Supporting Information For

SNEC Surface Model

(Upper 1 Meter of Soil)

Compiled by GPU Nuclear, Inc.
July 31, 2002

GPU NUCLEAR

CALCULATION COVER SHEET

Subject:	Calculation No.	Revision Number
SNEC Radionuclide List	E900-01-030	3

All revised areas denoted by change bars in right margin. Change bars denote Revision 1, 2 & 3 changes

Revision 1 Changes

1. Section 1 – Reworded third sentence.
2. Section 2 – Summary of Results: Revised the Radionuclide List Table. Eliminated the inside/outside CV delineation and made the table a general radionuclide list.
3. Section 3 – Renumbered references. Added reference 3.11.
4. Section 4c&e – Added NCRP 45 information on background uranium in section 4c. Revised section 4e to eliminate the use of only 5 radionuclides outside the CV.
5. Section 5, Conclusions: Revised to use the list of 11 radionuclides inside the CV and select applicable radionuclides outside CV based on characterization data.
6. Section 6 – Revised title from Attachments to Appendices. Added Appendix numbers to Table 1-5.
7. Table 2 – Removed columns related to DCGLs.
8. Table 4 – Fixed footnote numbering and added new footnotes.
9 Table 5 – Re-titled the External table to Effective Dose Equivalent.

Revision 2 Changes

1. Section 4c – Added additional laboratory reports under Teledyne and ERL sections.
2. Section 4d – Revised to explain how nuclides were deselected and referenced new Table 6.
3. Section 6 - Added Table 6
4. Revised Table 5 to take into account doses from all pathways, i e. external, internal (ingestion & inhalation).
5. Added Table 6 – TRU to Cs-137 Characterization Ratios.

Revision 3 Changes

1. Section 4c – Explain why Cm-242 was misidentified and deselected.
2. Section 5 – Added new paragraph 5.3 to explain accounting for dose of deselected nuclides <10%.
3. Table 5 – Removed Cm-242 and summarized percent of dose contributions of listed nuclides.
4. Table 6 – Removed Cm-242 ratios

	Signature	Date
Originator	Pat Donnachie /	7/23/02
Reviewer	Barry Brosey /	7/29/02
Additional Reviewer	N/A	
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Calculation Sheet

Subject	Calc. No.	Rev. No.	Sheet No.
SNEC Radionuclide List	E900-01-030	3	1 of 7

Originator	Date	Reviewed by	Date
Pat Donnachie	July 23, 2002	Barry Brosey	7/29/02

1. Purpose

The purpose of this calculation is to document the most representative list of radionuclides to be considered at the SNEC facility and to provide verification why some radionuclides were selected and others were not. Chapter 5, Table 5-1 of the SNEC License Termination Plan (LTP), Revision 0, contains a list of 26 radionuclides that have derived concentration guidelines (DCGLs) calculated. These radionuclides were identified as part of the site characterization process. This data was selected from the SNEC Characterization Report (Reference 3.1). To date more analytical information has been collected in justifying a better representation of radionuclides found at SNEC. In addition, a formal process, based on regulatory guidance, has been implemented to select radionuclides applicable to the site.

Determining a representative list of radionuclides provides the following:

a. Increased efficiencies and clearer guidance for sampling and analysis.
b. Emphasis on radionuclides contributing significant doses to the public.
c. More efficient regulatory review.
d. Simplification of dose models.
e. Analytical cost reduction.

2. Summary of results

Guidance from NUREG/CR-3474 and NUREG/CR-0130 (References 3.6 & 3.7) was used to first develop a comprehensive list of radionuclides (Table 4) that could potentially be found in media at SNEC, during its operation and post shutdown periods. From this list various criteria was used to deselect radionuclides. Information on site-specific radionuclides was also determined using results of characterization surveys, waste stream analyses and historical site assessments that are appropriate for each medium. Once a list was developed a 4-step process was used to deselect radionuclides that are not applicable to SNEC.

Step 1 - SNEC has been shut down for almost 30 years. All radionuclides with half lives less than 3 years have been deselected since they have decayed 10 half lives.

Step 2 - Over 500 samples in various media have been analyzed as part of the characterization process. Radionuclide results below minimum detectable activity (MDA) levels were deselected.

Step 3 – Radionuclides in media that were < 1% of the total mix activity and < 10% of the dose limit were also deselected. Per Appendix E of NUREG-1727 (Reference 8) radionuclides contributing < 10% of the dose limit can be screened out.

Step 4 – Evaluate which media contain certain radionuclides.

As a result of the deselection process and most recent characterization data, a table has been developed listing radionuclides present at the SNEC site. This table represents the list of radionuclides potentially found in volumetric media and on structural surface areas.

SNEC Radionuclide List Table

H-3	Eu-152
C-14	Pu-238
Co-60	Pu-239
Ni-63	Pu-241
Sr-90	Am-241
Cs-137	

3. References:

3.1 SNEC Facility Site Characterization Report, May 1996

3.2 SNEC License Termination Plan, February 2000

3.3 SNEC Historical Site Assessment Report, March 2000

3.4 SNEC Soil Characterization Report, May 1995

3.5 File W:/Donnachie/Nuclide Laboratory Analysis Results.xls

3.6 NUREG/CR-3474, "Long-lived Activation Products in Reactor Materials", August 1984.

3.7 NUREG/CR-0130, "Technology, Safety, and Costs of Decommissioning a Reference Pressurized Water Reactor Power Station", June 1978.

3.8 NUREG-1727, "NMSS Decommissioning Standard Review Plan", September 2000.

3.9 Federal Guidance Report No. 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion", September 1988.

3.10 Federal Guidance Report No. 12, "External Exposure to Radionuclides in Air, Water, and Soil", September 1993.

3.11 NCRP Report No. 45, "Natural Background Radiation in the United States," pg 46, November 15, 1975.

4. Assumptions and Basic Data

The following criteria was used to determine a reasonable list of radionuclides that are significant at the SNEC site (Reference Table 3.4):

a. NUREG/CR- 0130 & 3474 guidance for selection of radionuclides in PWR station media. The following tables from these NUREGs were used to determine a comprehensive list of radionuclides from which a deselection process could be used, i.e. NUREG/CR-3474, Tables 1.1, 5.4 & 5.6 and NUREG/CR-0130, Volumes 1 & 2, Tables 7.3-5, 7.3-11, 7.3-14, C.1-3, C.1-5, E.2-1, E.2-2 & E.2-3. This list is consistent with the regulatory guidance for radionuclides of concern in bio-shield wall concrete, rebar, and surface contamination and site deposition from radioactive releases. A total of 71 radionuclides initially made the comprehensive list as a result of the NUREG tables review and, also, through the addition of some transuranic nuclides not contained in the NUREG tables. However, many radionuclides in the regulatory guidance are not applicable to SNEC based on short half-life, low relative abundance in media mix, or inconsequential dose contribution.

b. List, for possible deselection, radionuclides that have decayed 10 half lives (i.e. radionuclides with half-life < 3 years). This method takes into account SNEC's 30 year shut down period. A total of 31 radionuclides with half-lives less than 3 years were deselected from the initial list leaving 40 radionuclides remaining.

c. Evaluate positively identified radionuclides (i.e. gamma emitters, hard to detect and transuranic nuclides) identified above MDA. Gamma scan results on over 540 samples were reviewed from the SNEC characterization electronic database. In addition, transuranic and hard to detect radionuclides were reviewed from technical reports and laboratory analysis data. Sample media consisted of smears, core bores, pipe scrapings, soil, sediment and water. Samples were obtained from CV system components & piping, structural concrete, surface & sub-surface soils, site wells, CV paint and SSGS related structures. A total of 21 radionuclides were deselected as being less than MDA leaving 19 radionuclides remaining. Of these 19, two radionuclides (Fe-55 & Cm-242) have half-lives less than 3 years but were reported above MDA in a few samples. Since Cm-242 has decayed 67 half lives since the shutdown of SNEC (1972) an investigation was conducted to determine why this nuclide was being reported by the off site laboratory. It was determined that the Cm-242 was misidentified as a result of natural thorium daughter interference. Therefore, Cm-242 has been deselected. The Fe-55 is less than 1% of the mix activity and will be deselected (see Table 5).

Per Reference 3.11 one gram of natural uranium contains 0.33 uCi of U-238, 0.015 uCi of U-235 and 0.3 uCi of U-234, subject to minor variations in U-234. U-234, U-235 and U-238 have been detected in samples. Results of these uranium nuclides are listed in Table 2. An evaluation was made to determine if these uraniums were plant produced or naturally occurring. Table 3 presents

the estimated activities for each uranium as it is found in nature. Nuclide ratios (U234/U238, U238/U235 & U234/U235) were calculated with specified uncertainty ranges. From this information SNEC samples, while varying in total activity, contain naturally occurring uranium.

The following technical reports and analytical data were reviewed:

SNEC Facility Characterization Report, May 1996:
Tables 4-1, 4-5, 4-6, 4-7, 4-8, 4-10, 4-13, 4-17, 4-20, 4-21, 4-25, 4-27, 4-28, 4-29, 4-30, 4-31, 4-53

SNEC License Termination Plan, February 2000 – Revision 0:
Tables 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-12, 2-14, 2-15, 2-16, 2-17

SNEC Historical Site Assessment Report, March 2000:
Sections 7.1 and 7.2, pp. 27-40

SNEC Soil Characterization Report, May 1995
Pp. 1-7, Appendices 1, 3 & 4

Off-site Laboratory Analyses
(BWXT Technologies, Inc.)

Report #: 0011042	CV Concrete Samples	Report Date: 12/14/00
Report #: 0102059	CV Tunnel Sediment	Report Date: 03/26/01
Report #: 0101037	SSGS Soil Bag Sample	Report Date: 02/22/01
Report #: 0104005	North CV Yard Soil Bag #34L	Report Date: 05/21/01
Report #: 0104079	Well OW-6	Report Date: 05/28/01
Report #: 0106103	Weir Line Sediment Sample	Report Date: 08/09/01

(Teledyne Brown)

Report #: 38251	CV Yard Grid F-8 Soil	Report Date: 05/16/00
Report #: 38252	CV Yard Grid G-8) Soil	Report Date: 05/17/00
Report #: 38250	CV Yard Grid F-7 Soil	Report Date: 05/08/00
Report #: 16599	Discharge Tunnel 6" Drain Line Scraping	Report Date: 07/22/99
Report #: 38253	SSGS East Turbine Sump Area AV-133	Report Date: 05/05/00
Report #: 38254	SSGS Intake Tunnel AT-139	Report Date: 06/08/00
Report # 14181	Well Water Composite (SX-GW-MW-GEO)	Report Date: 09/18/99
Report # 110609	CV Dome Paint Chips	Report Date: 10/14/99
Report #s 111123/110593/ 110594/110595	CV Dome Paint Chips	Report Date: 10/14/99
Report # 111157	SSGSDT Floor Sediment @ 32'	Report Date: 11/17/99

Report # 111031	SSPDT Floor Sediment ~32'	Report Date: 11/17/99

(ERL)

Report # 88236	Weir Pipe Sediment (70' from weir to river)	Report Date: 05/07/96
Report # 111151	Composite Spray Pond Soil 125, 126, 127	Report Date: 10/28/99
Report # 111158	Soil Sample SX9SL99202	Report Date: 11/17/99
Report # 115374	SSGS Footprint, Well # 7 Sediment	Report Date: 08/24.00
Report # 113454	SSGS East Sump Sediment @25'	Report Date: 04/25/00
Report # 109430	Discharge Tunnel Wall Scraping	Report Date: 07/29/99
Report # 111156	SSGSDT Seal Chamber #3 Sediment	Report Date: 11/17/99
Report # 111155	SSGSDT Seal Chamber @40' Sediment	Report Date: 11/17/99
Report # 111152	SSGSDT 16" Pipe Internal @ 138'	Report Date: 11/17/99
Report # 111157	SSGSDT Floor Sediment @ 32'	Report Date: 11/17/99
Report # 111153	SSGSDT 8" & 15" Pipe Internal Composite	Report Date: 11/17/99
Report # 111154	SSGSDT Floor Sediment Composite	Report Date: 11/17/99
Report # 109067	Well Water Composite (SX-GW-MW-GEO)	Report Date: 09/30/99
Report # 114218	SSGS Well #2-Sediment, W. Turbine Sump	Report Date: 06/05/00
Report # 114219	SSGS Well #3 Sediment, Collection Tank	Report Date: 06/06/00
Report # 114221	SSGS DT 18" Line	Report Date: 05/24/00
Report # 110609	CV Paint Chips	Report Date: 12/08/99
Report #s 110592-110595	CV Paint Chips	Report Date: 11/16/99
Report # 111123	CV Paint Chips	Report Date: 12/20/99

Survey Request (SR) & Site Work Instruction (SWI) Sample Results

SR-0004	SSGS East ~790' to 811' Elevation.
SR-0006	SSGS West ~790' to 811' Elevation
SR-0007	Open Land Areas Near SSGS Tunnels
SR-0008	Northeast End of SSGS Discharge Tunnel
SR-0011	SSGS Center Section ~790' to 811' Elevation
SR-0012	SSGS Firing Isle, 806' Elevation
SR-0013	Discharge Tunnel Seal Chambers
SR-0014	SSGS Spray Pump Pit
SR-0015	SSGS Miscellaneous (Shunt Line, Weir Line, SSGS Sump Cross Connecting Lines & SSGS Intake Tunnel.
SR-0024	SSGS Boiler Pad at 811' Elevation
SWI-99-069	SSGS Discharge Tunnel

d. Deselect radionuclides < 1% of media mix **and** < 10% of the dose limit per NUREG-1727, Appendix E. From the 19 radionuclides determined in Section C above, 7 radionuclides (Fe-55, Ni-59, Nb-94, Tc-99, Eu-154, Pu-242, & Cm-244) were further deselected due to a low abundance (< 1%) in the media mixes. Deselection was based on review of the 1996 Site Characterization Report, SNEC License Termination Plan Table 2-1, most recent characterization analysis data and removal of contaminated plant equipment. In the 1996 Site Characterization Report, Table 4-1, Fe-55 was listed as 2.46% of the site's radionuclide inventory contained within the steel structures of the reactor vessel. In 1998 the reactor vessel was removed along with the steam generator and pressurizer as part of the Large Component Removal program. This program essentially reduced the Fe-55 to only 0.12% of the site radionuclide inventory per the 2000 LTP, Table 2-1.

Tables 5 and 6 provide information on how these radionuclides were also deselected based on contributing less than 10% of the total effective dose equivalent (total of external and internal). Dose conversion factors were taken from Federal Guidance Report (FGR) 11, Tables 2.1 (Exposure-to-Dose Factors for Inhalation) and 2.2 (Exposure-to-Dose Factors for Ingestion) and FGR 12, Table III-7 (Dose Coefficients for Exposure to Soil Contaminated to an Infinite Depth). Since all these radionuclides are < 1% of the mix and Cs-137 is the predominate radionuclide onsite, the applicable DCFs were normalized using the applicable nuclide–to-Cs ratio from either the SNEC LTP Table 2-1 or from Table 6 information. The normalized DCFs were then compared against applicable pathway Cs-137 DCF to determine if the respective doses would be greater than 10% of the Cs-137 dose. Since there is no external dose hazard from Fe-55 and Ni-63 there are no DCFs in FGR 12. For gamma exposure the Cs-137 daughter (Ba-137m) contributes the entire dose. Therefore, the Ba-137m dose coefficient from FGR #12 Table III-7 was used. FGR 11, Tables 2.1, 2.2 and 3 were used to calculate the committed effective dose equivalents from ingestion and inhalation for each radionuclide. Per Table 5, doses attributed individually to Fe-55, Ni-59, Nb-94, Tc-99, Eu-154, Pu-242, & Cm-244 are less than 10% of the Cs-137 dose and have all been deselected. This reduces the list to 11 radionuclides (H-3, C-14, Co-60, Ni-63, Sr-90, Cs-137, Eu-152, Pu-238, Pu-239, Pu-241 & Am-241) considered to be significant dose contributors at the SNEC facility.

e. Evaluate locations where radionuclides have been identified on site and are most likely to occur (e.g. inside or outside the CV). From review of the different types of media from Section C and Table 1, it can be shown that all 11 radionuclides have the potential to be present inside the CV. However, for media (e.g. soil, water, concrete, metal) outside the CV, the presence of these radionuclides can be further limited.

5. Conclusions

5.1 Based on the radionuclide deselection process, per the guidance in the subject NUREGs, the SNEC Radionuclide List Table in Section 2 lists the potential radionuclides of concern at SNEC. In addition, this is supported by recent characterization data that has been gathered from operational and decommissioning survey work over the last 5 years.

5.2 It is recommended that a total of eleven (11) radionuclides should be analyzed for all collected media and surveyed surfaces inside the CV. The revised radionuclide list should be updated into the next revision of the LTP. For media and surfaces surveyed in land areas and structures outside the CV it is recommended a review of the latest characterization data be used to select the applicable radionuclides of concern for the final site survey.

5.3 Per Table 5 of this analysis seven (7) nuclides have been deselected from the SNEC mix. These nuclides contribute a total of 3.45%, or 0.86 mrem, of the annual dose limit (25 mrem). This small dose will need to be accounted into the dose modeling of the site DCGLs.

6. Appendices

6.1 Table 1 – Radionuclide Analysis Results (Laboratory)
6.2 Table 2 – Uranium Ratios
6.3 Table 3 – Uranium Ratios in Nature
6.4 Table 4 - Radionuclide Deselection List
6.5 Table 5 – Radionuclides <10% Dose Impact
6.6 Table 6 – TRU to Cs-137 Characterization Ratios

Appendix 1

Table1

Radionuclide Analysis Results (Laboratory)

Area	Date	Am-241	C-14	Co-60	Cs-137	H-3	Ni-63	Eu-152	Pu-238	Pu-239	Pu-240	Pu-241	Sr-90	U-234	U-235	U-238	K-40	Ra-226	Th-232	Th-228
Proposed DCGL (pCi g)		1.5	3.7	2.5	8.5	260	1700	6 3	24	22	22	45	16	16	1.2	30	N/A	N/A	N/A	N/A
SSGS Intake Tunnel AT-139	6/8/00		1 8		0 22									0 65		0 45	9 79	1 06		
SSGSDT Seal Chamber #3 Sediment	11/17/99				43					0 0071				2 7	0 063	1 9				
SSGSDT Seal Chamber @40' Sediment	11/17/99				1 9					0 009				0 5	0 0096	0 41				
SSGSDT 16" Pipe Internal @138'	11/17/99				3 8					0 02				4 5	0 097	2 8				
SSGSDT Floor Sediment @32'	11/17/99	0 021			27				0 0037	0 012				2 3	0 062	1 7				
SSGSDT 8" & 15" Pipe Internal Comp (160&163')	11/17/99				2 2					0 0081				1 6	0 031	1 1				
SSGSDT Floor Sediment Composite @100 & 326'	11/17/99	0 035			7					0 0042				1 6	0 031	1 1				
SSGS Footprint E Turbine Area AV-133 (pumped)	6/5/00			0 37	97 8									1 1		0 57	2 58	0 326		
SSGS Footprint Well #7 Pumped Sediment	8/24/00			1 5	77									0 93	0 029	0 83				
SSGS E Sump Sediment @25', AV183, Well #1	4/25/00	0 088			85									0 88	0 052	0 85				
Discharge Tunnel Wall Scraping	7/29/99			0 84	120									1 2		0 74	1 7			
Discharge Tunnel 6" Drain Line Scraping	7/22/99	5 4		30	4800		55		1 6	2 5	2 5			0 45		0 57	39 8			
SSGS Soil Bag #5	11/22/00			0 4	11 4									0 198	0 009	0 193				
Composite of Spray Pond Soil 125, 126 & 127	11/28/99	0 0035							0 0043					0 56	0 015	0 41				
SX9SL99202 (Subsurface #11 (4-6'))	11/17/99	0 012												0 45	0 014	0 4				
CV Tunnel Sediment	2/14/01			1 26	1250								9 67	1 12		1 46				
Weir Pipe Sediment ~70' out toward river from weir	5/7/96			0 51	46												4 3		0 54	
North CV Yard Soil Bag #34L	3/26/01	0 07		1 31	5 04				0 02	0 04	0 04		0 27	0 34	0 02	0 31				
CV Yard F-7, Loc #2, Truck R-2	5/8/00			0 175	210									0 36		0 24	16 7	1 19	1 49	
CV Yard R-2-4 (G-8) AZ-129	5/17/00			0 084	555	110								0 33		0 25	16 8	0 952	1 33	
CV Yard Grid #F-8 AY-129	5/16/00			0 104	612									0 38		0 28	20 4	1 11	1.55	
Sediment Westinghouse Lab Pad Drain Line Comp	3/27/00	0 092		0 067	6 8									1	0 041	0 85	12	3	1 3	
Soil	10/13/94			0 228	11 9												12 6	2 34		6 43
1994 Soil Remediation Report Results	11/9/94			0 968	33 1									0 33		0 24	14 6			1 23
1994 Soil Remediation Report Results	11/19/94			2 35	319									0 31		0 23		23 3		
OW-6 Well (pCi/L)	4/25/01													0 52						
OW-4R Well (pCi/L)	4/25/01													1 19		0 84				
OW-5R (pCi/L)	4/25/01													2 38		2 1				
OW-3 (pCi/L)	4/25/01													0 49						
OW-3R (pCi/L)	4/25/01													0 94		0 44				
Weir Line 135' above river outlet	5/24/01				61 6									0 7	0 02	0 53				
CV Concrete (SX-01-CW-00-574)	10/18/00		33 62	0 04	1 37	40 86		0 1				275								
CV Concrete (SX-01-CW-00-637)	10/23/00	0 55	115		58 5	191						31 04								
CV Concrete (SX-01-CW-00-635)	10/27/00		22 4		5 08	66 6						46 78								
CV Concrete (SX-01-CW-00-626)	10/27/00	1 08	90 29		0 55	270 87						39 69								
CV Concrete (SX-01-CW-00-639)	10/18/00		67 48		11 1	225 26						23 52								
CV Concrete (SX-02-CW-00-633)	11/7/00		80 42		0 21	376 21						28 76								
CV Concrete (SX-02-CW-00-640)	5/25/95		98 39		27 7	518 57						10 07								
Discharge Tunnel Sediment (1st Seal ChamberCrud Pile 3" Vertical Drain Line)	7/22/99				67									0 72		0 68	2 4		0 33	
Discharge Tunnel Sediment -End of Tunnel (H3 in pCi/L)	7/21/99				21 2	210								0 28		0 38				
SSGS Footprint Collection Tank Area Aw-132/SSGS Well #3 Sediment					5 5									0 34		0 31	6 1			
SSGS DT 18" Line Sediment	5/24/00				3 1									1 1	0 029	0 84	9 3	4 8	2	

Note: Activity is specified as pCi/g unless specified otherwise.

Appendix 2

Table 2
Uranium Ratios

	U-234*	U-235*	U-238*	U234/236 Ratio	U238/U235 Ratio
SSGS Intake Tunnel AT-139	0 65		0 45	1 4	
SSGSDT Seal Chamber #3 Sediment	2 7	0 063	1 9	1 4	30.2
SSGSDT Seal Chamber @40' Sediment	0 5	0 0096	0 41	1.2	42 7
SSGSDT 16" Pipe Internal @138'	4.5	0 097	2 8	1 6	28 9
SSGSDT Floor Sediment @32'	2.3	0 062	1 7	1.4	27 4
SSGSDT 8" & 15" Pipe Internal Comp (160&163')	1.6	0 031	1 1	1 5	35 5
SSGSDT Floor Sediment Composite @100 & 326'	1 6	0 031	1 1	1 5	35 5
SSGS Footprint E Turbine Area AV-133 (pumped)	1 1		0 57	1 9	
SSGS Footprint Well #7 Pumped Sediment	0 93	0 029	0 83	1.1	28 6
SSGS E. Sump Sediment @25', AV183, Well #1	0 88	0 052	0 85	1 0	16 3
Discharge Tunnel Wall Scraping	1.2		0 74	1 6	
Discharge Tunnel 6" Drain Line Scraping	0 45		0 57	0 8	
SSGS Soil Bag #5	0 198	0 009	0 193	1 0	21 4
Composite of Spray Pond Soil 125, 126 & 127	0 56	0 015	0 41	1 4	27.3
SX9SL99202 (Subsurface #11 (4-6'))	0 45	0 014	0 4	1 1	28 6
CV Tunnel Sediment	1 12		1 46	0 8	
Weir Pipe Sediment ~70' out toward river from weir					
North CV Yard Soil Bag #34L	0 34	0 02	0 31	1.1	15 5
CV Yard F-7, Loc #2, Truck R-2	0 36		0.24	1.5	
CV Yard R-2-4 (G-8) AZ-129	0 33		0.25	1.3	
CV Yard Gnd #F-8 AY-129	0 38		0.28	1 4	
Sediment Westinghouse Lab Pad Drain Line Comp	1	0 041	0 85	1.2	20 7
Soil					
1994 Soil Remediation Report Results	0 33		0.24	1 4	
1994 Soil Remediation Report Results	0 31		0 23	1 3	
OW-6 Well (pCi/L)	0 52				
OW-4R Well (pCi/L)	1.19		0 84	1 4	
OW-5R (pCi/L)	2 38		2.1	1 1	
OW-3 (pCi/L)	0 49				
OW-3R (pCi/L)	0 94		0 44	2 1	
Weir Line 135' above river outlet	0 7	0 02	0 53	1 3	26 5
Discharge Tunnel Sediment (1st Seal ChamberCrud Pile 3" Vertical Drain Line)	0 72		0 68	1.1	
Discharge Tunnel Sediment -End of Tunnel (H3 in pCi/L)	0 28		0 38	0 7	
SSGS Footprint Collection Tank Area Aw-132/SSGS Well #3 Sediment	0 34		0 31	1.1	
SSGS DT 18" Line Sediment	1.1	0 029	0 84	1.3	29 0
Average				**1.3**	**27.6**

*** Activity is in pCi/g unless specified otherwise.**

Appendix 3

Table 3
Uranium Ratios in Nature

Radionuclide	Half-Life (Years)	Abundance in nature	λ	N	Activity in nature (disintegrations/yr/gm)
U-234	2.47E+05	0.000057	2.81E-06	2.57E+21	4.11E+11
U-235	7.10E+08	0.007196	9.76E-10	2.56E+21	1.80E+10
U-238	4.51E+09	0.99276	1.54E-10	2.53E+21	3.86E+11

Specific Activity (A)= $\lambda N(\%)$ where. $\lambda = .693/t_{1/2}$, N=atoms/mole(gm), %=fractional abundance in nature

Avogadro Constant (atoms/mole) = 6.02E+23 atoms/mole

Nuclide Ratio	Ratio in nature	Ratio w/ +/- 50% uncertainty range *
U234/U238	1.1	**0.55 - 1.65**
U238/U235	21.4	**10.7 - 32.1**
U234/U235	22.9	**11.45 - 34.35**

* Calculated to account for analytical uncertainties.

Reference: Radiological Health Handbook, Section IV, January 1970.

Appendix 4

Table 4
Radionuclide Deselection List

Isotope	Half Life (y)	Bioshield Concrete[1,2]	Rebar[3]	Surface Contamination[4]	Activated Reactor Components[5]	Release Deposits[6]	Half Life >3.0 y[7]	Isotopes Detected @SNEC >MDA	Isotopes @SNEC > 1% of Mix
H-3	1.24E+01	Y	Y				Y	Y	Y
C-14	5.73E+03	Y	Y		Y		Y	Y	Y
Na-22	2.60E+00	Y							
P-33	6.96E-02	Y							
S-35	2.40E-01	Y							
Cl-36	3.01E+05	Y	Y				Y		
Ar-37	9.50E-02	Y							
Ar-39	2.65E+02	Y					Y		
Ca-41	1.40E+05	Y	Y				Y		
Ca-45	4.47E-01	Y							
Sc-46	2.30E-01	Y							
Cr-51	7.59E-02	Y		Y		Y			
Mn-53	3.70E+06	Y	Y				Y		
Mn-54	8.56E-01	Y	Y	Y	Y	Y			
Fe-55	2.70E+00	Y	Y	Y	Y			Y	
Fe-59	1.22E-01	Y		Y	Y	Y			
Co-57	7.42E-01					Y			
Co-58	1.94E-01	Y		Y	Y	Y			
Co-60	5.27E+00	Y	Y	Y	Y	Y	Y	Y	Y
Ni-59	7.51E+04	Y	Y		Y		Y	Y	
Ni-63	9.20E+01	Y	Y		Y		Y	Y	Y
Zn-65	6.68E-01	Y	Y		Y				
Se-79	6.50E+04	Y	Y				Y		
Sr-89	1.38E-01			Y		Y			
Sr-90	2.91E+01	Y	Y	Y		Y	Y	Y	Y
Y-90	7.31E-03			Y		Y			
Nb-92m	3.60E+07	Y	Y				Y		
Nb-93m	1.36E+01	Y					Y		
Nb-95	3.50E+01	Y		Y	Y	Y	Y		
Zr-93	1.53E+06	Y	Y				Y		
Mo-93	3.50E+03	Y	Y		Y		Y		
Nb-94	2.03E+04	Y	Y		Y		Y	Y	
Zr-95	1.75E-01			Y	Y	Y			
Tc-99	2.13E+05	Y	Y				Y	Y	
Ru-103	1.08E-01					Y			
Ag-108m	1.27E+02	Y	Y				Y		
Ag-110m	6.85E-01					Y			
Sn-121m	5.50E+01	Y	Y				Y		
Sb-124	1.65E-01					Y			
Sb-125	2.77E+00					Y			
Te-129m	9.21E-02			Y					
I-129	1.57E+07	Y	Y				Y		
I-131	2.20E-02			Y		Y			
I-133	2.37E-03					Y			
Ba-133	1.07E+01	Y	Y				Y		
Cs-134	2.06E+00	Y	Y	Y		Y			
Cs-135	2.30E+06	Y	Y				Y		
Cs-136	3.59E-02			Y		Y			
Cs-137	3.00E+01	Y	Y	Y		Y	Y	Y	Y
Ba-140	3.49E-02					Y			
La-140	4.60E-03					Y			
Ce-141	8.90E-02					Y			
Ce-144	3.77E-03					Y			
Pm-145	1.77E+01	Y	Y				Y		
Sm-146	1.03E+08	Y	Y				Y		
Sm-151	9.01E+01	Y	Y				Y		
Eu-152	1.27E+01	Y	Y				Y	Y	Y
Eu-154	1.60E+01	Y	Y				Y	Y	
Eu-155	1.81E+00	Y	Y						
Tb-158	1.50E+02	Y	Y				Y		
Ho-166m	1.20E+03	Y	Y				Y		
Hf-178m	3.10E+01	Y	Y				Y		
Pb-205	1.43E+07	Y	Y				Y		
U-233	1.59E+05	Y	Y				Y		
Pu-238	8.78E+01						Y	Y	Y
Pu-239	2.41E+04	Y	Y				Y	Y	Y
Pu-241	1.32E+01						Y	Y	Y
Pu-242	3.79E+05						Y	Y	
Cm-242	4.40E-01							Y	
Cm-244	1.76E+01						Y	Y	
Am-241	4.58E+02						Y	Y	Y

Footnotes: 1 NUREG/CR-0130, Volume 1, Table 7 3-5, "Radioactivity Levels at the Inner Surface of the Activated Biological Shield at Reactor Shutdown"
2 NUREG/CR-3474, Table 5 4, "Activation of PWR Bioshield (Ci/gm) Average Concrete 30 EFPY at Core Axial Midplane"
3 NUREG/CR-3474, Table 5 6, "Activation of PWR Bioshield (Ci/gm) Average Rebar 30 EFPY at Core Axial Midplane"
4 NUREG/CR-0130, Volume 1, Table 7 3-11, Isotopic Composition of Accumulated Surface Contamination in the Referenced PWR "
5 NUREG/CR-0130, Volume 2, Table C 1-3, "Radioactivity Levels in Major Activated Reactor Components at Time of Reactor Shutdown"
6 NUREG/CR-0130, Volume 1, Table 7 3-14, "Est. Accumulated Activity of Radionuclides Deposited on the PWR Site "
7 SNEC shutdown 30 years Isotopes with a half life <3 0 years and therefore, <0 1% of original activity (I e decayed 10 half lives) were deselected

Appendix 5

Table 5

Radionuclides <10% Dose Impact
(Normalized to Cs-137)

External

	FGR #12 Table III-7					
Isotope	Sv m^3/Bq s	mrem g/pCi y	Nuclide/Cs-137 Ratio [1]	Normalized mrem g/pCi y Cs	% of Nuclide/Cs-137 Dose	<10% of dose? (Y/N)
Fe-55	0.00E+00	0.00E+00	2.40E-03	0.00E+00	0.00%	n/a
Ni-59	0 00E+00	0.00E+00	1.30E-02	0.00E+00	0.00%	n/a
Nb-94	5.18E-17	9.68E+00	6.00E-04	5.81E-03	0.16%	y
Tc-99	6.72E-22	1.26E-04	1.80E-04	2.26E-08	0.00%	y
Eu-154	4.11E-17	7.68E+00	1.43E-04	1.10E-03	0.03%	y
Pu-242	6.85E-22	1.28E-04	1.60E-06	2.05E-10	0.00%	y
Cm-244	6.74E-22	1.26E-04	1.04E-06	1.31E-10	0.00%	y
Cs-137/Ba-137m	1.93E-17	3.61E+00		Sub-total	**0.19%**	

Ingestion

	FGR#11 Table 2.2					
Isotope	Sv/Bq	mrem/pCi	Nuclide/Cs-137 Ratio [1]	Normalized mrem/pCi Cs	% of Nuclide/Cs-137 Dose	<10% of dose? (Y/N)
Fe-55	1.64E-10	6.07E-07	2.40E-03	1.46E-09	0.00%	y
Ni-59	5.67E-11	2.10E-07	1.30E-02	2.73E-09	0.01%	y
Nb-94	1.93E-09	7.14E-06	6.00E-04	4 28E-09	0.01%	y
Tc-99	3.95E-10	1.46E-06	1.80E-04	2.63E-10	0.00%	y
Eu-154	2.58E-09	9 55E-06	1.43E-04	1.37E-09	0.00%	y
Pu-242	1.33E-08	4.92E-05	1.60E-06	7.87E-11	0 00%	y
Cm-244	5 45E-07	2.02E-03	1.04E-06	2.10E-09	0.00%	y
Cs-137	1.35E-08	5.00E-05		Sub-total	**0.02%**	

Inhalation

	FGR#11 Table 2.1					
Isotope (Class) [3]	Sv/Bq	mrem/pCi	Nuclide/Cs-137 Ratio [1,2]	Normalized mrem/pCi Cs	% of Nuclide/Cs-137 Dose	<10% of dose? (Y/N)
Fe-55 (W)	3.61E-10	1.34E-06	2.40E-03	3.21E-09	0.01%	y
Ni-59 (W)	2.48E-10	9.18E-07	1.30E-02	1.19E-08	0.04%	y
Nb-94 (Y)	1.12E-07	4.14E-04	6.00E-04	2.49E-07	0.78%	y
Tc-99 (W)	2.25E-09	8.33E-06	1.80E-04	1.50E-09	0.00%	y
Eu-154 (W)	7.73E-08	2 86E-04	1.43E-04	4.09E-08	0.13%	y
Pu-242 (Y)	7.92E-05	2.93E-01	1.60E-06	4.69E-07	1.47%	y
Cm-244 (W)	6.70E-05	2.48E-01	1.04E-06	2.58E-07	0.81%	y
Cs-137 (D)	8.63E-09	3.19E-05		Sub-total	**3.24%**	
				Total	**3.45%**	

Footnote 1:
1. Ratios for Fe-55, Ni-59, Nb-94, Eu-154 & Tc-99 determined from SNEC LTP, Table 2-1.
2. Ratios for Pu-242 & Cm-244 determined from Table 6 contained within this calculation.
3. Class designations determined from FGR-11, Table 3 for SNEC chemical compounds.

Appendix 6

Table 6

TRU to Cs-137 Characterization Ratios

Sample	Sample ID	Cs-137	Cm-244	Cm244/Cs137	Pu-242	Pu242/Cs137
CV Paint Chips	SX4PC990104	2.70E+04	2.80E-02	1.04E-06		0.00E+00
CV Paint Chip Composite	SXPCTRU4	1.50E+04	1.60E-02	1.07E-06		0.00E+00
SSGSDT Floor Sed.	SX5SD99259	2.70E+01		0.00E+00		0.00E+00
SSGS Seal Chamber Sed.	SX5SD99258	4.30E+01		0.00E+00		0.00E+00
CV smear	SX821950052	5.63E-01	1.90E-05	3.37E-05	4.80E-06	8.53E-06
CV smear	SX861950051	9.03E+00	3.00E-04	3.32E-05	2.40E-05	2.66E-06
Smear	SXTN-SMR-A2	7.66E-02		0.00E+00		0.00E+00
Avg. Ratio				**1.04E-06**		**1.60E-06**

Reference the following laboratory reports:

Teledyne ID	ERL ID
110609	110609
111123	110593
110593	110594
110594	110595
110595	110592
111157	111123
111031	

SNEC Upper 1 Meter of Soil - DCGL's

Radionuclide	Peak Dose per pCi/g @ Time t (in years)		Limits in pCi/g for: 25 mrem/y TEDE	Limits in pCi/g for: 4 mrem/y DW
Am-241	9.70E-01	mrem/yr @ t = 0	25.7	
Am-241 DW	1.93E-02	mrem/yr @ t = 1062 ± 2		207
C-14	9.30E-01	mrem/yr @ t = 0	26.8	
C-14 DW	8.87E-03	mrem/yr @ t = 1.504 ± 0.003		450
Co-60	7.13E+00	mrem/yr @ t = 0	3.5	
Co-60 DW	5.62E-11	mrem/yr @ t = 114.8 ± 0.2		7.1E+10
Cs-137	3.74E+00	mrem/yr @ t = 0	6.6	
Cs-137 DW	2.32E-17	mrem/yr @ t = 1189 ± 2		1.7E+17
Eu-152	2.46E+00	mrem/yr @ t = 0	10.1	
Eu-152 DW	2.18E-15	mrem/yr @ t = 1037 ± 2		1.8E+15
H-3	3.87E-02	mrem/yr @ t = 0	645	
H-3 DW	1.43E-02	mrem/yr @ t = 0.913 ± 0.002		279
Ni-63	3.34E-02	mrem/yr @ t = 0	747	
Ni-63 DW	2.07E-08	mrem/yr @ t = 661 ± 1		1.9E+08
Pu-238	8.28E-01	mrem/yr @ t = 0	30.1	
Pu-238 DW	1.70E-01	mrem/yr @ t = 200.4 ± 0.4		23.5
Pu-239	3.63E+00	mrem/yr @ t = 642 ± 1	6.8	
Pu-239 DW	2.83E+00	mrem/yr @ t = 556 ± 1		1.4
Pu-241	2.89E-02	mrem/yr @ t = 54.9 ± 0.1	866	
Pu-241 DW	8.33E-04	mrem/yr @ t = 950 ± 2		4803
Sr-90	2.05E+01	mrem/yr @ t = 0	1.2	
Sr-90 DW	5.03E-01	mrem/yr @ t = 36.49 ± 0.07		7.9

NOTE: Specific Activity Limit (SAL) for Cs & Eu is 8.70E+13 pCi/g & 1.75E+14 pCi/g respectively.

Comparison of Proposed DCGL Values with Other Miscellaneous Values

	Proposed Composite DCGL's (URS + SNEC)		SNEC RESRAD 6.1 Deterministic Values (pCi/g)		URS Developed Subsurface Values		SNEC Initial RESRAD 5.82 Deterministic DCGL's (pCi/g)	NRC Screening DCGL's (pCi/g)	
	July-02		July-02		July-02		February-00	May-99	
	25 mrem/y Limit	4 mrem/y DW Limit	25 mrem/y Limit	4 mrem/y DW Limit	25 mrem/y Limit	4 mrem/y DW Limit	25 mrem/y Limit	25 mrem/y Limit	
Am-241	25.7	2.3	25.7	207	107	2.3	1.5	2.1	Am-241
C-14	26.8	5.4	26.8	450	42.1	5.4	3.7	12	C-14
Co-60	3.5	66.7	3.5	7.1E+10	8	66.7	2.5	3.8	Co-60
Cs-137	6.6	397	6.6	1.7E+17	21.1	397	8.5	11	Cs-137
Eu-152	10.1	1443	10.1	1.8E+15	20.7	1443	6.3	8.7	Eu-152
H-3	645	31.1	645	279	2185	31.1	260	110	H-3
Ni-63	747	19249	747	1.9E+08	3220	19249	1700	2100	Ni-63
Pu-238	30.1	0.41	30.1	23.5	123	0.41	24	2.5	Pu-238
Pu-239	6.8	0.37	6.8	1.4	45.7	0.37	22	2.3	Pu-239
Pu-241	866	19.8	866	4803	4072	19.8	45	72	Pu-241
Sr-90	1.2	0.61	1.2	7.9	5.6	0.61	1.6	1.7	Sr-90

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
Am-241 1.000E+00

0

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	9.701E-01	9.683E-01	9.648E-01	9.527E-01	9.106E-01	7.398E-01	5.623E-01	1.208E-01	2.352E-08
M(t):	3.880E-02	3.873E-02	3.859E-02	3.811E-02	3.643E-02	2.959E-02	2.249E-02	4.831E-03	9.406E-10

0Maximum TDOSE(t): **9.701E-01 mrem/yr at t = 0.000E+00 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	2.466E-02	0.0254	1.269E-02	0.0131	0.000E+00	0.0000	8.723E-01	0.8992	7.585E-03	0.0078	1.015E-03	0.0010	5.180E-02	0.0534
Total	2.466E-02	0.0254	1.269E-02	0.0131	0.000E+00	0.0000	8.723E-01	0.8992	7.585E-03	0.0078	1.015E-03	0.0010	5.180E-02	0.0534

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.701E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.701E-01	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	2.461E-02	0.0254	1.266E-02	0.0131	0.000E+00	0.0000	8.707E-01	0.8992	7.571E-03	0.0078	1.014E-03	0.0010	5.171E-02	0.0534
Total	2.461E-02	0.0254	1.266E-02	0.0131	0.000E+00	0.0000	8.707E-01	0.8992	7.571E-03	0.0078	1.014E-03	0.0010	5.171E-02	0.0534

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Branch Fraction*	DSR(j,t) (mrem/yr)/(pCi/g) t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Am-241	Am-241	1.000E+00	9.701E-01	9.683E-01	9.648E-01	9.527E-01	9.105E-01	7.393E-01	5.614E-01	1.197E-01	2.332E-08
Am-241	Np-237	1.000E+00	2.003E-06	6.217E-06	1.463E-05	4.374E-05	1.434E-04	5.239E-04	8.595E-04	1.060E-03	6.452E-11
Am-241	U-233	1.000E+00	4.730E-14	2.704E-13	1.275E-12	1.036E-11	1.819E-10	2.249E-08	1.214E-07	3.717E-07	4.976E-15
Am-241	Th-229	1.000E+00	9.667E-18	1.350E-16	1.523E-15	3.886E-14	1.360E-12	7.019E-11	3.626E-10	2.940E-09	1.280E-10
Am-241	ädSR(j)		9.701E-01	9.683E-01	9.648E-01	9.527E-01	9.106E-01	7.398E-01	5.623E-01	1.208E-01	2.352E-08

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life 6 0.5 yr) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Am-241	2.577E+01	2.582E+01	2.591E+01	2.624E+01	2.745E+01	3.379E+01	4.446E+01	2.070E+02	1.063E+09

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	**1.000E+00**	**0.000E+00**	**9.701E-01**	**2.577E+01**	**9.701E-01**	**2.577E+01**

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Am-241	Am-241	1.000E+00	9.701E-01	9.683E-01	9.648E-01	9.527E-01	9.105E-01	7.393E-01	5.614E-01	1.197E-01	2.332E-08
0Np-237	Am-241	1.000E+00	2.003E-06	6.217E-06	1.463E-05	4.374E-05	1.434E-04	5.239E-04	8.595E-04	1.060E-03	6.452E-11
0U-233	Am-241	1.000E+00	4.730E-14	2.704E-13	1.275E-12	1.036E-11	1.819E-10	2.249E-08	1.214E-07	3.717E-07	4.976E-15
0Th-229	Am-241	1.000E+00	9.667E-18	1.350E-16	1.523E-15	3.886E-14	1.360E-12	7.019E-11	3.626E-10	2.940E-09	1.280E-10

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04

1 RESRAD Regression and Correlation output 05/20/02 13:11
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW AM241.RAD**

Sensitive Parameter Summary Table

Plant transfer factor for Am (+,+,+,+)
Kd of Am-241 in Contaminated Zone (+,+), (-,-,-)
Kd of Am-241 in Saturated Zone (-,-,-)
Kd of Am-241 in Unsaturated Zone 1 (-,-,-)
Kd of Th-229 in Contaminated Zone (+)
Kd of U-233 in Contaminated Zone (-)

Probabilistic results summary : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Z-one
File: NEW AM241.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	1.202E+02	9.096E-01
2	3.500E+01	8.712E-01
3	5.754E+01	8.339E-01

1 RESRAD Regression and Correlation output 05/20/02 13:11 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW AM241.RAD

Coefficients for peak of mean dose time Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	1		1		1		1	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Thickness of evasion layer of C-14 in soil	9	0.10	14	0.05	5	0.12	12	0.06
Contaminated zone hydraulic conductivity	6	0.12	12	0.06	54	0.01	55	0.00
Effective Porosity of Unsaturated zone 1	5	-0.12	2	-0.47	28	-0.05	5	-0.18
Total Porosity of Unsaturated zone 1	7	0.11	3	0.45	38	0.03	7	0.13
Plant transfer factor for Am	3	0.24	10	0.12	1	0.84	1	0.80
Milk transfer factor for Am	10	0.10	16	0.05	20	0.06	26	0.03
Plant transfer factor for Th	8	-0.11	13	-0.06	29	-0.05	34	-0.02
Kd of Np-237 in Saturated Zone	4	0.18	11	0.10	44	-0.02	45	-0.01
Kd of Th-229 in Contaminated Zone	1	0.84	1	0.86	16	0.07	22	0.03
Kd of U-233 in Contaminated Zone	2	-0.44	5	-0.27	55	0.01	56	0.00
R-SQUARE		0.75		0.75		0.74		0.74

-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.

1 RESRAD Regression and Correlation output 05/20/02 13:11 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW AM241.RAD

Coefficients for peak of mean dose time Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	2		2		2		2	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Am-241 in Contaminated Zone	56	-0.01	56	0.00	2	0.31	5	0.14
Kd of Am-241 in Unsaturated Zone 1	64	0.00	64	0.00	3	-0.14	10	-0.06
Kd of Am-241 in Saturated Zone	62	0.00	62	0.00	6	-0.12	14	-0.05
Thickness of Unsaturated zone 1	3	-0.10	9	-0.09	4	-0.13	11	-0.06
Effective Porosity of Unsaturated zone 1	31	0.02	5	0.17	9	0.10	2	0.34
Wet foliar interception fraction of leafy vegetables	33	0.02	36	0.02	8	-0.10	16	-0.04
Precipitation	37	0.02	40	0.02	7	-0.11	15	-0.05
Plant transfer factor for Am	1	0.43	1	0.42	1	0.90	1	0.88
Fish transfer factor for Np	11	-0.06	18	-0.05	10	-0.09	17	-0.04
Kd of Th-229 in Saturated Zone	45	0.01	47	0.01	5	0.13	13	0.06
R-SQUARE		0.26		0.26		0.82		0.82

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW AM241.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 3, Repetition = Sig	PCC Coeff	SRC Coefficient = 3, Repetition = Sig	SRC Coeff	PRCC Coefficient = 3, Repetition = Sig	PRCC Coeff	SRRC Coefficient = 3, Repetition = Sig	SRRC Coeff
Kd of Am-241 in Contaminated Zone	52	0.01	52	0.01	2	0.39	6	0.19
Kd of Am-241 in Unsaturated Zone 1	49	0.01	49	0.01	3	-0.21	8	-0.10
Kd of Am-241 in Saturated Zone	42	0.02	42	0.02	4	-0.16	10	-0.07
Evapotranspiration coefficient	38	0.02	40	0.02	8	0.10	14	0.04
Indoor dust filtration factor	4	-0.10	10	-0.09	7	-0.10	13	-0.05
Total Porosity of Unsaturated zone 1	7	-0.09	1	-0.63	5	-0.11	2	-0.40
Plant transfer factor for Am	1	0.35	4	0.34	1	0.88	1	0.85
Plant transfer factor for U	28	0.03	32	0.03	9	0.10	15	0.04
Fish transfer factor for U	53	-0.01	54	-0.01	10	0.09	16	0.04
Kd of Np-237 in Contaminated Zone	26	-0.04	30	-0.03	6	-0.11	12	-0.05
R-SQUARE		0.23		0.23		0.80		0.80

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW AM241.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 1, Repetition = Sig	PCC Coeff	SRC Coefficient = 1, Repetition = Sig	SRC Coeff	PRCC Coefficient = 1, Repetition = Sig	PRCC Coeff	SRRC Coefficient = 1, Repetition = Sig	SRRC Coeff
Kd of Am-241 in Contaminated Zone	42	-0.02	44	-0.01	4	-0.29	9	-0.10
Kd of Am-241 in Unsaturated Zone 1	53	-0.01	53	0.00	3	-0.30	7	-0.10
Kd of Am-241 in Saturated Zone	49	-0.01	49	-0.01	2	-0.31	6	-0.11
Saturated zone hydraulic conductivity	7	-0.10	13	-0.05	5	-0.10	11	-0.03
Saturated zone total porosity	15	0.07	5	0.25	6	0.10	2	0.27
Plant transfer factor for Am	3	0.25	9	0.13	1	0.94	1	0.92
Plant transfer factor for U	50	-0.01	50	0.00	8	0.09	13	0.03
Kd of Th-229 in Contaminated Zone	1	0.86	1	0.89	9	0.09	14	0.03
Kd of Th-229 in Saturated Zone	43	0.02	40	0.01	7	0.10	12	0.03
Kd of U-233 in Saturated Zone	64	0.00	64	0.00	10	0.08	15	0.03
R-SQUARE		0.77		0.77		0.89		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone

Input File : NEW AM241.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2, Repetition = 2		SRC Coefficient = 2, Repetition = 2		PRCC Coefficient = 2, Repetition = 2		SRRC Coefficient = 2, Repetition = 2	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Am-241 in Contaminated Zone	52	0.00	54	0.00	2	-0.34	4	-0.14
Kd of Am-241 in Unsaturated Zone 1	53	0.00	55	0.00	4	-0.29	8	-0.12
Kd of Am-241 in Saturated Zone	42	-0.01	43	-0.01	3	-0.32	5	-0.13
Depth of soil mixing layer	6	0.08	10	0.07	10	0.09	17	0.04
Well pump intake depth	18	-0.04	21	-0.04	8	-0.09	15	-0.04
Mass loading for inhalation	10	0.05	14	0.05	9	0.09	16	0.04
Plant transfer factor for Am	1	0.19	3	0.18	1	0.91	1	0.88
Meat transfer factor for Np	27	0.02	32	0.02	7	0.10	14	0.04
Milk transfer factor for Th	49	-0.01	50	-0.01	5	-0.11	11	-0.04
Kd of Th-229 in Unsaturated Zone 1	29	-0.02	30	-0.02	6	0.10	12	0.04
R-SQUARE		0.14		0.14		0.84		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.

1 RESRAD Regression and Correlation output 05/20/02 13:11 Page: Coef 6
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW AM241.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3, Repetition = 3		SRC Coefficient = 3, Repetition = 3		PRCC Coefficient = 3, Repetition = 3		SRRC Coefficient = 3, Repetition = 3	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of saturated zone	13	0.06	3	0.39	5	0.11	2	0.35
Kd of Am-241 in Contaminated Zone	47	-0.01	49	-0.01	2	-0.34	6	-0.15
Kd of Am-241 in Unsaturated Zone 1	42	0.01	43	0.01	3	-0.28	7	-0.12
Kd of Am-241 in Saturated Zone	43	0.01	44	0.01	4	-0.27	8	-0.11
Saturated zone hydraulic conductivity	26	-0.03	27	-0.03	8	-0.09	12	-0.04
Saturated zone total porosity	60	0.00	46	-0.01	6	-0.11	3	-0.34
Thickness of evasion layer of C-14 in soil	22	-0.04	23	-0.04	10	-0.08	14	-0.03
External gamma shielding factor	4	0.12	7	0.11	9	0.09	13	0.04
Plant transfer factor for Am	1	0.33	5	0.32	1	0.91	1	0.88
Kd of U-233 in Saturated Zone	32	0.02	33	0.02	7	0.10	10	0.04
R-SQUARE		0.22		0.22		0.84		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.

StatMost for Windows Tuesday, May 28, 2002 2:02:27 PM

********** Statistics Report **********

Plant Trans Factor for Am

Sample size (N)	5000
No. missing	0
Minimum	3.58000000E-005
Maximum	0.0275
Std deviation	0.0017
Mean	**0.0015**
Geometric mean	NaN
Quadratic mean	0.0023
Harmonic mean	0.0007
Sum	7.5903
Absolute Sum	7.5903
Median	0.0010
Percentiles:	
10	0.0003
25	**0.0005**
50	0.0010
75	**0.0018**
90	0.0032
Quartiles:	
First quartile:	0.0005
Second quartile:	0.0010
Third quartile:	0.0018
95.00% Confidence Interval:	
lower limit	0.0015
upper limit	0.0016

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 1:05:36 PM

********** Statistics Report **********

Kd of Am in Contaminated Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0156
Maximum	129000000.0000
Std deviation	2689400.6949
Mean	**170733.0865**
Geometric mean	NaN
Quadratic mean	2694546.2159
Harmonic mean	13.6103
Sum	853665432.4554
Absolute Sum	853665432.4554
Median	1448.6450
Percentiles:	
10	25.5448
25	**173.2772 (ANL=1000)**
50	1448.6450
75	**12139.0000**
90	82349.9400
Quartiles:	
First quartile:	173.2772
Second quartile:	1448.6450
Third quartile:	12139.0000
95.00% Confidence Interval:	
lower limit	96170.0191
upper limit	245296.1539

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 2:43:44 PM

********** Statistics Report **********

Kd of Am in the Sat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0156
Maximum	129000000.0000
Std deviation	2689400.6949
Mean	**170733.0865**
Geometric mean	NaN
Quadratic mean	2694546.2159
Harmonic mean	13.6103
Sum	853665432.4554
Absolute Sum	853665432.4554
Median	1448.6450
Percentiles:	
10	25.5448
25	**173.2772 (ANL=1000)**
50	1448.6450
75	**12139.0000**
90	82349.9400
Quartiles:	
First quartile:	173.2772
Second quartile:	1448.6450
Third quartile:	12139.0000
95.00% Confidence Interval:	
lower limit	96170.0191
upper limit	245296.1539

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 2:19:17 PM

********** Statistics Report **********

Kd of Am in the Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0156
Maximum	129000000.0000
Std deviation	2689400.6949
Mean	**170733.0865**
Geometric mean	NaN
Quadratic mean	2694546.2159
Harmonic mean	13.6103
Sum	853665432.4554
Absolute Sum	853665432.4554
Median	1448.6450
Percentiles:	
10	25.5448
25	**173.2772 (ANL=1000)**
50	1448.6450
75	**12139.0000**
90	82349.9400
Quartiles:	
First quartile:	173.2772
Second quartile:	1448.6450
Third quartile:	12139.0000
95.00% Confidence Interval:	
lower limit	96170.0191
upper limit	245296.1539

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 9:48:14 AM

********** Statistics Report **********

Kd of Th-229 in Contaminated Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0115
Maximum	2870000000.0000
Std deviation	56854645.8260
Mean	**2735726.7047** ✓
Geometric mean	NaN
Quadratic mean	56914747.3196
Harmonic mean	14.6328
Sum	1.36786335E+010
Absolute Sum	1.36786335E+010
Median	5873.1400
Percentiles:	
10	56.6962
25	**511.7395**
50	5873.1400
75	**67583.5250**
90	610076.5000
Quartiles:	
First quartile:	511.7395
Second quartile:	5873.1400
Third quartile:	67583.5250
95.00% Confidence Interval:	
lower limit	1159443.6336
upper limit	4312009.7758

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 11:22:44 AM

********** Statistics Report **********

Kd of U-233 in C-Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0015
Maximum	10500000.0000
Std deviation	219309.2340
Mean	**14088.8754**
Geometric mean	NaN
Quadratic mean	219739.4302
Harmonic mean	1.2517
Sum	70444376.8780
Absolute Sum	70444376.8780
Median	126.2665
Percentiles:	
10	2.2844
25	**15.3082 (ANL=16)**
50	126.2665
75	**1043.8750**
90	6995.9760
Quartiles:	
First quartile:	15.3082
Second quartile:	126.2665
Third quartile:	1043.8750
95.00% Confidence Interval:	
lower limit	8008.5731
upper limit	20169.1777

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCı/g
Am-241 1.000E+00

0

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 4.000E+00 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	0.000E+00	0.000E+00	5.105E-06	1.676E-04	9.456E-04	1.018E-03	7.588E-04	1.913E-02	6.355E-13
M(t):	0.000E+00	0.000E+00	1.276E-06	4.190E-05	2.364E-04	2.546E-04	1.897E-04	4.782E-03	1.589E-13

0Maximum TDOSE(t): **1.927E-02 mrem/yr at t = 1062 ± 2 years**

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (ı) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.062E+03 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(ı,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.062E+03 years
0 Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Mılk mrem/yr	Mılk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	1.927E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.927E-02	1.0000
Total	1.927E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.927E-02	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Indıvidual Radionuclides (i) and Pathways (p)
As mrem/yr and Fractıon of Total Dose At t = 0.000E+00 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Branch Fraction*	DSR(j,t) (mrem/yr)/(pCi/g) t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.894E-02	0.000E+00
Am-241	Np-237	1.000E+00	0.000E+00	0.000E+00	5.105E-06	1.676E-04	9.456E-04	1.018E-03	7.588E-04	1.856E-04	0.000E+00
Am-241	U-233	1.000E+00	0.000E+00	0.000E+00	2.470E-13	4.684E-11	1.455E-09	6.757E-09	6.314E-09	1.424E-09	0.000E+00
Am-241	Th-229	1.000E+00	0.000E+00	0.000E+00	1.306E-17	3.439E-16	1.150E-14	2.261E-13	5.841E-13	1.338E-12	6.355E-13
Am-241	ädSR(j)		0.000E+00	0.000E+00	5.105E-06	1.676E-04	9.456E-04	1.018E-03	7.588E-04	1.913E-02	6.355E-13

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life 6 0.5 yr) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 4.000E+00 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Am-241	*3.430E+12	*3.430E+12	7.836E+05	2.387E+04	4.230E+03	3.928E+03	5.271E+03	2.091E+02	*3.430E+12

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 1062 ñ 2 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	**1.000E+00**	**1062 ± 2**	**1.927E-02**	**2.076E+02**	**1.927E-02**	**2.076E+02**

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.894E-02	0.000E+00
0Np-237	Am-241	1.000E+00	0.000E+00	0.000E+00	5.105E-06	1.676E-04	9.456E-04	1.018E-03	7.588E-04	1.856E-04	0.000E+00
0U-233	Am-241	1.000E+00	0.000E+00	0.000E+00	2.470E-13	4.684E-11	1.455E-09	6.757E-09	6.314E-09	1.424E-09	0.000E+00
0Th-229	Am-241	1.000E+00	0.000E+00	0.000E+00	1.306E-17	3.439E-16	1.150E-14	2.261E-13	5.841E-13	1.338E-12	6.355E-13

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04

1 RESRAD Regression and Correlation output 05/23/02 10:37
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW AM241 DW.RAD**

Sensitive Parameter Summary Table

Kd of Am-241 in Unsaturated Zone 1 (-,-,-)
Kd of Th-229 in Contaminated Zone (+,+)
Kd of Np-237 in Unsaturated Zone 1 (-,-)
Kd of Am-241 in Contaminated Zone (-,-)
Kd of Am-241 in Saturated Zone (-,-)
Thickness of Unsaturated zone 1 (-,-,-)
Kd of U-233 in Contaminated Zone (-,-)
Saturated zone hydraulic conductivity (-,-)
Well pump intake depth (-,-)
Kd of Np-237 in Contaminated Zone (-,-)
Kd of Np-237 in Saturated Zone (-)

Probabilistic results summary : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Z-one
File: NEW AM241 DW.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	1.202E+02	2.771E-01
2	3.981E+01	1.261E-01
3	5.754E+01	1.337E-01

1 RESRAD Regression and Correlation output 05/23/02 10:37 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW AM241 DW.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 1 Repetition = Sig	PCC 1 Coeff	SRC 1 Sig	SRC 1 Coeff	PRCC 1 Sig	PRCC 1 Coeff	SRRC 1 Sig	SRRC 1 Coeff
Saturated zone hydraulic conductivity	8	-0.10	14	-0.05	4	-0.32	6	-0.22
Thickness of evasion layer of C-14 in soil	9	0.10	15	0.05	45	-0.03	49	-0.02
Contaminated zone hydraulic conductivity	5	0.11	12	0.06	34	0.04	39	0.03
Effective Porosity of Unsaturated zone 1	4	-0.12	2	-0.47	39	-0.03	9	-0.16
Total Porosity of Unsaturated zone 1	6	0.11	3	0.45	64	0.00	62	0.00
Milk transfer factor for Am	10	0.10	16	0.05	19	-0.07	23	-0.04
Plant transfer factor for Th	7	-0.10	13	-0.05	43	-0.03	47	-0.02
Kd of Np-237 in Saturated Zone	3	0.18	10	0.10	6	-0.26	8	-0.17
Kd of Th-229 in Contaminated Zone	1	0.84	1	0.87	47	0.02	50	0.02
Kd of U-233 in Contaminated Zone	2	-0.44	5	-0.27	15	-0.08	20	-0.05
R-SQUARE		0.75		0.75		0.59		0.59

-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.

1 RESRAD Regression and Correlation output 05/23/02 10:37 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW AM241 DW.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 2 Repetition = Sig	PCC 2 Coeff	SRC 2 Sig	SRC 2 Coeff	PRCC 2 Sig	PRCC 2 Coeff	SRRC 2 Sig	SRRC 2 Coeff
Kd of Am-241 in Contaminated Zone	55	-0.01	56	-0.01	6	-0.18	10	-0.12
Kd of Am-241 in Unsaturated Zone 1	59	0.00	59	0.00	2	-0.42	4	-0.30
Thickness of Unsaturated zone 1	2	-0.10	9	-0.10	3	-0.35	5	-0.24
b Parameter of Unsaturated zone 1	22	-0.03	26	-0.03	9	0.13	14	0.09
Well pump intake depth	21	-0.03	25	-0.03	8	-0.14	13	-0.09
Precipitation	29	0.03	33	0.02	7	0.18	11	0.12
Kd of Np-237 in Contaminated Zone	27	-0.03	30	-0.03	4	-0.30	8	-0.20
Kd of Np-237 in Unsaturated Zone 1	43	-0.02	44	-0.02	1	-0.62	1	-0.51
Kd of Np-237 in Saturated Zone	39	-0.02	41	-0.02	5	-0.25	9	-0.16
Kd of U-233 in Unsaturated Zone 1	63	0.00	63	0.00	10	-0.13	15	-0.08
R-SQUARE		0.11		0.11		0.59		0.59

-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.

Coefficients for peak of mean dose time Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	3		3		3		3	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Am-241 in Contaminated Zone	57	0.01	56	0.01	6	-0.19	8	-0.12
Kd of Am-241 in Unsaturated Zone 1	49	0.01	50	0.01	2	-0.46	3	-0.33
Saturated zone hydraulic conductivity	56	0.01	57	0.01	7	-0.11	10	-0.07
Thickness of Unsaturated zone 1	62	0.00	62	0.00	4	-0.34	6	-0.23
Total Porosity of Unsaturated zone 1	7	-0.08	1	-0.60	9	-0.10	1	-0.49
Well pump intake depth	35	-0.02	37	-0.02	8	-0.10	11	-0.06
Meat transfer factor for Np	28	-0.03	33	-0.03	10	0.09	12	0.06
Kd of Np-237 in Contaminated Zone	24	-0.04	28	-0.04	3	-0.36	5	-0.25
Kd of Np-237 in Unsaturated Zone 1	27	-0.03	30	-0.04	1	-0.60	2	-0.49
Kd of Np-237 in Saturated Zone	64	0.00	64	0.00	5	-0.22	7	-0.14
R-SQUARE		0.14		0.14		0.58		0.58

-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.

Coefficients for peak All Pathways Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	1		1		1		1	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Saturated zone hydraulic conductivity	5	-0.10	12	-0.05	4	-0.41	4	-0.24
Contaminated zone hydraulic conductivity	10	0.09	16	0.04	22	-0.07	29	-0.04
Depth of soil mixing layer	7	-0.10	14	-0.05	63	0.00	63	0.00
Effective Porosity of Unsaturated zone 1	4	-0.12	2	-0.45	37	0.03	10	0.14
Total Porosity of Unsaturated zone 1	9	0.10	3	0.38	45	-0.02	11	-0.10
Precipitation	8	0.10	15	0.05	12	0.09	18	0.05
Milk transfer factor for Am	6	0.10	13	0.05	50	0.01	52	0.01
Kd of Np-237 in Saturated Zone	3	0.14	11	0.07	24	-0.06	31	-0.03
Kd of Th-229 in Contaminated Zone	1	0.86	1	0.89	29	0.05	36	0.02
Kd of U-233 in Contaminated Zone	2	-0.45	4	-0.27	40	0.03	45	0.02
R-SQUARE		0.76		0.76		0.72		0.72

-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.

Input File : NEW AM241 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2 Repetition =		SRC 2		PRCC 2		SRRC 2	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of contaminated zone	55	0.00	25	-0.03	9	0.10	3	0.36
Kd of Am-241 in Contaminated Zone	52	-0.01	54	-0.01	2	-0.57	2	-0.38
Kd of Am-241 in Unsaturated Zone 1	57	0.00	58	0.00	1	-0.73	1	-0.58
Kd of Am-241 in Saturated Zone	40	-0.01	44	-0.01	3	-0.45	5	-0.28
Saturated zone hydraulic conductivity	45	-0.01	48	-0.01	4	-0.44	6	-0.26
Thickness of Unsaturated zone 1	10	-0.05	14	-0.05	6	-0.22	10	-0.12
Runoff coefficient	15	0.04	19	0.04	10	0.09	14	0.05
Well pump intake depth	14	-0.04	18	-0.04	5	-0.33	8	-0.19
External gamma shielding factor	51	0.01	53	0.01	8	0.10	13	0.05
Kd of Np-237 in Contaminated Zone	56	0.00	57	0.00	7	-0.17	12	-0.09
R-SQUARE		0.11		0.11		0.71		0.71

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW AM241 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Repetition =		SRC 3		PRCC 3		SRRC 3	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Am-241 in Contaminated Zone	41	-0.01	45	-0.01	2	-0.63	2	-0.40
Kd of Am-241 in Unsaturated Zone 1	42	0.01	46	0.01	1	-0.75	1	-0.55
Kd of Am-241 in Saturated Zone	49	0.01	52	0.01	3	-0.51	4	-0.29
Saturated zone hydraulic conductivity	25	-0.03	30	-0.03	4	-0.45	8	-0.25
Thickness of Unsaturated zone 1	61	0.00	61	0.00	6	-0.25	11	-0.13
Evapotranspiration coefficient	51	-0.01	53	-0.01	8	-0.13	14	-0.06
Well pump intake depth	32	-0.02	36	-0.02	5	-0.40	9	-0.22
Precipitation	18	0.05	19	0.05	9	0.12	15	0.06
Plant transfer factor for Th	46	-0.01	49	-0.01	10	-0.11	16	-0.05
Kd of Np-237 in Contaminated Zone	26	-0.03	29	-0.03	7	-0.17	12	-0.09
R-SQUARE		0.13		0.13		0.76		0.76

-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.

StatMost for Windows Tuesday, May 28, 2002 2:19:17 PM

********** Statistics Report **********

Kd of Am in the Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0156
Maximum	129000000.0000
Std deviation	2689400.6949
Mean	**170733.0865**
Geometric mean	NaN
Quadratic mean	2694546.2159
Harmonic mean	13.6103
Sum	853665432.4554
Absolute Sum	853665432.4554
Median	1448.6450
Percentiles:	
10	25.5448
25	**173.2772 (ANL=1000)**
50	1448.6450
75	**12139.0000**
90	82349.9400
Quartiles:	
First quartile:	173.2772
Second quartile:	1448.6450
Third quartile:	12139.0000
95.00% Confidence Interval:	
lower limit	96170.0191
upper limit	245296.1539

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 9:48:14 AM

********** Statistics Report **********

Kd of Th-229 in Contaminated Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0115
Maximum	2870000000.0000
Std deviation	56854645.8260
Mean	**2735726.7047** ✓
Geometric mean	NaN
Quadratic mean	56914747.3196
Harmonic mean	14.6328
Sum	1.36786335E+010
Absolute Sum	1.36786335E+010
Median	5873.1400
Percentiles:	
10	56.6962
25	**511.7395**
50	5873.1400
75	**67583.5250**
90	610076.5000
Quartiles:	
First quartile:	511.7395
Second quartile:	5873.1400
Third quartile:	67583.5250
95.00% Confidence Interval:	
lower limit	1159443.6336
upper limit	4312009.7758

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 10:00:53 AM

********** Statistics Report **********

Kd of Np-237 in Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0048
Maximum	58697.1000
Std deviation	1472.4221
Mean	**209.5689**
Geometric mean	NaN
Quadratic mean	1487.1154
Harmonic mean	1.4423
Sum	1047844.3914
Absolute Sum	1047844.3914
Median	17.0960
Percentiles:	
10	0.9556
25	**3.7512** ✓
50	17.0960
75	**78.0438**
90	306.3746
Quartiles:	
First quartile:	3.7512
Second quartile:	17.0960
Third quartile:	78.0438
95.00% Confidence Interval:	
lower limit	168.7463
upper limit	250.3915

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 1:05:36 PM

********** Statistics Report **********

Kd of Am in Contaminated Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0156
Maximum	129000000.0000
Std deviation	2689400.6949
Mean	**170733.0865**
Geometric mean	NaN
Quadratic mean	2694546.2159
Harmonic mean	13.6103
Sum	853665432.4554
Absolute Sum	853665432.4554
Median	1448.6450
Percentiles:	
10	25.5448
25	**173.2772 (ANL=1000)**
50	1448.6450
75	**12139.0000**
90	82349.9400
Quartiles:	
First quartile:	173.2772
Second quartile:	1448.6450
Third quartile:	12139.0000
95.00% Confidence Interval:	
lower limit	96170.0191
upper limit	245296.1539

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 2:43:44 PM

********** Statistics Report **********

Kd of Am in the Sat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0156
Maximum	129000000.0000
Std deviation	2689400.6949
Mean	**170733.0865**
Geometric mean	NaN
Quadratic mean	2694546.2159
Harmonic mean	13.6103
Sum	853665432.4554
Absolute Sum	853665432.4554
Median	1448.6450
Percentiles:	
10	25.5448
25	**173.2772 (ANL=1000)**
50	1448.6450
75	**12139.0000**
90	82349.9400
Quartiles:	
First quartile:	173.2772
Second quartile:	1448.6450
Third quartile:	12139.0000
95.00% Confidence Interval:	
lower limit	96170.0191
upper limit	245296.1539

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 4:01:05 PM

********** Statistics Report **********

Thickness of Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	7.02000000E-005
Maximum	0.4999
Std deviation	0.1444
Mean	**0.2500**
Geometric mean	NaN
Quadratic mean	0.2887
Harmonic mean	0.0523
Sum	1250.0006
Absolute Sum	1250.0006
Median	0.2499
Percentiles:	
10	0.0499
25	**0.1250** ✓
50	0.2499
75	**0.3750**
90	0.4501
Quartiles:	
First quartile:	0.1250
Second quartile:	0.2499
Third quartile:	0.3750
95.00% Confidence Interval:	
lower limit	0.2460
upper limit	0.2540

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 11:22:44 AM

********** Statistics Report **********

Kd of U-233 in C-Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0015
Maximum	10500000.0000
Std deviation	219309.2340
Mean	**14088.8754**
Geometric mean	NaN
Quadratic mean	219739.4302
Harmonic mean	1.2517
Sum	70444376.8780
Absolute Sum	70444376.8780
Median	126.2665
Percentiles:	
10	2.2844
25	**15.3082 (ANL=16)**
50	126.2665
75	**1043.8750**
90	6995.9760
Quartiles:	
First quartile:	15.3082
Second quartile:	126.2665
Third quartile:	1043.8750
95.00% Confidence Interval:	
lower limit	8008.5731
upper limit	20169.1777

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 10:50:38 AM

********** Statistics Report **********

	Sat Zone Hydraulic Conductivity
Sample size (N)	5000
No. missing	0
Minimum	15.7156
Maximum	909.4060
Std deviation	258.0881
Mean	**462.5604**
Geometric mean	NaN
Quadratic mean	529.6775
Harmonic mean	219.8750
Sum	2312801.7788
Absolute Sum	2312801.7788
Median	462.3790
Percentiles:	
10	104.8508
25	**239.0330** ✓
50	462.3790
75	**686.0087**
90	820.2343
Quartiles:	
First quartile:	239.0330
Second quartile:	462.3790
Third quartile:	686.0087
95.00% Confidence Interval:	
lower limit	455.4049
upper limit	469.7158

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 11:00:43 AM

********** Statistics Report **********

Well Pump Intake Depth

Sample size (N)	5000
No. missing	0
Minimum	10.0056
Maximum	49.9944
Std deviation	11.5483
Mean	**30.0000**
Geometric mean	NaN
Quadratic mean	32.1456
Harmonic mean	24.8532
Sum	150000.0759
Absolute Sum	150000.0759
Median	29.9919
Percentiles:	
10	13.9940
25	**19.9981**
50	29.9919
75	**39.9983**
90	46.0044
Quartiles:	
First quartile:	19.9981
Second quartile:	29.9919
Third quartile:	39.9983
95.00% Confidence Interval:	
lower limit	29.6798
upper limit	30.3202

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 4:45:52 PM

********** Statistics Report **********

Kd of Np-237 in Cont Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0048
Maximum	58697.1000
Std deviation	1472.4221
Mean	**209.5689**
Geometric mean	NaN
Quadratic mean	1487.1154
Harmonic mean	1.4423
Sum	1047844.3914
Absolute Sum	1047844.3914
Median	17.0960
Percentiles:	
10	0.9556
25	**3.7512** ✓
50	17.0960
75	**78.0438**
90	306.3746
Quartiles:	
First quartile:	3.7512
Second quartile:	17.0960
Third quartile:	78.0438
95.00% Confidence Interval:	
lower limit	168.7463
upper limit	250.3915

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 10:27:07 AM

**********Statistics Report **********

Kd of Np-237 in Sat Zone

Sample size (N)	5000
Num missings	0
Minimum	0.0050
Maximum	60484.7000
Std deviation	1517.2636
Mean	**215.9512**
Geometric mean	NaN
Quadratic mean	1532.4044
Harmonic mean	1.4865
Sum	1079755.8828
Absolute Sum	1079755.8828
Median	17.6166
Percentiles:	
10	0.9847
25	**3.8654** ✓
50	17.6166
75	**80.4205**
90	315.7049
Quartiles:	
First quartile:	3.8654
Second quartile:	17.6166
Third quartile:	80.4205
95.00% Confidence Interval:	
lower limit	173.8854
upper limit	258.0170

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
C-14 1.000E+00

0

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	9.298E-01	2.562E-02	4.469E-02	4.396E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
M(t):	3.719E-02	1.025E-03	1.787E-03	1.758E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

0Maximum TDOSE(t): **9.298E-01 mrem/yr at t = 0.000E+00 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	7.974E-07	0.0000	5.935E-05	0.0001	0.000E+00	0.0000	5.582E-01	0.6004	2.229E-01	0.2397	1.486E-01	0.1598	3.103E-06	0.0000
Total	7.974E-07	0.0000	5.935E-05	0.0001	0.000E+00	0.0000	5.582E-01	0.6004	2.229E-01	0.2397	1.486E-01	0.1598	3.103E-06	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

0

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.298E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.298E-01	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	5.384E-11	0.0000	4.007E-09	0.0000	0.000E+00	0.0000	4.010E-05	0.0016	1.640E-05	0.0006	1.009E-05	0.0004	2.095E-10	0.0000

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Branch Fraction*	DSR(j,t) (mrem/yr)/(pCi/g) t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
C-14	C-14	1.000E+00	9.298E-01	2.562E-02	4.469E-02	4.396E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life ó 0.5 yr) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
C-14	2.689E+01	9.757E+02	5.594E+02	5.687E+02	*4.454E+12	*4.454E+12	*4.454E+12	*4.454E+12	*4.454E+12

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
C-14	**1.000E+00**	**0.000E+00**	**9.298E-01**	**2.689E+01**	**9.298E-01**	**2.689E+01**

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
C-14	C-14	1.000E+00	9.298E-01	2.562E-02	4.469E-02	4.396E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
C-14	C-14	1.000E+00	1.000E+00	6.756E-05	3.024E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

1 RESRAD Regression and Correlation output 05/20/02 08:02
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW C14.RAD**

Sensitive Parameter Summary Table

Wind Speed (-,-,-,-,-,-)
Thickness of evasion layer of C-14 in soil (+,+,+,+,+,+)
Density of contaminated zone (+,+,+)
Kd of C-14 in Unsaturated Zone 1 (-)

Probabilistic results summary : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Z-one
File: NEW C14.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	0.000E+00	7.691E-01
2	0.000E+00	7.709E-01
3	0.000E+00	7.863E-01

1 RESRAD Regression and Correlation output 05/20/02 08:02 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW C14.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient 1 Repetition 1 Sig	PCC Coefficient 1 Repetition 1 Coeff	SRC Coefficient 1 Repetition 1 Sig	SRC Coefficient 1 Repetition 1 Coeff	PRCC Coefficient 1 Repetition 1 Sig	PRCC Coefficient 1 Repetition 1 Coeff	SRRC Coefficient 1 Repetition 1 Sig	SRRC Coefficient 1 Repetition 1 Coeff
Density of contaminated zone	4	0.13	1	0.66	3	0.30	1	0.73
Kd of C-14 in Contaminated Zone	31	-0.02	34	-0.02	5	0.19	10	0.07
Kd of C-14 in Unsaturated Zone 1	35	-0.02	37	-0.01	6	-0.18	11	-0.06
Kd of C-14 in Saturated Zone	27	-0.02	32	-0.02	4	-0.19	9	-0.07
Thickness of Unsaturated zone 1	6	-0.09	9	-0.07	8	-0.10	14	-0.04
Thickness of evasion layer of C-14 in soil	2	0.21	4	0.16	2	0.57	3	0.24
Hydraulic Conductivity of Unsaturated zone 1	11	-0.06	15	-0.05	9	-0.07	15	-0.02
Wind Speed	1	-0.51	2	-0.44	1	-0.88	2	-0.64
Contaminated zone field capacity	10	-0.06	16	-0.05	10	-0.07	17	-0.02
Fish transfer factor for C	3	0.14	6	0.11	7	0.13	13	0.05
R-SQUARE		0.45		0.45		0.88		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.

1 RESRAD Regression and Correlation output 05/20/02 08:02 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW C14.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient 2 Repetition 2 Sig	PCC Coefficient 2 Repetition 2 Coeff	SRC Coefficient 2 Repetition 2 Sig	SRC Coefficient 2 Repetition 2 Coeff	PRCC Coefficient 2 Repetition 2 Sig	PRCC Coefficient 2 Repetition 2 Coeff	SRRC Coefficient 2 Repetition 2 Sig	SRRC Coefficient 2 Repetition 2 Coeff
Density of contaminated zone	39	0.00	33	-0.01	5	0.16	2	0.46
Kd of C-14 in Unsaturated Zone 1	25	-0.03	28	-0.03	3	-0.26	8	-0.10
Kd of C-14 in Saturated Zone	35	-0.01	36	-0.01	4	-0.17	9	-0.07
Thickness of evasion layer of C-14 in soil	2	0.27	5	0.23	2	0.56	3	0.26
Density of Unsaturated zone 1	19	0.04	4	0.26	9	0.08	4	0.25
Well pump intake depth	7	-0.07	14	-0.05	10	-0.08	15	-0.03
Wet foliar interception fraction of leafy vegetables	41	0.00	41	0.00	7	-0.10	12	-0.04
Wind Speed	1	-0.44	2	-0.39	1	-0.86	1	-0.64
Well pumping rate	3	0.09	10	0.08	8	0.09	13	0.04
Fish transfer factor for C	12	0.06	17	0.05	6	0.11	11	0.04
R-SQUARE		0.37		0.37		0.85		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW C14.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Repetition = 3 Sig	PCC Coeff	SRC Coefficient = 3 Repetition = 3 Sig	SRC Coeff	PRCC Coefficient = 3 Repetition = 3 Sig	PRCC Coeff	SRRC Coefficient = 3 Repetition = 3 Sig	SRRC Coeff
Density of contaminated zone	24	0.03	6	0.16	3	0.28	2	0.66
Kd of C-14 in Contaminated Zone	32	-0.01	35	-0.01	6	0.12	10	0.04
Kd of C-14 in Unsaturated Zone 1	35	0.01	37	0.01	4	-0.22	5	-0.07
Kd of C-14 in Saturated Zone	42	0.00	42	0.00	5	-0.16	7	-0.05
Thickness of evasion layer of C-14 in soil	5	0.09	11	0.09	2	0.60	3	0.24
Weathering removal constant of all vegetation	26	0.03	29	0.02	7	0.10	12	0.03
Wet weight crop yield of fruit, grain and non-leafy vegetables	2	0.12	7	0.11	8	0.10	13	0.03
Wind Speed	1	-0.28	3	-0.26	1	-0.90	1	-0.68
External gamma shielding factor	27	0.02	30	0.02	9	0.09	14	0.03
Field Capacity of Unsaturated zone 1	17	0.05	22	0.05	10	0.09	15	0.03
R-SQUARE		0.21		0.21		0.90		0.90

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW C14.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 1 Repetition = 1 Sig	PCC Coeff	SRC Coefficient = 1 Repetition = 1 Sig	SRC Coeff	PRCC Coefficient = 1 Repetition = 1 Sig	PRCC Coeff	SRRC Coefficient = 1 Repetition = 1 Sig	SRRC Coeff
Density of contaminated zone	35	-0.02	9	-0.12	4	0.22	1	0.62
Kd of C-14 in Unsaturated Zone 1	40	-0.01	40	-0.01	5	-0.21	6	-0.09
Kd of C-14 in Saturated Zone	34	-0.02	35	-0.02	3	-0.23	5	-0.10
Thickness of Unsaturated zone 1	16	-0.05	21	-0.05	10	-0.08	15	-0.03
Thickness of evasion layer of C-14 in soil	4	0.12	12	0.11	2	0.51	3	0.24
b Parameter of Unsaturated zone 1	5	0.11	13	0.10	7	0.11	12	0.05
Wind Speed	2	-0.16	8	-0.15	1	-0.84	2	-0.62
External gamma shielding factor	3	0.12	11	0.11	8	0.10	13	0.04
Plant transfer factor for C	14	-0.07	19	-0.06	9	-0.09	14	-0.04
Fish transfer factor for C	1	0.17	7	0.16	6	0.18	9	0.07
R-SQUARE		0.16		0.16		0.83		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone

Input File : NEW C14.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2, Repetition = 2		SRC Coefficient = 2, Repetition = 2		PRCC Coefficient = 2, Repetition = 2		SRRC Coefficient = 2, Repetition = 2	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of contaminated zone	31	-0.02	8	-0.11	6	0.15	2	0.45
Kd of C-14 in Unsaturated Zone 1	24	-0.02	28	-0.02	4	-0.23	7	-0.10
Kd of C-14 in Saturated Zone	23	-0.03	27	-0.02	3	-0.24	6	-0.10
Thickness of evasion layer of C-14 in soil	2	0.16	5	0.14	2	0.50	3	0.25
Runoff coefficient	14	-0.05	18	-0.04	9	-0.09	16	-0.04
Wet weight crop yield of fruit, grain and non-leafy vegetables	11	0.05	16	0.05	10	0.08	17	0.04
Wind Speed	1	-0.32	3	-0.30	1	-0.83	1	-0.63
Inhalation rate	7	0.06	13	0.05	8	0.11	15	0.05
Well pumping rate	3	0.12	7	0.11	7	0.14	11	0.06
Fish transfer factor for C	12	0.05	17	0.05	5	0.15	10	0.07
R-SQUARE		0.22		0.22		0.82		0.82

-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.

1 RESRAD Regression and Correlation output 05/20/02 08:02 Page: Coef 6
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW C14.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3, Repetition = 3		SRC Coefficient = 3, Repetition = 3		PRCC Coefficient = 3, Repetition = 3		SRRC Coefficient = 3, Repetition = 3	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of contaminated zone	34	0.01	9	0.09	3	0.25	2	0.63
Kd of C-14 in Contaminated Zone	32	-0.02	36	-0.01	9	0.07	15	0.02
Kd of C-14 in Unsaturated Zone 1	41	0.01	41	0.01	4	-0.21	6	-0.08
Kd of C-14 in Saturated Zone	43	0.01	43	0.01	5	-0.20	7	-0.07
Thickness of evasion layer of C-14 in soil	12	0.07	18	0.06	2	0.57	3	0.24
Weathering removal constant of all vegetation	33	0.01	37	0.01	10	0.07	16	0.02
Wet weight crop yield of fruit, grain and non-leafy vegetables	3	0.10	7	0.10	7	0.08	12	0.03
Wind Speed	1	-0.21	4	-0.20	1	-0.89	1	-0.67
Field Capacity of Unsaturated zone 1	13	0.06	19	0.05	6	0.10	11	0.03
Fish transfer factor for C	4	0.09	10	0.09	8	0.07	14	0.03
R-SQUARE		0.16		0.16		0.88		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.

StatMost for Windows Thursday, May 30, 2002 4:46:23 PM

********** Statistics Report **********

	Wind Speed
Sample size (N)	5000
No. missing	0
Minimum	3.1302
Maximum	4.8298
Std deviation	0.4908
Mean	**3.9800**
Geometric mean	NaN
Quadratic mean	4.0101
Harmonic mean	3.9187
Sum	19900.0035
Absolute Sum	19900.0035
Median	3.9797
Percentiles:	
10	3.2997
25	**3.5549** ✓
50	3.9797
75	**4.4049**
90	4.6602
Quartiles:	
First quartile:	3.5549
Second quartile:	3.9797
Third quartile:	4.4049
95.00% Confidence Interval:	
lower limit	3.9664
upper limit	3.9936

********** The End **********

StatMost for Windows Thursday, May 30, 2002 4:10:51 PM

********** Statistics Report **********

Thickness of Soil Evasion Layer of C-14 in Soil

Sample size (N)	5000
No. missing	0
Minimum	0.2024
Maximum	0.5958
Std deviation	0.0850
Mean	**0.3667**
Geometric mean	NaN
Quadratic mean	0.3764
Harmonic mean	0.3476
Sum	1833.3272
Absolute Sum	1833.3272
Median	0.3550
Percentiles:	
10	0.2632
25	**0.3000**
50	0.3550
75	**0.4268** ✓
90	0.4905
Quartiles:	
First quartile:	0.3000
Second quartile:	0.3550
Third quartile:	0.4268
95.00% Confidence Interval:	
lower limit	0.3643
upper limit	0.3690

********** The End **********

StatMost for Windows Thursday, May 30, 2002 4:04:29 PM

********** Statistics Report **********

Density of C-Zone

Sample size (N)	5000
No. missing	0
Minimum	1.2801
Maximum	1.9199
Std deviation	0.1848
Mean	**1.6000**
Geometric mean	NaN
Quadratic mean	1.6106
Harmonic mean	1.5784
Sum	8000.0009
Absolute Sum	8000.0009
Median	1.5999
Percentiles:	
10	1.3439
25	**1.4400**
50	1.5999
75	**1.7600**
90	1.8561
Quartiles:	
First quartile:	1.4400
Second quartile:	1.5999
Third quartile:	1.7600
95.00% Confidence Interval:	
lower limit	1.5949
upper limit	1.6051

********** The End **********

StatMost for Windows Friday, May 31, 2002 1:30:24 PM

********** Statistics Report **********

Kd of C in Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	9.18000000E-005
Maximum	1260000.0000
Std deviation	26118.9943
Mean	**1581.5150**
Geometric mean	NaN
Quadratic mean	26164.2239
Harmonic mean	0.0854
Sum	7907574.9680
Absolute Sum	7907574.9680
Median	11.0049
Percentiles:	
10	0.1774
25	**1.2557 (ANL=1)**
50	11.0049
75	**96.6777**
90	684.3590
Quartiles:	
First quartile:	1.2557
Second quartile:	11.0049
Third quartile:	96.6777
95.00% Confidence Interval:	
lower limit	857.3714
upper limit	2305.6586

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
C-14 1.000E+00

0

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 4.000E+00 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	1.913E-03	8.760E-03	8.853E-03	1.206E-20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
M(t):	4.783E-04	2.190E-03	2.213E-03	3.015E-21	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

0Maximum TDOSE(t): **8.872E-03 mrem/yr at t = 1.504 ± 0.003 years**

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.504E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.504E+00 years
Water Dependent Pathways

0

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	8.872E-03	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.872E-03	1.0000
Total	8.872E-03	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.872E-03	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0Parent (i)	Product (j)	Branch Fraction*	DSR(j,t) (mrem/yr)/(pCi/g) t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
C-14	C-14	1.000E+00	1.913E-03	8.760E-03	8.853E-03	1.206E-20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life ó 0.5 yr) daughters.
0

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 4.000E+00 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
C-14	2.091E+03	4.566E+02	4.518E+02	*4.454E+12	*4.454E+12	*4.454E+12	*4.454E+12	*4.454E+12	*4.454E+12

*At specific activity limit
0

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 1.504 ñ 0.003 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
C-14	**1.000E+00**	**1.504 ± 0.003**	**8.872E-03**	**4.509E+02**	**8.872E-03**	**4.509E+02**

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	BRF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
C-14	C-14	1.000E+00	1.913E-03	8.760E-03	8.853E-03	1.206E-20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	BRF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
C-14	C-14	1.000E+00	1.000E+00	1.103E-03	1.323E-09	2.164E-30	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.
0RESCALC.EXE execution time = 1.43 seconds

1 RESRAD Regression and Correlation output 05/20/02 10:29
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW C14 DW.RAD**

Sensitive Parameter Summary Table

Kd of C-14 in Unsaturated Zone 1 (-,-,-,-,-,-)
Kd of C-14 in Contaminated Zone (-,-,-)
Thickness of Unsaturated zone 1 (-,-,-,-)
Saturated zone hydraulic conductivity (-)

Probabilistic results summary : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Z-one
File: NEW C14 DW.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	1.000E+00	1.193E-03
2	0.000E+00	9.945E-04
3	1.000E+00	8.383E-04

1 RESRAD Regression and Correlation output 05/20/02 10:29 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW C14 DW.RAD

Coefficients for peak of mean dose time Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	1		1		1		1	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of saturated zone	11	0.04	3	0.27	9	-0.09	3	-0.39
Kd of C-14 in Contaminated Zone	27	-0.02	28	-0.02	3	-0.16	9	-0.10
Kd of C-14 in Unsaturated Zone 1	30	-0.02	31	-0.02	1	-0.77	1	-0.72
Saturated zone effective porosity	25	-0.02	8	-0.07	6	0.11	2	0.52
Saturated zone hydraulic conductivity	7	-0.07	11	-0.07	10	-0.08	16	-0.05
Thickness of Unsaturated zone 1	19	-0.04	22	-0.03	2	-0.35	6	-0.22
Thickness of evasion layer of C-14 in soil	18	-0.04	21	-0.04	4	-0.12	11	-0.07
Contaminated zone erosion rate	10	-0.05	14	-0.04	5	-0.11	13	-0.07
Evapotranspiration coefficient	23	0.02	26	0.02	7	-0.11	14	-0.06
Precipitation	12	0.04	15	0.04	8	0.09	15	0.06
R-SQUARE		0.08		0.08		0.64		0.64

-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.

1 RESRAD Regression and Correlation output 05/20/02 10:29 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW C14 DW.RAD

Coefficients for peak of mean dose time Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	2		2		2		2	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of C-14 in Contaminated Zone	41	0.00	41	0.00	5	-0.08	11	-0.06
Kd of C-14 in Unsaturated Zone 1	26	-0.02	29	-0.02	1	-0.72	1	-0.69
Kd of C-14 in Saturated Zone	32	-0.01	34	-0.01	7	-0.08	13	-0.05
Thickness of Unsaturated zone 1	21	0.02	25	0.02	2	-0.33	4	-0.23
Thickness of evasion layer of C-14 in soil	6	-0.04	13	-0.04	10	0.05	16	0.03
Evapotranspiration coefficient	38	0.01	38	0.01	9	-0.06	15	-0.04
Total Porosity of Unsaturated zone 1	35	0.01	9	0.06	4	0.08	2	0.43
Well pump intake depth	1	-0.08	8	-0.08	3	-0.14	9	-0.09
Precipitation	19	0.03	24	0.03	6	0.08	12	0.06
Field Capacity of Unsaturated zone 1	5	-0.04	12	-0.04	8	-0.07	14	-0.05
R-SQUARE		0.05		0.05		0.56		0.56

-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.

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Sig	PCC Repetition = 3 Coeff	SRC Coefficient = 3 Sig	SRC Repetition = 3 Coeff	PRCC Coefficient = 3 Sig	PRCC Repetition = 3 Coeff	SRRC Coefficient = 3 Sig	SRRC Repetition = 3 Coeff
Depth of roots	37	-0.01	39	-0.01	9	-0.05	16	-0.03
Kd of C-14 in Contaminated Zone	28	-0.02	30	-0.02	3	-0.19	6	-0.11
Kd of C-14 in Unsaturated Zone 1	34	-0.01	37	-0.01	1	-0.77	1	-0.73
Thickness of Unsaturated zone 1	25	0.03	28	0.02	2	-0.37	2	-0.24
Runoff coefficient	1	-0.12	6	-0.12	4	-0.12	10	-0.07
Well pump intake depth	2	-0.10	7	-0.10	10	0.05	17	0.03
Precipitation	3	-0.09	8	-0.08	5	0.08	12	0.05
Saturated zone field capacity	16	-0.03	20	-0.03	8	0.06	15	0.03
Meat transfer factor for C	23	0.03	26	0.03	6	-0.07	13	-0.04
Fish transfer factor for C	7	0.06	12	0.06	7	0.07	14	0.04
R-SQUARE		0.08		0.08		0.64		0.64

-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.

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 1 Sig	PCC Repetition = 1 Coeff	SRC Coefficient = 1 Sig	SRC Repetition = 1 Coeff	PRCC Coefficient = 1 Sig	PRCC Repetition = 1 Coeff	SRRC Coefficient = 1 Sig	SRRC Repetition = 1 Coeff
Kd of C-14 in Contaminated Zone	23	-0.03	24	-0.03	1	-0.58	1	-0.49
Kd of C-14 in Unsaturated Zone 1	17	-0.04	18	-0.04	2	-0.54	3	-0.45
Kd of C-14 in Saturated Zone	34	-0.01	36	-0.01	5	-0.12	12	-0.09
Saturated zone hydraulic conductivity	7	-0.07	9	-0.07	3	-0.21	7	-0.15
Thickness of Unsaturated zone 1	30	0.02	33	0.02	4	-0.18	9	-0.13
Contaminated zone b parameter	31	0.02	34	0.02	8	-0.09	14	-0.06
Density of Unsaturated zone 1	43	0.00	43	0.00	10	-0.08	4	-0.44
Total Porosity of Unsaturated zone 1	41	0.00	25	-0.03	7	0.09	2	0.49
Mass loading for inhalation	18	0.04	20	0.04	6	0.10	13	0.07
Meat transfer factor for C	35	-0.01	37	-0.01	9	0.08	15	0.06
R-SQUARE		0.09		0.09		0.53		0.53

-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.

Input File : NEW C14 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2, Repetition = 2 Sig	PCC 2 Coeff	SRC 2 Sig	SRC 2 Coeff	PRCC 2 Sig	PRCC 2 Coeff	SRRC 2 Sig	SRRC 2 Coeff
Density of contaminated zone	14	0.04	4	0.30	8	-0.08	3	-0.41
Kd of C-14 in Contaminated Zone	29	-0.02	31	-0.02	1	-0.61	1	-0.53
Kd of C-14 in Unsaturated Zone 1	27	-0.02	28	-0.02	2	-0.55	2	-0.45
Saturated zone hydraulic conductivity	2	-0.09	6	-0.09	5	-0.10	12	-0.07
Thickness of Unsaturated zone 1	32	-0.01	35	-0.01	3	-0.15	7	-0.11
Thickness of evasion layer of C-14 in soil	1	-0.09	5	-0.09	6	-0.10	11	-0.07
Contaminated zone erosion rate	19	-0.03	21	-0.03	7	0.08	13	0.06
Contaminated zone total porosity	8	-0.06	2	-0.38	10	0.08	4	0.40
Runoff coefficient	43	0.00	43	0.00	4	-0.11	10	-0.07
Saturated zone field capacity	38	0.00	40	0.00	9	0.08	14	0.06
R-SQUARE		0.08		0.08		0.54		0.54

-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.

1 RESRAD Regression and Correlation output 05/20/02 10:29 Page: Coef 6
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW C14 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3, Repetition = 3 Sig	PCC 3 Coeff	SRC 3 Sig	SRC 3 Coeff	PRCC 3 Sig	PRCC 3 Coeff	SRRC 3 Sig	SRRC 3 Coeff
Kd of C-14 in Contaminated Zone	17	-0.04	21	-0.03	1	-0.61	1	-0.51
Kd of C-14 in Unsaturated Zone 1	34	-0.01	33	-0.01	2	-0.51	2	-0.40
Kd of C-14 in Saturated Zone	40	0.00	40	0.00	7	-0.15	14	-0.10
Saturated zone hydraulic conductivity	1	-0.14	9	-0.13	3	-0.28	8	-0.20
Thickness of Unsaturated zone 1	11	-0.05	16	-0.05	4	-0.22	9	-0.15
Thickness of evasion layer of C-14 in soil	41	0.00	41	0.00	8	-0.13	15	-0.09
Contaminated zone b parameter	4	-0.06	12	-0.06	6	-0.16	12	-0.11
Saturated zone hydraulic gradient	33	-0.01	34	-0.01	10	-0.11	17	-0.08
Well pump intake depth	2	-0.11	10	-0.11	5	-0.17	11	-0.12
Humidity in air	19	0.03	23	0.03	9	0.12	16	0.08
R-SQUARE		0.08		0.08		0.56		0.56

-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.

StatMost for Windows Friday, May 31, 2002 1:30:24 PM

********** Statistics Report **********

Kd of C in Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	9.18000000E-005
Maximum	1260000.0000
Std deviation	26118.9943
Mean	**1581.5150**
Geometric mean	NaN
Quadratic mean	26164.2239
Harmonic mean	0.0854
Sum	7907574.9680
Absolute Sum	7907574.9680
Median	11.0049
Percentiles:	
10	0.1774
25	**1.2557 (ANL=1)**
50	11.0049
75	**96.6777**
90	684.3590
Quartiles:	
First quartile:	1.2557
Second quartile:	11.0049
Third quartile:	96.6777
95.00% Confidence Interval:	
lower limit	857.3714
upper limit	2305.6586

********** The End **********

StatMost for Windows Friday, May 31, 2002 1:46:21 PM

********** Statistics Report **********

Kd of C in Contaminated Zone

Sample size (N)	5000
No. missing	0
Minimum	9.18000000E-005
Maximum	1260000.0000
Std deviation	26118.9943
Mean	**1581.5150**
Geometric mean	NaN
Quadratic mean	26164.2239
Harmonic mean	0.0854
Sum	7907574.9680
Absolute Sum	7907574.9680
Median	11.0049
Percentiles:	
10	0.1774
25	**1.2557 (ANL=1)**
50	11.0049
75	**96.6777**
90	684.3590
Quartiles:	
First quartile:	1.2557
Second quartile:	11.0049
Third quartile:	96.6777
95.00% Confidence Interval:	
lower limit	857.3714
upper limit	2305.6586

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 4:01:05 PM

********** Statistics Report **********

Thickness of Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	7.02000000E-005
Maximum	0.4999
Std deviation	0.1444
Mean	**0.2500**
Geometric mean	NaN
Quadratic mean	0.2887
Harmonic mean	0.0523
Sum	1250.0006
Absolute Sum	1250.0006
Median	0.2499
Percentiles:	
10	0.0499
25	**0.1250** ✓
50	0.2499
75	**0.3750**
90	0.4501
Quartiles:	
First quartile:	0.1250
Second quartile:	0.2499
Third quartile:	0.3750
95.00% Confidence Interval:	
lower limit	0.2460
upper limit	0.2540

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 10:50:38 AM

********** Statistics Report **********

	Sat Zone Hydraulic Conductivity
Sample size (N)	5000
No. missing	0
Minimum	15.7156
Maximum	909.4060
Std deviation	258.0881
Mean	**462.5604**
Geometric mean	NaN
Quadratic mean	529.6775
Harmonic mean	219.8750
Sum	2312801.7788
Absolute Sum	2312801.7788
Median	462.3790
Percentiles:	
10	104.8508
25	**239.0330** ✓
50	462.3790
75	**686.0087**
90	820.2343
Quartiles:	
First quartile:	239.0330
Second quartile:	462.3790
Third quartile:	686.0087
95.00% Confidence Interval:	
lower limit	455.4049
upper limit	469.7158

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
Co-60 1.000E+00

0

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	7.131E+00	6.246E+00	4.791E+00	1.895E+00	6.895E-02	1.656E-08	3.848E-17	0.000E+00	0.000E+00
M(t):	2.852E-01	2.498E-01	1.917E-01	7.579E-02	2.758E-03	6.625E-10	1.539E-18	0.000E+00	0.000E+00

0Maximum TDOSE(t): **7.131E+00 mrem/yr at t = 0.000E+00 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Co-60	5.466E+00	0.7666	5.866E-06	0.0000	0.000E+00	0.0000	4.960E-01	0.0696	1.067E+00	0.1496	1.013E-01	0.0142	3.589E-04	0.0001
Total	5.466E+00	0.7666	5.866E-06	0.0000	0.000E+00	0.0000	4.960E-01	0.0696	1.067E+00	0.1496	1.013E-01	0.0142	3.589E-04	0.0001

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

0

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.131E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.131E+00	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Co-60	4.788E+00	0.7666	5.138E-06	0.0000	0.000E+00	0.0000	4.344E-01	0.0696	9.344E-01	0.1496	8.873E-02	0.0142	3.143E-04	0.0001

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0Parent (i)	Product (j)	Branch Fraction*	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
			DSR(j,t) (mrem/yr)/(pCi/g)								
Co-60	Co-60	1.000E+00	7.131E+00	6.246E+00	4.791E+00	1.895E+00	6.895E-02	1.656E-08	3.848E-17	0.000E+00	0.000E+00

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life ó 0.5 yr) daughters.

0

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Co-60	3.506E+00	4.003E+00	5.218E+00	1.319E+01	3.626E+02	1.509E+09	*1.131E+15	*1.131E+15	*1.131E+15

*At specific activity limit

0

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Co-60	**1.000E+00**	**0.000E+00**	**7.131E+00**	**3.506E+00**	**7.131E+00**	**3.506E+00**

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	BRF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
			DOSE(j,t), mrem/yr								
Co-60	Co-60	1.000E+00	7.131E+00	6.246E+00	4.791E+00	1.895E+00	6.895E-02	1.656E-08	3.848E-17	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	BRF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
			S(j,t), pCi/g								
Co-60	Co-60	1.000E+00	1.000E+00	8.759E-01	6.719E-01	2.657E-01	9.669E-03	2.323E-09	5.395E-18	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

1 RESRAD Regression and Correlation output 05/20/02 09:02
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW CO60.RAD**

Sensitive Parameter Summary Table

External gamma shielding factor (+,+,+,+,+,+)
Plant transfer factor for Co (+,+,+,+,+,+)
Meat transfer factor for Co (+,+,+,+,+,+)

Probabilistic results summary : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Z-one
File: NEW CO60.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	0.000E+00	5.897E+00
2	0.000E+00	5.894E+00
3	0.000E+00	5.959E+00

1 RESRAD Regression and Correlation output 05/20/02 09:02 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60.RAD

Coefficients for peak of mean dose time Dose
Coefficient =
Repetition =

Description of Probabilistic Variable	PCC 1 Sig	PCC 1 Coeff	SRC 1 Sig	SRC 1 Coeff	PRCC 1 Sig	PRCC 1 Coeff	SRRC 1 Sig	SRRC 1 Coeff
Density of contaminated zone	9	0.08	5	0.18	21	-0.06	8	-0.15
Thickness of evasion layer of C-14 in soil	7	0.09	13	0.03	41	0.00	41	0.00
Contaminated zone b parameter	8	-0.08	15	-0.03	20	-0.06	24	-0.02
Contaminated zone total porosity	10	-0.07	6	-0.17	22	0.06	9	0.14
Weathering removal constant of all vegetation	5	-0.10	11	-0.03	28	-0.03	30	-0.01
Inhalation rate	6	0.09	12	0.03	7	0.12	15	0.04
External gamma shielding factor	1	0.90	1	0.67	1	0.91	1	0.78
Plant transfer factor for Co	2	0.85	2	0.53	2	0.77	2	0.43
Meat transfer factor for Co	3	0.77	3	0.40	3	0.59	4	0.27
Milk transfer factor for Co	4	0.15	9	0.05	8	0.12	16	0.04
R-SQUARE		0.89		0.89		0.87		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.

1 RESRAD Regression and Correlation output 05/20/02 09:02 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60.RAD

Coefficients for peak of mean dose time Dose
Coefficient =
Repetition =

Description of Probabilistic Variable	PCC 2 Sig	PCC 2 Coeff	SRC 2 Sig	SRC 2 Coeff	PRCC 2 Sig	PRCC 2 Coeff	SRRC 2 Sig	SRRC 2 Coeff
Density of saturated zone	5	-0.12	5	-0.22	26	0.02	9	0.06
Depth of roots	10	0.07	14	0.02	37	0.01	37	0.00
Saturated zone total porosity	4	0.12	4	0.23	25	0.03	8	0.07
b Parameter of Unsaturated zone 1	9	0.07	13	0.02	21	0.03	26	0.01
Well pump intake depth	6	-0.10	10	-0.03	24	0.03	28	0.01
External gamma shielding factor	2	0.92	2	0.64	1	0.91	1	0.80
Plant transfer factor for Co	1	0.92	1	0.67	2	0.75	2	0.40
Meat transfer factor for Co	3	0.66	3	0.24	3	0.55	3	0.24
Milk transfer factor for Co	7	0.10	11	0.03	4	0.15	11	0.06
Fish transfer factor for Co	8	0.08	12	0.02	18	-0.04	23	-0.02
R-SQUARE		0.92		0.92		0.87		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Repetition = Sig	PCC Coeff	SRC Coefficient = 3 Repetition = Sig	SRC Coeff	PRCC Coefficient = 3 Repetition = Sig	PRCC Coeff	SRRC Coefficient = 3 Repetition = Sig	SRRC Coeff
Depth of roots	18	-0.04	23	-0.02	7	0.09	14	0.03
Kd of Co-60 in Contaminated Zone	43	0.00	43	0.00	6	0.10	12	0.04
Humidity in air	12	-0.05	18	-0.02	10	-0.08	17	-0.03
Inhalation rate	38	-0.01	39	0.00	9	-0.08	16	-0.03
External gamma shielding factor	1	0.83	1	0.59	1	0.91	1	0.80
Contaminated zone field capacity	9	-0.06	16	-0.02	5	-0.13	11	-0.05
Well pumping rate	29	0.02	33	0.01	8	-0.09	15	-0.03
Plant transfer factor for Co	2	0.78	2	0.49	2	0.76	2	0.42
Meat transfer factor for Co	3	0.76	3	0.46	3	0.55	3	0.24
Milk transfer factor for Co	4	0.14	9	0.06	4	0.16	9	0.06
R-SQUARE		0.85		0.85		0.87		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 1 Repetition = Sig	PCC Coeff	SRC Coefficient = 1 Repetition = Sig	SRC Coeff	PRCC Coefficient = 1 Repetition = Sig	PRCC Coeff	SRRC Coefficient = 1 Repetition = Sig	SRRC Coeff
Density of contaminated zone	9	0.08	5	0.18	21	-0.06	8	-0.15
Thickness of evasion layer of C-14 in soil	7	0.09	13	0.03	41	0.00	41	0.00
Contaminated zone b parameter	8	-0.08	15	-0.03	20	-0.06	24	-0.02
Contaminated zone total porosity	10	-0.07	6	-0.17	22	0.06	9	0.14
Weathering removal constant of all vegetation	5	-0.10	11	-0.03	28	-0.03	30	-0.01
Inhalation rate	6	0.09	12	0.03	7	0.12	15	0.04
External gamma shielding factor	1	0.90	1	0.67	1	0.91	1	0.78
Plant transfer factor for Co	2	0.85	2	0.53	2	0.77	2	0.43
Meat transfer factor for Co	3	0.77	3	0.40	3	0.59	4	0.27
Milk transfer factor for Co	4	0.15	9	0.05	8	0.12	16	0.04
R-SQUARE		0.89		0.89		0.87		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone

Input File : NEW CO60.RAD

Coefficients for peak All Pathways Dose
Coefficient =
Repetition =

Description of Probabilistic Variable	PCC 2		SRC 2		PRCC 2		SRRC 2	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of saturated zone	5	-0.12	5	-0.22	26	0.02	9	0.06
Depth of roots	10	0.07	14	0.02	37	0.01	37	0.00
Saturated zone total porosity	4	0.12	4	0.23	25	0.03	8	0.07
b Parameter of Unsaturated zone 1	9	0.07	13	0.02	21	0.03	26	0.01
Well pump intake depth	6	-0.10	10	-0.03	24	0.03	28	0.01
External gamma shielding factor	2	0.92	2	0.64	1	0.91	1	0.80
Plant transfer factor for Co	1	0.92	1	0.67	2	0.75	2	0.40
Meat transfer factor for Co	3	0.66	3	0.24	3	0.55	3	0.24
Milk transfer factor for Co	7	0.10	11	0.03	4	0.15	11	0.06
Fish transfer factor for Co	8	0.08	12	0.02	18	-0.04	23	-0.02
R-SQUARE		0.92		0.92		0.87		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.

1 RESRAD Regression and Correlation output 05/20/02 09:02 Page: Coef 6
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60.RAD

Coefficients for peak All Pathways Dose
Coefficient =
Repetition =

Description of Probabilistic Variable	PCC 3		SRC 3		PRCC 3		SRRC 3	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Depth of roots	18	-0.04	23	-0.02	7	0.09	14	0.03
Kd of Co-60 in Contaminated Zone	43	0.00	43	0.00	6	0.10	12	0.04
Humidity in air	12	-0.05	18	-0.02	10	-0.08	17	-0.03
Inhalation rate	38	-0.01	39	0.00	9	-0.08	16	-0.03
External gamma shielding factor	1	0.83	1	0.59	1	0.91	1	0.80
Contaminated zone field capacity	9	-0.06	16	-0.02	5	-0.13	11	-0.05
Well pumping rate	29	0.02	33	0.01	8	-0.09	15	-0.03
Plant transfer factor for Co	2	0.78	2	0.49	2	0.76	2	0.42
Meat transfer factor for Co	3	0.76	3	0.46	3	0.55	3	0.24
Milk transfer factor for Co	4	0.14	9	0.06	4	0.16	9	0.06
R-SQUARE		0.85		0.85		0.87		0.87

StatMost for Windows Wednesday, May 29, 2002 2:46:17 PM

********** Statistics Report **********

External Gamma Shielding Factor

Sample size (N)	5000
No. missing	0
Minimum	0.0450
Maximum	0.9976
Std deviation	0.1760
Mean	**0.3116**
Geometric mean	NaN
Quadratic mean	0.3579
Harmonic mean	0.2276
Sum	1558.0392
Absolute Sum	1558.0392
Median	0.2699
Percentiles:	
10	0.1277
25	**0.1821**
50	0.2699
75	**0.3983** ✓
90	0.5581
Quartiles:	
First quartile:	0.1821
Second quartile:	0.2699
Third quartile:	0.3983
95.00% Confidence Interval:	
lower limit	0.3067
upper limit	0.3165

********** The End **********

StatMost for Windows Friday, May 31, 2002 2:03:43 PM

********** Statistics Report **********

Plant Trans Factor Co

Sample size (N)	5000
No. missing	0
Minimum	0.0029
Maximum	2.1924
Std deviation	0.1381
Mean	**0.1212**
Geometric mean	NaN
Quadratic mean	0.1838
Harmonic mean	0.0524
Sum	605.9688
Absolute Sum	605.9688
Median	0.0796
Percentiles:	
10	0.0246
25	**0.0429**
50	0.0796
75	**0.1478** ✓
90	0.2579
Quartiles:	
First quartile:	0.0429
Second quartile:	0.0796
Third quartile:	0.1478
95.00% Confidence Interval:	
lower limit	0.1174
upper limit	0.1250

********** The End **********

StatMost for Windows Friday, May 31, 2002 2:08:33 PM

********** Statistics Report **********

Meat Trans Fact for Co

Sample size (N)	5000
No. missing	0
Minimum	0.0007
Maximum	1.2399
Std deviation	0.0690
Mean	**0.0508**
Geometric mean	NaN
Quadratic mean	0.0857
Harmonic mean	0.0176
Sum	253.9103
Absolute Sum	253.9103
Median	0.0298
Percentiles:	
10	0.0080
25	**0.0149**
50	0.0298
75	**0.0599** ✓
90	0.1119
Quartiles:	
First quartile:	0.0149
Second quartile:	0.0298
Third quartile:	0.0599
95.00% Confidence Interval:	
lower limit	0.0489
upper limit	0.0527

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
Co-60 1.000E+00

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 4.000E+00 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.012E-12	3.325E-20	0.000E+00	0.000E+00
M(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.530E-13	8.314E-21	0.000E+00	0.000E+00

Maximum TDOSE(t): **5.616E-11 mrem/yr at t = 114.8 ± 0.2 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.148E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.148E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	5.616E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.616E-11	1.0000
Total	5.616E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.616E-11	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Branch Fraction*	DSR(j,t) (mrem/yr)/(pCi/g) t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Co-60	Co-60	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.012E-12	3.325E-20	0.000E+00	0.000E+00

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life ó 0.5 yr) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 4.000E+00 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Co-60	*1.131E+15	*1.131E+15	*1.131E+15	*1.131E+15	*1.131E+15	1.328E+12	*1.131E+15	*1.131E+15	*1.131E+15

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 114.8 ñ 0.2 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Co-60	**1.000E+00**	**114.8 ± 0.2**	**5.616E-11**	**7.123E+10**	**5.616E-11**	**7.123E+10**

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Co-60	Co-60	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.012E-12	3.325E-20	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Co-60	Co-60	1.000E+00	1.000E+00	8.759E-01	6.719E-01	2.657E-01	9.669E-03	2.323E-09	5.395E-18	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.
0RESCALC.EXE execution time = 1.32 seconds

1 RESRAD Regression and Correlation output 05/20/02 09:23
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW CO60 DW.RAD**

Sensitive Parameter Summary Table

Kd of Co-60 in Unsaturated Zone 1 (-,-,-,-,-,-)
Thickness of Unsaturated zone 1 (-,-,-,-,-,-)
Kd of Co-60 in Contaminated Zone (-,-,-)
Kd of Co-60 in Saturated Zone (-)

Probabilistic results summary : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Z-one
File: NEW CO60 DW.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	1.000E+01	1.684E-04
2	3.020E+00	1.604E-03
3	4.365E+00	9.508E-04

1 RESRAD Regression and Correlation output 05/20/02 09:23 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60 DW.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 1, Repetition = Sig	PCC 1 Coeff	SRC 1 Sig	SRC 1 Coeff	PRCC 1 Sig	PRCC 1 Coeff	SRRC 1 Sig	SRRC 1 Coeff
Density of contaminated zone	6	0.06	1	0.39	6	0.09	3	0.48
Kd of Co-60 in Unsaturated Zone 1	27	-0.03	27	-0.03	1	-0.57	2	-0.53
Thickness of Unsaturated zone 1	1	-0.15	7	-0.14	2	-0.32	7	-0.26
Contaminated zone hydraulic conductivity	31	0.02	31	0.02	8	0.09	14	0.07
Evapotranspiration coefficient	29	-0.03	30	-0.02	3	-0.11	11	-0.09
Hydraulic Conductivity of Unsaturated zone 1	12	-0.05	14	-0.05	7	-0.09	13	-0.07
b Parameter of Unsaturated zone 1	38	-0.01	38	-0.01	9	0.08	15	0.06
Total Porosity of Unsaturated zone 1	24	0.03	6	0.26	4	-0.11	1	-0.68
External gamma shielding factor	18	0.04	20	0.04	5	0.10	12	0.08
Field Capacity of Unsaturated zone 1	19	-0.04	21	-0.04	10	-0.08	16	-0.06
R-SQUARE		0.10		0.10		0.42		0.42

-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.

1 RESRAD Regression and Correlation output 05/20/02 09:23 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60 DW.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 2, Repetition = Sig	PCC 2 Coeff	SRC 2 Sig	SRC 2 Coeff	PRCC 2 Sig	PRCC 2 Coeff	SRRC 2 Sig	SRRC 2 Coeff
Density of saturated zone	43	0.00	43	-0.01	8	-0.07	2	-0.47
Depth of roots	35	0.01	36	0.01	4	-0.09	9	-0.08
Kd of Co-60 in Unsaturated Zone 1	29	-0.02	30	-0.02	1	-0.46	3	-0.44
Thickness of Unsaturated zone 1	33	-0.02	34	-0.01	2	-0.26	6	-0.23
Thickness of evasion layer of C-14 in soil	4	0.08	8	0.08	9	0.07	13	0.06
Contaminated zone b parameter	3	0.08	7	0.08	6	0.08	12	0.06
Evapotranspiration coefficient	18	-0.04	21	-0.03	3	-0.10	8	-0.09
Effective Porosity of Unsaturated zone 1	42	0.00	20	-0.03	7	-0.08	1	-0.49
Hydraulic Conductivity of Unsaturated zone 1	30	-0.02	31	-0.02	5	-0.08	10	-0.07
Total Porosity of Unsaturated zone 1	8	-0.06	3	-0.47	10	0.07	4	0.43

R-SQUARE	0.07	0.07	0.30	0.30

-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.

1 RESRAD Regression and Correlation output 05/20/02 09:23 Page: Coef 3
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60 DW.RAD

Coefficients for peak of mean dose time Dose

	PCC		SRC		PRCC		SRRC	
Coefficient =								
Repetition =	3		3		3		3	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of contaminated zone	22	-0.03	5	-0.19	9	0.07	2	0.42
Depth of roots	14	0.05	19	0.04	3	0.10	9	0.09
Kd of Co-60 in Unsaturated Zone 1	42	0.00	42	0.00	1	-0.48	1	-0.45
Thickness of Unsaturated zone 1	38	-0.01	38	-0.01	2	-0.28	5	-0.24
Contaminated zone total porosity	17	0.04	4	0.25	10	-0.07	3	-0.41
Evapotranspiration coefficient	2	-0.09	8	-0.09	4	-0.10	11	-0.08
Indoor dust filtration factor	10	-0.06	16	-0.06	8	-0.07	16	-0.06
b Parameter of Unsaturated zone 1	8	-0.07	13	-0.07	6	0.09	13	0.08
Precipitation	21	0.03	24	0.03	5	0.10	12	0.08
Field Capacity of Unsaturated zone 1	7	0.07	12	0.07	7	0.07	15	0.06
R-SQUARE		0.09		0.09		0.32		0.32

-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.

1 RESRAD Regression and Correlation output 05/20/02 09:23 Page: Coef 4
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60 DW.RAD

Coefficients for peak All Pathways Dose

	PCC		SRC		PRCC		SRRC	
Coefficient =								
Repetition =	1		1		1		1	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Co-60 in Contaminated Zone	17	-0.03	21	-0.03	3	-0.25	8	-0.10
Kd of Co-60 in Unsaturated Zone 1	20	-0.03	23	-0.03	1	-0.92	1	-0.87
Kd of Co-60 in Saturated Zone	30	-0.01	30	-0.01	4	-0.22	9	-0.08
Saturated zone effective porosity	21	-0.02	11	-0.07	10	0.07	3	0.21
Thickness of Unsaturated zone 1	1	-0.10	6	-0.10	2	-0.60	2	-0.28
Evapotranspiration coefficient	25	-0.02	26	-0.02	5	-0.14	12	-0.05
Runoff coefficient	10	0.05	15	0.05	6	-0.09	13	-0.03
Saturated zone hydraulic gradient	19	0.03	22	0.03	9	0.07	17	0.03
Precipitation	34	-0.01	34	-0.01	8	0.08	15	0.03
Meat transfer factor for Co	16	0.04	20	0.04	7	-0.08	14	-0.03
R-SQUARE		0.07		0.07		0.86		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.

1 RESRAD Regression and Correlation output 05/20/02 09:23 Page: Coef 5
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2, Repetition = Sig	PCC 2 Coeff	SRC 2 Sig	SRC 2 Coeff	PRCC 2 Sig	PRCC 2 Coeff	SRRC 2 Sig	SRRC 2 Coeff
Kd of Co-60 in Contaminated Zone	35	-0.01	37	-0.01	3	-0.25	7	-0.09
Kd of Co-60 in Unsaturated Zone 1	27	-0.02	30	-0.02	1	-0.93	1	-0.88
Kd of Co-60 in Saturated Zone	28	-0.02	31	-0.02	4	-0.24	9	-0.08
Thickness of Unsaturated zone 1	37	-0.01	39	-0.01	2	-0.60	3	-0.26
Evapotranspiration coefficient	21	-0.03	24	-0.03	9	-0.08	15	-0.03
Density of Unsaturated zone 1	11	0.05	4	0.40	10	0.08	4	0.22
Effective Porosity of Unsaturated zone 1	39	0.00	21	-0.03	7	-0.11	2	-0.30
Hydraulic Conductivity of Unsaturated zone 1	31	-0.02	33	-0.02	8	-0.10	14	-0.03
Well pump intake depth	42	0.00	42	0.00	6	-0.12	11	-0.04
Precipitation	17	0.04	20	0.04	5	0.12	10	0.04
R-SQUARE		0.07		0.07		0.88		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.

1 RESRAD Regression and Correlation output 05/20/02 09:23 Page: Coef 6
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CO60 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3, Repetition = Sig	PCC 3 Coeff	SRC 3 Sig	SRC 3 Coeff	PRCC 3 Sig	PRCC 3 Coeff	SRRC 3 Sig	SRRC 3 Coeff
Density of contaminated zone	22	-0.03	5	-0.19	8	-0.10	3	-0.24
Kd of Co-60 in Contaminated Zone	20	-0.03	23	-0.03	3	-0.32	6	-0.12
Kd of Co-60 in Unsaturated Zone 1	42	0.00	42	0.00	1	-0.93	1	-0.87
Kd of Co-60 in Saturated Zone	37	0.01	39	0.01	4	-0.29	7	-0.11
Thickness of Unsaturated zone 1	33	-0.01	35	-0.01	2	-0.62	2	-0.28
Contaminated zone total porosity	16	0.04	3	0.25	9	0.09	4	0.24
Evapotranspiration coefficient	2	-0.09	8	-0.09	6	-0.19	10	-0.07
Humidity in air	30	0.01	34	0.01	10	-0.08	14	-0.03
Contaminated zone field capacity	39	0.01	40	0.00	7	-0.10	13	-0.04
Precipitation	24	0.02	27	0.02	5	0.21	8	0.08
R-SQUARE		0.08		0.08		0.88		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.

StatMost for Windows Friday, May 31, 2002 2:40:28 PM

********** Statistics Report **********

Kd of Co in Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0240
Maximum	2220000.0000
Std deviation	51653.2316
Mean	**5470.0424**
Geometric mean	NaN
Quadratic mean	51936.9242
Harmonic mean	10.6063
Sum	27350212.1329
Absolute Sum	27350212.1329
Median	234.7920
Percentiles:	
10	9.1662
25	**42.6561 (ANL=200)**
50	234.7920
75	**1294.7625**
90	6025.8080
Quartiles:	
First quartile:	42.6561
Second quartile:	234.7920
Third quartile:	1294.7625
95.00% Confidence Interval:	
lower limit	4037.9675
upper limit	6902.1174

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 4:01:05 PM

********** Statistics Report **********

Thickness of Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	7.02000000E-005
Maximum	0.4999
Std deviation	0.1444
Mean	**0.2500**
Geometric mean	NaN
Quadratic mean	0.2887
Harmonic mean	0.0523
Sum	1250.0006
Absolute Sum	1250.0006
Median	0.2499
Percentiles:	
10	0.0499
25	**0.1250** ✓
50	0.2499
75	**0.3750**
90	0.4501
Quartiles:	
First quartile:	0.1250
Second quartile:	0.2499
Third quartile:	0.3750
95.00% Confidence Interval:	
lower limit	0.2460
upper limit	0.2540

********** The End **********

StatMost for Windows Friday, May 31, 2002 2:35:21 PM

********** Statistics Report **********

Kd of Co in Contaminated Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0240
Maximum	2220000.0000
Std deviation	51653.2316
Mean	**5470.0424**
Geometric mean	NaN
Quadratic mean	51936.9242
Harmonic mean	10.6063
Sum	27350212.1329
Absolute Sum	27350212.1329
Median	234.7920
Percentiles:	
10	9.1662
25	**42.6561 (ANL=200)**
50	234.7920
75	**1294.7625**
90	6025.8080
Quartiles:	
First quartile:	42.6561
Second quartile:	234.7920
Third quartile:	1294.7625
95.00% Confidence Interval:	
lower limit	4037.9675
upper limit	6902.1174

********** The End **********

StatMost for Windows Friday, May 31, 2002 2:43:10 PM

********** Statistics Report **********

Kd of Co in Sat

Sample size (N)	5000
No. missing	0
Minimum	0.0240
Maximum	2220000.0000
Std deviation	51653.2316
Mean	**5470.0424**
Geometric mean	NaN
Quadratic mean	51936.9242
Harmonic mean	10.6063
Sum	27350212.1329
Absolute Sum	27350212.1329
Median	234.7920
Percentiles:	
10	9.1662
25	**42.6561 (ANL=200)**
50	234.7920
75	**1294.7625**
90	6025.8080
Quartiles:	
First quartile:	42.6561
Second quartile:	234.7920
Third quartile:	1294.7625
95.00% Confidence Interval:	
lower limit	4037.9675
upper limit	6902.1174

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
Cs-137 1.000E+00

0

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	3.740E+00	3.654E+00	3.488E+00	2.965E+00	1.660E+00	1.152E-01	3.547E-03	3.135E-10	0.000E+00
M(t):	1.496E-01	1.462E-01	1.395E-01	1.186E-01	6.641E-02	4.607E-03	1.419E-04	1.254E-11	0.000E+00

0Maximum TDOSE(t): **3.740E+00 mrem/yr at t = 0.000E+00 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.208E+00	0.3230	9.019E-07	0.0000	0.000E+00	0.0000	5.142E-01	0.1375	1.260E+00	0.3370	7.566E-01	0.2023	7.040E-04	0.0002
Total	1.208E+00	0.3230	9.019E-07	0.0000	0.000E+00	0.0000	5.142E-01	0.1375	1.260E+00	0.3370	7.566E-01	0.2023	7.040E-04	0.0002

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

0

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.740E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.740E+00	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.180E+00	0.3230	8.812E-07	0.0000	0.000E+00	0.0000	5.024E-01	0.1375	1.231E+00	0.3370	7.392E-01	0.2023	6.879E-04	0.0002
Total	1.180E+00	0.3230	8.812E-07	0.0000	0.000E+00	0.0000	5.024E-01	0.1375	1.231E+00	0.3370	7.392E-01	0.2023	6.879E-04	0.0002

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+04 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+04 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Branch Fraction*	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
			DSR(j,t) (mrem/yr)/(pCi/g)								
Cs-137	Cs-137	1.000E+00	3.740E+00	3.654E+00	3.488E+00	2.965E+00	1.660E+00	1.152E-01	3.547E-03	3.135E-10	0.000E+00

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life 6 0.5 yr) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Cs-137	6.685E+00	6.842E+00	7.167E+00	8.430E+00	1.506E+01	2.171E+02	7.048E+03	7.973E+10	*8.701E+13

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Cs-137	1.000E+00	0.000E+00	3.740E+00	6.685E+00	3.740E+00	6.685E+00

1 RESRAD Regression and Correlation output 05/20/02 08:14
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW CS137.RAD**

Sensitive Parameter Summary Table

Plant transfer factor for Cs (+,+,+,+,+,+)
External gamma shielding factor (+,+,+,+,+,+)
Meat transfer factor for Cs (+,+,+,+,+,+)
Milk transfer factor for Cs (+,+,+,+,+,+)

Probabilistic results summary : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Z-one
File: NEW CS137.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	0.000E+00	2.862E+00
2	0.000E+00	2.934E+00
3	0.000E+00	2.875E+00

1 RESRAD Regression and Correlation output 05/20/02 08:14 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CS137.RAD

Coefficients for peak of mean dose time Dose

Coefficient =	PCC 1		SRC 1		PRCC 1		SRRC 1	
Repetition =								
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Thickness of Unsaturated zone 1	5	-0.10	10	-0.02	34	0.02	35	0.00
Contaminated zone b parameter	6	-0.10	13	-0.02	18	-0.06	20	-0.02
Contaminated zone erosion rate	7	0.08	14	0.02	22	-0.04	24	-0.01
Indoor dust filtration factor	10	0.06	18	0.01	31	-0.02	33	-0.01
Well pump intake depth	8	-0.07	15	-0.01	26	-0.03	28	-0.01
Wet weight crop yield of fruit, grain and non-leafy vegetables	9	-0.07	17	-0.01	10	0.07	15	0.02
External gamma shielding factor	2	0.65	2	0.18	2	0.77	2	0.31
Plant transfer factor for Cs	1	0.98	1	0.94	1	0.96	1	0.89
Meat transfer factor for Cs	3	0.63	3	0.17	3	0.60	3	0.20
Milk transfer factor for Cs	4	0.50	4	0.12	4	0.45	4	0.13
R-SQUARE		0.96		0.96		0.93		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.

1 RESRAD Regression and Correlation output 05/20/02 08:14 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CS137.RAD

Coefficients for peak of mean dose time Dose

Coefficient =	PCC 2		SRC 2		PRCC 2		SRRC 2	
Repetition =								
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of saturated zone	10	-0.06	6	-0.07	5	0.07	5	0.14
Depth of roots	5	0.12	11	0.02	42	0.00	42	0.00
Saturated zone total porosity	8	0.08	3	0.09	37	-0.01	19	-0.01
Runoff coefficient	9	0.07	16	0.01	43	0.00	43	0.00
Humidity in air	6	-0.11	13	-0.02	17	-0.04	21	-0.01
External gamma shielding factor	2	0.56	2	0.10	2	0.79	2	0.32
Well pumping rate	7	-0.09	14	-0.01	16	0.05	20	0.01
Plant transfer factor for Cs	1	0.99	1	0.97	1	0.96	1	0.88
Meat transfer factor for Cs	3	0.50	4	0.09	3	0.58	3	0.18
Milk transfer factor for Cs	4	0.39	5	0.07	4	0.53	4	0.16
R-SQUARE		0.98		0.98		0.94		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.

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Sig	PCC Repetition = 3 Coeff	SRC 3 Sig	SRC 3 Coeff	PRCC 3 Sig	PRCC 3 Coeff	SRRC 3 Sig	SRRC 3 Coeff
Density of saturated zone	10	-0.06	5	-0.10	13	0.07	6	0.14
Depth of roots	9	-0.06	15	-0.01	7	0.10	14	0.03
Contaminated zone hydraulic conductivity	8	0.07	14	0.02	38	0.01	38	0.00
b Parameter of Unsaturated zone 1	6	-0.08	12	-0.02	42	0.00	42	0.00
Wind Speed	5	0.10	11	0.02	5	-0.11	11	-0.03
External gamma shielding factor	3	0.58	3	0.16	2	0.78	2	0.32
Well pumping rate	7	0.08	13	0.02	6	-0.10	13	-0.03
Plant transfer factor for Cs	1	0.97	1	0.93	1	0.96	1	0.89
Meat transfer factor for Cs	2	0.65	2	0.19	3	0.55	4	0.17
Milk transfer factor for Cs	4	0.44	4	0.11	4	0.49	5	0.15
R-SQUARE		0.95		0.95		0.93		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.

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 1 Sig	PCC Repetition = 1 Coeff	SRC 1 Sig	SRC 1 Coeff	PRCC 1 Sig	PRCC 1 Coeff	SRRC 1 Sig	SRRC 1 Coeff
Thickness of Unsaturated zone 1	5	-0.10	10	-0.02	34	0.02	35	0.00
Contaminated zone b parameter	6	-0.10	13	-0.02	18	-0.06	20	-0.02
Contaminated zone erosion rate	7	0.08	14	0.02	22	-0.04	24	-0.01
Indoor dust filtration factor	10	0.06	18	0.01	32	-0.02	34	-0.01
Well pump intake depth	8	-0.07	15	-0.01	26	-0.03	28	-0.01
Wet weight crop yield of fruit, grain and non-leafy vegetables	9	-0.07	17	-0.01	10	0.07	15	0.02
External gamma shielding factor	2	0.65	2	0.18	2	0.77	2	0.31
Plant transfer factor for Cs	1	0.98	1	0.94	1	0.96	1	0.89
Meat transfer factor for Cs	3	0.63	3	0.17	3	0.60	3	0.20
Milk transfer factor for Cs	4	0.50	4	0.12	4	0.45	4	0.13
R-SQUARE		0.96		0.96		0.93		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.

Input File : NEW CS137.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2 Sig	PCC Repetition = 2 Coeff	SRC 2 Sig	SRC 2 Coeff	PRCC 2 Sig	PRCC 2 Coeff	SRRC 2 Sig	SRRC 2 Coeff
Density of saturated zone	10	-0.06	5	-0.07	9	0.06	5	0.13
Depth of roots	5	0.12	10	0.02	42	0.00	42	0.00
Saturated zone total porosity	7	0.08	4	0.09	31	-0.02	11	-0.03
Wind Speed	9	0.07	15	0.01	29	0.02	31	0.01
Humidity in air	6	-0.10	12	-0.02	24	-0.03	27	-0.01
External gamma shielding factor	2	0.55	2	0.10	2	0.78	2	0.32
Well pumping rate	8	-0.08	14	-0.01	6	0.07	13	0.02
Plant transfer factor for Cs	1	0.99	1	0.97	1	0.96	1	0.88
Meat transfer factor for Cs	3	0.49	3	0.09	3	0.56	3	0.18
Milk transfer factor for Cs	4	0.38	6	0.07	4	0.50	4	0.15
R-SQUARE		0.98		0.98		0.93		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.

1 RESRAD Regression and Correlation output 05/20/02 08:14 Page: Coef 6
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CS137.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Sig	PCC Repetition = 3 Coeff	SRC 3 Sig	SRC 3 Coeff	PRCC 3 Sig	PRCC 3 Coeff	SRRC 3 Sig	SRRC 3 Coeff
Density of saturated zone	10	-0.06	5	-0.10	13	0.07	6	0.14
Depth of roots	9	-0.06	15	-0.01	7	0.10	14	0.03
Contaminated zone hydraulic conductivity	8	0.07	14	0.02	38	0.01	38	0.00
b Parameter of Unsaturated zone 1	6	-0.08	12	-0.02	42	0.00	42	0.00
Wind Speed	5	0.10	11	0.02	5	-0.11	11	-0.03
External gamma shielding factor	3	0.58	3	0.16	2	0.78	2	0.32
Well pumping rate	7	0.08	13	0.02	6	-0.10	13	-0.03
Plant transfer factor for Cs	1	0.97	1	0.93	1	0.96	1	0.89
Meat transfer factor for Cs	2	0.65	2	0.19	3	0.55	4	0.17
Milk transfer factor for Cs	4	0.44	4	0.11	4	0.49	5	0.15
R-SQUARE		0.95		0.95		0.93		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.

StatMost for Windows Wednesday, May 29, 2002 2:57:43 PM

********** Statistics Report **********

Plant Transfer for Cs

Sample size (N)	5000
Num missings	0
Minimum	0.0011
Maximum	1.4527
Std deviation	0.0841
Mean	**0.0654**
Geometric mean	NaN
Quadratic mean	0.1065
Harmonic mean	0.0244
Sum	327.0937
Absolute Sum	327.0937
Median	0.0399
Percentiles:	
10	0.0112
25	**0.0204**
50	0.0399
75	**0.0781** ✓
90	0.1428
Quartiles:	
First quartile:	0.0204
Second quartile:	0.0399
Third quartile:	0.0781
95.00% Confidence Interval:	
lower limit	0.0631
upper limit	0.0677

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 2:46:17 PM

********** Statistics Report **********

External Gamma Shielding Factor

Sample size (N)	5000
No. missing	0
Minimum	0.0450
Maximum	0.9976
Std deviation	0.1760
Mean	**0.3116**
Geometric mean	NaN
Quadratic mean	0.3579
Harmonic mean	0.2276
Sum	1558.0392
Absolute Sum	1558.0392
Median	0.2699
Percentiles:	
10	0.1277
25	**0.1821**
50	0.2699
75	**0.3983** ✓
90	0.5581
Quartiles:	
First quartile:	0.1821
Second quartile:	0.2699
Third quartile:	0.3983
95.00% Confidence Interval:	
lower limit	0.3067
upper limit	0.3165

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 3:03:04 PM

********** Statistics Report **********

Meat Transfer Factor for Cs

Sample size (N)	5000
No. missing	0
Minimum	0.0114
Maximum	0.2159
Std deviation	0.0228
Mean	**0.0541**
Geometric mean	NaN
Quadratic mean	0.0587
Harmonic mean	0.0459
Sum	270.2605
Absolute Sum	270.2605
Median	0.0498
Percentiles:	
10	0.0296
25	**0.0379**
50	0.0498
75	**0.0655** ✓
90	0.0837
Quartiles:	
First quartile:	0.0379
Second quartile:	0.0498
Third quartile:	0.0655
95.00% Confidence Interval:	
lower limit	0.0534
upper limit	0.0547

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 3:13:45 PM

********** Statistics Report **********

Milk Transfer Factor for Cs

Sample size (N)	5000
No. missing	0
Minimum	0.0018
Maximum	0.0545
Std deviation	0.0055
Mean	**0.0111**
Geometric mean	NaN
Quadratic mean	0.0124
Harmonic mean	0.0089
Sum	55.5674
Absolute Sum	55.5674
Median	0.0099
Percentiles:	
10	0.0054
25	**0.0072**
50	0.0099
75	**0.0137** ✓
90	0.0182
Quartiles:	
First quartile:	0.0072
Second quartile:	0.0099
Third quartile:	0.0137
95.00% Confidence Interval:	
lower limit	0.0110
upper limit	0.0113

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
Cs-137 1.000E+00

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 4.000E+00 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
M(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Maximum TDOSE(t): **2.323E-17 mrem/yr at t = 1189 ± 2 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.189E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.189E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.323E-17	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.323E-17	1.0000
Total	2.323E-17	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.323E-17	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0Parent (i)	Product (j)	Branch Fraction*	DSR(j,t) (mrem/yr)/(pCi/g) t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Cs-137	Cs-137	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life 6 0.5 yr) daughters.
0

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 4.000E+00 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Cs-137	*8.701E+13	*8.701E+13	*8.701E+13	*8.701E+13	*8.701E+13	*8.701E+13	*8.701E+13	*8.701E+13	*8.701E+13

*At specific activity limit
0

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCı/g)
and Single Radionuclide Soil Guidelines G(i,t) ın pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 1189 ñ 2 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Cs-137	**1.000E+00**	**1189 ± 2**	**2.323E-17**	***8.701E+13**	**2.323E-17**	***8.701E+13**

*At specific activity limit

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	BRF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Cs-137	Cs-137	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	BRF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Cs-137	Cs-137	1.000E+00	1.000E+00	9.771E-01	9.328E-01	7.929E-01	4.439E-01	3.080E-02	9.485E-04	8.384E-11	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.
0RESCALC.EXE execution time = 1.37 seconds

1 RESRAD Regression and Correlation output 05/20/02 09:49
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW CS137 DW.RAD**

Sensitive Parameter Summary Table

Kd of Cs-137 in Unsaturated Zone 1 (-,-,-,-,-,-)
Thickness of Unsaturated zone 1 (-,-,-,-,-)
Kd of Cs-137 in Contaminated Zone (-,-,-)
Kd of Cs-137 in Saturated Zone (-,-,-)

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	5.754E+01	9.724E-04
2	9.120E+00	1.575E-03
3	1.905E+01	1.066E-03

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 1, Repetition = Sig	PCC 1 Coeff	SRC 1 Sig	SRC 1 Coeff	PRCC 1 Sig	PRCC 1 Coeff	SRRC 1 Sig	SRRC 1 Coeff
Density of saturated zone	17	0.03	4	0.19	9	-0.07	4	-0.38
Kd of Cs-137 in Unsaturated Zone 1	28	-0.02	31	-0.02	1	-0.69	1	-0.64
Kd of Cs-137 in Saturated Zone	25	-0.02	27	-0.02	5	-0.08	12	-0.06
Saturated zone effective porosity	20	-0.03	9	-0.09	6	0.08	2	0.43
Thickness of Unsaturated zone 1	13	-0.04	19	-0.03	2	-0.41	5	-0.30
Evapotranspiration coefficient	30	0.02	33	0.01	3	-0.12	10	-0.08
Effective Porosity of Unsaturated zone 1	31	-0.01	5	-0.11	8	0.07	3	0.38
Hydraulic Conductivity of Unsaturated zone 1	12	-0.05	17	-0.05	4	-0.09	11	-0.06
b Parameter of Unsaturated zone 1	18	0.03	22	0.03	10	0.07	14	0.05
Inhalation rate	6	-0.07	11	-0.07	7	-0.08	13	-0.05
R-SQUARE		0.08		0.08		0.54		0.54

-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.

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 2, Repetition = Sig	PCC 2 Coeff	SRC 2 Sig	SRC 2 Coeff	PRCC 2 Sig	PRCC 2 Coeff	SRRC 2 Sig	SRRC 2 Coeff
Density of saturated zone	43	0.00	43	0.00	8	-0.07	2	-0.47
Depth of roots	34	0.01	35	0.01	4	-0.09	9	-0.08
Kd of Cs-137 in Unsaturated Zone 1	27	-0.02	28	-0.02	1	-0.46	4	-0.44
Thickness of Unsaturated zone 1	32	-0.02	33	-0.02	2	-0.27	6	-0.23
Thickness of evasion layer of C-14 in soil	4	0.08	8	0.07	9	0.07	13	0.06
Contaminated zone b parameter	3	0.08	7	0.08	7	0.08	12	0.06
Evapotranspiration coefficient	18	-0.04	20	-0.03	3	-0.10	8	-0.08
Effective Porosity of Unsaturated zone 1	41	0.00	27	-0.02	6	-0.08	1	-0.50
Hydraulic Conductivity of Unsaturated zone 1	31	-0.02	32	-0.02	5	-0.08	10	-0.07
Total Porosity of Unsaturated zone 1	8	-0.06	3	-0.47	10	0.07	3	0.44

R-SQUARE	0.07	0.07	0.30	0.30

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CS137 DW.RAD

Coefficients for peak of mean dose time Dose
Coefficient =
Repetition =

Description of Probabilistic Variable	PCC 3		SRC 3		PRCC 3		SRRC 3	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Cs-137 in Unsaturated Zone 1	42	0.00	42	0.00	1	-0.55	1	-0.52
Thickness of Unsaturated zone 1	43	0.00	43	0.00	2	-0.25	6	-0.21
Contaminated zone b parameter	21	-0.03	25	-0.03	6	0.10	14	0.08
Evapotranspiration coefficient	5	-0.08	10	-0.08	4	-0.11	11	-0.08
b Parameter of Unsaturated zone 1	9	-0.07	13	-0.06	3	0.14	10	0.11
Inhalation rate	34	0.01	35	0.01	9	0.07	17	0.06
External gamma shielding factor	27	0.02	29	0.02	7	0.09	15	0.07
Contaminated zone field capacity	41	0.00	41	0.00	8	0.08	16	0.06
Precipitation	31	0.01	33	0.01	5	0.10	12	0.08
Field Capacity of Unsaturated zone 1	7	0.07	12	0.07	10	0.07	18	0.06
R-SQUARE		0.08		0.08		0.38		0.38

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW CS137 DW.RAD

Coefficients for peak All Pathways Dose
Coefficient =
Repetition =

Description of Probabilistic Variable	PCC 1		SRC 1		PRCC 1		SRRC 1	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of contaminated zone	2	0.09	1	0.59	8	-0.09	3	-0.21
Kd of Cs-137 in Contaminated Zone	17	-0.03	20	-0.03	4	-0.43	7	-0.16
Kd of Cs-137 in Unsaturated Zone 1	22	-0.02	23	-0.03	1	-0.93	1	-0.86
Kd of Cs-137 in Saturated Zone	21	-0.03	25	-0.03	3	-0.45	6	-0.17
Thickness of Unsaturated zone 1	13	-0.05	18	-0.05	2	-0.67	2	-0.30
	3	-0.09	2	-0.58	9	0.09	4	0.21

-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.

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2 Repetition = Sig	PCC Coeff	SRC Coefficient = 2 Repetition = Sig	SRC Coeff	PRCC Coefficient = 2 Repetition = Sig	PRCC Coeff	SRRC Coefficient = 2 Repetition = Sig	SRRC Coeff
Kd of Cs-137 in Contaminated Zone	35	-0.01	37	-0.01	3	-0.48	4	-0.18
Kd of Cs-137 in Unsaturated Zone 1	20	-0.03	23	-0.03	1	-0.94	1	-0.87
Kd of Cs-137 in Saturated Zone	25	-0.02	28	-0.02	4	-0.40	7	-0.14
Thickness of Unsaturated zone 1	42	0.01	42	0.01	2	-0.64	2	-0.27
Contaminated zone hydraulic conductivity	18	-0.04	22	-0.04	7	-0.11	13	-0.03
Evapotranspiration coefficient	24	-0.02	27	-0.02	6	-0.16	12	-0.05
Well pump intake depth	21	-0.03	25	-0.03	9	-0.09	15	-0.03
External gamma shielding factor	26	0.02	29	0.02	8	0.09	14	0.03
Precipitation	14	0.04	19	0.04	5	0.16	11	0.05
Plant transfer factor for Cs	41	-0.01	41	-0.01	10	0.08	16	0.03
R-SQUARE		0.07		0.07		0.90		0.90

-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.

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Repetition = Sig	PCC Coeff	SRC Coefficient = 3 Repetition = Sig	SRC Coeff	PRCC Coefficient = 3 Repetition = Sig	PRCC Coeff	SRRC Coefficient = 3 Repetition = Sig	SRRC Coeff
Kd of Cs-137 in Contaminated Zone	15	-0.04	21	-0.03	3	-0.47	5	-0.17
Kd of Cs-137 in Unsaturated Zone 1	37	-0.01	37	-0.01	1	-0.93	1	-0.85
Kd of Cs-137 in Saturated Zone	41	0.00	41	0.00	4	-0.47	6	-0.17
Thickness of Unsaturated zone 1	27	-0.02	30	-0.02	2	-0.66	2	-0.29
Contaminated zone b parameter	25	-0.03	28	-0.02	7	-0.13	14	-0.04
Evapotranspiration coefficient	6	-0.07	13	-0.07	6	-0.17	13	-0.06
b Parameter of Unsaturated zone 1	8	-0.07	15	-0.07	9	-0.10	16	-0.03
Well pump intake depth	14	-0.04	20	-0.04	8	-0.13	15	-0.04
Precipitation	39	0.00	39	0.00	5	0.18	12	0.06
Meat transfer factor for Cs	42	0.00	42	0.00	10	-0.10	17	-0.03
R-SQUARE		0.07		0.07		0.89		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.

StatMost for Windows Wednesday, May 29, 2002 3:39:43 PM

********** Statistics Report **********

Kd of Cs in Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0941
Maximum	2040000.0000
Std deviation	49989.8982
Mean	**6515.6026**
Geometric mean	NaN
Quadratic mean	50407.7693
Harmonic mean	31.6209
Sum	32578012.8408
Absolute Sum	32578012.8408
Median	445.3245
Percentiles:	
10	22.4660
25	**92.5822 (ANL=2131)**
50	445.3245
75	**2145.6925**
90	8842.9730
Quartiles:	
First quartile:	92.5822
Second quartile:	445.3245
Third quartile:	2145.6925
95.00% Confidence Interval:	
lower limit	5129.6432
upper limit	7901.5620

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 4:01:05 PM

********** Statistics Report **********

Thickness of Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	7.02000000E-005
Maximum	0.4999
Std deviation	0.1444
Mean	**0.2500**
Geometric mean	NaN
Quadratic mean	0.2887
Harmonic mean	0.0523
Sum	1250.0006
Absolute Sum	1250.0006
Median	0.2499
Percentiles:	
10	0.0499
25	**0.1250** ✓
50	0.2499
75	**0.3750**
90	0.4501
Quartiles:	
First quartile:	0.1250
Second quartile:	0.2499
Third quartile:	0.3750
95.00% Confidence Interval:	
lower limit	0.2460
upper limit	0.2540

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 3:33:36 PM

********** Statistics Report **********

Kd of Cs in Con Zone

Sample size (N)	5000
Num missings	0
Minimum	0.0941
Maximum	2040000.0000
Std deviation	49989.8982
Mean	**6515.6026**
Geometric mean	NaN
Quadratic mean	50407.7693
Harmonic mean	31.6209
Sum	32578012.8408
Absolute Sum	32578012.8408
Median	445.3245
Percentiles:	
10	22.4660
25	**92.5822 (ANL=2131)**
50	445.3245
75	**2145.6925**
90	8842.9730
Quartiles:	
First quartile:	92.5822
Second quartile:	445.3245
Third quartile:	2145.6925
95.00% Confidence Interval:	
lower limit	5129.6432
upper limit	7901.5620

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 3:45:54 PM

********** Statistics Report **********

Kd of Cs in Sat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0941
Maximum	2040000.0000
Std deviation	49989.8982
Mean	**6515.6026**
Geometric mean	NaN
Quadratic mean	50407.7693
Harmonic mean	31.6209
Sum	32578012.8408
Absolute Sum	32578012.8408
Median	445.3245
Percentiles:	
10	22.4660
25	**92.5822 (ANL=2131)**
50	445.3245
75	**2145.6925**
90	8842.9730
Quartiles:	
First quartile:	92.5822
Second quartile:	445.3245
Third quartile:	2145.6925
95.00% Confidence Interval:	
lower limit	5129.6432
upper limit	7901.5620

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
Eu-152 1.000E+00

0

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	2.460E+00	2.335E+00	2.104E+00	1.462E+00	3.985E-01	1.008E-03	4.128E-07	1.713E-15	2.800E-16
M(t):	9.838E-02	9.340E-02	8.417E-02	5.849E-02	1.594E-02	4.031E-05	1.651E-08	6.851E-17	1.120E-17

0Maximum TDOSE(t): **2.460E+00 mrem/yr at t = 0.000E+00 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Eu-152	2.457E+00	0.9989	6.159E-06	0.0000	0.000E+00	0.0000	2.103E-03	0.0009	5.671E-04	0.0002	1.876E-05	0.0000	8.995E-05	0.0000
Total	2.457E+00	0.9989	6.159E-06	0.0000	0.000E+00	0.0000	2.103E-03	0.0009	5.671E-04	0.0002	1.876E-05	0.0000	8.995E-05	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

0

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.460E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.460E+00	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Eu-152	2.332E+00	0.9989	5.847E-06	0.0000	0.000E+00	0.0000	1.997E-03	0.0009	5.383E-04	0.0002	1.781E-05	0.0000	8.539E-05	0.0000

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0Parent (i)	Product (j)	Branch Fraction*	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
			DSR(j,t) (mrem/yr)/(pCi/g)								
Eu-152	Eu-152	7.208E-01	1.773E+00	1.683E+00	1.517E+00	1.054E+00	2.872E-01	7.263E-04	2.976E-07	4.622E-23	0.000E+00
0Eu-152	Eu-152	2.792E-01	6.867E-01	6.519E-01	5.875E-01	4.083E-01	1.113E-01	2.813E-04	1.153E-07	1.790E-23	0.000E+00
Eu-152	Gd-152	2.792E-01	6.852E-17	2.009E-16	4.457E-16	1.126E-15	2.245E-15	2.593E-15	2.491E-15	1.713E-15	2.800E-16
Eu-152	ΔDSR(j)		6.867E-01	6.519E-01	5.875E-01	4.083E-01	1.113E-01	2.813E-04	1.153E-07	1.713E-15	2.800E-16

*Branch Fraction is the cumulative factor for the j't principal radionuclıde daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life ó 0.5 yr) daughters.
0

Single Radionuclide Soil Guidelines G(i,t) in pCı/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Eu-152	1.016E+01	1.071E+01	1.188E+01	1.710E+01	6.274E+01	2.481E+04	6.056E+07	*1.765E+14	*1.765E+14

*At specıfic activity limit
0

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Eu-152	**1.000E+00**	**0.000E+00**	**2.460E+00**	**1.016E+01**	**2.460E+00**	**1.016E+01**

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (ı)	BRF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
			DOSE(j,t), mrem/yr								
Eu-152	Eu-152	7.208E-01	1.773E+00	1.683E+00	1.517E+00	1.054E+00	2.872E-01	7.263E-04	2.976E-07	4.622E-23	0.000E+00
Eu-152	Eu-152	2.792E-01	6.867E-01	6.519E-01	5.875E-01	4.083E-01	1.113E-01	2.813E-04	1.153E-07	1.790E-23	0.000E+00
Eu-152	ΔDOSE(j)		2.460E+00	2.335E+00	2.104E+00	1.462E+00	3.985E-01	1.008E-03	4.128E-07	6.413E-23	0.000E+00
0Gd-152	Eu-152	2.792E-01	6.852E-17	2.009E-16	4.457E-16	1.126E-15	2.245E-15	2.593E-15	2.491E-15	1.713E-15	2.800E-16

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclıde and Branch Fraction Indicated

1 RESRAD Regression and Correlation output 05/20/02 08:48
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW EU152.RAD**

Sensitive Parameter Summary Table

External gamma shielding factor (+,+,+,+,+,+)
Kd of Eu-152 in Contaminated Zone (+,+,+,+,+,+)

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	0.000E+00	2.083E+00
2	0.000E+00	2.082E+00
3	0.000E+00	2.081E+00

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW EU152.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 1, Repetition = 1 Sig	PCC Coefficient = 1, Repetition = 1 Coeff	SRC Coefficient = 1, Repetition = 1 Sig	SRC Coefficient = 1, Repetition = 1 Coeff	PRCC Coefficient = 1, Repetition = 1 Sig	PRCC Coefficient = 1, Repetition = 1 Coeff	SRRC Coefficient = 1, Repetition = 1 Sig	SRRC Coefficient = 1, Repetition = 1 Coeff
Kd of Eu-152 in Contaminated Zone	14	0.04	19	0.00	2	0.36	5	0.03
Saturated zone effective porosity	45	0.01	32	0.00	6	0.09	2	0.05
Saturated zone total porosity	35	-0.02	6	-0.01	10	-0.08	3	-0.04
Contaminated zone b parameter	3	-0.08	9	0.00	8	-0.08	14	-0.01
Well pump intake depth	11	0.05	18	0.00	7	0.09	13	0.01
Wet foliar interception fraction of leafy vegetables	4	0.07	11	0.00	9	0.08	15	0.01
External gamma shielding factor	1	1.00	1	1.00	1	1.00	1	1.00
Plant transfer factor for Eu	2	0.11	8	0.01	3	0.13	10	0.01
Milk transfer factor for Eu	10	-0.05	17	0.00	4	-0.11	11	-0.01
Milk transfer factor for Gd	6	0.06	12	0.00	5	0.10	12	0.01
R-SQUARE		1.00		1.00		1.00		1.00

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW EU152.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 2, Repetition = 2 Sig	PCC Coefficient = 2, Repetition = 2 Coeff	SRC Coefficient = 2, Repetition = 2 Sig	SRC Coefficient = 2, Repetition = 2 Coeff	PRCC Coefficient = 2, Repetition = 2 Sig	PRCC Coefficient = 2, Repetition = 2 Coeff	SRRC Coefficient = 2, Repetition = 2 Sig	SRRC Coefficient = 2, Repetition = 2 Coeff
Kd of Eu-152 in Contaminated Zone	29	0.03	31	0.00	2	0.28	6	0.03
Kd of Eu-152 in Unsaturated Zone 1	36	-0.02	39	0.00	5	0.09	13	0.01
Wet weight crop yield of fruit, grain and non-leafy vegetables	10	0.05	16	0.00	6	0.08	14	0.01
Humidity in air	2	0.09	8	0.01	3	0.11	11	0.01
External gamma shielding factor	1	1.00	1	1.00	1	1.00	1	1.00
Contaminated zone field capacity	34	0.02	37	0.00	10	0.06	18	0.01
Well pumping rate	3	-0.08	9	-0.01	7	-0.07	15	-0.01
Field Capacity of Unsaturated zone 1	12	-0.05	19	0.00	9	-0.06	17	-0.01
Fish transfer factor for Eu	15	0.04	22	0.00	8	0.07	16	0.01
Plant transfer factor for Gd	7	0.06	13	0.00	4	0.09	12	0.01
R-SQUARE		0.99		0.99		0.99		0.99

-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.

Coefficients for peak of mean dose time Dose

	PCC		SRC		PRCC		SRRC	
Coefficient =	3		3		3		3	
Repetition =								
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Eu-152 in Contaminated Zone	15	0.05	16	0.00	2	0.35	6	0.03
Thickness of evasion layer of C-14 in soil	16	0.04	18	0.00	10	0.08	14	0.01
Density of Unsaturated zone 1	4	-0.11	3	-0.07	8	-0.09	3	-0.06
Effective Porosity of Unsaturated zone 1	2	0.17	2	0.11	3	0.16	2	0.10
Hydraulic Conductivity of Unsaturated zone 1	19	0.04	21	0.00	6	0.10	12	0.01
b Parameter of Unsaturated zone 1	3	-0.13	7	-0.01	4	-0.12	9	-0.01
Total Porosity of Unsaturated zone 1	8	-0.06	4	-0.04	9	-0.08	4	-0.05
External gamma shielding factor	1	1.00	1	1.00	1	1.00	1	1.00
Contaminated zone field capacity	6	0.09	9	0.01	5	0.11	10	0.01
Meat transfer factor for Gd	12	-0.06	14	0.00	7	-0.09	13	-0.01
R-SQUARE		0.99		0.99		0.99		0.99

-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.

Coefficients for peak All Pathways Dose

	PCC		SRC		PRCC		SRRC	
Coefficient =	1		1		1		1	
Repetition =								
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Eu-152 in Contaminated Zone	14	0.04	20	0.00	2	0.37	5	0.03
Saturated zone effective porosity	45	0.01	32	0.00	6	0.09	2	0.05
Saturated zone total porosity	36	-0.02	6	-0.01	10	-0.08	3	-0.04
Contaminated zone b parameter	3	-0.08	9	0.00	8	-0.08	15	-0.01
Well pump intake depth	11	0.05	18	0.00	7	0.09	14	0.01
Wet foliar interception fraction of leafy vegetables	4	0.08	10	0.00	9	0.08	16	0.01
External gamma shielding factor	1	1.00	1	1.00	1	1.00	1	1.00
Plant transfer factor for Eu	2	0.11	7	0.01	3	0.13	10	0.01
Milk transfer factor for Eu	10	-0.05	17	0.00	4	-0.11	11	-0.01
Milk transfer factor for Gd	6	0.06	12	0.00	5	0.10	12	0.01
R-SQUARE		1.00		1.00		1.00		1.00

-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.

Input File : NEW EU152.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2 Repetition = 2 Sig	PCC Coeff	SRC Coefficient = 2 Repetition = 2 Sig	SRC Coeff	PRCC Coefficient = 2 Repetition = 2 Sig	PRCC Coeff	SRRC Coefficient = 2 Repetition = 2 Sig	SRRC Coeff
Kd of Eu-152 in Contaminated Zone	29	0.03	31	0.00	2	0.28	6	0.03
Kd of Eu-152 in Unsaturated Zone 1	36	-0.02	39	0.00	5	0.09	13	0.01
Wet weight crop yield of fruit, grain and non-leafy vegetables	10	0.05	17	0.00	6	0.08	14	0.01
Humidity in air	2	0.09	7	0.01	3	0.11	11	0.01
External gamma shielding factor	1	1.00	1	1.00	1	1.00	1	1.00
Contaminated zone field capacity	34	0.02	37	0.00	10	0.06	18	0.01
Well pumping rate	3	-0.08	9	-0.01	7	-0.08	15	-0.01
Field Capacity of Unsaturated zone 1	12	-0.05	19	0.00	9	-0.06	17	-0.01
Fish transfer factor for Eu	15	0.04	20	0.00	8	0.07	16	0.01
Plant transfer factor for Gd	7	0.06	13	0.00	4	0.09	12	0.01
R-SQUARE		0.99		0.99		0.99		0.99

-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.

1 RESRAD Regression and Correlation output 05/20/02 08:48 Page: Coef 6
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW EU152.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Repetition = 3 Sig	PCC Coeff	SRC Coefficient = 3 Repetition = 3 Sig	SRC Coeff	PRCC Coefficient = 3 Repetition = 3 Sig	PRCC Coeff	SRRC Coefficient = 3 Repetition = 3 Sig	SRRC Coeff
Kd of Eu-152 in Contaminated Zone	15	0.05	16	0.00	2	0.35	6	0.03
Thickness of evasion layer of C-14 in soil	16	0.04	18	0.00	10	0.08	14	0.01
Density of Unsaturated zone 1	4	-0.11	3	-0.07	8	-0.09	3	-0.06
Effective Porosity of Unsaturated zone 1	2	0.17	2	0.11	3	0.16	2	0.10
Hydraulic Conductivity of Unsaturated zone 1	19	0.04	21	0.00	6	0.10	12	0.01
b Parameter of Unsaturated zone 1	3	-0.13	7	-0.01	4	-0.12	9	-0.01
Total Porosity of Unsaturated zone 1	8	-0.06	4	-0.04	9	-0.08	4	-0.05
External gamma shielding factor	1	1.00	1	1.00	1	1.00	1	1.00
Contaminated zone field capacity	6	0.09	9	0.01	5	0.11	10	0.01
Meat transfer factor for Gd	12	-0.06	14	0.00	7	-0.09	13	-0.01
R-SQUARE		0.99		0.99		0.99		0.99

-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.

StatMost for Windows Wednesday, May 29, 2002 2:46:17 PM

********** Statistics Report **********

External Gamma Shielding Factor

Sample size (N)	5000
No. missing	0
Minimum	0.0450
Maximum	0.9976
Std deviation	0.1760
Mean	**0.3116**
Geometric mean	NaN
Quadratic mean	0.3579
Harmonic mean	0.2276
Sum	1558.0392
Absolute Sum	1558.0392
Median	0.2699
Percentiles:	
10	0.1277
25	**0.1821**
50	0.2699
75	**0.3983**
90	0.5581
Quartiles:	
First quartile:	0.1821
Second quartile:	0.2699
Third quartile:	0.3983
95.00% Confidence Interval:	
lower limit	0.3067
upper limit	0.3165

********** The End **********

StatMost for Windows Friday, June 07, 2002 3:26:36 PM

********** Statistics Report **********

Kd of Eu in Contaminated Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0069
Maximum	95000000.0000
Std deviation	1964392.3741
Mean	**118919.7186** ✓
Geometric mean	NaN
Quadratic mean	1967792.5529
Harmonic mean	6.4200
Sum	594598593.2071
Absolute Sum	594598593.2071
Median	827.4495
Percentiles:	
10	13.3387
25	**94.4122**
50	827.4495
75	**7269.0625**
90	51455.9600
Quartiles:	
First quartile:	94.4122
Second quartile:	827.4495
Third quartile:	7269.0625
95.00% Confidence Interval:	
lower limit	64457.3541
upper limit	173382.0831

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
Eu-152 1.000E+00

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 4.000E+00 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.810E-16	6.897E-16	2.132E-15	0.000E+00
M(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.025E-17	1.724E-16	5.331E-16	0.000E+00

Maximum TDOSE(t): **2.180E-15 mrem/yr at t = 1037 ± 2 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.037E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.037E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Eu-152	2.180E-15	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.180E-15	1.0000
Total	2.180E-15	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.180E-15	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Branch Fraction*	DSR(j,t) (mrem/yr)/(pCi/g) t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Eu-152	Eu-152	7.208E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.052E-27	0.000E+00
Eu-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.950E-28	0.000E+00
Eu-152	Gd-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.810E-16	6.897E-16	2.132E-15	0.000E+00
Eu-152	ΔDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.810E-16	6.897E-16	2.132E-15	0.000E+00

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life ó 0.5 yr) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 4.000E+00 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Eu-152	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 1037 ñ 2 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin) (pCi/g)	G(i,tmin) (pCi/g)	DSR(i,tmax) (pCi/g)	G(i,tmax) (pCi/g)
Eu-152	**1.000E+00**	**1037 ± 2**	**2.180E-15**	***1.765E+14**	**2.180E-15**	***1.765E+14**

*At specific activity limit

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Eu-152	Eu-152	7.208E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.052E-27	0.000E+00
Eu-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.950E-28	0.000E+00
Eu-152	ΔDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.847E-27	0.000E+00
Gd-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.810E-16	6.897E-16	2.132E-15	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04

1 RESRAD Regression and Correlation output 05/20/02 10:07
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW EU152 DW.RAD**

Sensitive Parameter Summary Table

Kd of Eu-152 in Unsaturated Zone 1 (-,-,-,-,-,-)
Thickness of Unsaturated zone 1 (-,-,-,-,-)
Kd of Gd-152 in Unsaturated Zone 1 (-,-,-,-)
Kd of Eu-152 in Contaminated Zone (-,-,-)
Kd of Gd-152 in Saturated Zone (-)
Kd of Eu-152 in Saturated Zone (-,-)

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	1.905E+01	7.613E-05
2	1.000E+00	3.675E-04
3	2.754E+01	2.027E-04

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 1 Repetition = 1 Sig	PCC Coeff	SRC Coefficient = 1 Repetition = 1 Sig	SRC Coeff	PRCC Coefficient = 1 Repetition = 1 Sig	PRCC Coeff	SRRC Coefficient = 1 Repetition = 1 Sig	SRRC Coeff
Kd of Eu-152 in Unsaturated Zone 1	10	-0.06	16	-0.05	1	-0.52	1	-0.46
Thickness of Unsaturated zone 1	6	-0.10	13	-0.09	3	-0.36	4	-0.29
Wet foliar interception fraction of leafy vegetables	12	-0.05	17	-0.04	5	0.09	12	0.07
Inhalation rate	13	-0.05	18	-0.04	8	-0.08	15	-0.06
Mass loading for inhalation	29	-0.03	31	-0.03	10	-0.06	17	-0.05
Contaminated zone field capacity	7	-0.09	14	-0.08	4	0.11	11	0.09
Precipitation	35	0.02	37	0.02	9	0.07	16	0.06
Field Capacity of Unsaturated zone 1	27	-0.03	29	-0.03	6	-0.09	13	-0.06
Kd of Gd-152 in Contaminated Zone	26	-0.03	28	-0.03	7	-0.08	14	-0.06
Kd of Gd-152 in Unsaturated Zone 1	46	-0.01	47	-0.01	2	-0.40	2	-0.32
R-SQUARE		0.14		0.14		0.45		0.45

-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.

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 2 Repetition = 2 Sig	PCC Coeff	SRC Coefficient = 2 Repetition = 2 Sig	SRC Coeff	PRCC Coefficient = 2 Repetition = 2 Sig	PRCC Coeff	SRRC Coefficient = 2 Repetition = 2 Sig	SRRC Coeff
Kd of Eu-152 in Unsaturated Zone 1	49	0.00	49	0.00	2	-0.26	9	-0.24
Saturated zone effective porosity	15	0.05	8	0.15	10	0.06	2	0.43
Thickness of Unsaturated zone 1	20	-0.04	24	-0.04	3	-0.21	10	-0.19
Contaminated zone erosion rate	42	-0.01	42	-0.01	5	-0.10	13	-0.09
Effective Porosity of Unsaturated zone 1	5	-0.08	1	-0.59	6	0.09	1	0.67
Contaminated zone field capacity	48	0.00	48	0.00	9	-0.07	16	-0.06
Meat transfer factor for Eu	21	-0.04	25	-0.04	8	-0.08	15	-0.07
Plant transfer factor for Gd	32	0.03	33	0.03	4	-0.13	12	-0.12
Kd of Gd-152 in Unsaturated Zone 1	44	0.01	44	0.01	1	-0.29	6	-0.26
Kd of Gd-152 in Saturated Zone	46	-0.01	46	-0.01	7	-0.08	14	-0.07
R-SQUARE		0.09		0.09		0.23		0.23

-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.

Coefficients for peak of mean dose time Dose

	PCC		SRC		PRCC		SRRC	
Coefficient =								
Repetition =	3		3		3		3	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Eu-152 in Unsaturated Zone 1	36	-0.01	40	-0.01	1	-0.58	1	-0.51
Thickness of Unsaturated zone 1	18	-0.04	22	-0.03	2	-0.39	2	-0.30
Contaminated zone hydraulic conductivity	22	-0.03	24	-0.03	6	0.09	12	0.07
Hydraulic Conductivity of Unsaturated zone 1	28	-0.02	32	-0.02	10	-0.06	16	-0.05
b Parameter of Unsaturated zone 1	7	0.07	11	0.07	9	0.07	15	0.05
Wet weight crop yield of fruit, grain and non-leafy vegetables	14	-0.05	18	-0.04	4	-0.12	10	-0.09
Milk transfer factor for Eu	8	0.07	12	0.06	7	-0.09	13	-0.06
Fish transfer factor for Gd	32	-0.02	36	-0.02	5	-0.12	11	-0.09
Kd of Gd-152 in Contaminated Zone	31	-0.02	34	-0.02	8	-0.07	14	-0.05
Kd of Gd-152 in Unsaturated Zone 1	38	-0.01	41	-0.01	3	-0.39	3	-0.30
R-SQUARE		0.08		0.08		0.49		0.49

-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.

Coefficients for peak All Pathways Dose

	PCC		SRC		PRCC		SRRC	
Coefficient =								
Repetition =	1		1		1		1	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Eu-152 in Contaminated Zone	38	-0.02	39	-0.02	5	-0.25	6	-0.13
Kd of Eu-152 in Unsaturated Zone 1	10	-0.06	18	-0.06	1	-0.82	1	-0.75
Kd of Eu-152 in Saturated Zone	16	-0.04	22	-0.04	4	-0.25	5	-0.14
Thickness of Unsaturated zone 1	4	-0.10	10	-0.10	2	-0.44	2	-0.25
Contaminated zone erosion rate	47	0.00	47	0.00	8	-0.16	13	-0.08
Precipitation	39	0.02	41	0.02	9	0.15	14	0.08
Saturated zone field capacity	23	-0.03	26	-0.03	10	0.09	17	0.05
Kd of Gd-152 in Contaminated Zone	24	-0.03	28	-0.03	6	-0.17	11	-0.09
Kd of Gd-152 in Unsaturated Zone 1	44	-0.01	45	-0.01	3	-0.29	4	-0.16
Kd of Gd-152 in Saturated Zone	32	-0.02	35	-0.02	7	-0.16	12	-0.09
R-SQUARE		0.14		0.14		0.73		0.73

-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.

Input File : NEW EU152 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2, Repetition = 2 Sig	PCC 2 Coeff	SRC 2 Sig	SRC 2 Coeff	PRCC 2 Sig	PRCC 2 Coeff	SRRC 2 Sig	SRRC 2 Coeff
Kd of Eu-152 in Contaminated Zone	42	0.01	42	0.01	4	-0.26	7	-0.13
Kd of Eu-152 in Unsaturated Zone 1	49	0.00	49	0.00	1	-0.83	1	-0.75
Kd of Eu-152 in Saturated Zone	36	-0.02	37	-0.02	7	-0.20	10	-0.10
Thickness of Unsaturated zone 1	16	-0.05	21	-0.05	2	-0.44	2	-0.25
Evapotranspiration coefficient	9	-0.07	15	-0.06	9	-0.12	16	-0.06
Well pump intake depth	33	0.02	34	0.02	8	-0.16	12	-0.08
Precipitation	35	-0.02	36	-0.02	10	0.12	17	0.06
Kd of Gd-152 in Contaminated Zone	26	0.04	23	0.04	6	-0.22	9	-0.11
Kd of Gd-152 in Unsaturated Zone 1	41	0.01	40	0.01	3	-0.28	4	-0.15
Kd of Gd-152 in Saturated Zone	48	0.00	48	0.00	5	-0.24	8	-0.13
R-SQUARE		0.09		0.09		0.75		0.75

-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.

1 RESRAD Regression and Correlation output 05/20/02 10:07 Page: Coef 6
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW EU152 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3, Repetition = 3 Sig	PCC 3 Coeff	SRC 3 Sig	SRC 3 Coeff	PRCC 3 Sig	PRCC 3 Coeff	SRRC 3 Sig	SRRC 3 Coeff
Kd of Eu-152 in Contaminated Zone	33	-0.02	36	-0.02	5	-0.27	8	-0.14
Kd of Eu-152 in Unsaturated Zone 1	35	-0.01	40	-0.01	1	-0.83	1	-0.76
Kd of Eu-152 in Saturated Zone	42	0.01	46	0.01	7	-0.18	14	-0.09
Thickness of Unsaturated zone 1	17	-0.04	20	-0.04	2	-0.42	2	-0.23
Contaminated zone erosion rate	21	0.03	23	0.03	10	-0.07	17	-0.04
Well pump intake depth	15	-0.04	17	-0.04	8	-0.11	15	-0.05
Milk transfer factor for Gd	25	0.02	29	0.02	9	0.07	16	0.04
Kd of Gd-152 in Contaminated Zone	29	-0.02	33	-0.02	6	-0.23	11	-0.12
Kd of Gd-152 in Unsaturated Zone 1	37	-0.01	42	-0.01	3	-0.36	3	-0.19
Kd of Gd-152 in Saturated Zone	49	0.00	49	0.00	4	-0.28	6	-0.15
R-SQUARE		0.07		0.07		0.75		0.75

-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.

StatMost for Windows Friday, June 07, 2002 3:34:29 PM

********** Statistics Report **********

Kd of Eu in Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0069
Maximum	95000000.0000
Std deviation	1964392.3741
Mean	**118919.7186**
Geometric mean	NaN
Quadratic mean	1967792.5529
Harmonic mean	6.4200
Sum	594598593.2071
Absolute Sum	594598593.2071
Median	827.4495
Percentiles:	
10	13.3387
25	**94.4122 (ANL=1000)**
50	827.4495
75	**7269.0625**
90	51455.9600
Quartiles:	
First quartile:	94.4122
Second quartile:	827.4495
Third quartile:	7269.0625
95.00% Confidence Interval:	
lower limit	64457.3541
upper limit	173382.0831

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 4:01:05 PM

********** Statistics Report **********

Thickness of Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	7.02000000E-005
Maximum	0.4999
Std deviation	0.1444
Mean	**0.2500**
Geometric mean	NaN
Quadratic mean	0.2887
Harmonic mean	0.0523
Sum	1250.0006
Absolute Sum	1250.0006
Median	0.2499
Percentiles:	
10	0.0499
25	**0.1250** ✓
50	0.2499
75	**0.3750**
90	0.4501
Quartiles:	
First quartile:	0.1250
Second quartile:	0.2499
Third quartile:	0.3750
95.00% Confidence Interval:	
lower limit	0.2460
upper limit	0.2540

********** The End **********

StatMost for Windows Friday, June 07, 2002 3:53:30 PM

********** Statistics Report **********

Kd of Gd in Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0069
Maximum	95000000.0000
Std deviation	1964392.3741
Mean	**118919.7186**
Geometric mean	NaN
Quadratic mean	1967792.5529
Harmonic mean	6.4200
Sum	594598593.2071
Absolute Sum	594598593.2071
Median	827.4495
Percentiles:	
10	13.3387
25	**94.4122** **(Must include real default value in contaminated zone to eliminate -1)** ✓
50	827.4495
75	**7269.0625**
90	51455.9600
Quartiles:	
First quartile:	94.4122
Second quartile:	827.4495
Third quartile:	7269.0625
95.00% Confidence Interval:	
lower limit	64457.3541
upper limit	173382.0831

********** The End **********

StatMost for Windows Friday, June 07, 2002 3:26:36 PM

********** Statistics Report **********

Kd of Eu in Contaminated Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0069
Maximum	95000000.0000
Std deviation	1964392.3741
Mean	**118919.7186**
Geometric mean	NaN
Quadratic mean	1967792.5529
Harmonic mean	6.4200
Sum	594598593.2071
Absolute Sum	594598593.2071
Median	827.4495
Percentiles:	
10	13.3387
25	**94.4122 (ANL=1000)**
50	827.4495
75	**7269.0625**
90	51455.9600
Quartiles:	
First quartile:	94.4122
Second quartile:	827.4495
Third quartile:	7269.0625
95.00% Confidence Interval:	
lower limit	64457.3541
upper limit	173382.0831

********** The End **********

StatMost for Windows Friday, June 07, 2002 4:00:10 PM

********** Statistics Report **********

Kd of Gd in Sat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0069
Maximum	95000000.0000
Std deviation	1964392.3741
Mean	**118919.7186**
Geometric mean	NaN
Quadratic mean	1967792.5529
Harmonic mean	6.4200
Sum	594598593.2071
Absolute Sum	594598593.2071
Median	827.4495
Percentiles:	
10	13.3387
25	**94.4122** ✓
50	827.4495
75	**7269.0625**
90	51455.9600
Quartiles:	
First quartile:	94.4122
Second quartile:	827.4495
Third quartile:	7269.0625
95.00% Confidence Interval:	
lower limit	64457.3541
upper limit	173382.0831

********** The End **********

StatMost for Windows Friday, June 07, 2002 3:45:22 PM

********** Statistics Report **********

Kd of Eu in Sat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0069
Maximum	95000000.0000
Std deviation	1964392.3741
Mean	**118919.7186**
Geometric mean	NaN
Quadratic mean	1967792.5529
Harmonic mean	6.4200
Sum	594598593.2071
Absolute Sum	594598593.2071
Median	827.4495
Percentiles:	
10	13.3387
25	**94.4122 (ANL=1000)**
50	827.4495
75	**7269.0625**
90	51455.9600
Quartiles:	
First quartile:	94.4122
Second quartile:	827.4495
Third quartile:	7269.0625
95.00% Confidence Interval:	
lower limit	64457.3541
upper limit	173382.0831

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
H-3 1.000E+00

0

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	3.872E-02	2.687E-02	6.303E-04	2.456E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
M(t):	1.549E-03	1.075E-03	2.521E-05	9.822E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

0Maximum TDOSE(t): **3.872E-02 mrem/yr at t = 0.000E+00 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
H-3	0.000E+00	0.0000	9.464E-05	0.0024	0.000E+00	0.0000	1.391E-02	0.3593	2.876E-03	0.0743	1.060E-02	0.2737	3.419E-07	0.0000
Total	0.000E+00	0.0000	9.464E-05	0.0024	0.000E+00	0.0000	1.391E-02	0.3593	2.876E-03	0.0743	1.060E-02	0.2737	3.419E-07	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

0

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
H-3	7.434E-03	0.1920	1.369E-06	0.0000	0.000E+00	0.0000	1.153E-03	0.0298	3.643E-04	0.0094	2.286E-03	0.0590	3.872E-02	1.0000
Total	7.434E-03	0.1920	1.369E-06	0.0000	0.000E+00	0.0000	1.153E-03	0.0298	3.643E-04	0.0094	2.286E-03	0.0590	3.872E-02	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
H-3	0.000E+00	0.0000	8.306E-06	0.0003	0.000E+00	0.0000	1.226E-03	0.0456	2.542E-04	0.0095	9.306E-04	0.0346	3.001E-08	0.0000
Total	0.000E+00	0.0000	8.306E-06	0.0003	0.000E+00	0.0000	1.226E-03	0.0456	2.542E-04	0.0095	9.306E-04	0.0346	3.001E-08	0.0000

0

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Branch Fraction*	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
			DSR(j,t) (mrem/yr)/(pCi/g)								
H-3	H-3	1.000E+00	3.872E-02	2.687E-02	6.303E-04	2.456E-11	5.898E-38	0.000E+00	0.000E+00	0.000E+00	0.000E+00

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life ó 0.5 yr) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
H-3	6.457E+02	9.303E+02	3.966E+04	1.018E+12	*9.594E+15	*9.594E+15	*9.594E+15	*9.594E+15	*9.594E+15

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
H-3	1.000E+00	0.000E+00	3.872E-02	6.457E+02	3.872E-02	6.457E+02

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
			DOSE(j,t), mrem/yr								
H-3	H-3	1.000E+00	3.872E-02	2.687E-02	6.303E-04	2.456E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
			S(j,t), pCi/g								
H-3	H-3	1.000E+00	1.000E+00	8.779E-02	6.749E-04	2.614E-11	6.145E-38	0.000E+00	0.000E+00	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.
ORESCALC.EXE execution time = 1.38 seconds

1 RESRAD Regression and Correlation output 05/20/02 08:08
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW H3.RAD**

Sensitive Parameter Summary Table

Well pump intake depth (-,-,-,-,-,-)
Saturated zone hydraulic conductivity (-,-,-,-,-,-)
Contaminated zone hydraulic conductivity (+,+,+,+,+,+)
Kd of H-3 in Contaminated Zone (-,-,-,-,-,-)
Thickness of Unsaturated zone 1 (-,-,-,-,-,-)
Saturated zone hydraulic gradient (-,-,-,-,-,-)
Precipitation (-,-,-,-,-,-)
Evapotranspiration coefficient (-,-,-,-,-,-)

Probabilistic results summary : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Z-one
File: NEW H3.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	0.000E+00	3.416E-02
2	0.000E+00	3.392E-02
3	0.000E+00	3.421E-02

1 RESRAD Regression and Correlation output 05/20/02 08:08 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3.RAD

Coefficients for peak of mean dose time Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	1		1		1		1	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of H-3 in Contaminated Zone	5	-0.32	6	-0.19	5	-0.45	8	-0.21
Kd of H-3 in Saturated Zone	19	-0.04	24	-0.02	10	-0.15	17	-0.06
Saturated zone hydraulic conductivity	1	-0.62	1	-0.45	2	-0.71	2	-0.42
Thickness of Unsaturated zone 1	6	-0.31	8	-0.19	4	-0.48	7	-0.22
Contaminated zone hydraulic conductivity	3	0.34	3	0.21	3	0.63	4	0.34
Evapotranspiration coefficient	7	-0.18	13	-0.10	8	-0.30	12	-0.13
Saturated zone hydraulic gradient	4	-0.33	5	-0.20	6	-0.39	9	-0.18
Hydraulic Conductivity of Unsaturated zone 1	11	0.11	17	0.06	9	0.21	13	0.09
Well pump intake depth	2	-0.59	2	-0.42	1	-0.74	1	-0.46
Precipitation	9	-0.13	15	-0.07	7	-0.37	10	-0.17
R-SQUARE		0.68		0.68		0.83		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.

1 RESRAD Regression and Correlation output 05/20/02 08:08 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3.RAD

Coefficients for peak of mean dose time Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	2		2		2		2	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of H-3 in Contaminated Zone	4	-0.35	7	-0.21	4	-0.50	5	-0.24
Saturated zone hydraulic conductivity	1	-0.65	1	-0.47	2	-0.70	3	-0.41
Thickness of Unsaturated zone 1	3	-0.40	6	-0.24	5	-0.49	6	-0.23
Contaminated zone b parameter	25	-0.04	29	-0.02	10	-0.17	15	-0.07
Contaminated zone hydraulic conductivity	5	0.28	8	0.17	3	0.58	4	0.30
Evapotranspiration coefficient	7	-0.26	10	-0.15	6	-0.42	7	-0.19
Saturated zone hydraulic gradient	6	-0.26	9	-0.15	8	-0.36	11	-0.16
Hydraulic Conductivity of Unsaturated zone 1	13	0.09	18	0.05	9	0.17	14	0.07
Well pump intake depth	2	-0.62	2	-0.43	1	-0.74	2	-0.46
Precipitation	11	-0.11	16	-0.06	7	-0.37	10	-0.16
R-SQUARE		0.70		0.70		0.83		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 3, Repetition = 3 Sig	PCC Coeff	SRC 3 Sig	SRC Coeff	PRCC 3 Sig	PRCC Coeff	SRRC 3 Sig	SRRC Coeff
Density of contaminated zone	12	0.10	5	0.37	10	0.13	3	0.41
Kd of H-3 in Contaminated Zone	6	-0.27	11	-0.16	5	-0.38	9	-0.18
Saturated zone hydraulic conductivity	1	-0.66	1	-0.49	1	-0.73	1	-0.47
Thickness of Unsaturated zone 1	3	-0.38	8	-0.23	4	-0.39	8	-0.19
Contaminated zone hydraulic conductivity	4	0.29	9	0.17	3	0.52	4	0.27
Evapotranspiration coefficient	7	-0.23	14	-0.13	8	-0.32	12	-0.15
Saturated zone hydraulic gradient	5	-0.28	10	-0.16	6	-0.34	10	-0.16
Hydraulic Conductivity of Unsaturated zone 1	10	0.13	17	0.07	9	0.20	17	0.09
Well pump intake depth	2	-0.60	2	-0.42	2	-0.70	2	-0.44
Precipitation	9	-0.17	16	-0.10	7	-0.33	11	-0.15
R-SQUARE		0.70		0.70		0.80		0.80

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 1, Repetition = 1 Sig	PCC Coeff	SRC 1 Sig	SRC Coeff	PRCC 1 Sig	PRCC Coeff	SRRC 1 Sig	SRRC Coeff
Kd of H-3 in Contaminated Zone	5	-0.31	6	-0.18	5	-0.44	8	-0.19
Kd of H-3 in Saturated Zone	14	-0.06	21	-0.04	10	-0.19	17	-0.08
Saturated zone hydraulic conductivity	1	-0.65	1	-0.47	2	-0.74	2	-0.44
Thickness of Unsaturated zone 1	6	-0.28	7	-0.16	4	-0.45	7	-0.20
Contaminated zone hydraulic conductivity	4	0.33	4	0.20	3	0.64	4	0.33
Evapotranspiration coefficient	7	-0.18	10	-0.10	8	-0.30	13	-0.13
Saturated zone hydraulic gradient	3	-0.35	3	-0.21	6	-0.42	9	-0.18
Hydraulic Conductivity of Unsaturated zone 1	11	0.10	18	0.06	9	0.20	14	0.08
Well pump intake depth	2	-0.61	2	-0.43	1	-0.76	1	-0.46
Precipitation	8	-0.14	13	-0.08	7	-0.40	10	-0.17
R-SQUARE		0.69		0.69		0.84		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone

Input File : NEW H3.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2, Repetition = 2		SRC 2		PRCC 2		SRRC 2	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of contaminated zone	14	0.07	3	0.29	9	0.17	1	0.50
Kd of H-3 in Contaminated Zone	3	-0.34	6	-0.20	4	-0.50	5	-0.24
Saturated zone hydraulic conductivity	1	-0.67	1	-0.49	2	-0.72	3	-0.43
Thickness of Unsaturated zone 1	4	-0.33	7	-0.19	5	-0.46	6	-0.22
Contaminated zone b parameter	43	0.00	43	0.00	10	-0.14	16	-0.06
Contaminated zone hydraulic conductivity	6	0.25	9	0.15	3	0.58	4	0.29
Evapotranspiration coefficient	7	-0.21	11	-0.12	6	-0.40	8	-0.18
Saturated zone hydraulic gradient	5	-0.27	8	-0.15	7	-0.38	9	-0.17
Well pump intake depth	2	-0.61	2	-0.43	1	-0.75	2	-0.47
Precipitation	8	-0.14	12	-0.08	8	-0.38	10	-0.17
R-SQUARE		0.70		0.70		0.83		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.

1 RESRAD Regression and Correlation output 05/20/02 08:08 Page: Coef 6
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3, Repetition = 3		SRC 3		PRCC 3		SRRC 3	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of H-3 in Contaminated Zone	6	-0.26	13	-0.14	4	-0.39	8	-0.18
Saturated zone hydraulic conductivity	1	-0.69	1	-0.53	1	-0.77	1	-0.51
Thickness of Unsaturated zone 1	3	-0.32	9	-0.18	7	-0.34	12	-0.15
Contaminated zone b parameter	21	-0.06	24	-0.03	9	-0.14	16	-0.06
Contaminated zone hydraulic conductivity	4	0.30	10	0.18	3	0.53	5	0.26
Evapotranspiration coefficient	7	-0.24	14	-0.13	8	-0.32	15	-0.14
Saturated zone hydraulic gradient	5	-0.29	11	-0.17	6	-0.38	10	-0.17
Hydraulic Conductivity of Unsaturated zone 1	10	0.10	17	0.06	10	0.14	17	0.06
Well pump intake depth	2	-0.60	3	-0.41	2	-0.73	2	-0.45
Precipitation	8	-0.22	15	-0.12	5	-0.39	9	-0.17
R-SQUARE		0.71		0.71		0.83		0.83

StatMost for Windows Wednesday, May 29, 2002 11:00:43 AM

********** Statistics Report **********

Well Pump Intake Depth

Sample size (N)	5000
No. missing	0
Minimum	10.0056
Maximum	49.9944
Std deviation	11.5483
Mean	**30.0000**
Geometric mean	NaN
Quadratic mean	32.1456
Harmonic mean	24.8532
Sum	150000.0759
Absolute Sum	150000.0759
Median	29.9919
Percentiles:	
10	13.9940
25	**19.9981**
50	29.9919
75	**39.9983**
90	46.0044
Quartiles:	
First quartile:	19.9981
Second quartile:	29.9919
Third quartile:	39.9983
95.00% Confidence Interval:	
lower limit	29.6798
upper limit	30.3202

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 10:50:38 AM

********** Statistics Report **********

	Sat Zone Hydraulic Conductivity
Sample size (N)	5000
No. missing	0
Minimum	15.7156
Maximum	909.4060
Std deviation	258.0881
Mean	**462.5604**
Geometric mean	NaN
Quadratic mean	529.6775
Harmonic mean	219.8750
Sum	2312801.7788
Absolute Sum	2312801.7788
Median	462.3790
Percentiles:	
10	104.8508
25	**239.0330** ✓
50	462.3790
75	**686.0087**
90	820.2343
Quartiles:	
First quartile:	239.0330
Second quartile:	462.3790
Third quartile:	686.0087
95.00% Confidence Interval:	
lower limit	455.4049
upper limit	469.7158

********** The End **********

StatMost for Windows Monday, July 22, 2002 1:54:31 PM

********** Statistics Report **********

Contaminated Zone Hydraulic Conductivity

Sample size (N)	5000
Number missing	0
Minimum	0.3626
Maximum	25360.6000
Std deviation	4871.0196
Variance	23726831.4637
Mean	**2276.0861**
Geometric mean	NaN
Quadratic mean	5376.1189
Harmonic mean	4.0392
Sum	11380430.6218
Absolute Sum	11380430.6218
Median	95.6742
Percentiles:	
10	1.1031
25	**5.8886**
50	95.6742
75	**1559.9275**
90	8332.1360
Quartiles:	
First quartile:	5.8886
Second quartile:	95.6742
Third quartile:	1559.9275
95.00% Confidence Interval:	
lower limit	2141.0381
upper limit	2411.1341

********** The End **********

StatMost for Windows Friday, June 07, 2002 4:47:57 PM

********** Statistics Report **********

Kd of H in Contaminated Zone

Sample size (N)	5000
No. missing	0
Minimum	0.0098
Maximum	0.3675
Std deviation	0.0363
Mean	**0.0682**
Geometric mean	NaN
Quadratic mean	0.0773
Harmonic mean	0.0531
Sum	341.1047
Absolute Sum	341.1047
Median	0.0602
Percentiles:	
10	0.0317
25	**0.0430**
50	0.0602
75	**0.0844**
90	0.1143
Quartiles:	
First quartile:	0.0430
Second quartile:	0.0602
Third quartile:	0.0844
95.00% Confidence Interval:	
lower limit	0.0672
upper limit	0.0692

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 4:01:05 PM

********** Statistics Report **********

Thickness of Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	7.02000000E-005
Maximum	0.4999
Std deviation	0.1444
Mean	**0.2500**
Geometric mean	NaN
Quadratic mean	0.2887
Harmonic mean	0.0523
Sum	1250.0006
Absolute Sum	1250.0006
Median	0.2499
Percentiles:	
10	0.0499
25	**0.1250** ✓
50	0.2499
75	**0.3750**
90	0.4501
Quartiles:	
First quartile:	0.1250
Second quartile:	0.2499
Third quartile:	0.3750
95.00% Confidence Interval:	
lower limit	0.2460
upper limit	0.2540

********** The End **********

StatMost for Windows Friday, June 07, 2002 11:21:26 AM

********** Statistics Report **********

Sat Zone Hydraulic Gradient

Sample size (N)	5000
No. missing	0
Minimum	0.0130
Maximum	0.0300
Std deviation	0.0049
Mean	**0.0215**
Geometric mean	NaN
Quadratic mean	0.0221
Harmonic mean	0.0203
Sum	107.5012
Absolute Sum	107.5012
Median	0.0215
Percentiles:	
10	0.0147
25	**0.0172** ✓
50	0.0215
75	**0.0258**
90	0.0283
Quartiles:	
First quartile:	0.0172
Second quartile:	0.0215
Third quartile:	0.0258
95.00% Confidence Interval:	
lower limit	0.0214
upper limit	0.0216

********** The End **********

StatMost for Windows Friday, June 07, 2002 1:04:34 PM

********** Statistics Report **********

Precipitation

Sample size (N)	5000
No. missing	0
Minimum	0.6881
Maximum	1.3269
Std deviation	0.1845
Mean	**1.0075**
Geometric mean	0.9902
Quadratic mean	1.0242
Harmonic mean	0.9728
Sum	5037.5017
Absolute Sum	5037.5017
Median	1.0074
Percentiles:	
10	0.7518
25	**0.8477**
50	1.0074
75	**1.1672**
90	1.2632
Quartiles:	
First quartile:	0.8477
Second quartile:	1.0074
Third quartile:	1.1672
95.00% Confidence Interval:	
lower limit	1.0024
upper limit	1.0126

********** The End **********

StatMost for Windows Friday, June 07, 2002 12:57:32 PM

********** Statistics Report **********

Evapotranspiration Coefficient

Sample size (N)	5000
No. missing	0
Minimum	0.5000
Maximum	0.6700
Std deviation	0.0491
Mean	**0.5850**
Geometric mean	0.8617
Quadratic mean	0.5871
Harmonic mean	0.5809
Sum	2925.0004
Absolute Sum	2925.0004
Median	0.5850
Percentiles:	
10	0.5170
25	**0.5425** ✓
50	0.5850
75	**0.6275**
90	0.6530
Quartiles:	
First quartile:	0.5425
Second quartile:	0.5850
Third quartile:	0.6275
95.00% Confidence Interval:	
lower limit	0.5836
upper limit	0.5864

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
H-3 1.000E+00

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 4.000E+00 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	6.418E-03	1.423E-02	1.254E-03	2.770E-08	5.213E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00
M(t):	1.604E-03	3.557E-03	3.136E-04	6.926E-09	1.303E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Maximum TDOSE(t): **1.431E-02 mrem/yr at t = 0.913 ± 0.002 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.135E-01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.135E-01 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
H-3	1.431E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.431E-02	1.0000
Total	1.431E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.431E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Branch Fraction*	t=	DSR(j,t) (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
H-3	H-3	1.000E+00		6.418E-03	1.423E-02	1.254E-03	2.770E-08	5.213E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life 6 0.5 yr) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 4.000E+00 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
H-3	6.233E+02	2.811E+02	3.189E+03	1.444E+08	*9.594E+15	*9.594E+15	*9.594E+15	*9.594E+15	*9.594E+15

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.913 ñ 0.002 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
H-3	**1.000E+00**	**0.913 ± 0.002**	**1.431E-02**	**2.795E+02**	**1.431E-02**	**2.795E+02**

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	t=	DOSE(j,t), mrem/yr 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
H-3	H-3	1.000E+00		6.418E-03	1.423E-02	1.254E-03	2.770E-08	5.213E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	t=	S(j,t), pCi/g 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
H-3	H-3	1.000E+00		1.000E+00	2.169E-01	1.018E-02	2.244E-07	4.189E-24	0.000E+00	0.000E+00	0.000E+00	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.
RESCALC.EXE execution time = 1.43 seconds

1 RESRAD Regression and Correlation output 05/20/02 10:10
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW H3 DW.RAD**

Sensitive Parameter Summary Table

Saturated zone hydraulic conductivity (-,-,-,-,-,-)
Well pump intake depth (-,-,-,-,-,-)
Saturated zone hydraulic gradient (-,-,-,-,-,-)
Evapotranspiration coefficient (-,-,-,-,-,-)
Thickness of Unsaturated zone 1 (-,-,-,-)
Precipitation (+,+,+,+)
Contaminated zone hydraulic conductivity (+,+)
Hydraulic Conductivity of Unsaturated zone 1 (+,+)

Probabilistic results summary : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Z-one
File: NEW H3 DW.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	0.000E+00	7.484E-03
2	0.000E+00	7.345E-03
3	0.000E+00	7.535E-03

1 RESRAD Regression and Correlation output 05/20/02 10:10 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3 DW.RAD

Coefficients for peak of mean dose time Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	1		1		1		1	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of H-3 in Unsaturated Zone 1	42	0.00	42	0.00	10	-0.15	15	-0.06
Kd of H-3 in Saturated Zone	20	-0.05	26	-0.03	9	-0.20	14	-0.08
Saturated zone hydraulic conductivity	1	-0.64	1	-0.48	2	-0.77	2	-0.48
Thickness of Unsaturated zone 1	4	-0.33	5	-0.20	3	-0.58	4	-0.29
Contaminated zone hydraulic conductivity	7	0.20	8	0.12	7	0.32	11	0.14
Evapotranspiration coefficient	6	-0.20	10	-0.12	5	-0.44	8	-0.20
Saturated zone hydraulic gradient	3	-0.33	4	-0.20	4	-0.45	7	-0.20
Hydraulic Conductivity of Unsaturated zone 1	9	0.11	16	0.07	8	0.26	13	0.11
Well pump intake depth	2	-0.62	2	-0.45	1	-0.80	1	-0.54
Precipitation	5	0.20	9	0.12	6	0.40	9	0.18
R-SQUARE		0.68		0.68		0.84		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.

1 RESRAD Regression and Correlation output 05/20/02 10:10 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3 DW.RAD

Coefficients for peak of mean dose time Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	2		2		2		2	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of H-3 in Contaminated Zone	7	-0.16	10	-0.09	8	-0.23	12	-0.09
Kd of H-3 in Unsaturated Zone 1	15	-0.09	19	-0.05	9	-0.22	13	-0.09
Saturated zone hydraulic conductivity	1	-0.67	1	-0.50	2	-0.76	2	-0.47
Thickness of Unsaturated zone 1	3	-0.40	3	-0.24	3	-0.58	3	-0.29
Contaminated zone hydraulic conductivity	8	0.12	13	0.07	10	0.20	14	0.08
Evapotranspiration coefficient	4	-0.29	6	-0.17	4	-0.49	6	-0.22
Saturated zone hydraulic gradient	5	-0.27	7	-0.16	5	-0.46	8	-0.21
Hydraulic Conductivity of Unsaturated zone 1	11	0.11	15	0.06	7	0.23	11	0.10
Well pump intake depth	2	-0.64	2	-0.47	1	-0.80	1	-0.54
Precipitation	6	0.25	8	0.14	6	0.37	10	0.16

R-SQUARE	0.70	0.70	0.84	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.

1 RESRAD Regression and Correlation output 05/20/02 10:10 Page: Coef 3
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3 DW.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Sig	PCC Repetition = 3 Coeff	SRC Coefficient = 3 Sig	SRC Repetition = 3 Coeff	PRCC Coefficient = 3 Sig	PRCC Repetition = 3 Coeff	SRRC Coefficient = 3 Sig	SRRC Repetition = 3 Coeff
Kd of H-3 in Contaminated Zone	11	-0.09	18	-0.05	10	-0.15	17	-0.06
Kd of H-3 in Unsaturated Zone 1	34	0.03	36	0.02	9	-0.16	16	-0.07
Saturated zone hydraulic conductivity	1	-0.68	1	-0.53	1	-0.79	1	-0.53
Thickness of Unsaturated zone 1	3	-0.39	7	-0.24	3	-0.53	5	-0.26
Contaminated zone hydraulic conductivity	8	0.14	14	0.08	8	0.21	14	0.09
Evapotranspiration coefficient	5	-0.26	10	-0.15	5	-0.40	9	-0.18
Saturated zone hydraulic gradient	4	-0.30	8	-0.17	4	-0.46	8	-0.22
Hydraulic Conductivity of Unsaturated zone 1	9	0.12	15	0.07	7	0.27	12	0.11
Well pump intake depth	2	-0.62	2	-0.45	2	-0.78	2	-0.52
Precipitation	7	0.18	13	0.10	6	0.39	11	0.17
R-SQUARE		0.69		0.69		0.83		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.

1 RESRAD Regression and Correlation output 05/20/02 10:10 Page: Coef 4
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 1 Sig	PCC Repetition = 1 Coeff	SRC Coefficient = 1 Sig	SRC Repetition = 1 Coeff	PRCC Coefficient = 1 Sig	PRCC Repetition = 1 Coeff	SRRC Coefficient = 1 Sig	SRRC Repetition = 1 Coeff
Kd of H-3 in Unsaturated Zone 1	22	0.03	25	0.02	9	-0.11	15	-0.03
Saturated zone hydraulic conductivity	1	-0.78	1	-0.65	1	-0.92	1	-0.73
Thickness of Unsaturated zone 1	11	-0.08	16	-0.04	7	-0.20	12	-0.06
Contaminated zone hydraulic conductivity	4	0.14	9	0.08	5	0.30	9	0.09
Evapotranspiration coefficient	5	-0.14	10	-0.08	4	-0.37	7	-0.12
Saturated zone hydraulic gradient	3	-0.42	3	-0.25	3	-0.65	4	-0.26
Density of Unsaturated zone 1	21	-0.03	6	-0.14	10	-0.11	5	-0.25
Total Porosity of Unsaturated zone 1	24	0.03	7	0.13	8	0.12	3	0.29
Well pump intake depth	2	-0.62	2	-0.42	2	-0.86	2	-0.51
Precipitation	8	0.10	13	0.05	6	0.26	10	0.08
R-SQUARE		0.73		0.73		0.91		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2 Repetition = Sig	PCC Coeff	SRC Coefficient = 2 Repetition = Sig	SRC Coeff	PRCC Coefficient = 2 Repetition = Sig	PRCC Coeff	SRRC Coefficient = 2 Repetition = Sig	SRRC Coeff
Density of saturated zone	20	0.05	5	0.17	10	0.12	3	0.27
Kd of H-3 in Contaminated Zone	7	-0.12	10	-0.07	8	-0.18	14	-0.06
Saturated zone hydraulic conductivity	1	-0.77	1	-0.66	1	-0.92	1	-0.71
Thickness of Unsaturated zone 1	6	-0.13	9	-0.07	5	-0.29	10	-0.09
Contaminated zone hydraulic conductivity	23	0.04	26	0.02	7	0.20	13	0.06
Evapotranspiration coefficient	4	-0.17	8	-0.10	4	-0.44	6	-0.15
Saturated zone hydraulic gradient	3	-0.35	4	-0.20	3	-0.66	4	-0.26
Well pump intake depth	2	-0.63	2	-0.43	2	-0.87	2	-0.52
Precipitation	18	0.05	22	0.03	6	0.20	12	0.06
Field Capacity of Unsaturated zone 1	24	0.04	28	0.02	9	0.14	15	0.04
R-SQUARE		0.72		0.72		0.91		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW H3 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Repetition = Sig	PCC Coeff	SRC Coefficient = 3 Repetition = Sig	SRC Coeff	PRCC Coefficient = 3 Repetition = Sig	PRCC Coeff	SRRC Coefficient = 3 Repetition = Sig	SRRC Coeff
Kd of H-3 in Contaminated Zone	25	-0.03	28	-0.02	7	-0.15	14	-0.05
Kd of H-3 in Saturated Zone	13	-0.08	18	-0.05	10	-0.12	17	-0.03
Saturated zone hydraulic conductivity	1	-0.76	1	-0.66	1	-0.93	1	-0.73
Thickness of Unsaturated zone 1	5	-0.13	12	-0.07	8	-0.14	15	-0.04
Contaminated zone hydraulic conductivity	7	0.11	13	0.06	6	0.18	13	0.05
Evapotranspiration coefficient	4	-0.24	9	-0.13	4	-0.45	5	-0.15
Runoff coefficient	36	-0.01	37	-0.01	9	-0.13	16	-0.04
Saturated zone hydraulic gradient	3	-0.29	8	-0.17	3	-0.66	3	-0.25
Well pump intake depth	2	-0.58	3	-0.40	2	-0.87	2	-0.52
Precipitation	41	0.01	41	0.00	5	0.20	12	0.06
R-SQUARE		0.70		0.70		0.92		0.92

-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.

StatMost for Windows Wednesday, May 29, 2002 10:50:38 AM

********** Statistics Report **********

	Sat Zone Hydraulic Conductivity
Sample size (N)	5000
No. missing	0
Minimum	15.7156
Maximum	909.4060
Std deviation	258.0881
Mean	**462.5604**
Geometric mean	NaN
Quadratic mean	529.6775
Harmonic mean	219.8750
Sum	2312801.7788
Absolute Sum	2312801.7788
Median	462.3790
Percentiles:	
10	104.8508
25	**239.0330** ✓
50	462.3790
75	**686.0087**
90	820.2343
Quartiles:	
First quartile:	239.0330
Second quartile:	462.3790
Third quartile:	686.0087
95.00% Confidence Interval:	
lower limit	455.4049
upper limit	469.7158

********** The End **********

StatMost for Windows Wednesday, May 29, 2002 11:00:43 AM

********** Statistics Report **********

Well Pump Intake Depth

Sample size (N)	5000
No. missing	0
Minimum	10.0056
Maximum	49.9944
Std deviation	11.5483
Mean	**30.0000**
Geometric mean	NaN
Quadratic mean	32.1456
Harmonic mean	24.8532
Sum	150000.0759
Absolute Sum	150000.0759
Median	29.9919
Percentiles:	
10	13.9940
25	**19.9981** ✓
50	29.9919
75	**39.9983**
90	46.0044
Quartiles:	
First quartile:	19.9981
Second quartile:	29.9919
Third quartile:	39.9983
95.00% Confidence Interval:	
lower limit	29.6798
upper limit	30.3202

********** The End **********

StatMost for Windows Friday, June 07, 2002 11:21:26 AM

********** Statistics Report **********

Sat Zone Hydraulic Gradient

Sample size (N)	5000
No. missing	0
Minimum	0.0130
Maximum	0.0300
Std deviation	0.0049
Mean	**0.0215**
Geometric mean	NaN
Quadratic mean	0.0221
Harmonic mean	0.0203
Sum	107.5012
Absolute Sum	107.5012
Median	0.0215
Percentiles:	
10	0.0147
25	**0.0172** ✓
50	0.0215
75	**0.0258**
90	0.0283
Quartiles:	
First quartile:	0.0172
Second quartile:	0.0215
Third quartile:	0.0258
95.00% Confidence Interval:	
lower limit	0.0214
upper limit	0.0216

********** The End **********

StatMost for Windows Friday, June 07, 2002 12:57:32 PM

********** Statistics Report **********

Evapotranspiration Coefficient

Sample size (N)	5000
No. missing	0
Minimum	0.5000
Maximum	0.6700
Std deviation	0.0491
Mean	**0.5850**
Geometric mean	0.8617
Quadratic mean	0.5871
Harmonic mean	0.5809
Sum	2925.0004
Absolute Sum	2925.0004
Median	0.5850
Percentiles:	
10	0.5170
25	**0.5425**
50	0.5850
75	**0.6275**
90	0.6530
Quartiles:	
First quartile:	0.5425
Second quartile:	0.5850
Third quartile:	0.6275
95.00% Confidence Interval:	
lower limit	0.5836
upper limit	0.5864

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 4:01:05 PM

********** Statistics Report **********

Thickness of Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	7.02000000E-005
Maximum	0.4999
Std deviation	0.1444
Mean	**0.2500**
Geometric mean	NaN
Quadratic mean	0.2887
Harmonic mean	0.0523
Sum	1250.0006
Absolute Sum	1250.0006
Median	0.2499
Percentiles:	
10	0.0499
25	**0.1250** ✓
50	0.2499
75	**0.3750**
90	0.4501
Quartiles:	
First quartile:	0.1250
Second quartile:	0.2499
Third quartile:	0.3750
95.00% Confidence Interval:	
lower limit	0.2460
upper limit	0.2540

********** The End **********

StatMost for Windows Friday, June 07, 2002 1:04:34 PM

********** Statistics Report **********

Precipitation

Sample size (N)	5000
No. missing	0
Minimum	0.6881
Maximum	1.3269
Std deviation	0.1845
Mean	**1.0075**
Geometric mean	0.9902
Quadratic mean	1.0242
Harmonic mean	0.9728
Sum	5037.5017
Absolute Sum	5037.5017
Median	1.0074
Percentiles:	
10	0.7518
25	**0.8477**
50	1.0074
75	**1.1672** ✓
90	1.2632
Quartiles:	
First quartile:	0.8477
Second quartile:	1.0074
Third quartile:	1.1672
95.00% Confidence Interval:	
lower limit	1.0024
upper limit	1.0126

********** The End **********

StatMost for Windows Monday, July 22, 2002 1:54:31 PM

********** Statistics Report **********

Contaminated Zone Hydraulic Conductivity

Sample size (N)	5000
Number missing	0
Minimum	0.3626
Maximum	25360.6000
Std deviation	4871.0196
Variance	23726831.4637
Mean	**2276.0861**
Geometric mean	NaN
Quadratic mean	5376.1189
Harmonic mean	4.0392
Sum	11380430.6218
Absolute Sum	11380430.6218
Median	95.6742
Percentiles:	
10	1.1031
25	**5.8886**
50	95.6742
75	**1559.9275**
90	8332.1360
Quartiles:	
First quartile:	5.8886
Second quartile:	95.6742
Third quartile:	1559.9275
95.00% Confidence Interval:	
lower limit	2141.0381
upper limit	2411.1341

********** The End **********

StatMost for Windows Saturday, June 08, 2002 7:48:12 AM

********** Statistics Report **********

Hydraulic Conductivity of Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	0.3626
Maximum	25360.6000
Std deviation	4871.0196
Mean	**2276.0861** ✓
Geometric mean	NaN
Quadratic mean	5376.1189
Harmonic mean	4.0392
Sum	11380430.6218
Absolute Sum	11380430.6218
Median	95.6742
Percentiles:	
10	1.1031
25	**5.8886**
50	95.6742
75	**1559.9275**
90	8332.1360
Quartiles:	
First quartile:	5.8886
Second quartile:	95.6742
Third quartile:	1559.9275
95.00% Confidence Interval:	
lower limit	2141.0381
upper limit	2411.1341

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
Ni-63 1.000E+00

0

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	3.344E-02	3.319E-02	3.271E-02	3.106E-02	2.583E-02	1.105E-02	3.640E-03	1.557E-05	0.000E+00
M(t):	1.338E-03	1.328E-03	1.308E-03	1.242E-03	1.033E-03	4.422E-04	1.456E-04	6.230E-07	0.000E+00

0Maximum TDOSE(t): **3.344E-02 mrem/yr at t = 0.000E+00 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ni-63	0.000E+00	0.0000	1.792E-07	0.0000	0.000E+00	0.0000	7.075E-03	0.2116	2.430E-03	0.0727	2.393E-02	0.7155	8.189E-06	0.0002
Total	0.000E+00	0.0000	1.792E-07	0.0000	0.000E+00	0.0000	7.075E-03	0.2116	2.430E-03	0.0727	2.393E-02	0.7155	8.189E-06	0.0002

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

0

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.344E-02	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.344E-02	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

0

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ni-63	0.000E+00	0.0000	1.779E-07	0.0000	0.000E+00	0.0000	7.023E-03	0.2116	2.412E-03	0.0727	2.375E-02	0.7155	8.129E-06	0.0002

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Branch Fraction*	DSR(j,t) (mrem/yr)/(pCi/g) t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Ni-63	Ni-63	1.000E+00	3.344E-02	3.319E-02	3.271E-02	3.106E-02	2.583E-02	1.105E-02	3.640E-03	1.557E-05	9.530E-38

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life 6 0.5 yr) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Ni-63	7.476E+02	7.531E+02	7.643E+02	8.049E+02	9.679E+02	2.262E+03	6.867E+03	1.605E+06	*5.916E+13

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Ni-63	1.000E+00	0.000E+00	3.344E-02	7.476E+02	3.344E-02	7.476E+02

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Ni-63	Ni-63	1.000E+00	3.344E-02	3.319E-02	3.271E-02	3.106E-02	2.583E-02	1.105E-02	3.640E-03	1.557E-05	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	BRF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Ni-63	Ni-63	1.000E+00	1.000E+00	9.926E-01	9.781E-01	9.289E-01	7.724E-01	3.306E-01	1.093E-01	6.238E-04	8.929E-33

BRF(i) is the branch fraction of the parent nuclide.

1 RESRAD Regression and Correlation output 05/20/02 08:53
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW NI63.RAD**

Sensitive Parameter Summary Table

Plant transfer factor for Ni (+,+,+,+,+,+)
Milk transfer factor for Ni (+,+,+,+,+,+)
Meat transfer factor for Ni (+,+,+,+,+,+)

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	0.000E+00	2.363E-02
2	0.000E+00	2.472E-02
3	0.000E+00	2.375E-02

1 RESRAD Regression and Correlation output 05/20/02 08:53 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63.RAD

Coefficients for peak of mean dose time Dose

	PCC		SRC		PRCC		SRRC	
Coefficient =	1		1		1		1	
Repetition =								
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Ni-63 in Saturated Zone	39	-0.01	41	0.00	7	-0.09	14	-0.02
Contaminated zone total porosity	42	0.00	36	0.01	9	0.07	4	0.09
Wet weight crop yield of fruit, grain and non-leafy vegetables	11	-0.06	15	-0.02	6	0.10	13	0.02
Humidity in air	14	-0.05	19	-0.02	4	0.11	11	0.02
Inhalation rate	23	-0.03	29	-0.01	8	0.07	15	0.01
Contaminated zone field capacity	15	-0.05	20	-0.02	5	0.11	12	0.02
Well pumping rate	12	-0.06	16	-0.02	10	0.07	16	0.01
Plant transfer factor for Ni	1	0.90	1	0.82	1	0.98	1	0.86
Meat transfer factor for Ni	3	0.12	6	0.05	3	0.42	5	0.09
Milk transfer factor for Ni	2	0.70	2	0.39	2	0.93	2	0.47
R-SQUARE		0.85		0.85		0.97		0.97

-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.

1 RESRAD Regression and Correlation output 05/20/02 08:53 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63.RAD

Coefficients for peak of mean dose time Dose

	PCC		SRC		PRCC		SRRC	
Coefficient =	2		2		2		2	
Repetition =								
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Ni-63 in Contaminated Zone	31	0.02	32	0.01	10	0.07	15	0.01
Runoff coefficient	7	0.07	14	0.03	5	-0.11	11	-0.02
Effective Porosity of Unsaturated zone 1	43	0.00	34	0.00	8	-0.07	3	-0.11
Mass loading for inhalation	16	0.03	23	0.01	7	-0.08	13	-0.02
Precipitation	30	-0.02	31	-0.01	4	-0.16	9	-0.03
Well pumping rate	4	-0.10	10	-0.04	6	0.09	12	0.02
Field Capacity of Unsaturated zone 1	14	-0.04	21	-0.01	9	-0.07	14	-0.01
Plant transfer factor for Ni	1	0.92	1	0.88	1	0.97	1	0.85
Meat transfer factor for Ni	19	0.03	24	0.01	3	0.41	4	0.09
Milk transfer factor for Ni	2	0.50	2	0.21	2	0.92	2	0.47

R-SQUARE		0.87		0.87		0.96		0.96

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 3, Repetition =		SRC 3		PRCC 3		SRRC 3	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Depth of roots	18	-0.03	24	-0.01	6	0.07	9	0.01
Depth of soil mixing layer	7	-0.06	16	-0.02	4	0.11	7	0.02
Indoor dust filtration factor	12	-0.04	20	-0.02	7	0.06	10	0.01
Density of Unsaturated zone 1	30	0.02	9	0.06	10	0.06	3	0.10
Inhalation rate	11	-0.05	19	-0.02	8	0.06	11	0.01
Contaminated zone field capacity	35	0.01	35	0.01	9	-0.06	13	-0.01
Well pumping rate	4	0.09	11	0.03	5	-0.10	8	-0.02
Plant transfer factor for Ni	1	0.91	1	0.83	1	0.97	1	0.85
Meat transfer factor for Ni	3	0.18	7	0.07	3	0.28	5	0.06
Milk transfer factor for Ni	2	0.71	2	0.38	2	0.92	2	0.48
R-SQUARE		0.86		0.86		0.96		0.96

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 1, Repetition =		SRC 1		PRCC 1		SRRC 1	
	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Ni-63 in Saturated Zone	39	-0.01	41	0.00	7	-0.09	14	-0.02
Contaminated zone total porosity	42	0.00	36	0.01	9	0.07	4	0.09
Wet weight crop yield of fruit, grain and non-leafy vegetables	11	-0.06	15	-0.02	6	0.10	13	0.02
Humidity in air	14	-0.05	19	-0.02	4	0.11	11	0.02
Inhalation rate	23	-0.03	29	-0.01	8	0.07	15	0.01
Contaminated zone field capacity	15	-0.05	20	-0.02	5	0.11	12	0.02
Well pumping rate	12	-0.06	16	-0.02	10	0.07	16	0.01
Plant transfer factor for Ni	1	0.90	1	0.82	1	0.98	1	0.86
Meat transfer factor for Ni	3	0.12	6	0.05	3	0.42	5	0.09
Milk transfer factor for Ni	2	0.70	2	0.39	2	0.93	2	0.47
R-SQUARE		0.85		0.85		0.97		0.97

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2, Repetition = Sig	PCC 2 Coeff	SRC 2 Sig	SRC 2 Coeff	PRCC 2 Sig	PRCC 2 Coeff	SRRC 2 Sig	SRRC 2 Coeff
Kd of Ni-63 in Contaminated Zone	31	0.02	32	0.01	10	0.06	15	0.01
Runoff coefficient	7	0.07	14	0.03	5	-0.11	11	-0.02
Effective Porosity of Unsaturated zone 1	43	0.00	34	0.00	8	-0.07	3	-0.11
Mass loading for inhalation	16	0.03	23	0.01	7	-0.08	13	-0.02
Precipitation	30	-0.02	31	-0.01	4	-0.16	9	-0.03
Well pumping rate	4	-0.10	10	-0.04	6	0.09	12	0.02
Field Capacity of Unsaturated zone 1	14	-0.04	21	-0.01	9	-0.07	14	-0.01
Plant transfer factor for Ni	1	0.92	1	0.88	1	0.97	1	0.85
Meat transfer factor for Ni	19	0.03	24	0.01	3	0.41	4	0.09
Milk transfer factor for Ni	2	0.50	2	0.21	2	0.92	2	0.47
R-SQUARE		0.87		0.87		0.96		0.96

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3, Repetition = Sig	PCC 3 Coeff	SRC 3 Sig	SRC 3 Coeff	PRCC 3 Sig	PRCC 3 Coeff	SRRC 3 Sig	SRRC 3 Coeff
Depth of roots	18	-0.03	24	-0.01	6	0.07	9	0.01
Depth of soil mixing layer	7	-0.06	16	-0.02	4	0.11	7	0.02
Indoor dust filtration factor	12	-0.04	20	-0.02	7	0.06	10	0.01
Density of Unsaturated zone 1	30	0.02	9	0.06	9	0.06	3	0.10
Inhalation rate	11	-0.05	19	-0.02	8	0.06	11	0.01
Contaminated zone field capacity	35	0.01	35	0.01	10	-0.06	13	-0.01
Well pumping rate	4	0.09	11	0.03	5	-0.10	8	-0.02
Plant transfer factor for Ni	1	0.91	1	0.83	1	0.97	1	0.85
Meat transfer factor for Ni	3	0.18	7	0.07	3	0.28	5	0.06
Milk transfer factor for Ni	2	0.71	2	0.38	2	0.92	2	0.48
R-SQUARE		0.86		0.86		0.96		0.96

-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.

StatMost for Windows Saturday, June 08, 2002 8:34:58 AM

********** Statistics Report **********

Plant Transfer Factor for Ni

Sample size (N)	5000
No. missing	0
Minimum	0.0018
Maximum	1.3702
Std deviation	0.0863
Mean	**0.0757**
Geometric mean	NaN
Quadratic mean	0.1149
Harmonic mean	0.0328
Sum	378.7305
Absolute Sum	378.7305
Median	0.0497
Percentiles:	
10	0.0154
25	**0.0268**
50	0.0497
75	**0.0924** ✓
90	0.1612
Quartiles:	
First quartile:	0.0268
Second quartile:	0.0497
Third quartile:	0.0924
95.00% Confidence Interval:	
lower limit	0.0734
upper limit	0.0781

********** The End **********

StatMost for Windows Saturday, June 08, 2002 8:46:14 AM

********** Statistics Report **********

Milk Transfer Factor for Ni

Sample size (N)	5000
No. missing	0
Minimum	0.0016
Maximum	0.2460
Std deviation	0.0200
Mean	**0.0255**
Geometric mean	NaN
Quadratic mean	0.0324
Harmonic mean	0.0158
Sum	127.4092
Absolute Sum	127.4092
Median	0.0200
Percentiles:	
10	0.0082
25	**0.0126**
50	0.0200
75	**0.0320** ✓
90	0.0488
Quartiles:	
First quartile:	0.0126
Second quartile:	0.0200
Third quartile:	0.0320
95.00% Confidence Interval:	
lower limit	0.0249
upper limit	0.0260

********** The End **********

StatMost for Windows Saturday, June 08, 2002 8:40:26 AM

********** Statistics Report **********

Meat Transfer Factor for Ni

Sample size (N)	5000
No. missing	0
Minimum	0.0002
Maximum	0.1374
Std deviation	0.0087
Mean	**0.0076**
Geometric mean	NaN
Quadratic mean	0.0115
Harmonic mean	0.0033
Sum	37.9718
Absolute Sum	37.9718
Median	0.0050
Percentiles:	
10	0.0015
25	**0.0027**
50	0.0050
75	**0.0093** ✓
90	0.0162
Quartiles:	
First quartile:	0.0027
Second quartile:	0.0050
Third quartile:	0.0093
95.00% Confidence Interval:	
lower limit	0.0074
upper limit	0.0078

********** The End **********

Contaminated Zone Dimensions
Area: 10000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g
Ni-63 1.000E+00

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 4.000E+00 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.781E-09	0.000E+00
M(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.445E-09	0.000E+00

Maximum TDOSE(t): **2.073E-08 mrem/yr at t = 661 ± 1 years**

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 6.612E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 6.612E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ni-63	2.073E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.073E-08	1.0000
Total	2.073E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.073E-08	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

DSR(j,t) (mrem/yr)/(pCı/g)

Parent (i)	Product (j)	Branch Fraction*	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Ni-63	Ni-63	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.781E-09	2.851E-38

*Branch Fraction is the cumulative factor for the j't principal radionuclide daughter: CUMBRF(j) = BRF(1)*BRF(2)* ... BRF(j).
The DSR includes contributions from associated (half-life ó 0.5 yr) daughters.

Single Radionuclide Soil Guidelines G(i,t) ın pCi/g
Basic Radiation Dose Limit = 4.000E+00 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Ni-63	*5.916E+13	*5.916E+13	*5.916E+13	*5.916E+13	*5.916E+13	*5.916E+13	*5.916E+13	6.919E+08	*5.916E+13

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 661 ñ 1 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Ni-63	**1.000E+00**	**661 ± 1**	**2.073E-08**	**1.930E+08**	**2.073E-08**	**1.930E+08**

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

DOSE(j,t), mrem/yr

Nuclide (j)	Parent (i)	BRF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Ni-63	Ni-63	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.781E-09	0.000E+00

BRF(i) is the branch fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

S(j,t), pCi/g

Nuclide (ȷ)	Parent (i)	BRF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.500E+01	1.500E+02	3.000E+02	1.000E+03	1.000E+04
Ni-63	Ni-63	1.000E+00	1.000E+00	9.926E-01	9.780E-01	9.284E-01	7.710E-01	3.280E-01	1.076E-01	5.925E-04	5.334E-33

BRF(i) is the branch fraction of the parent nuclide.
ORESCALC.EXE execution time = 1.20 seconds

1 RESRAD Regression and Correlation output 05/20/02 10:13
Title: SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : **NEW NI63 DW.RAD**

Sensitive Parameter Summary Table

Kd of Ni-63 in Unsaturated Zone 1 (-,-,-,-,-,-)
Thickness of Unsaturated zone 1 (-,-,-,-,-,-)
Kd of Ni-63 in Contaminated Zone (-,-,-)
Kd of Ni-63 in Saturated Zone (-,-,-,-)
Precipitation (+)
Evapotranspiration coefficient (-)

Probabilistic results summary : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Z-one
File: NEW NI63 DW.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose Years	Peak mean dose mrem/yr
1	1.738E+02	9.085E-06
2	1.738E+02	1.202E-05
3	1.500E+02	9.439E-06

1 RESRAD Regression and Correlation output 05/20/02 10:13 Page: Coef 1
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63 DW.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 1 Repetition = Sig	PCC 1 Coeff	SRC 1 Sig	SRC 1 Coeff	PRCC 1 Sig	PRCC 1 Coeff	SRRC 1 Sig	SRRC 1 Coeff
Kd of Ni-63 in Contaminated Zone	8	-0.08	11	-0.08	3	-0.17	8	-0.10
Kd of Ni-63 in Unsaturated Zone 1	9	-0.08	12	-0.08	1	-0.74	1	-0.65
Kd of Ni-63 in Saturated Zone	10	-0.07	13	-0.06	5	-0.14	10	-0.08
Thickness of Unsaturated zone 1	2	-0.12	7	-0.11	2	-0.56	2	-0.41
Contaminated zone erosion rate	12	-0.06	17	-0.06	7	-0.12	13	-0.07
Evapotranspiration coefficient	43	0.00	43	0.00	4	-0.15	9	-0.09
Runoff coefficient	23	0.03	27	0.03	9	-0.10	16	-0.06
Saturated zone hydraulic gradient	29	0.02	32	0.02	8	0.11	14	0.07
b Parameter of Unsaturated zone 1	18	0.04	23	0.04	10	0.07	18	0.04
Precipitation	15	0.04	20	0.04	6	0.14	11	0.08
R-SQUARE		0.11		0.11		0.65		0.65

-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.

1 RESRAD Regression and Correlation output 05/20/02 10:13 Page: Coef 2
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63 DW.RAD

Coefficients for peak of mean dose time Dose

Description of Probabilistic Variable	PCC Coefficient = 2 Repetition = Sig	PCC 2 Coeff	SRC 2 Sig	SRC 2 Coeff	PRCC 2 Sig	PRCC 2 Coeff	SRRC 2 Sig	SRRC 2 Coeff
Density of contaminated zone	30	0.02	6	0.15	8	-0.08	2	-0.37
Kd of Ni-63 in Contaminated Zone	14	-0.06	18	-0.06	4	-0.18	10	-0.11
Kd of Ni-63 in Unsaturated Zone 1	9	-0.06	15	-0.06	1	-0.73	1	-0.65
Kd of Ni-63 in Saturated Zone	15	-0.06	21	-0.05	7	-0.10	14	-0.06
Thickness of Unsaturated zone 1	1	-0.09	8	-0.08	2	-0.50	4	-0.36
Contaminated zone total porosity	25	-0.03	5	-0.20	9	0.08	3	0.36
Evapotranspiration coefficient	13	-0.06	20	-0.06	6	-0.12	13	-0.07
Effective Porosity of Unsaturated zone 1	7	0.06	1	0.48	10	-0.07	5	-0.35
Well pump intake depth	28	-0.03	30	-0.03	5	-0.14	12	-0.09
Precipitation	11	0.06	17	0.06	3	0.19	9	0.12
R-SQUARE		0.09		0.09		0.62		0.62

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63 DW.RAD

Coefficients for peak of mean dose time Dose

	PCC		SRC		PRCC		SRRC	
Coefficient =								
Repetition =	3		3		3		3	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Kd of Ni-63 in Contaminated Zone	7	-0.07	8	-0.07	4	-0.18	8	-0.11
Kd of Ni-63 in Unsaturated Zone 1	12	-0.05	13	-0.05	1	-0.71	1	-0.63
Kd of Ni-63 in Saturated Zone	13	-0.05	14	-0.05	5	-0.12	9	-0.07
Thickness of Unsaturated zone 1	2	-0.11	4	-0.10	2	-0.54	2	-0.40
Thickness of evasion layer of C-14 in soil	28	0.02	33	0.02	9	0.08	12	0.05
Evapotranspiration coefficient	25	-0.03	30	-0.02	6	-0.11	10	-0.07
Density of Unsaturated zone 1	41	0.00	27	-0.03	8	0.08	3	0.39
Total Porosity of Unsaturated zone 1	40	0.00	26	0.03	10	-0.07	4	-0.39
Precipitation	19	0.03	21	0.03	3	0.18	7	0.12
Saturated zone field capacity	35	0.01	40	0.01	7	0.09	11	0.05
R-SQUARE		0.09		0.09		0.62		0.62

-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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63 DW.RAD

Coefficients for peak All Pathways Dose

	PCC		SRC		PRCC		SRRC	
Coefficient =								
Repetition =	1		1		1		1	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of contaminated zone	7	0.09	1	0.55	8	-0.11	4	-0.27
Kd of Ni-63 in Contaminated Zone	3	-0.10	7	-0.10	4	-0.59	6	-0.27
Kd of Ni-63 in Unsaturated Zone 1	4	-0.10	8	-0.10	1	-0.90	1	-0.74
Kd of Ni-63 in Saturated Zone	8	-0.09	12	-0.08	3	-0.60	3	-0.28
Thickness of Unsaturated zone 1	1	-0.13	5	-0.12	2	-0.72	2	-0.38
Contaminated zone total porosity	10	-0.08	2	-0.52	9	0.11	5	0.27
Evapotranspiration coefficient	32	-0.01	34	-0.01	7	-0.17	15	-0.06
Runoff coefficient	31	0.02	33	0.01	10	-0.09	16	-0.03
Well pump intake depth	2	-0.12	6	-0.11	5	-0.21	12	-0.08
Precipitation	19	0.04	22	0.04	6	0.21	13	0.08
R-SQUARE		0.12		0.12		0.87		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.

Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone

Input File : NEW NI63 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 2 Repetition = Sig	PCC Coeff	SRC 2 Sig	SRC Coeff	PRCC 2 Sig	PRCC Coeff	SRRC 2 Sig	SRRC Coeff
Kd of Ni-63 in Contaminated Zone	4	-0.07	10	-0.07	3	-0.62	3	-0.29
Kd of Ni-63 in Unsaturated Zone 1	2	-0.08	8	-0.08	1	-0.90	1	-0.74
Kd of Ni-63 in Saturated Zone	3	-0.07	9	-0.07	4	-0.57	4	-0.25
Saturated zone effective porosity	29	0.03	6	0.09	10	-0.07	6	-0.20
Thickness of Unsaturated zone 1	12	-0.05	18	-0.05	2	-0.70	2	-0.36
Evapotranspiration coefficient	11	-0.05	16	-0.05	5	-0.25	10	-0.09
Runoff coefficient	25	-0.03	27	-0.03	9	-0.08	16	-0.03
Effective Porosity of Unsaturated zone 1	17	0.04	2	0.31	8	-0.09	5	-0.25
Well pump intake depth	20	-0.04	23	-0.04	6	-0.21	13	-0.08
Precipitation	8	0.06	14	0.06	7	0.20	14	0.07
R-SQUARE		0.09		0.09		0.87		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.

1 RESRAD Regression and Correlation output 05/20/02 10:13 Page: Coef 6
Title : SNEC Soil DCGLs (10000 m2) & 1 m Deep Contam. Zone
Input File : NEW NI63 DW.RAD

Coefficients for peak All Pathways Dose

Description of Probabilistic Variable	PCC Coefficient = 3 Repetition = Sig	PCC Coeff	SRC 3 Sig	SRC Coeff	PRCC 3 Sig	PRCC Coeff	SRRC 3 Sig	SRRC Coeff
Kd of Ni-63 in Contaminated Zone	4	-0.10	10	-0.10	3	-0.59	4	-0.27
Kd of Ni-63 in Unsaturated Zone 1	9	-0.07	15	-0.06	1	-0.89	1	-0.72
Kd of Ni-63 in Saturated Zone	10	-0.06	16	-0.06	4	-0.57	6	-0.26
Thickness of Unsaturated zone 1	3	-0.10	9	-0.10	2	-0.71	2	-0.38
Contaminated zone b parameter	5	-0.08	11	-0.08	8	-0.11	14	-0.04
Contaminated zone total porosity	28	0.03	5	0.17	10	0.10	3	0.27
Evapotranspiration coefficient	6	-0.08	12	-0.08	7	-0.20	12	-0.08
Runoff coefficient	25	-0.03	29	-0.03	9	-0.11	15	-0.04
Well pump intake depth	8	-0.08	14	-0.07	6	-0.24	11	-0.09
Precipitation	21	0.03	25	0.03	5	0.26	10	0.10
R-SQUARE		0.10		0.10		0.86		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.

StatMost for Windows Saturday, June 08, 2002 8:54:58 AM

********** Statistics Report **********

Kd of Ni in Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	2.1104
Maximum	83454.0000
Std deviation	3125.1601
Mean	**1228.9485**
Geometric mean	NaN
Quadratic mean	3357.8247
Harmonic mean	147.2165
Sum	6144742.6699
Absolute Sum	6144742.6699
Median	423.7945
Percentiles:	
10	65.2153
25	**158.3850 (ANL=1300)**
50	423.7945
75	**1135.1700**
90	2757.0600
Quartiles:	
First quartile:	158.3850
Second quartile:	423.7945
Third quartile:	1135.1700
95.00% Confidence Interval:	
lower limit	1142.3041
upper limit	1315.5929

********** The End **********

StatMost for Windows Tuesday, May 28, 2002 4:01:05 PM

********** Statistics Report **********

Thickness of Unsat Zone

Sample size (N)	5000
No. missing	0
Minimum	7.02000000E-005
Maximum	0.4999
Std deviation	0.1444
Mean	**0.2500**
Geometric mean	NaN
Quadratic mean	0.2887
Harmonic mean	0.0523
Sum	1250.0006
Absolute Sum	1250.0006
Median	0.2499
Percentiles:	
10	0.0499
25	**0.1250** ✓
50	0.2499
75	**0.3750**
90	0.4501
Quartiles:	
First quartile:	0.1250
Second quartile:	0.2499
Third quartile:	0.3750
95.00% Confidence Interval:	
lower limit	0.2460
upper limit	0.2540

********** The End **********

StatMost for Windows Saturday, June 08, 2002 9:07:54 AM

********** Statistics Report **********

Kd of Ni in Contaminated Zone

Sample size (N)	5000
No. missing	0
Minimum	2.1104
Maximum	83454.0000
Std deviation	3125.1601
Mean	**1228.9485**
Geometric mean	NaN
Quadratic mean	3357.8247
Harmonic mean	147.2165
Sum	6144742.6699
Absolute Sum	6144742.6699
Median	423.7945
Percentiles:	
10	65.2153
25	**158.3850 (ANL=1300)**
50	423.7945
75	**1135.1700**
90	2757.0600
Quartiles:	
First quartile:	158.3850
Second quartile:	423.7945
Third quartile:	1135.1700
95.00% Confidence Interval:	
lower limit	1142.3041
upper limit	1315.5929

********** The End **********

StatMost for Windows Saturday, June 08, 2002 9:14:44 AM

********** Statistics Report **********

Kd of Ni in the Saturated Zone

Sample size (N)	5000
No. missing	0
Minimum	2.1104
Maximum	83454.0000
Std deviation	3125.1601
Mean	**1228.9485**
Geometric mean	NaN
Quadratic mean	3357.8247
Harmonic mean	147.2165
Sum	6144742.6699
Absolute Sum	6144742.6699
Median	423.7945
Percentiles:	
10	65.2153
25	**158.3850 (ANL=1300)**
50	423.7945
75	**1135.1700**
90	2757.0600
Quartiles:	
First quartile:	158.3850
Second quartile:	423.7945
Third quartile:	1135.1700
95.00% Confidence Interval:	
lower limit	1142.3041
upper limit	1315.5929

********** The End **********

StatMost for Windows Friday, June 07, 2002 1:04:34 PM

********** Statistics Report **********

Precipitation

Sample size (N)	5000
No. missing	0
Minimum	0.6881
Maximum	1.3269
Std deviation	0.1845
Mean	**1.0075**
Geometric mean	0.9902
Quadratic mean	1.0242
Harmonic mean	0.9728
Sum	5037.5017
Absolute Sum	5037.5017
Median	1.0074
Percentiles:	
10	0.7518
25	**0.8477**
50	1.0074
75	**1.1672** ✓
90	1.2632
Quartiles:	
First quartile:	0.8477
Second quartile:	1.0074
Third quartile:	1.1672
95.00% Confidence Interval:	
lower limit	1.0024
upper limit	1.0126

********** The End **********

StatMost for Windows Friday, June 07, 2002 12:57:32 PM

********** Statistics Report **********

Evapotranspiration Coefficient

Sample size (N)	5000
No. missing	0
Minimum	0.5000
Maximum	0.6700
Std deviation	0.0491
Mean	**0.5850**
Geometric mean	0.8617
Quadratic mean	0.5871
Harmonic mean	0.5809
Sum	2925.0004
Absolute Sum	2925.0004
Median	0.5850
Percentiles:	
10	0.5170
25	**0.5425**
50	0.5850
75	**0.6275**
90	0.6530
Quartiles:	
First quartile:	0.5425
Second quartile:	0.5850
Third quartile:	0.6275
95.00% Confidence Interval:	
lower limit	0.5836
upper limit	0.5864

********** The End **********