

SANDIA REPORT

SAND2008-4556

Unlimited Release

Printed: May 2008

Verification and Validation of RADTRAN 6.0

Matthew.L. Dennis, Douglas.M. Osborn, Ruth.F. Weiner, Terence. J. Heames*

Prepared by
Sandia National Laboratories
Albuquerque, New Mexico 87185 and Livermore, California 94550

Sandia is a multiprogram laboratory operated by Sandia Corporation,
a Lockheed Martin Company, for the United States Department of Energy's
National Nuclear Security Administration under Contract DE-AC04-94AL85000.

Approved for public release; further dissemination unlimited.



Issued by Sandia National Laboratories, operated for the United States Department of Energy by Sandia Corporation.

NOTICE: This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government, nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors, or their employees, make any warranty, express or implied, or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represent that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government, any agency thereof, or any of their contractors or subcontractors. The views and opinions expressed herein do not necessarily state or reflect those of the United States Government, any agency thereof, or any of their contractors.

Printed in the United States of America. This report has been reproduced directly from the best available copy.

Available to DOE and DOE contractors from

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831

Telephone: (865)576-8401
Facsimile: (865)576-5728
E-Mail: reports@adonis.osti.gov
Online ordering: <http://www.osti.gov/bridge>

Available to the public from

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Rd
Springfield, VA 22161

Telephone: (800)553-6847
Facsimile: (703)605-6900
E-Mail: orders@ntis.fedworld.gov
Online order: <http://www.ntis.gov/help/ordermethods.asp?loc=7-4-0#online>



SAND2008-4556
Unlimited Release
Printed May 2008

Verification and Validation of RADTRAN 6.0

Matthew.L. Dennis, Ruth.F. Weiner, Douglas.M. Osborn, and Terence.J. Heames*
Transportation & Environmental Safety Department
Sandia National Laboratories
P.O. Box 5800
Albuquerque, NM 87185-0718

*Alion Science & Technology
Albuquerque, New Mexico 87110

ABSTRACT

This document contains a description of the verification and validation process used for the RADTRAN 6.0 code. The verification and validation process ensured the proper calculational models and mathematical and numerical methods were used in the RADTRAN 6.0 code for the determination of risk and consequence assessments. The most recent verification and validation of the RADTRAN code was conducted for version 5.5. Since that time, RADTRAN 5.6 and subsequently RADTRAN 6.0 have been developed. The significant differences between RADTRAN 5.5/5.6 and RADTRAN 6.0 are the addition of a revised Loss of Lead Shielding (LOS) model, an economic model, historical and Standard International (SI) unit conversion capability, a revised rail crew dose, revised INTERDICT and CLEANUP calculations, radionuclide library expansion from 148 to 149 nuclides, and a revised output format.

Table of Contents

List of Tables	5
1. Introduction	7
2. Description of Revisions and New Capabilities.....	8
3. Validation and Verification Approach.....	11
3.1 Program Requirements.....	11
3.2 Program Design.....	12
3.3 Source Code, Program Integration, and Documentation.....	12
3.4 Program Testing.....	12
4. Test Case Overview	13
5. Test Case Results.....	16
5.1 General Comparison.	16
5.2 Comparison Between RADTRAN 5.5 and RADTRAN 5.6.....	18
5.3 Economic Model Verification	22
5.4 LOS Model Verification	23
5.5 Unit Conversion Verification.....	23
5.6 Incident-free Rail Dose Verification.....	24
6. Overview of Test Cases	24
7. References.....	27
Appendix A	29
Appendix B	84
Appendix C	138
Appendix D	171
Appendix E	269

List of Tables

1 Test Matrix.....	13-16
2 User-Defined Radionuclide Input Parameters for RADTRAN 5.5 and 6.0.....	21
3 RADTRAN 6.0 Unit Conversion Combinations.....	24
4 Overview of Test Cases.....	25-26

1. INTRODUCTION

RADTRAN[®] (Copyright: Sandia National Laboratories 2006; current version RADTRAN 5.6) is the national standard for transportation risk assessment computer codes. The international version, INTERTRAN, is based on RADTRAN. RADTRAN combines user-determined meteorological, packaging, demographic, transportation, and material data with health physics data to calculate the expected radiological consequences and accident risk of transporting radioactive material.

RADTRAN was initially developed for the “Environmental Impact Statement (EIS) for the Transportation of Radioactive Materials by Air and Other Means” (NUREG-0170) in 1977. RADTRAN 5.6, the current version, allows complete user input and contains several improved utilities. RADCAT[®] (Copyright: Sandia National Laboratories 2006; current version RADCAT 2.3) is a graphical user interface (GUI). It is coupled with a downloadable PC version of RADTRAN 5.6 and acts as the input file generator.

RADTRAN 6, which is to be launched in the last quarter of 2008, will have the same capabilities as RADTRAN 5.6 plus an economic model, a loss of shielding model, inclusion of rail crew dose, and the ability to provide Standard International (SI) units for inputs and/or outputs. The radionuclide library will be expanded from 148 nuclides presently available to 149 nuclides. There are additional tables that have been added to the output file and a distinction between the input echo and output results.

The RADTRAN code is in the operation and maintenance phase of its life-cycle according to the ANSI/ANS software standard (ANS, 1987). Since additional capabilities and improved performance characteristics will be incorporated into the RADTRAN 6 code, a validation and verification (V&V) plan is needed to meet the minimum requirements for establishing the correctness of the RADTRAN risk assessment tool.

The primary objectives of this V&V plan are twofold:

- a. Validate the performance of the program revisions and new capabilities incorporated into RADTRAN 6.
- b. Benchmark RADTRAN 6 against earlier validated versions of RADTRAN and other industry recognized computer programs appropriate for this type of analysis.

Sandia National Laboratories Organization 06765 is responsible for the maintenance and operation of the RADTRAN 6 code. The manager of 06765 designates a Member of the Technical Staff as the Principle Investigator responsible for RADTRAN. In addition, there is generally a scientific programmer assisting the Principle Investigator.

2. DESCRIPTION OF REVISIONS AND NEW CAPABILITIES

The major revisions in RADTRAN 6 are the addition an economic model, a loss of shielding model, a revised rail crew dose, the ability to provide Standard International (SI) units for inputs, and an expansion of the radionuclide library. Other differences between the current RADTRAN 5.6 version and the new RADTRAN 6 are in the location or content of the following output tables:

1. Non-Radiological Data
2. Regulatory Checks
3. Interdiction Areas
4. Release Fractions
5. Dilution Factors
6. Deposition Factors
7. Lung Inhalation Pathways
8. Ground Surface Contamination before Cleanup
9. Maximum Individual Consequence
10. Backyard Farmer Dose
11. Incident Free Summary
12. Incident Free Importance Analysis Summary
13. Number of Expected Accidents
14. Number of Early Fatalities from Inhalation
15. Radiological Consequences 50-year Population Dose
16. Number of Early Morbidity Cases from Inhalation
17. Maximum Risk for Individual in nearest Isopleth
18. Loss of Shielding Model Output
19. Radiological Consequences in Person-Rem: 50-year Societal Ingestion Dose
20. Expected Values of Population Risk
21. Societal Ingestion Risk
22. Societal Ingestion Risk by Organ
23. Expected Risk Values
24. Loss of Shielding Risk Values by Case
25. Total Exposed Population: Incident Free
26. Total Exposed Population: Accident
27. Expected Values of Population Risk per Radionuclide for each Link
28. Economic Model Output

The expanded radionuclide library expands the original 148 isotopes to 149 with the addition of ^{14}C - metal. The library has also updated the following for each isotope according to the source listed:

1. Half Life (days) source: ICRP 38 (as reported in Federal Guidance Report (FGR) 12)
2. Photon Energy (Mev) source: ICRP 38
3. Cloud/Immersion Dose Factor ($\text{REM}\cdot\text{m}^3/\text{Ci}\cdot\text{sec}$) source: FGR 12
4. Groundshine Dose Factor ($\text{REM}\cdot\text{m}^2/\mu\text{Ci}\cdot\text{day}$) source: FGR 12
5. Inhalation Value – 50 year Effective Dose (REM/Ci) source: ICRP 72
6. Inhalation Value – 50 year Dose to Gonads (REM/Ci) source: ICRP 72
7. Inhalation Value – 1 year Dose to Lungs (REM/Ci) source: ICRP 72
8. Inhalation Value – 1 year Dose to Bone Marrow (REM/Ci) source: ICRP72
9. Nuclide Name for Ingestion Date (RT5INGEST.BIN) source: COMIDA2
10. A1 Activity Limit Value (Ci) source: 10CFR71 Appendix A as of 01/01/2004
11. A2 Activity Limit Value (Ci) source: 10CFR71 Appendix A as of 01/01/2004
12. Class A radioactive waste classification limit (Ci/m^3) source: 10CFR61.55 as of 01/01/2006. If radionuclide does not have a Class A limit then it is assumed to be $700 \text{ Ci}/\text{m}^3$.

In determining the 50 year dose, ICRP 72 assigns the dose commitments to adult members of the public (age 20) assumed to live another 50 yrs. The inhalation values are based on 1.0-micron AMAD particles with the exception of the following radioisotopes:

1. Kr-85, Xe-133m, and Xe-133 are gases
2. H-3(water) is tritiated water
3. H-3(gas) is elemental hydrogen vapor
4. C-14(organic) is organic gases and vapors
5. C-14(gas) is carbon dioxide.

All the radioisotopes are assumed to have no progeny contribution with the exception of the following radionuclides:

1. Mo-99 includes the weighted contribution from its Tc-99m daughter
2. Ru-103 includes the weighted contribution from its short half-life Rh-103 daughter
3. Ru-106 includes the weighted contribution from its short half-life Rh-106 daughter. The inhalation dose conversion factors were determined for Ru-106 only since there is no information on Rh-106.

4. Cs-137 includes the weighted contribution from its short half-life Ba-137m daughter. Inhalation dose conversion factors were determined for Cs-137 only since there is no information on Ba-137m.
5. Ce-144 includes the weighted contribution from its two short half-life daughters Pr-144 and Pr-144m. Inhalation dose conversion factors were determined with Ce-144 and Pr-144 since there is no information on Pr-144m.

RADTRAN 6 has the capability to input values with units in either historical units (rem, curies) or International System of Units (SI; sieverts, becquerels) and obtain outputs in either historical or SI units. The flexibility of RADTRAN has become significant to the Department of Energy as the number of international users has increased, and industries have globalized. RADTRAN 5.6 currently allows the user the option to generate an output in either historical or SI units, but only allows users to input using historical units.

The Rail module in RADTRAN 6 allows users to determine crew and escort incident-free dose. Prior versions of RADTRAN did not allow for this since it was assumed that crew and escort personnel would be adequately shielded and far enough away from the shipment that their dose would be zero. This assumption was hard-wired into RADTRAN and did not allow users to deviate from it.

A new model has been added to RADTRAN 6 offering the option for the user to define loss of lead gamma shielding (LOS) scenarios for a spent fuel truck cask accident. The LOS model estimates dose receptor risk and consequence at a distance from the accident and yields three results: average radiological dose, maximum radiological dose at 2 m from the cask, and the LOS dose risk.

Another new model has been added to RADTRAN 6 offering the option for the user to determine the economic impact from accident cleanup. An accidental release of radionuclides during transportation could require evacuation of the population and decontamination of the affected area. The economic model in RADTRAN 6 estimates the cost of evacuation and decontamination.

The cost of decontamination depends on the size of the release, the number of people and land area affected by the release, the activity of the released material, and the “goal” cleanup level. The values of these input parameters are either defined by the analyst or default values in RADTRAN 6 using user-defined inputs.

The categories of parameter values are:

- Building Cleanup
 - o Residential
 - o Commercial
 - o Industrial
- Road Cleanup
- Soil Cleanup
- Agricultural Damage
 - o Crops

- o Livestock
- Evacuation and Emergency

Post-accident costs considered are the cost of building and road cleanup, soil disposal, agricultural sequestration, and emergency evacuation, as financed by the federal government through the Federal Emergency Management Agency loans and grants. Political and social costs are not included. Buildings and roads are decontaminated by washing deposited radioactive compounds from contaminated surfaces. The contaminated water is collected on adsorption resins, which are disposed as low-level radioactive waste. Only contaminated surfaces are washed down. It is assumed that all roads and other horizontal surfaces are contaminated. Building sides, however, are vertical and the entire vertical surface would not be contaminated. Depending on the location of the release, orientation of the building(s), and height of the building(s), different fractions of the building's exposed surface area will be contaminated.

3. VALIDATION AND VERIFICATION APPROACH

The V&V of RADTRAN 6 addresses the following areas:

1. Program requirements
2. Program design
3. Source code, program integration and documentation
4. Program testing
5. Test results-validation
6. V&V review report

Many of these areas have been previously addressed and are documented in the validation of earlier versions of the RADTRAN code (Neuhauser 1994; Neuhauser 2000; Osborn 2005). Therefore, the required extent of review for each of these areas will vary accordingly. The specific aspects that were reviewed are discussed in detail in the following sections.

3.1 PROGRAM REQUIREMENTS

As previously discussed, the earlier versions of RADTRAN have been documented and these documents are the basis for the program requirements. This V&V will primarily review the mathematical models and solution algorithms used by the program for the purpose of determining any known limitations to the code and the classes of problems that they best represent. The primary focus of this V&V is on the ability of the RADTRAN 6 code to model the economic cleanup, the potential for loss of lead shielding, and the incident-free, accident, and ingestion exposures and consequences to the public, workers, and a maximally exposed individual.

3.2 PROGRAM DESIGN

This V&V will not include a review of the program design. Since RADTRAN is an existing program that has undergone previous V&V and has been used for over 30 years, it was determined that a detailed review of the program is not required. For further information on the new economic or LOS model, please refer to Dennis, et al.(2007).

3.3 SOURCE CODE, PROGRAM INTEGRATION, AND DOCUMENTATION

The review of the source code, program integration, and documentation is limited to the following areas:

1. Configuration control of source code changes
2. Program installation
3. User documentation.

3.4 PROGRAM TESTING

This aspect of the V&V plan is crucial to ensuring that the two primary objectives of this plan are accomplished. The tests in each of the series are designed to fulfill one or both of the primary objectives. The last full V&V was done with RADTRAN 5.5 since there were only minor changes in the code to develop RADTRAN 5.6. The test series are the following:

- Series 1: Tests utilize old RADTRAN 5.5 V&V (SAND2005-1274) truck, rail, and barge input file to validate and verify RADTRAN 6 with RADTRAN 5.5. The primary objective of this series is Objective 2.
- Series 2: Tests utilize a RADTRAN 5.5 and RADTAN 6.0 truck input file with the average Pasquill atmospheric dispersion model. The primary objective of this series is Objective 2.
- Series 3: Tests utilize a RADTRAN 5.5 and RADTAN 6.0 truck input file with the National Average Weather atmospheric dispersion model. The primary objective of this series is Objective 2.
- Series 4: Tests utilize a RADTRAN 5.5 and RADTAN 6.0 truck input file with the User-defined atmospheric dispersion model. The primary objective of this series is Objective 2.
- Series 5: Tests utilize a RADTRAN 5.5 and RADTAN 6.0 truck input file defining a radionuclide that is not in the library. The primary objective of this series is Objective 2.

- Series 6: Tests utilize a RADTRAN 5.5 and RADTAN 6.0 truck input file with 21 different severity categories. The primary objective of this series is Objective 2.
- Series 7: Tests utilize a RADTRAN 5.5 and RADTAN 6.0 truck input file with a neutron exposure. The primary objective of this series is Objective 2.
- Series 8: Tests utilize a RADTRAN 6 input file with all the radionuclides listed in the expanded library. The primary objective of this series is Objective 1.
- Series 9: Tests utilize a RADTRAN 6 input file to provide a baseline for the new economic cleanup model. The primary objective of this series is Objective 1.
- Series 10: Tests utilize a RADTRAN 6 input file to provide a baseline for the new loss of shielding model. The primary objective of this series is Objective 1.
- Series 11: Tests utilize a RADTRAN 6 input to provide a baseline for SI inputs. The primary objective of this series is Objective 1.
- Series 12: Tests utilize a rail RADTRAN 6 input to determine crew and escort incident-free dose. The primary objective of this series is Objective 1.
- Series 13: REMOVED from the original V&V plan since “Radiological Consequences 50 Year Population Dose in Person-REM” has been removed from RADTRAN 6.0 output.

4. TEST CASE OVERVIEW

These tests provide the verification and validation of the RADTRAN 6.0 computer code. The verification of RADTRAN 6.0 was performed to confirm that dosimetric models in the code have been correctly coded and that the code correctly performs the operations specified in the numerical models. Table 1 shows the test cases and provides a brief description of each case.

Table 1: Test Matrix

Test Series/Case No.	Description
1a	Verify that a standardized truck route run with RADTRAN 5.5 used in SAND2005-1274 produces the same results as those run with RADTRAN 5.6
1b	Verify that a standardized truck route run with RADTRAN 5.5 used in SAND2005-1274 produces the same results as those run with RADTRAN 6
1c	Verify that a standardized rail route run with RADTRAN 5.5 used in SAND2005-1274 produces the same results as those run with RADTRAN 5.6
1d	Verify that a standardized rail route run with RADTRAN 5.5 used in SAND2005-1274 produces the same results as those run with RADTRAN 6
1e	Verify that a standardized barge route run with RADTRAN 5.5 used in SAND2005-1274 produces the same results as those run with RADTRAN 5.6
1f	Verify that a standardized barge route run with RADTRAN 5.5 used in SAND2005-1274 produces the same results as those run with RADTRAN 6
2	Verify that a standardized truck route run with RADTRAN 5.5 with the average Pasquill dispersion model produces the same results as those run with RADTRAN 6
3	Verify that a standardized truck route run with RADTRAN 5.5 with the average weather dispersion model produces the same results as those run with RADTRAN 6
4	Verify that a standardized truck route run with RADTRAN 5.5 with the User-defined atmospheric dispersion model produces the same results as those run with RADTRAN 6
5	Verify that a standardized truck route run with RADTRAN 5.5 with the average weather dispersion model produces the same results as those run with RADTRAN 6 using user-defined radionuclides
6	Verify that a standardized rail route run with RADTRAN 5.5 with the average weather dispersion model produces the same results as those run with RADTRAN 6 when 21 different severity categories are used
7	Verify that a standardized truck route run with RADTRAN 5.5 with the average weather dispersion model produces the same results as those run with RADTRAN 6 when neutron dose is calculated

Table 1: Test Matrix

Test Series/Case No.	Description
8a	Verify that a standardized truck route run with RADTRAN 5.5 with the average weather dispersion model produces the same results as those run with RADTRAN 6 with the exception of those results affected by the new expanded radioisotope library
8b	Verify that all 149 radionuclides in the RADTRAN 6 isotope library provide the correct output
9a	Verify that a standardized truck route run with RADTRAN 6 with the average weather dispersion model produces the same results as those hand calculated for the economic model
9b	Verify that a standardized truck route run with RADTRAN 6 with the user-defined atmospheric dispersion model produces the same results as those hand calculated for the economic model
9c	Verify that a standardized rail route run with RADTRAN 6 with the average weather dispersion model produces the same results as those hand calculated for the economic model using multiple radionuclides
9d	Verify that a standardized rail route run with RADTRAN 6 with the user-defined atmospheric dispersion model produces the same results as those hand calculated for the economic model using multiple radionuclides
9e	Verify that a standardized barge route run with RADTRAN 6 with the average weather dispersion model produces the same results as those hand calculated for the economic model using multiple radionuclides with multiple deposition velocities
9f	Verify that a standardized barge route run with RADTRAN 6 with the user-defined atmospheric dispersion model produces the same results as those hand calculated for the economic model using multiple radionuclides using multiple deposition velocities
10a	Verify that a standardized truck route run with RADTRAN 6 with the LOS model produces the same average radiological dose results as those hand calculated for multiple distances and slump fractions.
10b	Verify that a standardized truck route run with RADTRAN 6 with the LOS model produces the same maximum radiological dose at two meter results as those hand calculated for multiple slump fractions.

Table 1: Test Matrix

Test Series/Case No.	Description
10c	Verify that a standardized truck route run with RADTRAN 6 with the LOS model produces the same dose risk results as those hand calculated based on a matrix of multiple severity fractions, route lengths, average LOS doses, and accident probabilities.
11a	Verify that a set of standardized RADTRAN 6 input files used in SAND2007-8102 produce the same results for SI and historical units for the Loss of Shielding model
11b	Verify that a set of standardized RADTRAN 6 input files used in SAND2007-8102 produce the same results for SI and historical units for the Economic model
12	REMOVED: Verify that a standardized truck route run with RADTRAN 6 produces the same Radiological Consequences 50-year Population Dose results as the hand calculations

5. TEST CASE RESULTS

This section will discuss the test cases according to the area of the code that was tested. Along with a brief description of each test case, the results are discussed with respect to differences between each case and any errors in the results, if applicable.

5.1 GENERAL COMPARISON

Some of the files used for comparison between RADTRAN 6.0, 5.6 and 5.5 were the same as those used to validate RADTRAN 5.5 in SAND2005-1274 “Verification and Validation of RADTRAN 5.5.” These files tested the truck, rail and barge transport mode consistency between RADTRAN 5.5 and 5.6 as well as RADTRAN 5.6 and 6.0. The test cases include:

- 1a. A standardized truck route run with RADTRAN 5.5 and 5.6 for comparison
- 1b. The same standardized truck route run with RADTRAN 5.5 and RADTRAN 6.0 for comparison.
- 1c. A standardized rail route run with RADTRAN 5.5 and 5.6 for comparison.
- 1d. The same standardized rail route run with RADTRAN 5.5 and 6.0 for comparison.
- 1e. A standardized barge route run with RADTRAN 5.5 and 5.6 for comparison.
- 1f. The same standardized barge route run with RADTRAN 5.6 and 6.0 for comparison.

These test files compared the incident-free, accident, and ingestion exposures, as well as default input echo values. These test files used the defaulted time integrated concentrations (Chi/Q) values versus downwind distances within specified isopleth areas from the national average weather dispersion model. All test cases express a consistent change from RADTRAN 5.5 to either 5.6 or 6.0. Fatalities per accident are now included and RADTRAN 5.6 or 6.0 requires input for fatalities per accident in link related information prior to declaring whether the link is rural, suburban or urban (denoted with R,S, or U). Additionally, the input echo for RADTRAN 5.6 and 6.0 now includes a data table for non-radiological accidents and fatalities.

Some of the key changes in RADTRAN 6.0 are reformatted output tables which aggregate lung, bone marrow, and thyroid dose and air concentration after deposition and ground contamination before cleanup with a separate table for each severity category. Another table disaggregates the inhalation, resuspension, cloudshine and groundshine doses, where as they were previously reported as only the sum total. Again, this is reported in a separate table for each severity category.

5.1.1 Truck Routes

Input echo, incident-free, and accident values are identical between RADTRAN 5.5, 5.6 and 6.0 (test case 1a and 1b) except for “Expected Values of Population Risk in Person-Rem” resulting from groundshine, inhalation, resuspension, groundshine and total dose. Decreased groundshine risk in RADTRAN 5.6 and 6.0 results from changing the RADTRAN mathematical model for integrated population dose from groundshine. The previous model assumed a dose from evacuation time and a 50 year dose. The model was reconfigured in February 2007 to adjust the groundshine dose to be only the pre-evacuation time period, eliminating the time the area is surveyed for a subsequent 50 year period after eviction. The change to the groundshine model results from the deletion of the TRM2 term in Equation 88 of the RADTRAN 5 Technical Manual.

The remaining difference in test case 1a and 1b is the increase in inhalation, resuspension, and cloudshine dose when comparing RADTRAN 5.5 with 5.6 and 6.0. These doses have increased on average 14% versus RADTRAN 5.5, and the increase can be attributed to a change in the integration subroutine in RADTRAN which calculates the integration factor (IF), the integration of the dilution factor over all downwind isopleths. The previous subroutine, AVINT, employed a quadratic interpolant which erroneously provided negative values, thus when summed together, reduced the population risk. In February 2006 the AVINT subroutine was replaced with a Geometric Mean subroutine for integration factor calculation.

Regarding RADTRAN 6.0, there are no numerical differences except for those motioned in the previous two paragraphs. However, substantial formatting changes have altered the output orientation of such tables as those displaying the severity categories.

5.1.2 Rail Routes

Input echo, incident-free, and accident values are identical between RADTRAN 5.5 and 5.6 for test case 1c except that test case 1d for RADTRAN 5.6 and 6.0 indicates differences between inhalation and resuspension population risk for a few radionuclides. As discussed in section 5.1.1, differences in population risk can be attributed to eliminating the 50 year dose component from groundshine and

changing the IF subroutine from AVINT to Geometric Mean. Results for groundshine and cloudshine concur.

5.1.3 Barge Routes

Input echo, incident-free, and accident values are identical between RADTRAN 5.5 and 5.6 for test case 1e except for the following:

- Units for the ground surface contamination table are changed from reported as $\mu\text{Bq}/\text{m}^2$ in RADTRAN 5.5 to Bq/m^2 in RADTRAN 5.6.
- The bone marrow inhalation pathway dose is larger values in RADTRAN 6.0 than in 5.5 (case 1f).

As previously discussed in section 5.1.1, differences in population risk can be attributed to eliminating the 50 year dose component from groundshine and changing the IF subroutine from AVINT to Geometric Mean.

5.2 COMPARISON BETWEEN RADTRAN 5.5 AND 6.0

Some of the files used for comparison between RADTRAN 5.5 and 6.0 were the same as those used to validate RADTRAN 5.5 in SAND2005-1274 “Verification and Validation of RADTRAN 5.5.” These files tested the Pasquill, national average weather and user-defined dispersion models along with severity categories, neutron dose, and the expanded radionuclide library for truck or rail transport modes. The test cases include:

2. A standard truck route with the Pasquill dispersion model run with RADTRAN 5.5 and 6.0 for comparison
3. A standard truck route with the national average weather dispersion model run with RADTRAN 5.5 and 6.0 for comparison.
4. A standard truck route with the user-defined atmospheric dispersion model run with RADTRAN 5.5 and 6.0 for comparison.
5. A standard truck route with the national average weather dispersion model and user-defined radionuclides run with RADTRAN 5.5 and 6.0 for comparison.
6. A standard rail route with the national average weather dispersion model and 21 different severity categories run with RADTRAN 5.5 and 6.0 for comparison.
7. A standard truck route with the national average weather dispersion model and neutron dose run with RADTRAN 5.5 and 6.0 for comparison.
- 8a. A standard truck route with the national average weather dispersion model with all nuclides except the new ^{14}C – metal addition to compare RADTRAN 5.5 and 6.0

- 8b. A standard truck route with national average weather dispersion model and all 149 radionuclides provides correct output for dose conversion factors, half-lives and photon energies.

These test files compared the incident-free, accident, and ingestion exposures, as well as default input echo values. All test cases express a consistent change from RADTRAN 5.5 to 6.0. Fatalities per accident are now included and RADTRAN 6.0 requires input for fatalities per accident in link related information prior to declaring whether the link is rural, suburban or urban (denoted with R,S, or U). Additionally, the input echo for RADTRAN 6.0 now includes a data table for non-radiological accidents and fatalities.

Some of the key changes in RADTRAN 6.0 are reformatted output tables which aggregate lung, bone marrow, and thyroid dose and air concentration after deposition and ground contamination before cleanup with a separate table for each severity category. Another table disaggregates the inhalation, resuspension, cloudshine and groundshine doses, where as they were previously reported as only the sum total. Again, this is reported in a separate table for each severity category.

5.2.1 Ground-Level Pasquill Dispersion Comparison

Test case 2 compared a standard truck route with the Pasquill dispersion model for RADTRAN 5.5 and 6.0. Incident-free, accident, and ingestion exposures, as well as defaulted input echo values were the same between RADTRAN 5.5 and 6.0 except for the following differences:

- RADTRAN 6.0 reports a larger bone marrow dose and zero thyroid dose whereas RADTRAN 5.5 reports a smaller bone marrow dose and non-zero thyroid dose. This difference is being investigated.
- There is a third significant digit increase from RADTRAN 5.5 to 6.0 in societal ingestion risk by organ, attributable to computation rounding error.

As discussed in section 5.1.1, differences in population risk can be attributed to eliminating the 50 year dose component from groundshine and changing the IF subroutine from AVINT to Geometric Mean.

5.2.2 National Average Weather Dispersion Comparison

Test case 3 compared a standard truck route with the national average weather dispersion model for RADTRAN 5.5 and 6.0. Incident-free, accident, and ingestion exposures, as well as defaulted input echo values were the same between RADTRAN 5.5 and 6.0 except for the following differences:

- RADTRAN 6.0 reports a larger bone marrow dose and zero thyroid dose whereas RADTRAN 5.5 reports a smaller bone marrow dose and non-zero thyroid dose. This difference is being investigated.
- There is a third significant digit increase from RADTRAN 5.5 to 6.0 in societal ingestion risk by organ. However, this is attributed to computation rounding error.

As previously discussed in section 5.1.1, numerical differences in population risk can be attributed to eliminating the 50 year dose component from groundshine and changing the IF subroutine from AVINT to Geometric Mean.

5.2.3 User-Defined Atmospheric Dispersion Comparison

Test case 4 compared a standard truck route with the user-defined atmospheric dispersion model for RADTRAN 5.5 and 6.0. The input parameters for user-defined atmospheric dispersion are presented in Table 2.

Table 2: User-Defined Atmospheric Dispersion Input Parameters for RADTRAN 5.5 and 6.0

Release Height (m)	2.0
Heat Flux (Cal/sec)	10000
Source Width (m)	1.5
Source Height (m)	3.0
Wind Speed (m/sec)	3.0
Dispersion Type	Pasquill
Wind Stability Class	C
Rainfall Rate (mm/h)	0
Deposition Velocity (m/s)	0.04
Anemometer Height (m)	10
Ambient Temperature (K)	298
Atmospheric Mixing Height (m)	5000
Population Zone	Rural

Incident-free, accident, and ingestion exposures, as well as defaulted input echo values were the same between RADTRAN 5.5 and 6.0 except for the following differences:

- RADTRAN 6.0 reports a larger bone marrow dose and zero thyroid dose whereas RADTRAN 5.5 reports a smaller bone marrow dose and non-zero thyroid dose. This difference is being investigated.
- There is a third significant digit increase from RADTRAN 5.5 to 6.0 in societal ingestion risk by organ. However, this is attributed to computation rounding error.

As previously discussed in section 5.1.1, differences in population risk can be attributed to eliminating the 50 year dose component from groundshine and changing the IF subroutine from AVINT to Geometric Mean.

5.2.4 DEFINE Statement Comparison

Test case 5 compared a standard truck route with the national average weather dispersion model incorporating a user-defined radionuclide for RADTRAN 5.5 and 6.0. The input parameters for the user-defined radionuclide ¹¹¹Ag are presented in Table 2.

Table 2: User-Defined Radionuclide Input Parameters for RADTRAN 5.5 and 6.0

Half-Life (days)	7.45E+00
Photon Energy (MeV/disintegration)	2.63E-02
Cloudshine Dose Factor	4.77E-03
Groundshine Dose Factor	8.54E-06
50-yr Committed Effective Dose Equivalent for Inhalation	6.29E+03
1-yr Lung Dose for Inhalation	5.18E+00
1-yr Marrow Dose for Inhalation	4.44E+04
Class A Waste Concentration (Ci/m ³)	1.78E+01

Incident-free, accident, and ingestion exposures, as well as defaulted input echo values were the same between RADTRAN 5.5 and 6.0 except for the following differences:

- RADTRAN 6.0 reports a larger bone marrow dose and zero thyroid dose whereas RADTRAN 5.5 reports a smaller bone marrow dose and non-zero thyroid dose. This difference is being investigated.
- There is a third significant digit increase from RADTRAN 5.5 to 6.0 in societal ingestion risk by organ. However, this is attributed to computation rounding error.
- For test case 5, inhalation, resuspension and cloudshine for RADTRAN 6.0 have decreased substantially compared to RADTRAN 5.5 (3 orders of magnitude). This probably results from eliminating the 50 year dose component from groundshine: the 50-year dose component was the dose that a resident would receive after returning to the contaminated area after cleanup and being exposed continuously and without any shielding to deposited and resuspended radioactive material. The work of Anspaugh, et al (1990) indicates that resuspension after year is very unlikely, and weathering and deposition of non-radioactive soil would greatly dilute any “50-year” exposure.

5.2.5 Severity Category Comparison

Test case 6 compared a standard rail route with the national average weather dispersion model using 21 severity categories for RADTRAN 5.5 and 6.0. This test file compared the incident-free, accident, and ingestion exposures, as well as the defaulted input echo values. The incident-free, accident, and ingestion exposures, as well as the defaulted input echo values were the same for RADTRAN 5.5 and RADTRAN 6.0 with the previously noted exceptions:

5.2.6 Neutron Dose Comparison

Test case 7 compared a standard truck route with the national average weather dispersion model including neutron dose calculations for RADTRAN 5.5 and 6.0. This test file compared the incident-free, accident, and ingestion exposures, as well as the defaulted input echo values. The incident-free, accident, and ingestion exposures, as well as the defaulted input echo values were the same for RADTRAN 5.5 and RADTRAN 6.0 with the previously noted exceptions.

5.2.7 Radionuclide Comparison and Verification

Test case 8a used a standard truck route with the national average weather dispersion model to compare RADTRAN 5.5 and 6.0 with all previous 148 radionuclides. This test file compared the incident-free, accident, and ingestion exposures, as well as the defaulted input echo values. The incident-free, accident, and ingestion exposures, as well as the defaulted input echo values were the same for RADTRAN 5.5 and RADTRAN 6.0 with the following exceptions:

- RADTRAN 6.0 reports a larger bone marrow dose, whereas RADTRAN 5.5 reports a smaller bone marrow dose. In test case 8a both RADTRAN 5.5 and 6.0 yield the same thyroid 1-yr dose.
- The table for route dependent population follows the trend outlined in section 5.1.1; however, the table for isotope dependent population exposure follows no discernable trend between RADTRAN 5.5 and 6.0.

Test case 8b used a similar standard file, but included the new radionuclide ^{14}C – metal, making the total radionuclide inventory 149. Test case 8b was performed to ensure RADTRAN 6.0 accepted the correct isotope data from the RT6_Isotope.INFILE. The results indicated that all 149 radionuclides provided the correct output with respect to the dose conversion factors, half-lives, and photon energies. The Expected Values of Population Risk in Person-REM table was also verified to have all 149 radionuclides.

5.3 ECONOMIC MODEL VERIFICATION

Test files in series 9 were prepared so the RADTRAN 6.0 economic model could be verified and validated with corresponding hand calculations for truck, rail and barge transportation with each using the national average weather and user-defined dispersion models. Hand calculations for RADTRAN 6.0 economic outputs were performed using equations taken from SAND2007-7120. The test cases used to compare with hand calculations include:

- 9a. A standardized truck route with national average weather dispersion run with RADTRAN 6.0
- 9b. A standardized truck route with user-defined atmospheric dispersion run with RADTRAN 6.0
- 9c. A standardized rail route with national average weather dispersion run with RADTRAN 6.0
- 9d. A standardized rail route with user-defined atmospheric dispersion run with RADTRAN 6.0
- 9e. A standardized barge route with national average weather dispersion run with RADTRAN 6.0

- 9f. A standardized barge route with user-defined atmospheric dispersion run with RADTRAN 6.0

Each test case in series 9 was run with RADTRAN 6.0 and compared against hand calculations using the same economic inputs. In each instance, the difference between the RADTRAN 6.0 results and those hand calculated was less than 1%. Therefore, the test cases were verified and validated using hand calculations, which are available upon request.

5.4 LOS MODEL VERIFICATION

Test files in series 10 were prepared so the RADTRAN 6.0 LOS model could be verified and validated with corresponding hand calculations for truck transportation using multiple dose distance, slump fractions, severity fractions, route lengths, and accident probabilities. Hand calculations for RADTRAN 6.0 LOS outputs were performed using equations taken from Dennis, et al., "Dose Estimates for Loss of Lead Shielding in Truck Accidents" or SAND2007-XXXX. The test cases used to compare with hand calculations include:

- 10a. A standardized truck route with national average weather dispersion at multiple distances and slump fractions run with RADTRAN 6.0 to obtain average radiological dose results.
- 10b. A standardized truck route with national average weather dispersion at multiple distances and slump fractions run with RADTRAN 6.0 to obtain maximum radiological dose at two meters.
- 10c. A standardized truck route with national average weather dispersion at multiple distances, slump fractions, severity fractions, route lengths and accident probabilities run with RADTRAN 6.0 to obtain LOS dose-risk.

Each test case in series 10 was run with RADTRAN 6.0 and compared against hand calculations using the same LOS inputs. In each instance, the difference between the RADTRAN 6.0 results and those hand calculated was less than 1%. Therefore, the test cases were verified and validated using hand calculations, which are available upon request.

5.5 UNIT CONVERSION VERIFICATION

Test files in series 11 were prepared so the RADTRAN 6.0 LOS and Economic model could be verified and validated with corresponding hand calculation unit conversions using a standard test file from SAND2007-8102. Each test case was run three times to cover the unit input/output combinations shown in Table 3. Historical to historical is assumed to be verified from previous V&V as it is the default operational mode for the RADTRAN code.

Table 3: RADTRAN 6.0 Unit Conversion Combinations

INPUT	OUTPUT
Historical	Historical
Historical	SI
SI	Historical
SI	SI

Other values in RADTRAN 6.0 dependent on unit conversion have been previously verified and validated in SAND2007-8102, which did not cover the LOS and Economic models. The test cases used to compare with hand calculated input/output conversions include:

- 11a. A standardized input file from SAND2007-8102 run with RADTRAN 6.0 to obtain SI and historical units for the LOS model.
- 11b. A standardized input file from SAND2007-8102 run with RADTRAN 6.0 to obtain SI and historical units for the Economic model.

The economic model was not coded for unit conversion at the time of this writing and the resulting input/output is always in historical units. This oversight is currently being remedied.

The test case 11a was run with RADTRAN 6.0 and compared against hand calculations using the same LOS inputs and subsequently converted for either SI or historical units. In each instance, RADTRAN 6.0 accurately converted SI and historical units. Therefore, the test case 11a was verified and validated using hand calculations, which are available upon request.

5.6 INCIDENT-FREE RAIL DOSE VERIFICATION

RADTRAN 6.0 now allows for calculation of rail crew incident-free dose calculation. Test files in series 12 were prepared so the RADTRAN 6.0 rail module could be verified and validated with corresponding hand calculations using a standard rail input file. The test cases used to compare with hand calculated results include:

6. OVERVIEW OF TEST CASES

Table 4 provides an overview of the test cases with respect to the RADTRAN Version used, type of atmospheric dispersion, and release height.

Table 4: Overview of Test Cases

Test Case No.	RADTRAN Version	Dispersion Model	Release Height
1a	RADTRAN 5.5 and 5.6	Average Weather	Ground
1b	RADTRAN 5.5 and 6.0	Average Weather	Ground
1c	RADTRAN 5.5 and 5.6	Average Weather	Ground
1d	RADTRAN 5.5 and 6.0	Average Weather	Ground
1e	RADTRAN 5.5 and 5.6	Average Weather	Ground
1f	RADTRAN 5.5 and 6.0	Average Weather	Ground
2	RADTRAN 5.5 and 6.0	Pasquill	Ground
3	RADTRAN 5.5 and 6.0	Average Weather	Ground
4	RADTRAN 5.5 and 6.0	User-Defined Atmospheric	Elevated
5	RADTRAN 5.5 and 6.0	Average Weather	Ground
6	RADTRAN 5.5 and 6.0	Average Weather	Ground
7	RADTRAN 5.5 and 6.0	Average Weather	Ground

Table 4: Overview of Test Cases Continued

Test Case No.	RADTRAN Version	Dispersion Model	Release Height
8a	RADTRAN 5.5 and 6.0	Average Weather	Ground
8b	RADTRAN 6.0	Average Weather	Ground
9a	RADTRAN 6.0	Average Weather	Ground
9b	RADTRAN 6.0	User-Defined Atmospheric	Elevated
9c	RADTRAN 6.0	Average Weather	Ground
9d	RADTRAN 6.0	User-Defined Atmospheric	Elevated
9e	RADTRAN 6.0	Average Weather	Ground
9f	RADTRAN 6.0	Average Weather	Ground
10a	RADTRAN 6.0	Average Weather	Ground
10b	RADTRAN 6.0	Average Weather	Ground
10c	RADTRAN 6.0	Average Weather	Ground
11a	RADTRAN 6.0	Average Weather	Ground
11b	RADTRAN 6.0	Average Weather	Ground
12	NONE: 50 year consequence deleted from RADTRAN 6.0 output	N/A	N/A

7. REFERENCES

ANS (American Nuclear Society), 1987, "Guidelines for the Verification and Validation of Scientific and Engineering Computer Programs for the Nuclear Industry," ANSI/ANS-10.4-1987, American Nuclear Society, La Grange Park, IL.

Ansbaugh, L. R. "Environmental Behavior of Plutonium," 1990. Health Phys. 58, S5.

Chen, S.Y., B.M. Biwer, D.J. LePoire, and Y.C. Yuan, 1995, "RISKIND – A Computer Program for Calculating Radiological Consequences and Health Risks from Transportation of Spent Nuclear Fuel," ANL / EAD-1, Argonne National Laboratory, Argonne, IL.

Dennis M.L., Weiner, R.F., Osborn, D.M., and Heames, T.J., 2007, "Dose Estimates for Loss of Lead Shielding in Truck Accidents," SAND2007-XXXX, Sandia National Laboratories, Albuquerque, NM.

Eckerman, K.F., J.C. Ryman, 1993, "Federal Guidance Report No. 12: External Exposure to Radionuclides in Air, Water, and Soil," EPA-402-R-93-081, Office of Radiation and Indoor Air – U.S. Environmental Protection Agency, Washington D.C.

Heames, T., J. Bostelman, 2001, "ITSC RADTRAN Version 3.03 Verification and Validation Plan Revision 0," ITSC/RUG-01-01, Innovative Technology Solutions Corporation, Albuquerque, NM.

ICRP (International Commission on Radiological Protection), 1983, "Radionuclide Transformations: Energy and Intensity of Emissions," ISBN-0-08-030760-4, Publication 38, Annals of the ICRP, Volumes 11-13, Pergamon Press, Oxford, England.

ICRP (International Commission on Radiological Protection), 2001, "The ICRP Database of Dose Coefficients: Workers and Members of the Public," ISBN-0-08-043-8768, Version 2.01 on Compact Disc (CD), Publications 68 and 72, Pergamon Press, Oxford, England.

Maheras, S.J., H.K. Pippen, 1995, "Validation of the Transportation Computer Codes HIGHWAY, INTERLINE, RADTRAN 4, and RISKIND," DOE/ID-10511, Science Applications International Corporation, Idaho Falls, ID.

Neuhauser, K.S., F.L. Kanipe, 1992, "RADTRAN 4 Volume III: User Guide," SAND89-2370, Sandia National Laboratories, Albuquerque, NM.

Neuhauser, K.S., F.L. Kanipe, 1992, "RADTRAN 4 Volume IV: Programmer's Manual," SAND89-2370, Sandia National Laboratories, Albuquerque, NM.

Neuhauser, K.S., F.L. Kanipe, S.J. Bepalko, 1994, "RADTRAN 4 Software Quality Assurance Plan: Version 1," Sandia National Laboratories, Albuquerque, NM.

Neuhauser, K.S., F.L. Kanipe, 2000, "RADTRAN Software Quality Assurance Plan: Version 2," Sandia National Laboratories, Albuquerque, NM.

Neuhauser, K.S., F.L. Kanipe, and R.F. Weiner, 2000, "RADTRAN 5 Technical Manual," SAND2000-1256, Sandia National Laboratories, Albuquerque, NM.

NRC (Nuclear Regulatory Commission), 1977, "Final Environmental Statement on the Transportation of Radioactive Materials by Air and other Modes," NUREG-0170, Nuclear Regulatory Commission, Washington D.C.

Osborn D.M., R.F. Weiner, G.S. Mills, and S.C. Hamp, 2005, "Verification and Validation of RADTRAN 5.5," SAND2005-1274, Sandia National Laboratories, Albuquerque, NM.

Osborn D.M., et al., 2007, "An Economic Model for RADTRAN," SAND2007-7120, Sandia National Laboratories, Albuquerque, NM.

Weiner, R.F., et al., 2006, "RadCat 2.3 User Guide," SAND2006-6315, Sandia National Laboratories, Albuquerque, NM.

Weiner, R.F., et al., 2007, "RADTRAN 6 Unit Conversion Quality Assurance Plan," SAND2007-8102, Sandia National Laboratories, Albuquerque, NM.

Appendix A **RADTRAN 5.5 Output from Test Case 1a**

RUN DATE: [10-MAY-08 AT 16:23:45]

PAGE 1

RRRR	AAA	DDDD	TTTTT	RRRR	AAA	N	N	55555
R R	A A	D D	T	R R	A A	NN	N	5
R R	A A	D D	T	R R	A A	N N	N	5
RRRR	A A	D D	T	RRRR	A A	N	NN	5555
R R	AAAAA	D D	T	R R	AAAAA	N	N	5
R R	A A	D D	T	R R	A A	N	N	5 5
R R	A A	DDDD	T	R R	A A	N	N	5555

RADTRAN 5.6 August 15, 2005

INPUT ECHO

&& Edited Thu Mar 30 10:24:42 2000

TITLE CRYSTAL RIVER TO HANFORD; SPENT FUEL

INPUT STANDARD

STD: 0 10 18	&& DIMEN=NSEV NRAD NAREAS
STD: 1 3 3 0	&& PARM=IRNKC IANA ISEN IPSQSB
STD: .TRUE. .FALSE.	&& FORM = UNIT, SI-UNITS?
STD: 2.3E12	&& NEVAL FOR CF252
STD: 9.25E5 5.77E6 1.27E6	&& RPCTHY FOR I125, I129, I131
STD: 0.0 0.0 0.0 0.0 0.0	&& TRANSFER GAMMA
STD: 7.42E-3 2.02E-2 6.17E-5 3.17E-8 0.0	&& TRANSFER NEUTRON
STD: 30 24	&& MITDDIST MITDVEL
STD: 1 2 .0018	&& ITRAIN FMINCL DDRWEF
STD: 33 68 105 244 369	&& CENTER LINE
STD: 561 1018 1628 2308 4269	&& DISTANCES
STD: 5468 11136 13097 21334 40502	&& FOR AVERAGE
STD: 69986 89860 120878 0 0 0 0 0 0 0 0 0 0 0 0	&& US CLOUD
STD: 4.59E+02 1.53E+03 3.94E+03 1.25E+04 3.04E+04 6.85E+04 1.76E+05 4.45E+05	
STD: 8.59E+05 2.55E+06 4.45E+06 1.03E+07 2.16E+07 5.52E+07 1.77E+08 4.89E+08	
STD: 8.12E+08 1.35E+09 0 0 0 0 0 0 0 0 0 0 0	&& AREADA
STD: 3.42E-03 1.72E-03 8.58E-04 3.42E-04 1.72E-04 8.58E-05 3.42E-05 1.72E-05	
STD: 8.58E-06 3.42E-06 1.72E-06 8.58E-07 3.42E-07 1.72E-07 8.58E-08 5.42E-08	
STD: 4.30E-08 3.42E-08 0 0 0 0 0 0 0 0 0 0 0	&& DFLEV
STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	
STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	
STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	&& RADIST
STD: 0.5	&& SMLPKG
STD: 1.0 0.87 0.018	&& SHIELDING FACTORS RR RS RU
STD: 30 30 800	&& OFFLINK {FREEWAY}
STD: 27 30 800	&& OFFLINK {NON-FREEWAY}
STD: 5 8 800	&& OFFLINK {CITY STREETS}
STD: 30 30 800	&& OFFLINK {RAILWAY}
STD: 200 200 1000	&& OFFLINK {WATERWAY}
STD: 15 3 3 3 4	&& ONLINK {FWAY NONFWY STREET RAIL ADJ}
STD: 6.0 4 40.0	&& RPD FNOATT INTERDICT
STD: 0.05 0.2 3.3E-4	&& BDF CULVL BRATE
STD: 0.9 0.1	&& UBF USWF

STD: 1.0 10.0 1.0

&& EVACUATION SURVEY CAMPAIGN

CRYSTAL RIVER TO HANFORD; SPENT FUEL

```

STD: 0.0 0.0 1.5E-8 5.3E-8 && HIGHWAY - RURAL - NONRAD
STD: 0.0 0.0 3.7E-9 1.3E-8 && HIGHWAY - SUBURBAN - NONRAD
STD: 0.0 0.0 2.1E-9 7.5E-9 && HIGHWAY - URBAN - NONRAD
STD: 0.0 0.0 1.81E-9 2.64E-8 && GENERAL FREIGHT - R - NONRAD
STD: 0.0 0.0 1.81E-9 2.64E-8 && GENERAL FREIGHT - S - NONRAD
STD: 0.0 0.0 1.81E-9 2.64E-8 && GENERAL FREIGHT - U - NONRAD
STD: 0.0 0.0 1.27E-7 1.85E-6 && DEDICATED RAIL - R - NONRAD
STD: 0.0 0.0 1.27E-7 1.85E-6 && DEDICATED RAIL - S - NONRAD
STD: 0.0 0.0 1.27E-7 1.85E-6 && DEDICATED RAIL - U - NONRAD
STD: 0.0 0.0 0.0 0.0 0.0 0.0 && PSPROB
STD: 0.67 0.67 0.42 && TIMENDE NON-DISPERSAL EVAC TIME
(LCF&EA
STD: 2 2 1 && FLAGS=IUOPT IACC REGCHECK
STD: 5E-4, 4E-4, 1.3E-4 && LCFCN(1), LCFCN(2), GECON
STD: R5INGEST.BIN && INGESTION FILE
FORM UNIT
DIMEN 6 10 18
PARM 1 3 4 0
SEVERITY
NPOP=1
NMODE=1
6.03E-01 3.94E-01 3.00E-03 3.00E-06 5.00E-06 7.00E-06
NPOP=2
NMODE=1
6.02E-01 3.94E-01 4.00E-03 4.00E-06 3.00E-06 2.00E-06
NPOP=3
NMODE=1
6.04E-01 3.95E-01 3.80E-04 3.80E-07 2.50E-07 1.30E-07
RELEASE
GROUP=PKG1_B
RFRAC
0.00E+00 0.00E+00 1.20E-02 1.20E-02 1.20E-02 1.20E-02
AERSOL
1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
RESP
5.00E-02 5.00E-02 5.00E-02 5.00E-02 5.00E-02 5.00E-02
LOS
0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
DEPVEL 0.0100
GROUP=PKG2_C
RFRAC
0.00E+00 0.00E+00 0.00E+00 1.00E-02 1.00E-01 1.10E-01
AERSOL
1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
RESP
1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
LOS
0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
DEPVEL 0.0000
GROUP=PKG4_E

```

CRYSTAL RIVER TO HANFORD; SPENT FUEL

RFRAC	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08
AERSOL	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RESP	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
LOS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEPVEL	0.0100					
GROUP=PKG5_E						
RFRAC	0.00E+00	0.00E+00	0.00E+00	1.00E-08	1.00E-06	4.20E-05
AERSOL	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RESP	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
LOS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEPVEL	0.0100					
GROUP=PKG3_D						
RFRAC	0.00E+00	0.00E+00	0.00E+00	1.00E-08	2.00E-04	2.80E-04
AERSOL	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RESP	0.00E+00	0.00E+00	0.00E+00	5.00E-02	1.00E+00	1.00E+00
LOS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEPVEL	0.0100					
GROUP=PKG4_D						
RFRAC	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08
AERSOL	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RESP	0.00E+00	0.00E+00	0.00E+00	5.00E-02	1.00E+00	1.00E+00
LOS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEPVEL	0.0100					
PACKAGE	SFUEL	1.368E+01	1.000	0.000	5.20	
C060		9.220E+01	PKG1_B			
KR85		6.100E+03	PKG2_C			
SR90		5.960E+04	PKG4_E			
RU106		1.620E+04	PKG5_E			
CS134		2.740E+04	PKG3_D			
CS137		8.760E+04	PKG3_D			
CE144		1.220E+04	PKG4_D			
EU154		7.000E+03	PKG4_D			
PU238		2.960E+03	PKG4_E			
PU239		4.100E+02	PKG4_E			
PU240		4.680E+02	PKG4_E			
PU241		1.260E+05	PKG4_E			

AM241 1.290E+03 PKG4_E

CRYSTAL RIVER TO HANFORD; SPENT FUEL

```

AM243      1.990E+01 PKG4_E
CM244      1.790E+03 PKG4_E
END
VEHICLE  -1 TRUCK      1.368E+01 1.000 0.000      5.20 676.00
                        2.00  10.00 1.000      5.20
      SFUEL      1.00
FLAGS
      IUOPT 2
EOF
LINK RUR_NR_FW TRUCK 2623.81 88.6 2.0      6.00 470.00 1.37E-07 R 1 0.50
LINK RUR_NR_NF TRUCK 874.60 88.6 2.0      6.00 470.00 1.37E-07 R 2 0.50
LINK RUR_RH_FW TRUCK 291.53 88.6 2.0      6.00 470.00 1.37E-07 R 1 0.50
LINK RUR_RH_NF TRUCK 97.18 88.6 2.0      6.00 470.00 1.37E-07 R 2 0.50
LINK SUB_NR_FW TRUCK 623.03 88.6 2.0 719.00 780.00 3.00E-06 S 1 0.00
LINK SUB_NR_NF TRUCK 207.68 40.3 2.0 719.00 780.00 3.00E-06 S 2 0.00
LINK SUB_RH_FW TRUCK 69.23 44.3 2.0 719.00 1560.00 3.00E-06 S 1 0.00
LINK SUB_RH_NF TRUCK 23.08 20.2 2.0 719.00 1560.00 3.00E-06 S 2 0.00
LINK URB_NR_FW TRUCK 6.18 88.6 2.0 3861.00 2800.00 1.60E-05 U 1 0.00
LINK URB_NR_NF TRUCK 0.33 24.2 2.0 3861.00 2800.00 1.60E-05 U 2 0.00
LINK URB_RH_FW TRUCK 0.69 44.3 2.0 3861.00 5600.00 1.60E-05 U 1 0.00
LINK URB_RH_NF TRUCK 0.04 12.1 2.0 3861.00 5600.00 1.60E-05 U 2 0.00
STOP STOP_ TRUCK      50.00 20.00 20.00 1.000 52.991
EOF

```

CRYSTAL RIVER TO HANFORD; SPENT FUEL

PACKAGE AND MATERIAL CHARACTERISTICS

RATE	DIMENSION	EFFECTIVE	K(0)	FRACTION	FRACTION	DOSE
MATERIAL	(METERS)	DIMENSION	METERS SQ.	GAMMA	NEUTRON	
(MREM/HR)						
SFUEL	5.200E+00	4.677E+00	1.115E+01	1.000E+00	0.000E+00	
1.368E+01						

K(0) IS DOSE RATE CONVERSION FACTOR

VEHICLE CHARACTERISTICS

VEHICLE NAME	TRUCK
MODE TYPE	HIGHWAY
EXCLUSIVE USE	YES
DOSE RATE (MREM/HR)	1.37E+01
K(0) (SQ. METERS)	1.11E+01
VEHICLE SIZE (M)	5.20E+00
EFFECTIVE SIZE (M)	4.68E+00
NUMBER OF SHIPMENTS	6.76E+02
NUMBER OF CREW	2.00E+00
CREW DISTANCE (M)	1.00E+01
CREW DOSE ADJUSTMENT FACT	1.00E+00
CREW EXPOSER WIDTH (M)	5.20E+00
EFFECTIVE EXPOSER WIDTH	4.68E+00
K(0) (SQ M) CREW EXPOSURE	1.11E+01

VEHICLE	MATERIAL	NO. PACKAGES
TRUCK		
	SFUEL	1.00E+00

TRANSFER	MU	A(1)	A(2)	A(3)	A(4)
COEFFICIENTS:					
GAMMA	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NEUTRON	7.420E-03	2.020E-02	6.170E-05	3.170E-08	0.000E+00

DISTANCES (METERS)	FREEWAY	SECONDARY	STREET	RAIL	WATER
ADJACENT					
OFFLINK:					
MINIMUM DISTANCE	3.00E+01	2.70E+01	5.00E+00	3.00E+01	2.00E+02
SIDEWALK + MINIMUM	3.00E+01	3.00E+01	8.00E+00	3.00E+01	2.00E+02

MAXIMUM DISTANCE	8.00E+02	8.00E+02	8.00E+02	8.00E+02	1.00E+03
ONLINK:					
OPPOSITE DIRECTION	1.50E+01	3.00E+00	3.00E+00	3.00E+00	
ADJACENT VEHICLE					
4.00E+00					

RUN DATE: [10-MAY-08 AT 16:23:45]

PAGE 6

CRYSTAL RIVER TO HANFORD; SPENT FUEL

STOP RELATED DATA

VEHICLE	STOP_ TRUCK
PERSONS	5.00E+01
MINIMUM DISTANCE(M)	2.00E+01
MAXIMUM DISTANCE(M)	2.00E+01
SHIELDING FACTOR	1.00E+00
TIME (HR)	5.30E+01

HANDLING RELATED DATA

CRYSTAL RIVER TO HANFORD; SPENT FUEL

LINK RELATED DATA

	RUR_NR_FW	RUR_NR_NF	RUR_RH_FW	RUR_RH_NF	
SUB_NR_FW					
VEHICLE	TRUCK	TRUCK	TRUCK	TRUCK	TRUCK
DISTANCE (KM)	2.62E+03	8.75E+02	2.92E+02	9.72E+01	
6.23E+02					
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00	2.00E+00	
2.00E+00					
SPEED (KM/HR)	8.86E+01	8.86E+01	8.86E+01	8.86E+01	
8.86E+01					
POPULATION DENSITY	6.00E+00	6.00E+00	6.00E+00	6.00E+00	
7.19E+02					
VEHICLE DENSITY	4.70E+02	4.70E+02	4.70E+02	4.70E+02	
7.80E+02					
ACCIDENT RATE/KM	1.37E-07	1.37E-07	1.37E-07	1.37E-07	
3.00E-06					
ZONE	RURAL	RURAL	RURAL	RURAL	
SUBURBAN					
ROAD TYPE	FREEWAY	NON-FREEWAY	FREEWAY	NON-FREEWAY	
FREEWAY					
FARMING FRACTION	5.00E-01	5.00E-01	5.00E-01	5.00E-01	
0.00E+00					
	SUB_NR_NF	SUB_RH_FW	SUB_RH_NF	URB_NR_FW	
URB_NR_NF					
VEHICLE	TRUCK	TRUCK	TRUCK	TRUCK	TRUCK
DISTANCE (KM)	2.08E+02	6.92E+01	2.31E+01	6.18E+00	
3.30E-01					
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00	2.00E+00	
2.00E+00					
SPEED (KM/HR)	4.03E+01	4.43E+01	2.02E+01	8.86E+01	
2.42E+01					
POPULATION DENSITY	7.19E+02	7.19E+02	7.19E+02	3.86E+03	
3.86E+03					
VEHICLE DENSITY	7.80E+02	1.56E+03	1.56E+03	2.80E+03	
2.80E+03					
ACCIDENT RATE/KM	3.00E-06	3.00E-06	3.00E-06	1.60E-05	
1.60E-05					
ZONE	SUBURBAN	SUBURBAN	SUBURBAN	URBAN	URBAN
ROAD TYPE	NON-FREEWAY	FREEWAY	NON-FREEWAY	FREEWAY	NON-
FREEWAY					
FARMING FRACTION	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
	URB_RH_FW	URB_RH_NF			
VEHICLE	TRUCK	TRUCK			
DISTANCE (KM)	6.90E-01	4.00E-02			
PERSONS PER VEHICLE	2.00E+00	2.00E+00			
SPEED (KM/HR)	4.43E+01	1.21E+01			
POPULATION DENSITY	3.86E+03	3.86E+03			

VEHICLE DENSITY	5.60E+03	5.60E+03
ACCIDENT RATE/KM	1.60E-05	1.60E-05
ZONE	URBAN	URBAN
ROAD TYPE	FREEWAY	NON-FREEWAY
FARMING FRACTION	0.00E+00	0.00E+00

CRYSTAL RIVER TO HANFORD; SPENT FUEL

ISOTOPE RELATED DATA

NUCLIDE	CURIES PER PKG	RELEASE GROUP	SETTLING ONLY		50YR INHALATION (REM/CI) EFFECTIVE
			RESUSPENSION FACTOR		
SFUEL					
C060	9.22E+01	PKG1_B	1.01E+00		3.70E+04
KR85	6.10E+03	PKG2_C	1.00E+00		0.00E+00
SR90	5.96E+04	PKG4_E	1.01E+00		1.33E+05
RU106	1.62E+04	PKG5_E	1.01E+00		1.04E+05
CS134	2.74E+04	PKG3_D	1.01E+00		3.37E+04
CS137	8.76E+04	PKG3_D	1.01E+00		3.59E+04
CE144	1.22E+04	PKG4_D	1.01E+00		1.33E+05
EU154	7.00E+03	PKG4_D	1.01E+00		1.96E+05
PU238	2.96E+03	PKG4_E	1.01E+00		1.70E+08
PU239	4.10E+02	PKG4_E	1.01E+00		1.85E+08
PU240	4.68E+02	PKG4_E	1.01E+00		1.85E+08
PU241	1.26E+05	PKG4_E	1.01E+00		3.33E+06
AM241	1.29E+03	PKG4_E	1.01E+00		1.55E+08
AM243	1.99E+01	PKG4_E	1.01E+00		1.52E+08
CM244	1.79E+03	PKG4_E	1.01E+00		9.99E+07

NUCLIDE EMISSION	HALF LIFE	GAMMA ENERGY	CLOUD FACTOR	GROUND FACTOR	INGESTION NUCLIDE	NEUTRON
neutrons/sec/Ci						
SFUEL						
C060	1.92E+03	2.50E+00	4.66E-01	7.51E-04	Co-60	N/A
KR85	3.91E+03	2.21E-03	4.40E-04	8.44E-07	NONE	N/A
SR90	1.06E+04	0.00E+00	2.79E-05	9.08E-08	Sr-90	N/A
RU106	3.68E+02	2.01E-01	3.85E-02	6.78E-05	Ru-106	N/A
CS134	7.52E+02	1.55E+00	2.80E-01	4.86E-04	Cs-134	N/A
CS137	1.10E+04	5.69E-02	1.07E-01	1.77E-04	Cs-137	N/A
CE144	2.84E+02	5.27E-02	1.04E-02	1.88E-05	Ce-144	N/A
EU154	3.21E+03	1.22E+00	2.27E-01	3.80E-04	Eu-154	N/A
PU238	3.20E+04	1.81E-03	1.81E-05	2.68E-07	Pu-238	N/A
PU239	8.78E+06	7.96E-04	1.57E-05	1.17E-07	Pu-239	N/A
PU240	2.39E+06	1.73E-03	1.76E-05	2.57E-07	Pu-240	N/A
PU241	5.26E+03	2.54E-06	2.68E-07	6.17E-10	Pu-241	N/A
AM241	1.58E+05	3.24E-02	3.03E-03	8.79E-06	Am-241	N/A
AM243	2.69E+06	5.59E-02	8.07E-03	1.71E-05	Am-243	N/A
CM244	6.61E+03	1.70E-03	1.82E-05	2.81E-07	Cm-244	N/A

CRYSTAL RIVER TO HANFORD; SPENT FUEL

ISOTOPE RELATED DATA

NUCLIDE	1-YR INHALATION (REM/CI)		
	LUNG	MARROW	THYROID
SFUEL			
C060	1.78E+05	1.07E+04	0.00E+00
KR85	0.00E+00	0.00E+00	0.00E+00
SR90	7.03E+05	4.07E+04	0.00E+00
RU106	7.03E+05	6.29E+03	0.00E+00
CS134	1.78E+05	1.15E+04	0.00E+00
CS137	2.18E+05	6.29E+03	0.00E+00
CE144	6.66E+05	5.18E+04	0.00E+00
EU154	2.92E+05	3.70E+04	0.00E+00
PU238	1.26E+08	1.37E+07	0.00E+00
PU239	1.11E+08	1.30E+07	0.00E+00
PU240	1.11E+08	1.30E+07	0.00E+00
PU241	2.85E+04	1.33E+04	0.00E+00
AM241	1.22E+08	8.14E+06	0.00E+00
AM243	1.15E+08	7.77E+06	0.00E+00
CM244	1.37E+08	8.51E+06	0.00E+00

RUN DATE: [10-MAY-08 AT 16:23:45]

PAGE 10

CRYSTAL RIVER TO HANFORD; SPENT FUEL

RELEASE RELATED DATA

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
PKG1_B	0.00E+00	0.00E+00	1.20E-02	1.20E-02	1.20E-02	1.20E-02
PKG2_C	0.00E+00	0.00E+00	0.00E+00	1.00E-02	1.00E-01	1.10E-01
PKG4_E	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08
PKG5_E	0.00E+00	0.00E+00	0.00E+00	1.00E-08	1.00E-06	4.20E-05
PKG3_D	0.00E+00	0.00E+00	0.00E+00	1.00E-08	2.00E-04	2.80E-04
PKG4_D	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08

DEPOSITION VELOCITIES

GROUP	M/SEC
PKG1_B	1.00E-02
PKG2_C	0.00E+00
PKG4_E	1.00E-02
PKG5_E	1.00E-02
PKG3_D	1.00E-02
PKG4_D	1.00E-02

ACCIDENT SEVERITY FRACTIONS

FOR HIGHWAY

ZONE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RURAL	6.03E-01	3.94E-01	3.00E-03	3.00E-06	5.00E-06	7.00E-06
SUBURBAN	6.02E-01	3.94E-01	4.00E-03	4.00E-06	3.00E-06	2.00E-06
URBAN	6.04E-01	3.95E-01	3.80E-04	3.80E-07	2.50E-07	1.30E-07

CRYSTAL RIVER TO HANFORD; SPENT FUEL

AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
PKG1_B	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG2_C	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG4_E	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG5_E	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG3_D	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG4_D	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

RESPIRABLE FRACTION OF AEROSOLS (BELOW 10 MICRONS AED)

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
PKG1_B	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
PKG2_C	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG4_E	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
PKG5_E	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
PKG3_D	0.00E+00	0.00E+00	0.00E+00	5.00E-02	1.00E+00	1.00E+00
PKG4_D	0.00E+00	0.00E+00	0.00E+00	5.00E-02	1.00E+00	1.00E+00

RUN DATE: [10-MAY-08 AT 16:23:45]

PAGE 12

CRYSTAL RIVER TO HANFORD; SPENT FUEL

NON-RADIOLOGICAL DATA (FATALITIES/KM)

HIGHWAY

	NORMAL OCCUPATIONAL	NORMAL NON-OCCUPATIONAL	ACCIDENT OCCUPATIONAL	ACCIDENT NON-OCCUPATIONAL
RURAL	0.00E+00	0.00E+00	1.50E-08	5.30E-08
SUBURBAN	0.00E+00	0.00E+00	3.70E-09	1.30E-08
URBAN	0.00E+00	0.00E+00	2.10E-09	7.50E-09

CRYSTAL RIVER TO HANFORD; SPENT FUEL

HEALTH RELATED DATA

EARLY MORBIDITY THRESHOLD VALUE FOR LUNG 5.000E+02 REM
 EARLY MORBIDITY THRESHOLD VALUE FOR MARROW/WHOLE BODY 5.000E+01 REM
 EARLY MORBIDITY THRESHOLD VALUE FOR THYROID 2.000E+02 REM

EARLY FATALITY PROBABILITIES (EF)

DOSE(REM)	EF MARROW	DOSE(REM)	EF LUNG
680.00	1.00000	1525.00	1.00000
670.00	0.99999	1500.00	0.99999
660.00	0.99998	1475.00	0.99997
650.00	0.99996	1450.00	0.99991
640.00	0.99992	1425.00	0.99974
630.00	0.99983	1400.00	0.99933
620.00	0.99967	1375.00	0.99840
610.00	0.99938	1350.00	0.99653
600.00	0.99889	1325.00	0.99306
590.00	0.99808	1300.00	0.98709
580.00	0.99679	1275.00	0.97755
570.00	0.99482	1250.00	0.96331
560.00	0.99192	1225.00	0.94326
550.00	0.98776	1200.00	0.91656
540.00	0.98199	1175.00	0.88274
530.00	0.97423	1150.00	0.84178
520.00	0.96406	1125.00	0.79420
510.00	0.95111	1100.00	0.74095
500.00	0.93502	1075.00	0.68335
490.00	0.91551	1050.00	0.62293
480.00	0.89237	1025.00	0.56130
470.00	0.86552	1000.00	0.50000
460.00	0.83499	975.00	0.44042
450.00	0.80096	950.00	0.38372
440.00	0.76371	925.00	0.33077
430.00	0.72363	900.00	0.28218
420.00	0.68123	875.00	0.23830
410.00	0.63706	850.00	0.19925
400.00	0.59172	825.00	0.16498
390.00	0.54583	800.00	0.13529
380.00	0.50000	775.00	0.10988
370.00	0.45481	750.00	0.08837
360.00	0.41078	725.00	0.07038
350.00	0.36838	700.00	0.05548
340.00	0.32798	675.00	0.04329
330.00	0.28990	650.00	0.03341
320.00	0.25438	625.00	0.02549
310.00	0.22155	600.00	0.01922
300.00	0.19150	575.00	0.01430
290.00	0.16425	550.00	0.01050

280.00	0.13977	525.00	0.00759
270.00	0.11797	500.00	0.00000
260.00	0.09872		
250.00	0.08188		
240.00	0.06729		
230.00	0.05475		
220.00	0.04408		
210.00	0.03510		
200.00	0.02761		
190.00	0.02143		
180.00	0.01639		
170.00	0.01234		
160.00	0.00913		
150.00	0.00000		

CRYSTAL RIVER TO HANFORD; SPENT FUEL

DISPERSAL ACCIDENT INPUT

AREADA (M SQ)	CENTER LINE(M)	DILUTION FACTOR*
4.590E+02	3.300E+01	3.420E-03
1.530E+03	6.800E+01	1.720E-03
3.940E+03	1.050E+02	8.580E-04
1.250E+04	2.440E+02	3.420E-04
3.040E+04	3.690E+02	1.720E-04
6.850E+04	5.610E+02	8.580E-05
1.760E+05	1.018E+03	3.420E-05
4.450E+05	1.628E+03	1.720E-05
8.590E+05	2.308E+03	8.580E-06
2.550E+06	4.269E+03	3.420E-06
4.450E+06	5.468E+03	1.720E-06
1.030E+07	1.114E+04	8.580E-07
2.160E+07	1.310E+04	3.420E-07
5.520E+07	2.133E+04	1.720E-07
1.770E+08	4.050E+04	8.580E-08
4.890E+08	6.999E+04	5.420E-08
8.120E+08	8.986E+04	4.300E-08
1.350E+09	1.209E+05	3.420E-08

* DILUTION FACTOR UNITS ARE (CI-SEC/M**3/CI-RELEASED)

CRYSTAL RIVER TO HANFORD; SPENT FUEL

BUILDING DOSE FACTOR (BDF)	= 5.000E-02
CONTAMINATION CLEAN UP LEVEL (UCI/M**2) (CULVL)	= 2.000E-01
BREATHING RATE (M**3/SEC) (BRATE)	= 3.300E-04
INTERDICTION THRESHOLD (INTERDICT)	= 4.000E+01
EVACUATION TIME (DAYS) (EVACUATION)	= 1.000E+00
SURVEY INTERVAL (DAYS) (SURVEY)	= 1.000E+01
CAMPAIGN LENGTH (YEARS) (CAMPAIGN)	= 1.000E+00
FRACTION OF URBAN AREAS WITH BUILDINGS (UBF)	= 9.000E-01
FRACTION OF URBAN AREAS WITH SIDEWALKS (USWF)	= 1.000E-01
RATIO OF SIDEWALK PEDESTRIAN DENSITY (RPD)	= 6.000E+00
MAXIMUM IN-TRANSIT DOSE DISTANCE (M) (MITDDIST)	= 3.000E+01
MAXIMUM IN-TRANSIT DOSE VELOCITY (KM/H) (MITDVEL)	= 2.400E+01
IACC VALUE: 1=NON-DISPERSAL, 2=DISPERSAL	= 2
REGULATORY CHECK, 1=DO CHECKS, 0=NO CHECKS	= 1
BUILDING SHIELDING OPTION (IUOPT)	= 2
RURAL SHIELDING FACTOR	= 1.000E+00
SUBURBAN SHIELDING FACTOR	= 8.700E-01
URBAN SHIELDING FACTOR	= 1.800E-02

RUN DATE: [10-MAY-08 AT 16:23:45]

PAGE 16

CRYSTAL RIVER TO HANFORD; SPENT FUEL

INGESTION RELATED DATA

COMIDA INGESTION FILE USED: R5INGEST.BIN

COMIDA FILE HEADER

COMIDA2 07/22/03 08:58:40 Ver. 1.11a, 1/28/96: avoiding use of UNIT 6 for HP

DOSE CONVERSION FILE USED IN COMIDA

FGRDCF 07/10/03 21:45:47 Version 1.10

Implicit daughter half-lives (m) less than 90 and less than 0.100 of parent

NO INGESTION WILL BE CALCULATED FOR THE FOLLOWING ISOTOPES
INGESTION NUCLIDES ARE NOT IN INGESTION FILE

ISOTOPE	INGESTION NUCLIDE
KR85	NONE

CRYSTAL RIVER TO HANFORD; SPENT FUEL

BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

NUCLIDE	EFFECTIVE	THYROID
Co-60	1.328E+04	3.779E+03
Sr-90	7.984E+04	3.131E+03
Ru-106	6.681E+03	1.273E+03
Cs-134	2.232E+05	1.984E+05
Cs-137	1.704E+05	1.590E+05
Ce-144	3.780E+03	3.411E+00
Eu-154	4.260E+03	9.427E+01
Pu-238	7.414E+05	6.848E+00
Pu-239	8.229E+05	6.447E+00
Pu-240	8.228E+05	6.464E+00
Pu-241	1.624E+04	9.444E-02
Am-241	8.471E+05	1.136E+01
Am-243	8.435E+05	5.859E+01
Cm-244	7.686E+05	1.190E+01

SOCIETAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

NUCLIDE	GONADS	BREAST	LUNGS	RED MAR	BONE SU	THYROID	REMAIND	EFFECTI
Co-60	1.6E+00	5.7E-01	4.5E-01	6.8E-01	4.8E-01	4.1E-01	2.6E+00	1.4E+00
Sr-90	5.2E-01	5.2E-01	5.2E-01	6.6E+01	1.4E+02	5.2E-01	2.1E+00	1.3E+01
Ru-106	1.6E-01	1.4E-01	1.4E-01	1.4E-01	1.4E-01	1.3E-01	2.0E+00	7.1E-01
Cs-134	2.6E+01	2.2E+01	2.2E+01	2.4E+01	2.2E+01	2.2E+01	2.8E+01	2.5E+01
Cs-137	2.0E+01	1.8E+01	1.9E+01	1.9E+01	1.8E+01	1.8E+01	2.1E+01	2.0E+01
Ce-144	4.9E-03	8.6E-04	4.6E-04	6.2E-03	8.9E-03	3.6E-04	1.3E+00	4.0E-01
Eu-154	2.4E-01	4.9E-02	3.8E-02	2.0E-01	7.9E-01	1.0E-02	1.1E+00	4.6E-01
Pu-238	2.2E+01	8.0E-04	8.0E-04	1.2E+02	1.5E+03	7.6E-04	5.7E+01	8.2E+01
Pu-239	2.5E+01	7.3E-04	7.4E-04	1.3E+02	1.7E+03	7.1E-04	6.1E+01	9.1E+01
Pu-240	2.5E+01	7.6E-04	7.7E-04	1.3E+02	1.7E+03	7.1E-04	6.1E+01	9.1E+01
Pu-241	5.5E-01	2.6E-05	4.4E-05	2.7E+00	3.4E+01	1.1E-05	1.1E+00	1.8E+00
Am-241	2.6E+01	2.5E-03	3.2E-03	1.4E+02	1.7E+03	1.3E-03	6.3E+01	9.3E+01
Am-243	2.6E+01	1.3E-02	1.9E-02	1.4E+02	1.7E+03	6.5E-03	6.3E+01	9.3E+01
Cm-244	2.3E+01	1.5E-03	1.5E-03	1.3E+02	1.7E+03	1.4E-03	7.1E+01	9.4E+01

CRYSTAL RIVER TO HANFORD; SPENT FUEL

NON-RADIOLOGICAL RISK (FATALITIES)

	NORMAL OCCUPATIONAL	NORMAL NON-OCCUPATIONAL	ACCIDENT OCCUPATIONAL	ACCIDENT NON-OCCUPATIONAL
RUR_NR_FW	0.00E+00	0.00E+00	5.32E-02	1.88E-01
RUR_NR_NF	0.00E+00	0.00E+00	1.77E-02	6.27E-02
RUR_RH_FW	0.00E+00	0.00E+00	5.91E-03	2.09E-02
RUR_RH_NF	0.00E+00	0.00E+00	1.97E-03	6.96E-03
SUB_NR_FW	0.00E+00	0.00E+00	3.12E-03	1.10E-02
SUB_NR_NF	0.00E+00	0.00E+00	1.04E-03	3.65E-03
SUB_RH_FW	0.00E+00	0.00E+00	3.46E-04	1.22E-03
SUB_RH_NF	0.00E+00	0.00E+00	1.15E-04	4.06E-04
URB_NR_FW	0.00E+00	0.00E+00	1.75E-05	6.27E-05
URB_NR_NF	0.00E+00	0.00E+00	9.37E-07	3.35E-06
URB_RH_FW	0.00E+00	0.00E+00	1.96E-06	7.00E-06
URB_RH_NF	0.00E+00	0.00E+00	1.14E-07	4.06E-07
TOTALS:	0.00E+00	0.00E+00	8.35E-02	2.95E-01

RUN DATE: [10-MAY-08 AT 16:23:45]

PAGE 19

CRYSTAL RIVER TO HANFORD; SPENT FUEL

REGULATORY CHECKS

FOR TRUCK THE DOSE RATE AT 2 METERS COULD EXCEED 10 MREM/HR
THE VEHICLE DOSE RATE HAS BEEN RESET TO EQUAL 13.00 MREM/HR

RUN DATE: [10-MAY-08 AT 16:23:45]

PAGE 20

CRYSTAL RIVER TO HANFORD; SPENT FUEL

CALCULATIONAL INFORMATION

FOR TRUCK AREAS WITH TOTAL CONTAMINATION RATIO GREATER THAN
40.000
(THE AREAS MARKED WITH AN 'X' ARE INTERDICTED AND HAVE
NO 50 YEAR GROUNDSHINE DOSE AND NO INGESTION DOSE.)

AREA/SEVERITY	1	2	3	4	5	6
1	-	-	X	X	X	X
2	-	-	X	X	X	X
3	-	-	X	X	X	X
4	-	-	-	-	X	X
5	-	-	-	-	X	X
6	-	-	-	-	X	X
7	-	-	-	-	-	X
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
11	-	-	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	-	-	-	-	-	-
15	-	-	-	-	-	-
16	-	-	-	-	-	-
17	-	-	-	-	-	-
18	-	-	-	-	-	-

CRYSTAL RIVER TO HANFORD; SPENT FUEL

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
PKG1_B	0.00E+00	0.00E+00	1.20E-02	1.20E-02	1.20E-02	1.20E-02
PKG2_C	0.00E+00	0.00E+00	0.00E+00	1.00E-02	1.00E-01	1.10E-01
PKG4_E	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08
PKG5_E	0.00E+00	0.00E+00	0.00E+00	1.00E-08	1.00E-06	4.20E-05
PKG3_D	0.00E+00	0.00E+00	0.00E+00	1.00E-08	2.00E-04	2.80E-04
PKG4_D	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08

DEPOSITION VELOCITIES

GROUP	M/SEC
PKG1_B	1.00E-02
PKG2_C	0.00E+00
PKG4_E	1.00E-02
PKG5_E	1.00E-02
PKG3_D	1.00E-02
PKG4_D	1.00E-02

DILUTION FACTORS

CHI VALUES AFTER DEPLETION (CI-SEC/M**3/CI-RELEASED)

DISTANCE	PKG1_B	PKG2_C	PKG4_E	PKG5_E	PKG3_D	PKG4_D
3.30E+01	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03
6.80E+01	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03
1.05E+02	8.34E-04	8.58E-04	8.34E-04	8.34E-04	8.34E-04	8.34E-04
2.44E+02	3.23E-04	3.42E-04	3.23E-04	3.23E-04	3.23E-04	3.23E-04
3.69E+02	1.55E-04	1.72E-04	1.55E-04	1.55E-04	1.55E-04	1.55E-04
5.61E+02	7.38E-05	8.58E-05	7.38E-05	7.38E-05	7.38E-05	7.38E-05
1.02E+03	2.80E-05	3.42E-05	2.80E-05	2.80E-05	2.80E-05	2.80E-05
1.63E+03	1.33E-05	1.72E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05
2.31E+03	6.16E-06	8.58E-06	6.16E-06	6.16E-06	6.16E-06	6.16E-06
4.27E+03	2.33E-06	3.42E-06	2.33E-06	2.33E-06	2.33E-06	2.33E-06
5.47E+03	1.06E-06	1.72E-06	1.06E-06	1.06E-06	1.06E-06	1.06E-06
1.11E+04	5.04E-07	8.58E-07	5.04E-07	5.04E-07	5.04E-07	5.04E-07
1.31E+04	1.86E-07	3.42E-07	1.86E-07	1.86E-07	1.86E-07	1.86E-07
2.13E+04	8.77E-08	1.72E-07	8.77E-08	8.77E-08	8.77E-08	8.77E-08
4.05E+04	4.01E-08	8.58E-08	4.01E-08	4.01E-08	4.01E-08	4.01E-08
7.00E+04	2.14E-08	5.42E-08	2.14E-08	2.14E-08	2.14E-08	2.14E-08
8.99E+04	1.31E-08	4.30E-08	1.31E-08	1.31E-08	1.31E-08	1.31E-08
1.21E+05	8.54E-09	3.42E-08	8.54E-09	8.54E-09	8.54E-09	8.54E-09

CRYSTAL RIVER TO HANFORD; SPENT FUEL

DEPOSITION FACTORS
CHI DEPOSITED (CI/M**2/CI-RELEASED)

DISTANCE	PKG1_B	PKG2_C	PKG4_E	PKG5_E	PKG3_D	PKG4_D
3.30E+01	3.42E-05	0.00E+00	3.42E-05	3.42E-05	3.42E-05	3.42E-05
6.80E+01	1.72E-05	0.00E+00	1.72E-05	1.72E-05	1.72E-05	1.72E-05
1.05E+02	8.34E-06	0.00E+00	8.34E-06	8.34E-06	8.34E-06	8.34E-06
2.44E+02	3.23E-06	0.00E+00	3.23E-06	3.23E-06	3.23E-06	3.23E-06
3.69E+02	1.55E-06	0.00E+00	1.55E-06	1.55E-06	1.55E-06	1.55E-06
5.61E+02	7.38E-07	0.00E+00	7.38E-07	7.38E-07	7.38E-07	7.38E-07
1.02E+03	2.80E-07	0.00E+00	2.80E-07	2.80E-07	2.80E-07	2.80E-07
1.63E+03	1.33E-07	0.00E+00	1.33E-07	1.33E-07	1.33E-07	1.33E-07
2.31E+03	6.16E-08	0.00E+00	6.16E-08	6.16E-08	6.16E-08	6.16E-08
4.27E+03	2.33E-08	0.00E+00	2.33E-08	2.33E-08	2.33E-08	2.33E-08
5.47E+03	1.06E-08	0.00E+00	1.06E-08	1.06E-08	1.06E-08	1.06E-08
1.11E+04	5.04E-09	0.00E+00	5.04E-09	5.04E-09	5.04E-09	5.04E-09
1.31E+04	1.86E-09	0.00E+00	1.86E-09	1.86E-09	1.86E-09	1.86E-09
2.13E+04	8.77E-10	0.00E+00	8.77E-10	8.77E-10	8.77E-10	8.77E-10
4.05E+04	4.01E-10	0.00E+00	4.01E-10	4.01E-10	4.01E-10	4.01E-10
7.00E+04	2.14E-10	0.00E+00	2.14E-10	2.14E-10	2.14E-10	2.14E-10
8.99E+04	1.31E-10	0.00E+00	1.31E-10	1.31E-10	1.31E-10	1.31E-10
1.21E+05	8.54E-11	0.00E+00	8.54E-11	8.54E-11	8.54E-11	8.54E-11

CRYSTAL RIVER TO HANFORD; SPENT FUEL

VEHICLE TRUCK

	1-YEAR DOSE TO			LUNG, INHALATION PATHWAY		
	BDF = 1			(REM)		
CNTR LINE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
3.30E+01	0.00E+00	0.00E+00	1.11E-02	1.17E-02	5.43E+00	7.62E+00
6.80E+01	0.00E+00	0.00E+00	5.58E-03	5.85E-03	2.72E+00	3.82E+00
1.05E+02	0.00E+00	0.00E+00	2.71E-03	2.84E-03	1.32E+00	1.86E+00
2.44E+02	0.00E+00	0.00E+00	1.05E-03	1.10E-03	5.12E-01	7.19E-01
3.69E+02	0.00E+00	0.00E+00	5.03E-04	5.28E-04	2.46E-01	3.45E-01
5.61E+02	0.00E+00	0.00E+00	2.40E-04	2.51E-04	1.17E-01	1.64E-01
1.02E+03	0.00E+00	0.00E+00	9.10E-05	9.54E-05	4.44E-02	6.24E-02
1.63E+03	0.00E+00	0.00E+00	4.31E-05	4.52E-05	2.10E-02	2.95E-02
2.31E+03	0.00E+00	0.00E+00	2.00E-05	2.10E-05	9.78E-03	1.37E-02
4.27E+03	0.00E+00	0.00E+00	7.57E-06	7.94E-06	3.70E-03	5.19E-03
5.47E+03	0.00E+00	0.00E+00	3.45E-06	3.62E-06	1.68E-03	2.36E-03
1.11E+04	0.00E+00	0.00E+00	1.64E-06	1.72E-06	7.99E-04	1.12E-03
1.31E+04	0.00E+00	0.00E+00	6.05E-07	6.35E-07	2.95E-04	4.15E-04
2.13E+04	0.00E+00	0.00E+00	2.85E-07	2.99E-07	1.39E-04	1.95E-04
4.05E+04	0.00E+00	0.00E+00	1.30E-07	1.37E-07	6.36E-05	8.93E-05
7.00E+04	0.00E+00	0.00E+00	6.96E-08	7.30E-08	3.40E-05	4.77E-05
8.99E+04	0.00E+00	0.00E+00	4.24E-08	4.45E-08	2.07E-05	2.91E-05
1.21E+05	0.00E+00	0.00E+00	2.78E-08	2.91E-08	1.36E-05	1.90E-05

	1-YEAR DOSE TO MARROW/WHOLE BODY,			INHALATION PATHWAY		
	BDF = 1			(REM)		
CNTR LINE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
3.30E+01	0.00E+00	0.00E+00	2.43E-03	2.57E-03	2.11E-01	2.94E-01
6.80E+01	0.00E+00	0.00E+00	1.22E-03	1.29E-03	1.06E-01	1.48E-01
1.05E+02	0.00E+00	0.00E+00	5.93E-04	6.28E-04	5.14E-02	7.17E-02
2.44E+02	0.00E+00	0.00E+00	2.29E-04	2.43E-04	1.99E-02	2.78E-02
3.69E+02	0.00E+00	0.00E+00	1.10E-04	1.17E-04	9.54E-03	1.33E-02
5.61E+02	0.00E+00	0.00E+00	5.24E-05	5.58E-05	4.55E-03	6.35E-03
1.02E+03	0.00E+00	0.00E+00	1.99E-05	2.12E-05	1.73E-03	2.41E-03
1.63E+03	0.00E+00	0.00E+00	9.42E-06	1.01E-05	8.18E-04	1.14E-03
2.31E+03	0.00E+00	0.00E+00	4.38E-06	4.70E-06	3.81E-04	5.31E-04
4.27E+03	0.00E+00	0.00E+00	1.66E-06	1.78E-06	1.44E-04	2.01E-04
5.47E+03	0.00E+00	0.00E+00	7.54E-07	8.15E-07	6.56E-05	9.14E-05
1.11E+04	0.00E+00	0.00E+00	3.58E-07	3.88E-07	3.11E-05	4.34E-05
1.31E+04	0.00E+00	0.00E+00	1.32E-07	1.44E-07	1.15E-05	1.61E-05
2.13E+04	0.00E+00	0.00E+00	6.24E-08	6.82E-08	5.43E-06	7.57E-06
4.05E+04	0.00E+00	0.00E+00	2.85E-08	3.14E-08	2.48E-06	3.46E-06
7.00E+04	0.00E+00	0.00E+00	1.52E-08	1.70E-08	1.33E-06	1.85E-06
8.99E+04	0.00E+00	0.00E+00	9.28E-09	1.06E-08	8.13E-07	1.13E-06
1.21E+05	0.00E+00	0.00E+00	6.07E-09	7.11E-09	5.33E-07	7.42E-07

	1-YEAR DOSE TO			THYROID, INHALATION PATHWAY		
	BDF = 1			(REM)		
CNTR LINE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6

3.30E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.80E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.05E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.44E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.69E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.61E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.02E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.63E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.31E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.27E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.47E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.11E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.31E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.13E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.05E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.00E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.21E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRYSTAL RIVER TO HANFORD; SPENT FUEL

VEHICLE TRUCK

GROUND SURFACE CONTAMINATION TABLE (MICRO CI/M**2)
BEFORE CLEANUP

CNTR LINE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
3.30E+01	0.00E+00	0.00E+00	3.78E+01	3.80E+01	8.25E+02	1.16E+03
6.80E+01	0.00E+00	0.00E+00	1.90E+01	1.91E+01	4.14E+02	5.84E+02
1.05E+02	0.00E+00	0.00E+00	9.23E+00	9.26E+00	2.01E+02	2.84E+02
2.44E+02	0.00E+00	0.00E+00	3.57E+00	3.58E+00	7.79E+01	1.10E+02
3.69E+02	0.00E+00	0.00E+00	1.71E+00	1.72E+00	3.73E+01	5.26E+01
5.61E+02	0.00E+00	0.00E+00	8.16E-01	8.19E-01	1.78E+01	2.51E+01
1.02E+03	0.00E+00	0.00E+00	3.10E-01	3.11E-01	6.76E+00	9.52E+00
1.63E+03	0.00E+00	0.00E+00	1.47E-01	1.47E-01	3.20E+00	4.50E+00
2.31E+03	0.00E+00	0.00E+00	6.82E-02	6.84E-02	1.49E+00	2.10E+00
4.27E+03	0.00E+00	0.00E+00	2.58E-02	2.58E-02	5.62E-01	7.92E-01
5.47E+03	0.00E+00	0.00E+00	1.17E-02	1.18E-02	2.56E-01	3.61E-01
1.11E+04	0.00E+00	0.00E+00	5.57E-03	5.59E-03	1.22E-01	1.71E-01
1.31E+04	0.00E+00	0.00E+00	2.06E-03	2.07E-03	4.49E-02	6.33E-02
2.13E+04	0.00E+00	0.00E+00	9.71E-04	9.74E-04	2.12E-02	2.98E-02
4.05E+04	0.00E+00	0.00E+00	4.44E-04	4.45E-04	9.67E-03	1.36E-02
7.00E+04	0.00E+00	0.00E+00	2.37E-04	2.38E-04	5.17E-03	7.28E-03
8.99E+04	0.00E+00	0.00E+00	1.44E-04	1.45E-04	3.15E-03	4.44E-03
1.21E+05	0.00E+00	0.00E+00	9.45E-05	9.48E-05	2.06E-03	2.90E-03

CRYSTAL RIVER TO HANFORD; SPENT FUEL

VEHICLE TRUCK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM INHALATION, CLOUDSHINE, AND GROUNDSHINE EXPOSURE DURING EVACUATION

CNTR LINE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
3.30E+01	0.00E+00	0.00E+00	4.19E-02	4.26E-02	5.86E+00	8.22E+00
6.80E+01	0.00E+00	0.00E+00	2.11E-02	2.14E-02	2.94E+00	4.13E+00
1.05E+02	0.00E+00	0.00E+00	1.02E-02	1.04E-02	1.43E+00	2.00E+00
2.44E+02	0.00E+00	0.00E+00	3.96E-03	4.02E-03	5.53E-01	7.75E-01
3.69E+02	0.00E+00	0.00E+00	1.90E-03	1.93E-03	2.65E-01	3.72E-01
5.61E+02	0.00E+00	0.00E+00	9.04E-04	9.20E-04	1.26E-01	1.77E-01
1.02E+03	0.00E+00	0.00E+00	3.43E-04	3.49E-04	4.80E-02	6.73E-02
1.63E+03	0.00E+00	0.00E+00	1.62E-04	1.65E-04	2.27E-02	3.18E-02
2.31E+03	0.00E+00	0.00E+00	7.56E-05	7.69E-05	1.06E-02	1.48E-02
4.27E+03	0.00E+00	0.00E+00	2.86E-05	2.91E-05	3.99E-03	5.60E-03
5.47E+03	0.00E+00	0.00E+00	1.30E-05	1.32E-05	1.82E-03	2.55E-03
1.11E+04	0.00E+00	0.00E+00	6.17E-06	6.29E-06	8.63E-04	1.21E-03
1.31E+04	0.00E+00	0.00E+00	2.28E-06	2.32E-06	3.19E-04	4.47E-04
2.13E+04	0.00E+00	0.00E+00	1.08E-06	1.10E-06	1.50E-04	2.11E-04
4.05E+04	0.00E+00	0.00E+00	4.91E-07	5.01E-07	6.87E-05	9.63E-05
7.00E+04	0.00E+00	0.00E+00	2.62E-07	2.68E-07	3.67E-05	5.14E-05
8.99E+04	0.00E+00	0.00E+00	1.60E-07	1.64E-07	2.24E-05	3.14E-05
1.21E+05	0.00E+00	0.00E+00	1.05E-07	1.07E-07	1.46E-05	2.05E-05

CRYSTAL RIVER TO HANFORD; SPENT FUEL

VEHICLE TRUCK

BACKYARD FARMER DOSE - EFFECTIVE
MAXIMUM INDIVIDUAL CONSEQUENCE (REM)

CNTR LINE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
3.30E+01	0.00E+00	0.00E+00	5.03E-01	5.14E-01	1.44E+02	2.02E+02
6.80E+01	0.00E+00	0.00E+00	2.52E-01	2.58E-01	7.25E+01	1.02E+02
1.05E+02	0.00E+00	0.00E+00	1.23E-01	1.25E-01	3.52E+01	4.93E+01
2.44E+02	0.00E+00	0.00E+00	4.74E-02	4.85E-02	1.36E+01	1.91E+01
3.69E+02	0.00E+00	0.00E+00	2.27E-02	2.33E-02	6.54E+00	9.15E+00
5.61E+02	0.00E+00	0.00E+00	1.08E-02	1.11E-02	3.11E+00	4.36E+00
1.02E+03	0.00E+00	0.00E+00	4.12E-03	4.21E-03	1.18E+00	1.65E+00
1.63E+03	0.00E+00	0.00E+00	1.95E-03	1.99E-03	5.60E-01	7.83E-01
2.31E+03	0.00E+00	0.00E+00	9.06E-04	9.27E-04	2.60E-01	3.64E-01
4.27E+03	0.00E+00	0.00E+00	3.42E-04	3.50E-04	9.84E-02	1.38E-01
5.47E+03	0.00E+00	0.00E+00	1.56E-04	1.60E-04	4.48E-02	6.27E-02
1.11E+04	0.00E+00	0.00E+00	7.40E-05	7.57E-05	2.13E-02	2.98E-02
1.31E+04	0.00E+00	0.00E+00	2.74E-05	2.80E-05	7.86E-03	1.10E-02
2.13E+04	0.00E+00	0.00E+00	1.29E-05	1.32E-05	3.71E-03	5.19E-03
4.05E+04	0.00E+00	0.00E+00	5.89E-06	6.03E-06	1.69E-03	2.37E-03
7.00E+04	0.00E+00	0.00E+00	3.15E-06	3.22E-06	9.04E-04	1.27E-03
8.99E+04	0.00E+00	0.00E+00	1.92E-06	1.96E-06	5.51E-04	7.72E-04
1.21E+05	0.00E+00	0.00E+00	1.26E-06	1.28E-06	3.61E-04	5.05E-04

BACKYARD FARMER DOSE - THYROID
MAXIMUM INDIVIDUAL CONSEQUENCE (REM)

CNTR LINE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
3.30E+01	0.00E+00	0.00E+00	1.43E-01	1.50E-01	1.33E+02	1.86E+02
6.80E+01	0.00E+00	0.00E+00	7.18E-02	7.52E-02	6.66E+01	9.32E+01
1.05E+02	0.00E+00	0.00E+00	3.49E-02	3.65E-02	3.23E+01	4.53E+01
2.44E+02	0.00E+00	0.00E+00	1.35E-02	1.41E-02	1.25E+01	1.75E+01
3.69E+02	0.00E+00	0.00E+00	6.47E-03	6.77E-03	6.00E+00	8.40E+00
5.61E+02	0.00E+00	0.00E+00	3.08E-03	3.23E-03	2.86E+00	4.00E+00
1.02E+03	0.00E+00	0.00E+00	1.17E-03	1.23E-03	1.09E+00	1.52E+00
1.63E+03	0.00E+00	0.00E+00	5.54E-04	5.80E-04	5.14E-01	7.19E-01
2.31E+03	0.00E+00	0.00E+00	2.58E-04	2.70E-04	2.39E-01	3.35E-01
4.27E+03	0.00E+00	0.00E+00	9.74E-05	1.02E-04	9.03E-02	1.26E-01
5.47E+03	0.00E+00	0.00E+00	4.44E-05	4.64E-05	4.11E-02	5.76E-02
1.11E+04	0.00E+00	0.00E+00	2.11E-05	2.20E-05	1.95E-02	2.73E-02
1.31E+04	0.00E+00	0.00E+00	7.78E-06	8.15E-06	7.22E-03	1.01E-02
2.13E+04	0.00E+00	0.00E+00	3.67E-06	3.84E-06	3.40E-03	4.76E-03
4.05E+04	0.00E+00	0.00E+00	1.68E-06	1.75E-06	1.55E-03	2.18E-03
7.00E+04	0.00E+00	0.00E+00	8.95E-07	9.37E-07	8.30E-04	1.16E-03
8.99E+04	0.00E+00	0.00E+00	5.46E-07	5.72E-07	5.06E-04	7.09E-04
1.21E+05	0.00E+00	0.00E+00	3.57E-07	3.74E-07	3.31E-04	4.63E-04

CRYSTAL RIVER TO HANFORD; SPENT FUEL

INCIDENT-FREE SUMMARY

IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM
 *INPUT DATA WERE ALTERED WITH REGULATORY CHECKS

	PASSENGER	CREW	OFF LINK	ON LINK	TOTALS
RUR_NR_FW	0.00E+00	6.15E+01	3.62E-01	1.47E+01	7.66E+01
RUR_NR_NF	0.00E+00	2.05E+01	1.44E-01	1.35E+01	3.41E+01
RUR_RH_FW	0.00E+00	6.84E+00	4.02E-02	1.64E+00	8.51E+00
RUR_RH_NF	0.00E+00	2.28E+00	1.60E-02	1.50E+00	3.79E+00
SUB_NR_FW	0.00E+00	1.46E+01	8.96E+00	5.80E+00	2.94E+01
SUB_NR_NF	0.00E+00	1.07E+01	8.02E+00	2.62E+01	4.49E+01
SUB_RH_FW	0.00E+00	3.25E+00	1.99E+00	5.38E+00	1.06E+01
SUB_RH_NF	0.00E+00	2.37E+00	1.78E+00	2.39E+01	2.81E+01
URB_NR_FW	0.00E+00	1.45E-01	9.87E-03	2.07E-01	3.61E-01
URB_NR_NF	0.00E+00	2.83E-02	9.48E-02	4.23E-01	5.46E-01
URB_RH_FW	0.00E+00	3.24E-02	2.20E-03	1.92E-01	2.27E-01
URB_RH_NF	0.00E+00	6.87E-03	2.30E-02	4.32E-01	4.62E-01
RURAL	0.00E+00	9.12E+01	5.62E-01	3.13E+01	1.23E+02
SUBURB	0.00E+00	3.09E+01	2.07E+01	6.12E+01	1.13E+02
URBAN	0.00E+00	2.13E-01	1.30E-01	1.25E+00	1.60E+00
TOTALS:	0.00E+00	1.22E+02	2.14E+01	9.38E+01	2.38E+02

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

TRUCK 3.94E-04 REM

STOP EXPOSURE IN PERSON-REM

POINT-SOURCE STOP_ 6.49E+02

TOTAL: 6.49E+02

CRYSTAL RIVER TO HANFORD; SPENT FUEL

INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY
ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE
PARAMETER

LINK	PARAMETER	IMPORTANCE	CHANGE
RUR_NR_FW	-----	-----	-----
-			
	DISTANCE TRAVELED	7.663E-01	1.0000 %
	NUMBER OF SHIPMENTS	7.663E-01	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	7.663E-01	1.0000 %
	K ZERO FOR CREW DOSE	6.154E-01	0.8031 %
	CREW DOSE ADJUSTMENT FACTOR	6.154E-01	0.8031 %
	NUMBER OF CREW MEMBERS	6.154E-01	0.8031 %
	K ZERO FOR VEHICLE	1.509E-01	0.1969 %
	TRAFFIC COUNT	1.473E-01	0.1922 %
	NUMBER OF PEOPLE PER VEHICLE	1.473E-01	0.1922 %
	SHIELDING FACTOR (RR,RS,RU)	3.618E-03	0.0047 %
	POPULATION DENSITY	3.618E-03	0.0047 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	RATIO OF PEDESTRIAN DENSITY (RPD	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSr FACTR	0.000E+00	0.0000 %
	VELOCITY	-9.135E-01	-1.1922 %
	DISTANCE FROM PACKAGE TO CREW	-1.231E+00	-1.6061 %
RUR_NR_NF	-----	-----	-----
-			
	DISTANCE TRAVELED	3.414E-01	1.0000 %
	NUMBER OF SHIPMENTS	3.414E-01	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	3.414E-01	1.0000 %
	NUMBER OF CREW MEMBERS	2.051E-01	0.6009 %
	K ZERO FOR CREW DOSE	2.051E-01	0.6009 %
	CREW DOSE ADJUSTMENT FACTOR	2.051E-01	0.6009 %
	K ZERO FOR VEHICLE	1.363E-01	0.3991 %
	TRAFFIC COUNT	1.348E-01	0.3949 %
	NUMBER OF PEOPLE PER VEHICLE	1.348E-01	0.3949 %
	POPULATION DENSITY	1.438E-03	0.0042 %
	SHIELDING FACTOR (RR,RS,RU)	1.206E-03	0.0035 %
	RATIO OF PEDESTRIAN DENSITY (RPD	2.322E-04	0.0007 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSr FACTR	0.000E+00	0.0000 %
	DISTANCE FROM PACKAGE TO CREW	-4.102E-01	-1.2017 %
	VELOCITY	-4.762E-01	-1.3949 %
RUR_RH_FW	-----	-----	-----
-			
	DISTANCE TRAVELED	8.514E-02	1.0000 %
	NUMBER OF SHIPMENTS	8.514E-02	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	8.514E-02	1.0000 %
	NUMBER OF CREW MEMBERS	6.837E-02	0.8031 %
	CREW DOSE ADJUSTMENT FACTOR	6.837E-02	0.8031 %
	K ZERO FOR CREW DOSE	6.837E-02	0.8031 %
	K ZERO FOR VEHICLE	1.677E-02	0.1969 %

NUMBER OF PEOPLE PER VEHICLE	1.636E-02	0.1922 %
TRAFFIC COUNT	1.636E-02	0.1922 %
SHIELDING FACTOR (RR,RS,RU)	4.020E-04	0.0047 %
POPULATION DENSITY	4.020E-04	0.0047 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
VELOCITY	-1.015E-01	-1.1922 %
DISTANCE FROM PACKAGE TO CREW	-1.367E-01	-1.6061 %

CRYSTAL RIVER TO HANFORD; SPENT FUEL

INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY
ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE
PARAMETER

LINK	PARAMETER	IMPORTANCE	CHANGE
RUR_RH_NF	-----	-----	-----
-			
	DISTANCE TRAVELED	3.793E-02	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	3.793E-02	1.0000 %
	NUMBER OF SHIPMENTS	3.793E-02	1.0000 %
	K ZERO FOR CREW DOSE	2.279E-02	0.6009 %
	NUMBER OF CREW MEMBERS	2.279E-02	0.6009 %
	CREW DOSE ADJUSTMENT FACTOR	2.279E-02	0.6009 %
	K ZERO FOR VEHICLE	1.514E-02	0.3991 %
	TRAFFIC COUNT	1.498E-02	0.3949 %
	NUMBER OF PEOPLE PER VEHICLE	1.498E-02	0.3949 %
	POPULATION DENSITY	1.598E-04	0.0042 %
	SHIELDING FACTOR (RR,RS,RU)	1.340E-04	0.0035 %
	RATIO OF PEDESTRIAN DENSITY (RPD	2.580E-05	0.0007 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSr FACTR	0.000E+00	0.0000 %
	DISTANCE FROM PACKAGE TO CREW	-4.558E-02	-1.2017 %
	VELOCITY	-5.291E-02	-1.3949 %
SUB_NR_FW	-----	-----	-----
-			
	DOSE RATE FOR VEHICLE (TI)	2.937E-01	1.0000 %
	NUMBER OF SHIPMENTS	2.937E-01	1.0000 %
	DISTANCE TRAVELED	2.937E-01	1.0000 %
	K ZERO FOR VEHICLE	1.476E-01	0.5025 %
	CREW DOSE ADJUSTMENT FACTOR	1.461E-01	0.4975 %
	NUMBER OF CREW MEMBERS	1.461E-01	0.4975 %
	K ZERO FOR CREW DOSE	1.461E-01	0.4975 %
	SHIELDING FACTOR (RR,RS,RU)	8.956E-02	0.3049 %
	POPULATION DENSITY	8.956E-02	0.3049 %
	NUMBER OF PEOPLE PER VEHICLE	5.804E-02	0.1976 %
	TRAFFIC COUNT	5.804E-02	0.1976 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	RATIO OF PEDESTRIAN DENSITY (RPD	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSr FACTR	0.000E+00	0.0000 %
	DISTANCE FROM PACKAGE TO CREW	-2.922E-01	-0.9949 %
	VELOCITY	-3.518E-01	-1.1976 %
SUB_NR_NF	-----	-----	-----
-			
	DISTANCE TRAVELED	4.488E-01	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	4.488E-01	1.0000 %
	NUMBER OF SHIPMENTS	4.488E-01	1.0000 %
	K ZERO FOR VEHICLE	3.417E-01	0.7614 %
	NUMBER OF PEOPLE PER VEHICLE	2.616E-01	0.5828 %
	TRAFFIC COUNT	2.616E-01	0.5828 %
	NUMBER OF CREW MEMBERS	1.071E-01	0.2386 %

CREW DOSE ADJUSTMENT FACTOR	1.071E-01	0.2386 %
K ZERO FOR CREW DOSE	1.071E-01	0.2386 %
POPULATION DENSITY	8.016E-02	0.1786 %
SHIELDING FACTOR (RR,RS,RU)	6.564E-02	0.1463 %
RATIO OF PEDESTRIAN DENSITY (RPD	1.453E-02	0.0324 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSr FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-2.142E-01	-0.4772 %
VELOCITY	-7.103E-01	-1.5828 %

CRYSTAL RIVER TO HANFORD; SPENT FUEL

INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY
ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE
PARAMETER

LINK	PARAMETER	IMPORTANCE	CHANGE
SUB_RH_FW	-----	-----	-----
-			
	DISTANCE TRAVELED	1.062E-01	1.0000 %
	NUMBER OF SHIPMENTS	1.062E-01	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	1.062E-01	1.0000 %
	K ZERO FOR VEHICLE	7.368E-02	0.6941 %
	NUMBER OF PEOPLE PER VEHICLE	5.378E-02	0.5066 %
	TRAFFIC COUNT	5.378E-02	0.5066 %
	CREW DOSE ADJUSTMENT FACTOR	3.247E-02	0.3059 %
	K ZERO FOR CREW DOSE	3.247E-02	0.3059 %
	NUMBER OF CREW MEMBERS	3.247E-02	0.3059 %
	POPULATION DENSITY	1.990E-02	0.1875 %
	SHIELDING FACTOR (RR,RS,RU)	1.990E-02	0.1875 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	RATIO OF PEDESTRIAN DENSITY (RPD	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSr FACTR	0.000E+00	0.0000 %
	DISTANCE FROM PACKAGE TO CREW	-6.495E-02	-0.6118 %
	VELOCITY	-1.599E-01	-1.5066 %
SUB_RH_NF	-----	-----	-----
-			
	DOSE RATE FOR VEHICLE (TI)	2.806E-01	1.0000 %
	NUMBER OF SHIPMENTS	2.806E-01	1.0000 %
	DISTANCE TRAVELED	2.806E-01	1.0000 %
	K ZERO FOR VEHICLE	2.568E-01	0.9154 %
	TRAFFIC COUNT	2.390E-01	0.8520 %
	NUMBER OF PEOPLE PER VEHICLE	2.390E-01	0.8520 %
	NUMBER OF CREW MEMBERS	2.374E-02	0.0846 %
	CREW DOSE ADJUSTMENT FACTOR	2.374E-02	0.0846 %
	K ZERO FOR CREW DOSE	2.374E-02	0.0846 %
	POPULATION DENSITY	1.777E-02	0.0633 %
	SHIELDING FACTOR (RR,RS,RU)	1.455E-02	0.0519 %
	RATIO OF PEDESTRIAN DENSITY (RPD	3.221E-03	0.0115 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSr FACTR	0.000E+00	0.0000 %
	DISTANCE FROM PACKAGE TO CREW	-4.748E-02	-0.1692 %
	VELOCITY	-5.196E-01	-1.8520 %
URB_NR_FW	-----	-----	-----
-			
	NUMBER OF SHIPMENTS	3.615E-03	1.0000 %
	DISTANCE TRAVELED	3.615E-03	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	3.615E-03	1.0000 %
	K ZERO FOR VEHICLE	2.165E-03	0.5990 %
	NUMBER OF PEOPLE PER VEHICLE	2.067E-03	0.5717 %
	TRAFFIC COUNT	2.067E-03	0.5717 %
	CREW DOSE ADJUSTMENT FACTOR	1.449E-03	0.4010 %

K ZERO FOR CREW DOSE	1.449E-03	0.4010 %
NUMBER OF CREW MEMBERS	1.449E-03	0.4010 %
POPULATION DENSITY	9.870E-05	0.0273 %
SHIELDING FACTOR (RR,RS,RU)	9.870E-05	0.0273 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSr FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-2.899E-03	-0.8019 %
VELOCITY	-5.681E-03	-1.5717 %

CRYSTAL RIVER TO HANFORD; SPENT FUEL

INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY
ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE
PARAMETER

LINK	PARAMETER	IMPORTANCE	CHANGE
URB_NR_NF	-----	-----	-----
-			
	DISTANCE TRAVELED	5.460E-03	1.0000 %
	NUMBER OF SHIPMENTS	5.460E-03	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	5.460E-03	1.0000 %
	K ZERO FOR VEHICLE	5.177E-03	0.9481 %
	TRAFFIC COUNT	4.229E-03	0.7745 %
	NUMBER OF PEOPLE PER VEHICLE	4.229E-03	0.7745 %
	POPULATION DENSITY	9.478E-04	0.1736 %
	RATIO OF PEDESTRIAN DENSITY (RPD)	9.207E-04	0.1686 %
	NUMBER OF CREW MEMBERS	2.834E-04	0.0519 %
	CREW DOSE ADJUSTMENT FACTOR	2.834E-04	0.0519 %
	K ZERO FOR CREW DOSE	2.834E-04	0.0519 %
	SHIELDING FACTOR (RR, RS, RU)	2.706E-05	0.0050 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSr FACTR	0.000E+00	0.0000 %
	DISTANCE FROM PACKAGE TO CREW	-5.667E-04	-0.1038 %
	VELOCITY	-9.689E-03	-1.7745 %
URB_RH_FW	-----	-----	-----
-			
	DISTANCE TRAVELED	2.270E-03	1.0000 %
	NUMBER OF SHIPMENTS	2.270E-03	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	2.270E-03	1.0000 %
	K ZERO FOR VEHICLE	1.946E-03	0.8574 %
	NUMBER OF PEOPLE PER VEHICLE	1.924E-03	0.8477 %
	TRAFFIC COUNT	1.924E-03	0.8477 %
	CREW DOSE ADJUSTMENT FACTOR	3.237E-04	0.1426 %
	K ZERO FOR CREW DOSE	3.237E-04	0.1426 %
	NUMBER OF CREW MEMBERS	3.237E-04	0.1426 %
	POPULATION DENSITY	2.204E-05	0.0097 %
	SHIELDING FACTOR (RR, RS, RU)	2.204E-05	0.0097 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSr FACTR	0.000E+00	0.0000 %
	DISTANCE FROM PACKAGE TO CREW	-6.473E-04	-0.2852 %
	VELOCITY	-4.194E-03	-1.8477 %
URB_RH_NF	-----	-----	-----
-			
	DISTANCE TRAVELED	4.622E-03	1.0000 %
	NUMBER OF SHIPMENTS	4.622E-03	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	4.622E-03	1.0000 %
	K ZERO FOR VEHICLE	4.553E-03	0.9851 %
	TRAFFIC COUNT	4.323E-03	0.9354 %
	NUMBER OF PEOPLE PER VEHICLE	4.323E-03	0.9354 %
	POPULATION DENSITY	2.298E-04	0.0497 %

RATIO OF PEDESTRIAN DENSITY (RPD	2.232E-04	0.0483 %
NUMBER OF CREW MEMBERS	6.869E-05	0.0149 %
CREW DOSE ADJUSTMENT FACTOR	6.869E-05	0.0149 %
K ZERO FOR CREW DOSE	6.869E-05	0.0149 %
SHIELDING FACTOR (RR,RS,RU)	6.561E-06	0.0014 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-1.374E-04	-0.0297 %
VELOCITY	-8.945E-03	-1.9354 %

RUN DATE: [10-MAY-08 AT 16:23:45]

PAGE 32

CRYSTAL RIVER TO HANFORD; SPENT FUEL

INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY
ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE
PARAMETER

STOP	PARAMETER	IMPORTANCE	CHANGE
STOP_	-----	-----	-----
-	K ZERO FOR VEHICLE	6.486E+00	1.0000 %
	STOP TIME	6.486E+00	1.0000 %
	POPULATION/POPULATION DENSITY	6.486E+00	1.0000 %
	NUMBER OF SHIPMENTS	6.486E+00	1.0000 %
	DOSE RATE FOR VEHICLE	6.486E+00	1.0000 %
	MAXIMUM DISTANCE AT STOP	0.000E+00	0.0000 %
	MINIMUM DISTANCE AT STOP	-1.297E+01	-2.0000 %

CRYSTAL RIVER TO HANFORD; SPENT FUEL

ACCIDENT SUMMARY

NUMBER OF EXPECTED ACCIDENTS

CATEGORY SUB_RH_FW	RUR_NF_FW	RUR_NF_NF	RUR_RH_FW	RUR_RH_NF	SUB_NF_FW	SUB_NF_NF
1	1.47E-01	4.88E-02	1.63E-02	5.43E-03	7.61E-01	2.54E-01
8.45E-02						
2	9.57E-02	3.19E-02	1.06E-02	3.55E-03	4.98E-01	1.66E-01
5.53E-02						
3	7.29E-04	2.43E-04	8.10E-05	2.70E-05	5.05E-03	1.68E-03
5.62E-04						
4	7.29E-07	2.43E-07	8.10E-08	2.70E-08	5.05E-06	1.68E-06
5.62E-07						
5	1.21E-06	4.05E-07	1.35E-07	4.50E-08	3.79E-06	1.26E-06
4.21E-07						
6	1.70E-06	5.67E-07	1.89E-07	6.30E-08	2.53E-06	8.42E-07
2.81E-07						

CATEGORY	SUB_RH_NF	URB_NF_FW	URB_NF_NF	URB_RH_FW	URB_RH_NF
1	2.82E-02	4.04E-02	2.16E-03	4.51E-03	2.61E-04
2	1.84E-02	2.64E-02	1.41E-03	2.95E-03	1.71E-04
3	1.87E-04	2.54E-05	1.36E-06	2.84E-06	1.64E-07
4	1.87E-07	2.54E-08	1.36E-09	2.84E-09	1.64E-10
5	1.40E-07	1.67E-08	8.92E-10	1.87E-09	1.08E-10
6	9.36E-08	8.69E-09	4.64E-10	9.70E-10	5.62E-11

EARLY FATALITY CONSEQUENCES

CATEGORY SUB_RH_FW	RUR_NF_FW	RUR_NF_NF	RUR_RH_FW	RUR_RH_NF	SUB_NF_FW	SUB_NF_NF
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00						
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00						
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00						
4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00						
5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00						
6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00						

CATEGORY	SUB_RH_NF	URB_NF_FW	URB_NF_NF	URB_RH_FW	URB_RH_NF
----------	-----------	-----------	-----------	-----------	-----------

1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRYSTAL RIVER TO HANFORD; SPENT FUEL

RADIOLOGICAL CONSEQUENCES
50 YEAR POPULATION DOSE IN PERSON-REM

CATEGORY SUB_RH_FW	RUR_NF_FW	RUR_NF_NF	RUR_RH_FW	RUR_RH_NF	SUB_NF_FW	SUB_NF_NF
1 0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2 0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3 2.97E+02	2.48E+00	2.48E+00	2.48E+00	2.48E+00	2.97E+02	2.97E+02
4 2.97E+02	2.48E+00	2.48E+00	2.48E+00	2.48E+00	2.97E+02	2.97E+02
5 3.17E+03	2.64E+01	2.64E+01	2.64E+01	2.64E+01	3.17E+03	3.17E+03
6 4.20E+03	3.50E+01	3.50E+01	3.50E+01	3.50E+01	4.20E+03	4.20E+03

CATEGORY	SUB_RH_NF	URB_NF_FW	URB_NF_NF	URB_RH_FW	URB_RH_NF
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	2.97E+02	1.03E+03	1.03E+03	1.03E+03	1.03E+03
4	2.97E+02	1.03E+03	1.03E+03	1.03E+03	1.03E+03
5	3.17E+03	1.10E+04	1.10E+04	1.10E+04	1.10E+04
6	4.20E+03	1.45E+04	1.45E+04	1.45E+04	1.45E+04

MAXIMUM RISK FOR INDIVIDUAL IN NEAREST ISOPLETH (DOSE IN REM)
FROM INHALATION, CLOUDSHINE, AND GROUNDSHINE EXPOSURE DURING EVACUATION

CATEGORY SUB_RH_FW	RUR_NF_FW	RUR_NF_NF	RUR_RH_FW	RUR_RH_NF	SUB_NF_FW	SUB_NF_NF
1 0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2 0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3 2.35E-05	3.06E-05	1.02E-05	3.40E-06	1.13E-06	2.12E-04	7.06E-05
4 2.39E-08	3.11E-08	1.04E-08	3.45E-09	1.15E-09	2.15E-07	7.18E-08
5 2.47E-06	7.12E-06	2.37E-06	7.91E-07	2.64E-07	2.22E-05	7.41E-06
6 2.31E-06	1.40E-05	4.66E-06	1.55E-06	5.18E-07	2.08E-05	6.92E-06

CATEGORY	SUB_RH_NF	URB_NF_FW	URB_NF_NF	URB_RH_FW	URB_RH_NF
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

3	7.85E-06	1.07E-06	5.69E-08	1.19E-07	6.89E-09
4	7.98E-09	1.08E-09	5.78E-11	1.21E-10	7.01E-12
5	8.23E-07	9.80E-08	5.23E-09	1.09E-08	6.34E-10
6	7.69E-07	7.14E-08	3.81E-09	7.97E-09	4.62E-10

RADIOLOGICAL CONSEQUENCES IN PERSON REM
50 YEAR SOCIETAL INGESTION DOSE - EFFECTIVE

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RUR_NR_FW	0.00E+00	0.00E+00	3.43E-01	3.52E-01	7.77E+01	1.05E+02
RUR_NR_NF	0.00E+00	0.00E+00	3.43E-01	3.52E-01	7.77E+01	1.05E+02
RUR_RH_FW	0.00E+00	0.00E+00	3.43E-01	3.52E-01	7.77E+01	1.05E+02
RUR_RH_NF	0.00E+00	0.00E+00	3.43E-01	3.52E-01	7.77E+01	1.05E+02

CRYSTAL RIVER TO HANFORD; SPENT FUEL

EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

	GROUND	INHALED	RESUSPD	CLOUDSH	TOTAL
RUR_NR_FW	1.90E-03	6.07E-07	1.73E-10	1.62E-07	1.90E-03
RUR_NR_NF	6.33E-04	2.02E-07	5.78E-11	5.41E-08	6.33E-04
RUR_RH_FW	2.11E-04	6.75E-08	1.93E-11	1.80E-08	2.11E-04
RUR_RH_NF	7.04E-05	2.25E-08	6.42E-12	6.01E-09	7.04E-05
SUB_NR_FW	1.52E+00	2.68E-04	1.35E-07	1.31E-04	1.53E+00
SUB_NR_NF	5.08E-01	8.94E-05	4.49E-08	4.37E-05	5.08E-01
SUB_RH_FW	1.69E-01	2.98E-05	1.50E-08	1.46E-05	1.69E-01
SUB_RH_NF	5.65E-02	9.93E-06	4.99E-09	4.86E-06	5.65E-02
URB_NR_FW	2.65E-02	4.30E-06	2.33E-09	2.28E-06	2.65E-02
URB_NR_NF	1.41E-03	2.29E-07	1.24E-10	1.22E-07	1.41E-03
URB_RH_FW	2.95E-03	4.80E-07	2.60E-10	2.54E-07	2.96E-03
URB_RH_NF	1.71E-04	2.78E-08	1.51E-11	1.47E-08	1.71E-04
RURAL	2.81E-03	9.00E-07	2.57E-10	2.40E-07	2.82E-03
SUBURB	2.26E+00	3.97E-04	2.00E-07	1.94E-04	2.26E+00
URBAN	3.10E-02	5.03E-06	2.73E-09	2.67E-06	3.10E-02
TOTALS:	2.29E+00	4.03E-04	2.03E-07	1.97E-04	2.29E+00

RUN DATE: [10-MAY-08 AT 16:23:45]

PAGE 36

CRYSTAL RIVER TO HANFORD; SPENT FUEL

SOCIETAL INGESTION RISK - PERSON-REM

LINK	GONADS	EFFECTIVE
RUR_NR_FW	5.70E-04	5.24E-04
RUR_NR_NF	1.90E-04	1.75E-04
RUR_RH_FW	6.34E-05	5.82E-05
RUR_RH_NF	2.11E-05	1.94E-05
TOTAL	8.45E-04	7.76E-04

SOCIETAL INGESTION RISK BY ORGAN - PERSON-REM

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
RUR_NR_FW	3.46E-04	3.32E-04	3.83E-04	3.36E-04	3.22E-04	7.47E-04
RUR_NR_NF	1.15E-04	1.11E-04	1.28E-04	1.12E-04	1.07E-04	2.49E-04
RUR_RH_FW	3.84E-05	3.68E-05	4.26E-05	3.73E-05	3.58E-05	8.30E-05
RUR_RH_NF	1.28E-05	1.23E-05	1.42E-05	1.24E-05	1.19E-05	2.77E-05
TOTAL	5.13E-04	4.91E-04	5.68E-04	4.97E-04	4.77E-04	1.11E-03

CRYSTAL RIVER TO HANFORD; SPENT FUEL

EXPECTED RISK VALUES - OTHER

LINK	EARLY FATALITY	EARLY MORBIDITY
RUR_NR_FW	0.00E+00	0.00E+00
RUR_NR_NF	0.00E+00	0.00E+00
RUR_RH_FW	0.00E+00	0.00E+00
RUR_RH_NF	0.00E+00	0.00E+00
SUB_NR_FW	0.00E+00	0.00E+00
SUB_NR_NF	0.00E+00	0.00E+00
SUB_RH_FW	0.00E+00	0.00E+00
SUB_RH_NF	0.00E+00	0.00E+00
URB_NR_FW	0.00E+00	0.00E+00
URB_NR_NF	0.00E+00	0.00E+00
URB_RH_FW	0.00E+00	0.00E+00
URB_RH_NF	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

RUN DATE: [10-MAY-08 AT 16:23:45]

PAGE 38

CRYSTAL RIVER TO HANFORD; SPENT FUEL

TOTAL EXPOSED POPULATION: INCIDENT-FREE

RUR_NR_FW	3.54E+04	PERSONS
RUR_NR_NF	1.18E+04	PERSONS
RUR_RH_FW	3.93E+03	PERSONS
RUR_RH_NF	1.31E+03	PERSONS
SUB_NR_FW	1.01E+06	PERSONS
SUB_NR_NF	3.35E+05	PERSONS
SUB_RH_FW	1.12E+05	PERSONS
SUB_RH_NF	3.73E+04	PERSONS
URB_NR_FW	5.36E+04	PERSONS
URB_NR_NF	2.86E+03	PERSONS
URB_RH_FW	5.98E+03	PERSONS
URB_RH_NF	3.47E+02	PERSONS

TOTAL	1.61E+06	PERSONS
-------	----------	---------

CRYSTAL RIVER TO HANFORD; SPENT FUEL

TOTAL EXPOSED POPULATION: ACCIDENT
(PERSONS UNDER PLUME FOOTPRINT FOR A SINGLE ACCIDENT)

RUR_NR_FW	8.10E+03	PERSONS
RUR_NR_NF	8.10E+03	PERSONS
RUR_RH_FW	8.10E+03	PERSONS
RUR_RH_NF	8.10E+03	PERSONS
SUB_NR_FW	9.71E+05	PERSONS
SUB_NR_NF	9.71E+05	PERSONS
SUB_RH_FW	9.71E+05	PERSONS
SUB_RH_NF	9.71E+05	PERSONS
URB_NR_FW	5.21E+06	PERSONS
URB_NR_NF	5.21E+06	PERSONS
URB_RH_FW	5.21E+06	PERSONS
URB_RH_NF	5.21E+06	PERSONS

CRYSTAL RIVER TO HANFORD; SPENT FUEL

LINK: RUR_NR_FW		EXPECTED VALUES OF POPULATION RISK IN PERSON-REM				
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	1.81E-03	2.05E-07	1.56E-10	1.56E-07	1.81E-03
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	6.46E-10	6.46E-10
SFUEL	SR90	5.70E-12	8.29E-12	6.57E-16	1.05E-16	1.40E-11
SFUEL	RU106	4.63E-08	8.37E-10	2.57E-14	1.88E-11	4.71E-08
SFUEL	CS134	9.72E-06	9.08E-08	3.82E-12	2.29E-09	9.82E-06
SFUEL	CS137	7.63E-05	3.09E-07	1.30E-11	2.79E-09	7.66E-05
SFUEL	CE144	1.72E-11	3.24E-11	1.51E-15	8.05E-15	4.97E-11
SFUEL	EU154	1.34E-09	2.74E-11	1.28E-15	1.01E-13	1.37E-09
SFUEL	PU238	1.14E-12	5.27E-10	4.17E-14	3.40E-18	5.28E-10
SFUEL	PU239	8.18E-14	7.94E-11	6.29E-15	4.08E-19	7.95E-11
SFUEL	PU240	2.05E-13	9.06E-11	7.18E-15	5.22E-19	9.08E-11
SFUEL	PU241	5.61E-14	4.39E-10	3.48E-14	2.14E-18	4.39E-10
SFUEL	AM241	1.87E-11	2.09E-10	1.66E-14	2.48E-16	2.28E-10
SFUEL	AM243	5.79E-13	3.17E-12	2.51E-16	1.02E-17	3.74E-12
SFUEL	CM244	4.18E-13	1.87E-10	1.48E-14	2.07E-18	1.88E-10
TOTAL:						1.90E-03

LINK: RUR_NR_NF		EXPECTED VALUES OF POPULATION RISK IN PERSON-REM				
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	6.05E-04	6.83E-08	5.21E-11	5.22E-08	6.05E-04
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	2.15E-10	2.15E-10
SFUEL	SR90	1.90E-12	2.76E-12	2.19E-16	3.52E-17	4.67E-12
SFUEL	RU106	1.54E-08	2.79E-10	8.57E-15	6.26E-12	1.57E-08
SFUEL	CS134	3.24E-06	3.03E-08	1.27E-12	7.62E-10	3.27E-06
SFUEL	CS137	2.54E-05	1.03E-07	4.34E-12	9.31E-10	2.55E-05
SFUEL	CE144	5.74E-12	1.08E-11	5.04E-16	2.68E-15	1.66E-11
SFUEL	EU154	4.48E-10	9.14E-12	4.27E-16	3.36E-14	4.57E-10
SFUEL	PU238	3.80E-13	1.76E-10	1.39E-14	1.13E-18	1.76E-10

SFUEL	PU239	2.73E-14	2.65E-11	2.10E-15	1.36E-19	2.65E-11
SFUEL	PU240	6.82E-14	3.02E-11	2.39E-15	1.74E-19	3.03E-11
SFUEL	PU241	1.87E-14	1.46E-10	1.16E-14	7.14E-19	1.46E-10
SFUEL	AM241	6.22E-12	6.97E-11	5.52E-15	8.26E-17	7.60E-11
SFUEL	AM243	1.93E-13	1.06E-12	8.36E-17	3.39E-18	1.25E-12
SFUEL	CM244	1.39E-13	6.24E-11	4.94E-15	6.89E-19	6.25E-11
TOTAL:						6.33E-04

LINK: RUR_RH_FW		EXPECTED VALUES OF POPULATION RISK IN PERSON-REM				
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	2.02E-04	2.28E-08	1.74E-11	1.74E-08	2.02E-04
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	7.18E-11	7.18E-11
SFUEL	SR90	6.34E-13	9.22E-13	7.30E-17	1.17E-17	1.56E-12
SFUEL	RU106	5.14E-09	9.30E-11	2.86E-15	2.09E-12	5.24E-09
SFUEL	CS134	1.08E-06	1.01E-08	4.24E-13	2.54E-10	1.09E-06
SFUEL	CS137	8.48E-06	3.44E-08	1.45E-12	3.10E-10	8.52E-06
SFUEL	CE144	1.91E-12	3.60E-12	1.68E-16	8.94E-16	5.52E-12
SFUEL	EU154	1.49E-10	3.05E-12	1.42E-16	1.12E-14	1.52E-10
SFUEL	PU238	1.27E-13	5.85E-11	4.63E-15	3.78E-19	5.86E-11
SFUEL	PU239	9.09E-15	8.82E-12	6.98E-16	4.54E-20	8.83E-12
SFUEL	PU240	2.27E-14	1.01E-11	7.97E-16	5.80E-20	1.01E-11
SFUEL	PU241	6.24E-15	4.88E-11	3.86E-15	2.38E-19	4.88E-11
SFUEL	AM241	2.07E-12	2.32E-11	1.84E-15	2.75E-17	2.53E-11
SFUEL	AM243	6.44E-14	3.52E-13	2.79E-17	1.13E-18	4.16E-13
SFUEL	CM244	4.65E-14	2.08E-11	1.65E-15	2.30E-19	2.08E-11
TOTAL:						2.11E-04

LINK: RUR_RH_NF		EXPECTED VALUES OF POPULATION RISK IN PERSON-REM				
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	6.72E-05	7.59E-09	5.79E-12	5.80E-09	6.72E-05
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	2.39E-11	2.39E-11
SFUEL	SR90	2.11E-13	3.07E-13	2.43E-17	3.91E-18	5.18E-13
SFUEL	RU106	1.71E-09	3.10E-11	9.52E-16	6.95E-13	1.75E-09
SFUEL	CS134	3.60E-07	3.36E-09	1.41E-13	8.47E-11	3.64E-07
SFUEL	CS137	2.83E-06	1.15E-08	4.82E-13	1.03E-10	2.84E-06
SFUEL	CE144	6.38E-13	1.20E-12	5.60E-17	2.98E-16	1.84E-12
SFUEL	EU154	4.98E-11	1.02E-12	4.74E-17	3.73E-15	5.08E-11
SFUEL	PU238	4.22E-14	1.95E-11	1.54E-15	1.26E-19	1.95E-11
SFUEL	PU239	3.03E-15	2.94E-12	2.33E-16	1.51E-20	2.94E-12
SFUEL	PU240	7.58E-15	3.36E-12	2.66E-16	1.93E-20	3.36E-12
SFUEL	PU241	2.08E-15	1.63E-11	1.29E-15	7.93E-20	1.63E-11
SFUEL	AM241	6.91E-13	7.75E-12	6.14E-16	9.18E-18	8.44E-12
SFUEL	AM243	2.15E-14	1.17E-13	9.29E-18	3.77E-19	1.39E-13
SFUEL	CM244	1.55E-14	6.93E-12	5.49E-16	7.65E-20	6.95E-12
TOTAL:						7.04E-05

LINK: SUB_NF_FW		EXPECTED VALUES OF POPULATION RISK IN PERSON-REM				
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	1.50E+00	1.70E-04	1.30E-07	1.30E-04	1.50E+00
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	1.73E-07	1.73E-07
SFUEL	SR90	1.70E-09	2.38E-09	3.57E-13	3.02E-14	4.08E-09
SFUEL	RU106	8.40E-06	1.52E-07	4.80E-12	3.40E-09	8.56E-06
SFUEL	CS134	2.39E-03	2.22E-05	1.07E-09	5.58E-07	2.41E-03
SFUEL	CS137	1.88E-02	7.55E-05	3.66E-09	6.82E-07	1.88E-02
SFUEL	CE144	5.14E-09	8.46E-09	4.83E-13	2.31E-12	1.36E-08
SFUEL	EU154	4.01E-07	7.16E-09	4.08E-13	2.89E-11	4.08E-07
SFUEL	PU238	3.40E-10	1.51E-07	2.26E-11	9.75E-16	1.51E-07

SFUEL	PU239	2.44E-11	2.28E-08	3.41E-12	1.17E-16	2.28E-08
SFUEL	PU240	6.11E-11	2.60E-08	3.90E-12	1.50E-16	2.60E-08
SFUEL	PU241	1.67E-11	1.26E-07	1.89E-11	6.14E-16	1.26E-07
SFUEL	AM241	5.57E-09	6.00E-08	9.00E-12	7.11E-14	6.56E-08
SFUEL	AM243	1.73E-10	9.08E-10	1.36E-13	2.92E-15	1.08E-09
SFUEL	CM244	1.25E-10	5.37E-08	8.05E-12	5.93E-16	5.38E-08
TOTAL:						1.53E+00

LINK: SUB_NF_NF		EXPECTED	VALUES OF	POPULATION	RISK IN PERSON-REM	
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	5.01E-01	5.66E-05	4.33E-08	4.32E-05	5.01E-01
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	5.78E-08	5.78E-08
SFUEL	SR90	5.67E-10	7.93E-10	1.19E-13	1.01E-14	1.36E-09
SFUEL	RU106	2.80E-06	5.06E-08	1.60E-12	1.14E-09	2.85E-06
SFUEL	CS134	7.97E-04	7.39E-06	3.58E-10	1.86E-07	8.04E-04
SFUEL	CS137	6.25E-03	2.52E-05	1.22E-09	2.27E-07	6.28E-03
SFUEL	CE144	1.71E-09	2.82E-09	1.61E-13	7.69E-13	4.53E-09
SFUEL	EU154	1.34E-07	2.39E-09	1.36E-13	9.63E-12	1.36E-07
SFUEL	PU238	1.13E-10	5.03E-08	7.55E-12	3.25E-16	5.05E-08
SFUEL	PU239	8.13E-12	7.59E-09	1.14E-12	3.90E-17	7.60E-09
SFUEL	PU240	2.04E-11	8.66E-09	1.30E-12	4.99E-17	8.68E-09
SFUEL	PU241	5.58E-12	4.20E-08	6.29E-12	2.05E-16	4.20E-08
SFUEL	AM241	1.86E-09	2.00E-08	3.00E-12	2.37E-14	2.19E-08
SFUEL	AM243	5.76E-11	3.03E-10	4.54E-14	9.74E-16	3.60E-10
SFUEL	CM244	4.16E-11	1.79E-08	2.68E-12	1.98E-16	1.79E-08
TOTAL:						5.08E-01

LINK: SUB_RH_FW		EXPECTED	VALUES OF	POPULATION	RISK IN PERSON-REM	
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	1.67E-01	1.89E-05	1.44E-08	1.44E-05	1.67E-01
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	1.93E-08	1.93E-08
SFUEL	SR90	1.89E-10	2.64E-10	3.96E-14	3.36E-15	4.53E-10
SFUEL	RU106	9.34E-07	1.69E-08	5.33E-13	3.78E-10	9.51E-07
SFUEL	CS134	2.66E-04	2.46E-06	1.19E-10	6.20E-08	2.68E-04
SFUEL	CS137	2.08E-03	8.39E-06	4.07E-10	7.58E-08	2.09E-03
SFUEL	CE144	5.71E-10	9.40E-10	5.37E-14	2.56E-13	1.51E-09
SFUEL	EU154	4.46E-08	7.95E-10	4.54E-14	3.21E-12	4.54E-08
SFUEL	PU238	3.77E-11	1.68E-08	2.52E-12	1.08E-16	1.68E-08
SFUEL	PU239	2.71E-12	2.53E-09	3.79E-13	1.30E-17	2.53E-09
SFUEL	PU240	6.79E-12	2.89E-09	4.33E-13	1.66E-17	2.89E-09
SFUEL	PU241	1.86E-12	1.40E-08	2.10E-12	6.83E-17	1.40E-08
SFUEL	AM241	6.19E-10	6.67E-09	1.00E-12	7.90E-15	7.29E-09
SFUEL	AM243	1.92E-11	1.01E-10	1.51E-14	3.25E-16	1.20E-10
SFUEL	CM244	1.39E-11	5.96E-09	8.94E-13	6.58E-17	5.98E-09
TOTAL:						1.69E-01

LINK: SUB_RH_NF		EXPECTED	VALUES OF	POPULATION	RISK IN PERSON-REM	
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	5.57E-02	6.29E-06	4.81E-09	4.80E-06	5.57E-02
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	6.42E-09	6.42E-09
SFUEL	SR90	6.30E-11	8.81E-11	1.32E-14	1.12E-15	1.51E-10
SFUEL	RU106	3.11E-07	5.62E-09	1.78E-13	1.26E-10	3.17E-07
SFUEL	CS134	8.85E-05	8.21E-07	3.98E-11	2.07E-08	8.94E-05
SFUEL	CS137	6.95E-04	2.80E-06	1.36E-10	2.53E-08	6.98E-04
SFUEL	CE144	1.90E-10	3.14E-10	1.79E-14	8.55E-14	5.04E-10
SFUEL	EU154	1.49E-08	2.65E-10	1.51E-14	1.07E-12	1.51E-08
SFUEL	PU238	1.26E-11	5.59E-09	8.39E-13	3.61E-17	5.61E-09

SFUEL	PU239	9.04E-13	8.43E-10	1.26E-13	4.34E-18	8.44E-10
SFUEL	PU240	2.26E-12	9.63E-10	1.44E-13	5.55E-18	9.65E-10
SFUEL	PU241	6.20E-13	4.66E-09	6.99E-13	2.28E-17	4.67E-09
SFUEL	AM241	2.06E-10	2.22E-09	3.33E-13	2.63E-15	2.43E-09
SFUEL	AM243	6.40E-12	3.36E-11	5.04E-15	1.08E-16	4.00E-11
SFUEL	CM244	4.62E-12	1.99E-09	2.98E-13	2.20E-17	1.99E-09
TOTAL:						5.65E-02

LINK: URB_NR_FW		EXPECTED VALUES OF POPULATION RISK IN PERSON-REM				
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	2.62E-02	2.96E-06	2.26E-09	2.26E-06	2.62E-02
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	2.44E-09	2.44E-09
SFUEL	SR90	2.48E-11	3.43E-11	5.90E-15	4.36E-16	5.91E-11
SFUEL	RU106	1.01E-07	1.83E-09	5.86E-14	4.10E-11	1.03E-07
SFUEL	CS134	3.27E-05	3.03E-07	1.53E-11	7.62E-09	3.30E-05
SFUEL	CS137	2.57E-04	1.03E-06	5.22E-11	9.31E-09	2.58E-04
SFUEL	CE144	7.49E-11	1.18E-10	7.15E-15	3.32E-14	1.93E-10
SFUEL	EU154	5.85E-09	9.99E-11	6.04E-15	4.16E-13	5.95E-09
SFUEL	PU238	4.95E-12	2.18E-09	3.75E-13	1.40E-17	2.18E-09
SFUEL	PU239	3.56E-13	3.28E-10	5.65E-14	1.69E-18	3.28E-10
SFUEL	PU240	8.90E-13	3.74E-10	6.45E-14	2.16E-18	3.75E-10
SFUEL	PU241	2.44E-13	1.81E-09	3.12E-13	8.85E-18	1.81E-09
SFUEL	AM241	8.11E-11	8.65E-10	1.49E-13	1.02E-15	9.46E-10
SFUEL	AM243	2.52E-12	1.31E-11	2.25E-15	4.21E-17	1.56E-11
SFUEL	CM244	1.82E-12	7.73E-10	1.33E-13	8.54E-18	7.75E-10
TOTAL:						2.65E-02

LINK: URB_NR_NF		EXPECTED VALUES OF POPULATION RISK IN PERSON-REM				
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	1.40E-03	1.58E-07	1.21E-10	1.20E-07	1.40E-03
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	1.31E-10	1.31E-10
SFUEL	SR90	1.32E-12	1.83E-12	3.15E-16	2.33E-17	3.15E-12
SFUEL	RU106	5.40E-09	9.75E-11	3.13E-15	2.19E-12	5.50E-09
SFUEL	CS134	1.75E-06	1.62E-08	8.18E-13	4.07E-10	1.76E-06
SFUEL	CS137	1.37E-05	5.50E-08	2.79E-12	4.97E-10	1.38E-05
SFUEL	CE144	4.00E-12	6.31E-12	3.82E-16	1.78E-15	1.03E-11
SFUEL	EU154	3.12E-10	5.33E-12	3.23E-16	2.22E-14	3.18E-10
SFUEL	PU238	2.64E-13	1.16E-10	2.00E-14	7.50E-19	1.16E-10
SFUEL	PU239	1.90E-14	1.75E-11	3.02E-15	9.01E-20	1.75E-11
SFUEL	PU240	4.75E-14	2.00E-11	3.44E-15	1.15E-19	2.00E-11
SFUEL	PU241	1.30E-14	9.69E-11	1.67E-14	4.72E-19	9.69E-11
SFUEL	AM241	4.33E-12	4.62E-11	7.95E-15	5.47E-17	5.05E-11
SFUEL	AM243	1.35E-13	6.98E-13	1.20E-16	2.25E-18	8.33E-13
SFUEL	CM244	9.71E-14	4.13E-11	7.11E-15	4.56E-19	4.14E-11
TOTAL:						1.41E-03

LINK: URB_RH_FW		EXPECTED VALUES OF POPULATION RISK IN PERSON-REM				
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	2.92E-03	3.30E-07	2.53E-10	2.52E-07	2.92E-03
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	2.73E-10	2.73E-10
SFUEL	SR90	2.77E-12	3.83E-12	6.59E-16	4.86E-17	6.60E-12
SFUEL	RU106	1.13E-08	2.04E-10	6.54E-15	4.57E-12	1.15E-08
SFUEL	CS134	3.65E-06	3.38E-08	1.71E-12	8.51E-10	3.68E-06
SFUEL	CS137	2.86E-05	1.15E-07	5.83E-12	1.04E-09	2.88E-05
SFUEL	CE144	8.36E-12	1.32E-11	7.98E-16	3.71E-15	2.16E-11
SFUEL	EU154	6.53E-10	1.11E-11	6.75E-16	4.65E-14	6.64E-10
SFUEL	PU238	5.53E-13	2.43E-10	4.18E-14	1.57E-18	2.44E-10

SFUEL	PU239	3.97E-14	3.66E-11	6.30E-15	1.88E-19	3.67E-11
SFUEL	PU240	9.94E-14	4.18E-11	7.20E-15	2.41E-19	4.19E-11
SFUEL	PU241	2.72E-14	2.03E-10	3.49E-14	9.88E-19	2.03E-10
SFUEL	AM241	9.06E-12	9.65E-11	1.66E-14	1.14E-16	1.06E-10
SFUEL	AM243	2.81E-13	1.46E-12	2.51E-16	4.70E-18	1.74E-12
SFUEL	CM244	2.03E-13	8.63E-11	1.49E-14	9.53E-19	8.65E-11
					TOTAL:	2.96E-03

LINK: URB_RH_NF		EXPECTED	VALUES OF	POPULATION	RISK IN PERSON-REM	
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
SFUEL	C060	1.69E-04	1.91E-08	1.46E-11	1.46E-08	1.69E-04
SFUEL	KR85	0.00E+00	0.00E+00	0.00E+00	1.58E-11	1.58E-11
SFUEL	SR90	1.61E-13	2.22E-13	3.82E-17	2.82E-18	3.82E-13
SFUEL	RU106	6.54E-10	1.18E-11	3.79E-16	2.65E-13	6.66E-10
SFUEL	CS134	2.12E-07	1.96E-09	9.92E-14	4.93E-11	2.14E-07
SFUEL	CS137	1.66E-06	6.67E-09	3.38E-13	6.02E-11	1.67E-06
SFUEL	CE144	4.85E-13	7.64E-13	4.62E-17	2.15E-16	1.25E-12
SFUEL	EU154	3.78E-11	6.46E-13	3.91E-17	2.69E-15	3.85E-11
SFUEL	PU238	3.21E-14	1.41E-11	2.42E-15	9.09E-20	1.41E-11
SFUEL	PU239	2.30E-15	2.12E-12	3.65E-16	1.09E-20	2.13E-12
SFUEL	PU240	5.76E-15	2.42E-12	4.17E-16	1.40E-20	2.43E-12
SFUEL	PU241	1.58E-15	1.17E-11	2.02E-15	5.73E-20	1.17E-11
SFUEL	AM241	5.25E-13	5.60E-12	9.63E-16	6.63E-18	6.12E-12
SFUEL	AM243	1.63E-14	8.46E-14	1.46E-17	2.72E-19	1.01E-13
SFUEL	CM244	1.18E-14	5.00E-12	8.62E-16	5.53E-20	5.02E-12
					TOTAL:	1.71E-04

END OF RUN
SUCCESSFUL COMPLETION

Appendix B **RADTRAN 6.0 Output for Test Case 1b**

RUN DATE: [05-10-2008 AT 18:14]

PAGE 1

RRRR	AAA	DDDD	TTTTT	RRRR	AAA	N	N	6	000	000
R R	A A	D D	T	R R	A A	NN	N	6	0	0 0 0
R R	A A	D D	T	R R	A A	NN	NN	6	0	0 0 0
RRRR	A A	D D	T	RRRR	A A	N	NN	6666	0	0 0 0
R R	AAAAA	D D	T	R R	AAAAA	N	N	6 6	0	0 0 0
R R	A A	D D	T	R R	A A	N	N	6 6	0	0 0 0
R R	A A	DDDD	T	R R	A A	N	N	666 *	000	000

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

INPUT ECHO

RADTRAN 6

&& EDITED THU MAR 30 10:24:42 2000

TITLE CRYSTAL RIVER TO HANFORD; SPENT FUEL

INPUT STANDARD

STD: 0 18

STD: 3 3 0

STD: .TRUE. .FALSE. .FALSE.

&& DIMEN=NSEV NAREAS

&& PARM=IANA ISEN IPSQSB

&& FORM = UNIT, SI-OUTPUT,

SI-INPUT

STD: 2.3E12

STD: 9.25E5 5.77E6 1.27E6

&& NEVAL FOR CF252

&& RPCTHY FOR I125, I129,

I131

STD: 0.0 0.0 0.0 0.0 0.0

&& TRANSFER GAMMA [COEF(1,0-

4]

STD: 7.42E-3 2.02E-2 6.17E-5 3.17E-8 0.0

&& TRANSFER NEUTRON

[COEF(2,0-4]

STD: 30 24

STD: 1 2 .0018

STD: 33 68 105 244 369

STD: 561 1018 1628 2308 4269

&& MITDDIST MITDVEL

&& ITRAIN FMINCL DDRWEF

&&

&& CENTER LINE

DISTANCES

STD: 5468 11136 13097 21334 40502

&& FOR AVERAGE US

CLOUD

STD: 69986 89860 120878 0 0 0 0 0 0 0 0 0 0 0

&&

STD: 4.59E+02 1.53E+03 3.94E+03 1.25E+04 3.04E+04 6.85E+04 1.76E+05

4.45E+05

STD: 8.59E+05 2.55E+06 4.45E+06 1.03E+07 2.16E+07 5.52E+07 1.77E+08

4.89E+08

STD: 8.12E+08 1.35E+09 0 0 0 0 0 0 0 0 0 0 0

&& AREADA

STD: 3.42E-03 1.72E-03 8.58E-04 3.42E-04 1.72E-04 8.58E-05 3.42E-05

1.72E-05

STD: 8.58E-06 3.42E-06 1.72E-06 8.58E-07 3.42E-07 1.72E-07 8.58E-08

5.42E-08

STD: 4.30E-08 3.42E-08 0 0 0 0 0 0 0 0 0 0 0

&& DFLEV

STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	
STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	
STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	&& RADIST
STD: 0.5	&& SMLPKG
STD: 1.0 0.87 0.018	&& SHIELDING FACTORS RR RS RU
STD: 30 30 800	&& OFFLIM {FREEWAY}
STD: 27 30 800	&& OFFLIM {NON-FREEWAY}
STD: 5 8 800	&& OFFLIM {CITY STREETS}
STD: 30 30 800	&& OFFLIM {RAILWAY}
STD: 200 200 1000	&& OFFLIM {WATERWAY}
STD: 15 3 3 3 4	&& ONLINK {FWAY NONFWY STREET RAIL ADJ}
STD: 6.0 4 40.0	&& RPD FNOATT INTERDICT (ci/micro-Ci)
STD: 0.05 0.2 3.3E-4	&& BDF CULVL BRATE
STD: 0.9 0.1	&& UBF USWF
STD: 1.0 10.0 1.0	&& EVACUATION SURVEY CAMPAIGN

CRYSTAL RIVER TO HANFORD; SPENT FUEL

```

STD: 0.0 0.0 0.0 0.0 0.0 0.0  && PSPROB
STD: 0.67 0.67 0.42  && TIMENDE NON-DISPERSAL EVAC TIME
(LCF&EARLY)
STD: 2 2 0  && FLAGS=IUOPT IACC REGCHECK (OFF)
STD: 5E-4, 4E-4, 1.0E-4  && LCFCN(1), LCFCN(2), GECON
STD: RT6_Ingestion.BIN  && INGESTION FILE
FORM UNIT
DIMEN 6 10 18
PARM 1 3 4 0
SEVERITY
  NPOP=1
    NMODE=1
      6.03E-01 3.94E-01 3.00E-03 3.00E-06 5.00E-06 7.00E-06
  NPOP=2
    NMODE=1
      6.02E-01 3.94E-01 4.00E-03 4.00E-06 3.00E-06 2.00E-06
  NPOP=3
    NMODE=1
      6.04E-01 3.95E-01 3.80E-04 3.80E-07 2.50E-07 1.30E-07
RELEASE
  GROUP=PKG1_B
    RFRAC
      0.00E+00 0.00E+00 1.20E-02 1.20E-02 1.20E-02 1.20E-02
    AERSOL
      1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
    RESP
      5.00E-02 5.00E-02 5.00E-02 5.00E-02 5.00E-02 5.00E-02
    LOS
      0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
    DEPVEL 0.0100
  GROUP=PKG2_C
    RFRAC
      0.00E+00 0.00E+00 0.00E+00 1.00E-02 1.00E-01 1.10E-01
    AERSOL
      1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
    RESP
      1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
    LOS
      0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
    DEPVEL 0.0000
  GROUP=PKG4_E

```

CRYSTAL RIVER TO HANFORD; SPENT FUEL

RFRAC	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08
AERSOL	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RESP	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
LOS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEPVEL	0.0100					
GROUP=PKG5_E						
RFRAC	0.00E+00	0.00E+00	0.00E+00	1.00E-08	1.00E-06	4.20E-05
AERSOL	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RESP	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
LOS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEPVEL	0.0100					
GROUP=PKG3_D						
RFRAC	0.00E+00	0.00E+00	0.00E+00	1.00E-08	2.00E-04	2.80E-04
AERSOL	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RESP	0.00E+00	0.00E+00	0.00E+00	5.00E-02	1.00E+00	1.00E+00
LOS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEPVEL	0.0100					
GROUP=PKG4_D						
RFRAC	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08
AERSOL	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RESP	0.00E+00	0.00E+00	0.00E+00	5.00E-02	1.00E+00	1.00E+00
LOS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEPVEL	0.0100					
PACKAGE	SFUEL	1.368E+01	1.000	0.000	5.20	
C060		9.220E+01	PKG1_B			
KR85		6.100E+03	PKG2_C			
SR90		5.960E+04	PKG4_E			
RU106		1.620E+04	PKG5_E			
CS134		2.740E+04	PKG3_D			
CS137		8.760E+04	PKG3_D			
CE144		1.220E+04	PKG4_D			
EU154		7.000E+03	PKG4_D			
PU238		2.960E+03	PKG4_E			
PU239		4.100E+02	PKG4_E			
PU240		4.680E+02	PKG4_E			
PU241		1.260E+05	PKG4_E			

AM241 1.290E+03 PKG4_E

CRYSTAL RIVER TO HANFORD; SPENT FUEL

```

AM243      1.990E+01 PKG4_E
CM244      1.790E+03 PKG4_E
END
VEHICLE  -1 TRUCK      1.368E+01 1.000 0.000    5.20  676.00
                2.00   10.00 1.000    5.20
      SFUEL      1.00
FLAGS
IUOPT 2
EOF
LINK RUR_NR_FW TRUCK 2623.81 88.6 2.0    6.00  470.00 1.37E-07 1 R 1
0.50
LINK RUR_NR_NF TRUCK 874.60 88.6 2.0    6.00  470.00 1.37E-07 1 R 2
0.50
LINK RUR_RH_FW TRUCK 291.53 88.6 2.0    6.00  470.00 1.37E-07 1 R 1
0.50
LINK RUR_RH_NF TRUCK 97.18 88.6 2.0    6.00  470.00 1.37E-07 1 R 2
0.50
LINK SUB_NR_FW TRUCK 623.03 88.6 2.0  719.00  780.00 3.00E-06 1 S 1
0.00
LINK SUB_NR_NF TRUCK 207.68 40.3 2.0  719.00  780.00 3.00E-06 1 S 2
0.00
LINK SUB_RH_FW TRUCK 69.23 44.3 2.0  719.00 1560.00 3.00E-06 1 S 1
0.00
LINK SUB_RH_NF TRUCK 23.08 20.2 2.0  719.00 1560.00 3.00E-06 1 S 2
0.00
LINK URB_NR_FW TRUCK 6.18 88.6 2.0 3861.00 2800.00 1.60E-05 1 U 1
0.00
LINK URB_NR_NF TRUCK 0.33 24.2 2.0 3861.00 2800.00 1.60E-05 1 U 2
0.00
LINK URB_RH_FW TRUCK 0.69 44.3 2.0 3861.00 5600.00 1.60E-05 1 U 1
0.00
LINK URB_RH_NF TRUCK 0.04 12.1 2.0 3861.00 5600.00 1.60E-05 1 U 2
0.00
STOP STOP_ TRUCK      50.00 20.00 20.00 1.000 52.991
EOF

```

CRYSTAL RIVER TO HANFORD; SPENT FUEL

CONTROL INPUT DATA (DIMEN & PARM)

NUMBER OF ACCIDENT SEVERITY CATEGORIES = 6

NUMBER OF LOSS OF SHIELDING PROBABILITIES = 10

NUMBER OF DEPOSITION AREAS (ISOPLETHS) = 18

ECONOMIC MODEL INVOKED

INCIDENT FREE AND ACCIDENT ANALYSES INVOKED

DETAILED INPUT, FULL OUTPUT, CONSEQUENCE TABLES & POPULATION RISK BY

LINK

USER SUPPLIED OR NATIONAL AVERAGE WEATHER DILUTION INPUT

HISTORICAL UNITS ON INPUT

HISTORICAL UNITS ON OUTPUT

DOSE UNITS ON OUTPUT

INGESTION FILE = RT6_Ingestion.BIN

PACKAGE AND MATERIAL CHARACTERISTICS INPUT DATA

DOSE RATE		DIMENSION	EFFECTIVE	K(0)	FRACTION	FRACTION
(mrem/hr)	MATERIAL	(METERS)	DIMENSION	METERS SQ.	GAMMA	NEUTRON
1.368E+01	SFUEL	5.200E+00	4.677E+00	1.115E+01	1.000E+00	0.000E+00

K(0) IS DOSE RATE CONVERSION FACTOR

CRYSTAL RIVER TO HANFORD; SPENT FUEL

VEHICLE CHARACTERISTICS INPUT DATA

VEHICLE NAME	TRUCK
MODE TYPE	HIGHWAY
EXCLUSIVE USE	YES
DOSE RATE (mrem/hr)	1.37E+01
FRACTION OF GAMMA FOR VEH	1.00E+00
FRACTION OF NEUTRON FOR V	0.00E+00
K(0) (SQ. METERS)	1.11E+01
VEHICLE SIZE (M)	5.20E+00
EFFECTIVE SIZE (M)	4.68E+00
NUMBER OF SHIPMENTS	6.76E+02
NUMBER OF CREW	2.00E+00
CREW DISTANCE (M)	1.00E+01
CREW DOSE ADJUSTMENT FACT	1.00E+00
CREW EXPOSER WIDTH (M)	5.20E+00
EFFECTIVE EXPOSER WIDTH	4.68E+00
K(0) (SQ M) CREW EXPOSURE	1.11E+01

VEHICLE	MATERIAL	NO. PACKAGES
TRUCK		
	SFUEL	1.00E+00

TRANSFER	MU	A(1)	A(2)	A(3)	A(4)
COEFFICIENTS:					
GAMMA	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NEUTRON	7.420E-03	2.020E-02	6.170E-05	3.170E-08	0.000E+00

DISTANCES (METERS)	FREEWAY	SECONDARY	STREET	RAIL	WATER
ADJACENT					
OFFLINK:					
MINIMUM DISTANCE	3.00E+01	2.70E+01	5.00E+00	3.00E+01	2.00E+02
SIDEWALK + MINIMUM	3.00E+01	3.00E+01	8.00E+00	3.00E+01	2.00E+02
MAXIMUM DISTANCE	8.00E+02	8.00E+02	8.00E+02	8.00E+02	1.00E+03
ONLINK:					
OPPOSITE DIRECTION	1.50E+01	3.00E+00	3.00E+00	3.00E+00	
ADJACENT VEHICLE					
4.00E+00					

CRYSTAL RIVER TO HANFORD; SPENT FUEL

STOP RELATED INPUT DATA

STOP	STOP_
VEHICLE	TRUCK
PERSONS	5.00E+01
MINIMUM DISTANCE(M)	2.00E+01
MAXIMUM DISTANCE(M)	2.00E+01
SHIELDING FACTOR	1.00E+00
TIME (HR)	5.30E+01

LINK RELATED INPUT DATA

LINK	RUR_NF_FW	RUR_NF_NF	RUR_NF_FW
RUR_NF_NF SUB_NF_FW			
VEHICLE	TRUCK	TRUCK	TRUCK
TRUCK TRUCK			
DISTANCE (KM)	2.62E+03	8.75E+02	2.92E+02
9.72E+01 6.23E+02			
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00
2.00E+00 2.00E+00			
SPEED (KM/HR)	8.86E+01	8.86E+01	8.86E+01
8.86E+01 8.86E+01			
POPULATION DENSITY (#/KM^2)	6.00E+00	6.00E+00	6.00E+00
6.00E+00 7.19E+02			
VEHICLE DENSITY (#/HR)	4.70E+02	4.70E+02	4.70E+02
4.70E+02 7.80E+02			
ACCIDENT RATE/KM	1.37E-07	1.37E-07	1.37E-07
1.37E-07 3.00E-06			
FATALITIES/ACCIDENT	1.00E+00	1.00E+00	1.00E+00
1.00E+00 1.00E+00			
ZONE	RURAL	RURAL	RURAL
RURAL SUBURBAN			
ROAD TYPE	FREEWAY	NON-FREEWAY	FREEWAY
NON-FREEWAY FREEWAY			
FARMING FRACTION	5.00E-01	5.00E-01	5.00E-01
5.00E-01 0.00E+00			
LINK	SUB_NF_NF	SUB_NF_FW	SUB_NF_NF
URB_NF_FW URB_NF_NF			
VEHICLE	TRUCK	TRUCK	TRUCK
TRUCK TRUCK			
DISTANCE (KM)	2.08E+02	6.92E+01	2.31E+01
6.18E+00 3.30E-01			
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00
2.00E+00 2.00E+00			
SPEED (KM/HR)	4.03E+01	4.43E+01	2.02E+01
8.86E+01 2.42E+01			
POPULATION DENSITY (#/KM^2)	7.19E+02	7.19E+02	7.19E+02
3.86E+03 3.86E+03			

VEHICLE DENSITY (#/HR)	7.80E+02	1.56E+03	1.56E+03
2.80E+03 2.80E+03			
ACCIDENT RATE/KM	3.00E-06	3.00E-06	3.00E-06
1.60E-05 1.60E-05			
FATALITIES/ACCIDENT	1.00E+00	1.00E+00	1.00E+00
1.00E+00 1.00E+00			
ZONE	SUBURBAN	SUBURBAN	SUBURBAN
URBAN URBAN			
ROAD TYPE	NON-FREEWAY	FREEWAY	NON-FREEWAY
FREEWAY NON-FREEWAY			
FARMING FRACTION	0.00E+00	0.00E+00	0.00E+00
0.00E+00 0.00E+00			
LINK	URB_RH_FW	URB_RH_NF	
VEHICLE	TRUCK	TRUCK	
DISTANCE (KM)	6.90E-01	4.00E-02	
PERSONS PER VEHICLE	2.00E+00	2.00E+00	
SPEED (KM/HR)	4.43E+01	1.21E+01	
POPULATION DENSITY (#/KM^2)	3.86E+03	3.86E+03	
VEHICLE DENSITY (#/HR)	5.60E+03	5.60E+03	
ACCIDENT RATE/KM	1.60E-05	1.60E-05	
FATALITIES/ACCIDENT	1.00E+00	1.00E+00	
ZONE	URBAN	URBAN	
ROAD TYPE	FREEWAY	NON-FREEWAY	
FARMING FRACTION	0.00E+00	0.00E+00	

CRYSTAL RIVER TO HANFORD; SPENT FUEL

LOSS OF SHIELDING STOP RELATED INPUT DATA

RURAL		SUBURBAN		URBAN	
FAIL	FRAC	FAIL	FRAC	FAIL	FRAC
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRYSTAL RIVER TO HANFORD; SPENT FUEL

ISOTOPE RELATED INPUT DATA

NUCLIDE	CURIES PER PKG	WASTE LIMIT (CI/M^3)	RELEASE GROUP	RESUSPENSION FACTOR
SFUEL				
C060	9.22E+01	4.00E+01	PKG1_B	1.01E+00
KR85	6.10E+03	7.00E+02	PKG2_C	1.00E+00
SR90	5.96E+04	7.00E+02	PKG4_E	1.01E+00
RU106	1.62E+04	7.00E+02	PKG5_E	1.01E+00
CS134	2.74E+04	7.00E+02	PKG3_D	1.01E+00
CS137	8.76E+04	1.00E+00	PKG3_D	1.01E+00
CE144	1.22E+04	7.00E+02	PKG4_D	1.01E+00
EU154	7.00E+03	7.00E+02	PKG4_D	1.01E+00
PU238	2.96E+03	7.00E+02	PKG4_E	1.01E+00
PU239	4.10E+02	8.00E-01	PKG4_E	1.01E+00
PU240	4.68E+02	8.00E+00	PKG4_E	1.01E+00
PU241	1.26E+05	7.00E+02	PKG4_E	1.01E+00
AM241	1.29E+03	7.00E+02	PKG4_E	1.01E+00
AM243	1.99E+01	7.00E+02	PKG4_E	1.01E+00
CM244	1.79E+03	7.00E+02	PKG4_E	1.01E+00

NUCLIDE	HALF	GAMMA	AIR IMMERSION (SHINE)	DCF	INGESTION
NEUTRON	LIFE	ENERGY	CLOUD	GROUND	NUCLIDE
EMISSION	(Days)	(MeV/nt)	(rem-m^3/Ci-s)	(rem-m^2/uCi-d)	
SFUEL					
neu/sec/Ci					
C060	1.92E+03	2.50E+00	4.66E-01	7.51E-04	Co-60
0.00E+00					
KR85	3.91E+03	2.21E-03	4.40E-04	8.44E-07	NONE
0.00E+00					
SR90	1.06E+04	0.00E+00	2.79E-05	9.08E-08	Sr-90
0.00E+00					
RU106	3.68E+02	2.01E-01	3.85E-02	6.78E-05	Ru-106
0.00E+00					
CS134	7.52E+02	1.55E+00	2.80E-01	4.86E-04	Cs-134
0.00E+00					
CS137	1.10E+04	5.69E-02	1.01E-01	1.77E-04	Cs-137
0.00E+00					
CE144	2.84E+02	5.27E-02	1.04E-02	1.88E-05	Ce-144
0.00E+00					
EU154	3.21E+03	1.22E+00	2.27E-01	3.80E-04	Eu-154
0.00E+00					
PU238	3.20E+04	1.81E-03	1.81E-05	2.68E-07	Pu-238
0.00E+00					
PU239	8.78E+06	7.96E-04	1.57E-05	1.17E-07	Pu-239
0.00E+00					
PU240	2.39E+06	1.73E-03	1.76E-05	2.57E-07	Pu-240
0.00E+00					

0.00E+00	PU241	5.26E+03	2.54E-06	2.68E-07	6.17E-10	Pu-241
0.00E+00	AM241	1.58E+05	3.24E-02	3.03E-03	8.79E-06	Am-241
0.00E+00	AM243	2.69E+06	5.59E-02	8.07E-03	1.71E-05	Am-243
0.00E+00	CM244	6.61E+03	1.70E-03	1.82E-05	2.81E-07	Cm-244

CRYSTAL RIVER TO HANFORD; SPENT FUEL

ISOTOPE RELATED INPUT DATA

NUCLIDE	INHALATION DOSE CONVERSION FACTORS			
	LUNG (REM/CI)	MARROW (REM/CI)	THYROID (REM/CI)	EFFECTIVE (REM/CI)
SFUEL	1.78E+05	1.07E+04	0.00E+00	3.70E+04
C060	0.00E+00	0.00E+00	0.00E+00	0.00E+00
KR85	7.03E+05	4.07E+04	0.00E+00	1.33E+05
SR90	7.03E+05	6.29E+03	0.00E+00	1.04E+05
RU106	1.78E+05	1.15E+04	0.00E+00	3.37E+04
CS134	2.18E+05	6.29E+03	0.00E+00	3.59E+04
CS137	6.66E+05	5.18E+04	0.00E+00	1.33E+05
CE144	2.92E+05	3.70E+04	0.00E+00	1.96E+05
EU154	1.26E+08	1.37E+07	0.00E+00	1.70E+08
PU238	1.11E+08	1.30E+07	0.00E+00	1.85E+08
PU239	1.11E+08	1.30E+07	0.00E+00	1.85E+08
PU240	2.85E+04	1.33E+04	0.00E+00	3.33E+06
PU241	1.22E+08	8.14E+06	0.00E+00	1.55E+08
AM241	1.15E+08	7.77E+06	0.00E+00	1.52E+08
AM243	1.37E+08	8.51E+06	0.00E+00	9.99E+07
CM244				

CRYSTAL RIVER TO HANFORD; SPENT FUEL

RELEASE RELATED INPUT DATA

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
PKG1_B	0.00E+00	0.00E+00	1.20E-02	1.20E-02	1.20E-02	1.20E-02
PKG2_C	0.00E+00	0.00E+00	0.00E+00	1.00E-02	1.00E-01	1.10E-01
PKG4_E	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08
PKG5_E	0.00E+00	0.00E+00	0.00E+00	1.00E-08	1.00E-06	4.20E-05
PKG3_D	0.00E+00	0.00E+00	0.00E+00	1.00E-08	2.00E-04	2.80E-04
PKG4_D	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08

DEPOSITION VELOCITIES

GROUP	M/SEC
PKG1_B	1.00E-02
PKG2_C	0.00E+00
PKG4_E	1.00E-02
PKG5_E	1.00E-02
PKG3_D	1.00E-02
PKG4_D	1.00E-02

ACCIDENT SEVERITY FRACTIONS
FOR HIGHWAY

ZONE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RURAL	6.03E-01	3.94E-01	3.00E-03	3.00E-06	5.00E-06	7.00E-06
SUBURBAN	6.02E-01	3.94E-01	4.00E-03	4.00E-06	3.00E-06	2.00E-06
URBAN	6.04E-01	3.95E-01	3.80E-04	3.80E-07	2.50E-07	1.30E-07

RUN DATE: [05-10-2008 AT 18:14]

PAGE 12

CRYSTAL RIVER TO HANFORD; SPENT FUEL

AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
PKG1_B	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG2_C	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG4_E	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG5_E	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG3_D	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG4_D	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

RESPIRABLE FRACTION OF AEROSOLS (BELOW 10 MICRONS AED)

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
PKG1_B	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
PKG2_C	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PKG4_E	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
PKG5_E	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
PKG3_D	0.00E+00	0.00E+00	0.00E+00	5.00E-02	1.00E+00	1.00E+00
PKG4_D	0.00E+00	0.00E+00	0.00E+00	5.00E-02	1.00E+00	1.00E+00

CRYSTAL RIVER TO HANFORD; SPENT FUEL

HEALTH RELATED INPUT DATA

EARLY MORBIDITY THRESHOLD VALUE FOR LUNG 5.000E+02 REM
 EARLY MORBIDITY THRESHOLD VALUE FOR MARROW/WHOLE BODY 5.000E+01 REM
 EARLY MORBIDITY THRESHOLD VALUE FOR THYROID 2.000E+02 REM

EARLY FATALITY PROBABILITIES (EF)

DOSE(REM)	EF MARROW	DOSE(REM)	EF LUNG
680.00	1.00000	1525.00	1.00000
670.00	0.99999	1500.00	0.99999
660.00	0.99998	1475.00	0.99997
650.00	0.99996	1450.00	0.99991
640.00	0.99992	1425.00	0.99974
630.00	0.99983	1400.00	0.99933
620.00	0.99967	1375.00	0.99840
610.00	0.99938	1350.00	0.99653
600.00	0.99889	1325.00	0.99306
590.00	0.99808	1300.00	0.98709
580.00	0.99679	1275.00	0.97755
570.00	0.99482	1250.00	0.96331
560.00	0.99192	1225.00	0.94326
550.00	0.98776	1200.00	0.91656
540.00	0.98199	1175.00	0.88274
530.00	0.97423	1150.00	0.84178
520.00	0.96406	1125.00	0.79420
510.00	0.95111	1100.00	0.74095
500.00	0.93502	1075.00	0.68335
490.00	0.91551	1050.00	0.62293
480.00	0.89237	1025.00	0.56130
470.00	0.86552	1000.00	0.50000
460.00	0.83499	975.00	0.44042
450.00	0.80096	950.00	0.38372
440.00	0.76371	925.00	0.33077
430.00	0.72363	900.00	0.28218
420.00	0.68123	875.00	0.23830
410.00	0.63706	850.00	0.19925
400.00	0.59172	825.00	0.16498
390.00	0.54583	800.00	0.13529
380.00	0.50000	775.00	0.10988
370.00	0.45481	750.00	0.08837
360.00	0.41078	725.00	0.07038
350.00	0.36838	700.00	0.05548
340.00	0.32798	675.00	0.04329
330.00	0.28990	650.00	0.03341
320.00	0.25438	625.00	0.02549
310.00	0.22155	600.00	0.01922
300.00	0.19150	575.00	0.01430
290.00	0.16425	550.00	0.01050

280.00	0.13977	525.00	0.00759
270.00	0.11797	500.00	0.00000
260.00	0.09872		
250.00	0.08188		
240.00	0.06729		
230.00	0.05475		
220.00	0.04408		
210.00	0.03510		
200.00	0.02761		
190.00	0.02143		
180.00	0.01639		
170.00	0.01234		
160.00	0.00913		
150.00	0.00000		

CRYSTAL RIVER TO HANFORD; SPENT FUEL

DISPERSAL ACCIDENT INPUT DATA

AREADA (M SQ)	CENTER LINE(M)	DILUTION FACTOR*
4.590E+02	3.300E+01	3.420E-03
1.530E+03	6.800E+01	1.720E-03
3.940E+03	1.050E+02	8.580E-04
1.250E+04	2.440E+02	3.420E-04
3.040E+04	3.690E+02	1.720E-04
6.850E+04	5.610E+02	8.580E-05
1.760E+05	1.018E+03	3.420E-05
4.450E+05	1.628E+03	1.720E-05
8.590E+05	2.308E+03	8.580E-06
2.550E+06	4.269E+03	3.420E-06
4.450E+06	5.468E+03	1.720E-06
1.030E+07	1.114E+04	8.580E-07
2.160E+07	1.310E+04	3.420E-07
5.520E+07	2.133E+04	1.720E-07
1.770E+08	4.050E+04	8.580E-08
4.890E+08	6.999E+04	5.420E-08
8.120E+08	8.986E+04	4.300E-08
1.350E+09	1.209E+05	3.420E-08

* DILUTION FACTOR UNITS ARE (CI-SEC/M**3/CI-RELEASED)

OTHER DISPERSAL ACCIDENT INPUT PARAMETERS

BUILDING DOSE FACTOR	(BDF) = 5.000E-02
CONTAMINATION CLEAN UP LEVEL(micro-CI/M^2)(CULVL)	= 2.000E-01
BREATHING RATE (M**3/SEC)	(BRATE) = 3.300E-04
INTERDICTION THRESHOLD (Ci/micro-Ci)	(INTERDICT) = 4.000E+01
EVACUATION TIME (DAYS)	(EVACUATION) = 1.000E+00
SURVEY INTERVAL (DAYS)	(SURVEY) = 1.000E+01
CAMPAIGN LENGTH (YEARS)	(TIMEYR) = 1.000E+00
FRACTION OF URBAN AREAS WITH BUILDINGS	(UBF) = 9.000E-01
FRACTION OF URBAN AREAS WITH SIDEWALKS	(USWF) = 1.000E-01
RATIO OF SIDEWALK PEDESTRIAN DENSITY	(RPD) = 6.000E+00
MAXIMUM IN-TRANSIT DOSE DISTANCE (M)	(DMDIST) = 3.000E+01
MAXIMUM IN-TRANSIT DOSE VELOCITY (KM/H)	(DMVEL) = 2.400E+01
IACC VALUE: 1=NON-DISPERSAL, 2=DISPERSAL	= 2
REGULATORY CHECK, 1=DO CHECKS, 0=NO CHECKS	= 0
BUILDING SHIELDING OPTION	(IUOPT) = 2
RURAL SHIELDING FACTOR	= 1.000E+00
SUBURBAN SHIELDING FACTOR	= 8.700E-01
URBAN SHIELDING FACTOR	= 1.800E-02

RUN DATE: [05-10-2008 AT 18:14]

PAGE 15

CRYSTAL RIVER TO HANFORD; SPENT FUEL

INGESTION RELATED INPUT DATA

COMIDA INGESTION FILE USED: RT6_Ingestion.BIN

COMIDA FILE HEADER

COMIDA2 07/22/03 08:58:40 Ver. 1.11a, 1/28/96: avoiding use of UNIT
6 for HP

DOSE CONVERSION FILE USED IN COMIDA

FGRDCF 07/10/03 21:45:47 Version 1.10
Implicit daughter halflives (m) less than 90 and less than 0.100 of
parent

NO INGESTION WILL BE CALCULATED FOR THE FOLLOWING ISOTOPES
INGESTION NUCLIDES ARE NOT IN INGESTION FILE

PACKAGE	ISOTOPE	INGESTION NUCLIDE
SFUEL	KR85	NONE

BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

PACKAGE	NUCLIDE	EFFECTIVE	THYROID
SFUEL	Co-60	1.328E+04	3.779E+03
SFUEL	Sr-90	7.984E+04	3.131E+03
SFUEL	Ru-106	6.681E+03	1.273E+03
SFUEL	Cs-134	2.232E+05	1.984E+05
SFUEL	Cs-137	1.704E+05	1.590E+05
SFUEL	Ce-144	3.780E+03	3.411E+00
SFUEL	Eu-154	4.260E+03	9.427E+01
SFUEL	Pu-238	7.414E+05	6.848E+00
SFUEL	Pu-239	8.229E+05	6.447E+00
SFUEL	Pu-240	8.228E+05	6.464E+00
SFUEL	Pu-241	1.624E+04	9.444E-02
SFUEL	Am-241	8.471E+05	1.136E+01
SFUEL	Am-243	8.435E+05	5.859E+01
SFUEL	Cm-244	7.686E+05	1.190E+01

SOCIETAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

NUCLIDE	GONADS	BREAST	LUNGS	RED MAR	BONE SU	THYROID	REMAIND
Co-60	1.6E+00	5.7E-01	4.5E-01	6.8E-01	4.8E-01	4.1E-01	2.6E+00
Sr-90	5.2E-01	5.2E-01	5.2E-01	6.6E+01	1.4E+02	5.2E-01	2.1E+00

01	Ru-106	1.6E-01	1.4E-01	1.4E-01	1.4E-01	1.4E-01	1.3E-01	2.0E+00	7.1E-
2.5E+01	Cs-134	2.6E+01	2.2E+01	2.2E+01	2.4E+01	2.2E+01	2.2E+01	2.8E+01	
2.0E+01	Cs-137	2.0E+01	1.8E+01	1.9E+01	1.9E+01	1.8E+01	1.8E+01	2.1E+01	
01	Ce-144	4.9E-03	8.6E-04	4.6E-04	6.2E-03	8.9E-03	3.6E-04	1.3E+00	4.0E-
01	Eu-154	2.4E-01	4.9E-02	3.8E-02	2.0E-01	7.9E-01	1.0E-02	1.1E+00	4.6E-
8.2E+01	Pu-238	2.2E+01	8.0E-04	8.0E-04	1.2E+02	1.5E+03	7.6E-04	5.7E+01	
9.1E+01	Pu-239	2.5E+01	7.3E-04	7.4E-04	1.3E+02	1.7E+03	7.1E-04	6.1E+01	
9.1E+01	Pu-240	2.5E+01	7.6E-04	7.7E-04	1.3E+02	1.7E+03	7.1E-04	6.1E+01	
1.8E+00	Pu-241	5.5E-01	2.6E-05	4.4E-05	2.7E+00	3.4E+01	1.1E-05	1.1E+00	
9.3E+01	Am-241	2.6E+01	2.5E-03	3.2E-03	1.4E+02	1.7E+03	1.3E-03	6.3E+01	
9.3E+01	Am-243	2.6E+01	1.3E-02	1.9E-02	1.4E+02	1.7E+03	6.5E-03	6.3E+01	
9.4E+01	Cm-244	2.3E+01	1.5E-03	1.5E-03	1.3E+02	1.7E+03	1.4E-03	7.1E+01	

CRYSTAL RIVER TO HANFORD; SPENT FUEL

DECONTAMINATION ECONOMICS --- INPUT DATA

AVERAGE COMMERCIAL BUILDING ROOF FOOTPRINT	(m ²)	3.370E+02
AVERAGE COMMERCIAL BUILDING OUTSIDE HEIGHT	(m)	1.640E+01
AVERAGE COMMERCIAL LOT SIZE	(m ²)	9.300E+02
AVERAGE INDUSTRIAL BUILDING ROOF FOOTPRINT	(m ²)	6.620E+03
AVERAGE INDUSTRIAL BUILDING OUTSIDE HEIGHT	(m)	6.050E+00
AVERAGE INDUSTRIAL LOT SIZE	(m ²)	9.700E+03
AVERAGE RESIDENTIAL BUILDING ROOF FOOTPRINT	(m ²)	1.180E+02
AVERAGE RESIDENTIAL BUILDING OUTSIDE HEIGHT	(m)	5.320E+00
AVERAGE RESIDENTIAL LOT SIZE	(m ²)	2.230E+02
RURAL COMMERCIAL LAND USE FRACTION		1.000E-02
RURAL INDUSTRIAL LAND USE FRACTION		1.000E-02
RURAL RESIDENTIAL LAND USE FRACTION		3.000E-02
RURAL SOIL LAND USE FRACTION		9.500E-01
RURAL SOIL LAND FRACTION FOR CROPS		2.000E-01
RURAL SOIL LAND FRACTION FOR LIVESTOCK		2.800E-01
RURAL ROAD DENSITY	(m OF ROAD/m ² OF LAND)	5.970E-04
RURAL EVACUATION COSTS	(\$/PERSON-km ²)	7.880E+00
SUBURBAN COMMERCIAL LAND USE FRACTION		1.400E-01
SUBURBAN INDUSTRIAL LAND USE FRACTION		9.000E-02
SUBURBAN RESIDENTIAL LAND USE FRACTION		2.800E-01
SUBURBAN SOIL LAND USE FRACTION		4.100E-01
SUBURBAN ROAD DENSITY	(m OF ROAD/m ² OF LAND)	8.110E-04
SUBURBAN EVACUATION COSTS	(\$/PERSON-km ²)	1.361E+01
URBAN COMMERCIAL LAND USE FRACTION		3.700E-01
URBAN INDUSTRIAL LAND USE FRACTION		1.100E-01
URBAN RESIDENTIAL LAND USE FRACTION		2.400E-01
URBAN SOIL LAND USE FRACTION		9.000E-02
URBAN ROAD DENSITY	(m OF ROAD/m ² OF LAND)	8.060E-02
URBAN EVACUATION COSTS	(\$/PERSON-km ²)	1.361E+01
BUILDING COVER FRACTION		4.490E-01
COST OF WATER JETTING	(\$/m ²)	4.306E+01
ROAD WIDTH	(m)	8.840E+00
COST OF SOIL REMOVAL	(\$/m ³)	1.000E+00
SOIL REMOVAL DEPTH	(m)	3.000E-02
BI-ANNUAL LIVESTOCK PROFIT	(\$/m ²)	2.499E-02
ANNUAL CROP PROFIT	(\$/m ²)	1.303E-02
VOLUME OF SHIPPING CONTAINER	(m ³)	2.167E-01
RESIN DENSITY	(gm/cc)	1.280E+00
DOSE RATE FROM 1 CURIE OF Co-60	(mrem/hr)	2.697E+02
DOSE RATE LIMIT FROM 1 DRUM	(mrem/hr)	5.000E+00

END OF INPUT EDIT

RUN DATE: [05-10-2008 AT 18:14]

PAGE 17

CRYSTAL RIVER TO HANFORD; SPENT FUEL

RRRR	AAA	DDDD	TTTTT	RRRR	AAA	N	N	6	000	000
R R	A A	D D	T	R R	A A	NN	N	6	0 0	0 0
R R	A A	D D	T	R R	A A	N N	N	6	0 0	0 0
RRRR	A A	D D	T	RRRR	A A	N	NN	6666	0 0	0 0
R R	AAAAA	D D	T	R R	AAAAA	N	N	6 6	0 0	0 0
R R	A A	D D	T	R R	A A	N	N	6 6	0 0	0 0
R R	A A	DDDD	T	R R	A A	N	N	666 *	000	000

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

000	U	U	TTTTT	PPPP	U	U	TTTTT
0 0	U	U	T	P P	U	U	T
0 0	U	U	T	P P	U	U	T
0 0	U	U	T	PPPP	U	U	T
0 0	U	U	T	P	U	U	T
0 0	U	U	T	P	U	U	T
000	UUUUU	T	P	UUUUU	T		

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

CRYSTAL RIVER TO HANFORD; SPENT FUEL

NON-RADIOLOGICAL DATA (ACCIDENTS and FATALITIES)

LINK	ACCIDENT RATE	HIGHWAY TRUCK ACCIDENTS	FATALITIES
RUR_NR_FW	1.37E-07	3.59E-04	3.59E-04
RUR_NR_NF	1.37E-07	1.20E-04	1.20E-04
RUR_RH_FW	1.37E-07	3.99E-05	3.99E-05
RUR_RH_NF	1.37E-07	1.33E-05	1.33E-05
SUB_NR_FW	3.00E-06	1.87E-03	1.87E-03
SUB_NR_NF	3.00E-06	6.23E-04	6.23E-04
SUB_RH_FW	3.00E-06	2.08E-04	2.08E-04
SUB_RH_NF	3.00E-06	6.92E-05	6.92E-05
URB_NR_FW	1.60E-05	9.89E-05	9.89E-05
URB_NR_NF	1.60E-05	5.28E-06	5.28E-06
URB_RH_FW	1.60E-05	1.10E-05	1.10E-05
URB_RH_NF	1.60E-05	6.40E-07	6.40E-07
TOTALS:	7.65E-05	3.42E-03	3.42E-03

RUN DATE: [05-10-2008 AT 18:14]

PAGE 19

CRYSTAL RIVER TO HANFORD; SPENT FUEL

REGULATORY CHECKS HAVE BEEN DISABLED

RUN DATE: [05-10-2008 AT 18:14]

PAGE 20

CRYSTAL RIVER TO HANFORD; SPENT FUEL

CALCULATIONAL INFORMATION

FOR TRUCK AREAS WITH TOTAL CONTAMINATION RATIO GREATER THAN
40.0000

(THE AREAS MARKED WITH AN 'X' ARE INTERDICTED)

AREA/SEVERITY	1	2	3	4	5	6
1	-	-	X	X	X	X
2	-	-	X	X	X	X
3	-	-	X	X	X	X
4	-	-	-	-	X	X
5	-	-	-	-	X	X
6	-	-	-	-	X	X
7	-	-	-	-	-	X
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
11	-	-	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	-	-	-	-	-	-
15	-	-	-	-	-	-
16	-	-	-	-	-	-
17	-	-	-	-	-	-
18	-	-	-	-	-	-

CRYSTAL RIVER TO HANFORD; SPENT FUEL

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
PKG1_B	0.00E+00	0.00E+00	1.20E-02	1.20E-02	1.20E-02	1.20E-02
PKG2_C	0.00E+00	0.00E+00	0.00E+00	1.00E-02	1.00E-01	1.10E-01
PKG4_E	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08
PKG5_E	0.00E+00	0.00E+00	0.00E+00	1.00E-08	1.00E-06	4.20E-05
PKG3_D	0.00E+00	0.00E+00	0.00E+00	1.00E-08	2.00E-04	2.80E-04
PKG4_D	0.00E+00	0.00E+00	0.00E+00	1.00E-08	5.00E-08	5.00E-08

DEPOSITION VELOCITIES

GROUP	M/SEC
PKG1_B	1.00E-02
PKG2_C	0.00E+00
PKG4_E	1.00E-02
PKG5_E	1.00E-02
PKG3_D	1.00E-02
PKG4_D	1.00E-02

DILUTION FACTORS

CHI VALUES AFTER DEPLETION (CI-SEC/M**3/CI-RELEASED)

DISTANCE	PKG1_B	PKG2_C	PKG4_E	PKG5_E	PKG3_D	PKG4_D
3.30E+01	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03
6.80E+01	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03
1.05E+02	8.34E-04	8.58E-04	8.34E-04	8.34E-04	8.34E-04	8.34E-04
2.44E+02	3.23E-04	3.42E-04	3.23E-04	3.23E-04	3.23E-04	3.23E-04
3.69E+02	1.55E-04	1.72E-04	1.55E-04	1.55E-04	1.55E-04	1.55E-04
5.61E+02	7.38E-05	8.58E-05	7.38E-05	7.38E-05	7.38E-05	7.38E-05
1.02E+03	2.80E-05	3.42E-05	2.80E-05	2.80E-05	2.80E-05	2.80E-05
1.63E+03	1.33E-05	1.72E-05	1.33E-05	1.33E-05	1.33E-05	1.33E-05
2.31E+03	6.16E-06	8.58E-06	6.16E-06	6.16E-06	6.16E-06	6.16E-06
4.27E+03	2.33E-06	3.42E-06	2.33E-06	2.33E-06	2.33E-06	2.33E-06
5.47E+03	1.06E-06	1.72E-06	1.06E-06	1.06E-06	1.06E-06	1.06E-06
1.11E+04	5.04E-07	8.58E-07	5.04E-07	5.04E-07	5.04E-07	5.04E-07
1.31E+04	1.86E-07	3.42E-07	1.86E-07	1.86E-07	1.86E-07	1.86E-07
2.13E+04	8.77E-08	1.72E-07	8.77E-08	8.77E-08	8.77E-08	8.77E-08
4.05E+04	4.01E-08	8.58E-08	4.01E-08	4.01E-08	4.01E-08	4.01E-08
7.00E+04	2.14E-08	5.42E-08	2.14E-08	2.14E-08	2.14E-08	2.14E-08
8.99E+04	1.31E-08	4.30E-08	1.31E-08	1.31E-08	1.31E-08	1.31E-08
1.21E+05	8.54E-09	3.42E-08	8.54E-09	8.54E-09	8.54E-09	8.54E-09

CRYSTAL RIVER TO HANFORD; SPENT FUEL

DEPOSITION FACTORS
CHI DEPOSITED (CI/M**2/CI-RELEASED)

DISTANCE	PKG1_B	PKG2_C	PKG4_E	PKG5_E	PKG3_D	PKG4_D
3.30E+01	3.42E-05	0.00E+00	3.42E-05	3.42E-05	3.42E-05	3.42E-05
6.80E+01	1.72E-05	0.00E+00	1.72E-05	1.72E-05	1.72E-05	1.72E-05
1.05E+02	8.34E-06	0.00E+00	8.34E-06	8.34E-06	8.34E-06	8.34E-06
2.44E+02	3.23E-06	0.00E+00	3.23E-06	3.23E-06	3.23E-06	3.23E-06
3.69E+02	1.55E-06	0.00E+00	1.55E-06	1.55E-06	1.55E-06	1.55E-06
5.61E+02	7.38E-07	0.00E+00	7.38E-07	7.38E-07	7.38E-07	7.38E-07
1.02E+03	2.80E-07	0.00E+00	2.80E-07	2.80E-07	2.80E-07	2.80E-07
1.63E+03	1.33E-07	0.00E+00	1.33E-07	1.33E-07	1.33E-07	1.33E-07
2.31E+03	6.16E-08	0.00E+00	6.16E-08	6.16E-08	6.16E-08	6.16E-08
4.27E+03	2.33E-08	0.00E+00	2.33E-08	2.33E-08	2.33E-08	2.33E-08
5.47E+03	1.06E-08	0.00E+00	1.06E-08	1.06E-08	1.06E-08	1.06E-08
1.11E+04	5.04E-09	0.00E+00	5.04E-09	5.04E-09	5.04E-09	5.04E-09
1.31E+04	1.86E-09	0.00E+00	1.86E-09	1.86E-09	1.86E-09	1.86E-09
2.13E+04	8.77E-10	0.00E+00	8.77E-10	8.77E-10	8.77E-10	8.77E-10
4.05E+04	4.01E-10	0.00E+00	4.01E-10	4.01E-10	4.01E-10	4.01E-10
7.00E+04	2.14E-10	0.00E+00	2.14E-10	2.14E-10	2.14E-10	2.14E-10
8.99E+04	1.31E-10	0.00E+00	1.31E-10	1.31E-10	1.31E-10	1.31E-10
1.21E+05	8.54E-11	0.00E+00	8.54E-11	8.54E-11	8.54E-11	8.54E-11

VEHICLE TRUCK

CRYSTAL RIVER TO HANFORD; SPENT FUEL

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 1

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
6.80E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.05E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.44E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
3.69E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
5.61E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.02E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.63E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.31E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
4.27E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
5.47E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.11E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.31E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.13E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
4.05E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
7.00E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
8.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.21E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE TRUCK
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 1

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
ALL VALUES WERE 0.0							

CRYSTAL RIVER TO HANFORD; SPENT FUEL

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 2

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
6.80E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.05E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.44E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
3.69E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
5.61E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.02E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.63E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.31E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
4.27E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
5.47E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.11E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.31E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.13E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
4.05E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
7.00E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
8.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.21E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE TRUCK
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 2

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
ALL VALUES WERE 0.0							

CRYSTAL RIVER TO HANFORD; SPENT FUEL

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 3

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	1.11E-02	3.08E-02	2.31E-03	3.78E-03	
3.78E+01					
6.80E+01	5.58E-03	1.55E-02	1.16E-03	1.90E-03	
1.90E+01					
1.05E+02	2.71E-03	7.52E-03	5.64E-04	9.23E-04	
9.23E+00					
2.44E+02	1.05E-03	2.91E-03	2.18E-04	3.57E-04	
3.57E+00					
3.69E+02	5.03E-04	1.39E-03	1.05E-04	1.71E-04	
1.71E+00					
5.61E+02	2.40E-04	6.65E-04	4.98E-05	8.16E-05	8.16E-
01					
1.02E+03	9.10E-05	2.52E-04	1.89E-05	3.10E-05	3.10E-
01					
1.63E+03	4.31E-05	1.19E-04	8.95E-06	1.47E-05	1.47E-
01					
2.31E+03	2.00E-05	5.55E-05	4.16E-06	6.82E-06	6.82E-
02					
4.27E+03	7.57E-06	2.10E-05	1.57E-06	2.58E-06	2.58E-
02					
5.47E+03	3.45E-06	9.56E-06	7.17E-07	1.17E-06	1.17E-
02					
1.11E+04	1.64E-06	4.54E-06	3.40E-07	5.57E-07	5.57E-
03					
1.31E+04	6.05E-07	1.68E-06	1.26E-07	2.06E-07	2.06E-
03					
2.13E+04	2.85E-07	7.91E-07	5.93E-08	9.71E-08	9.71E-
04					
4.05E+04	1.30E-07	3.61E-07	2.71E-08	4.44E-08	4.44E-
04					
7.00E+04	6.96E-08	1.93E-07	1.45E-08	2.37E-08	2.37E-
04					
8.99E+04	4.24E-08	1.18E-07	8.82E-09	1.44E-08	1.44E-
04					
1.21E+05	2.78E-08	7.70E-08	5.77E-09	9.45E-09	9.45E-
05					

PASQUILL CATEGORY A
VEHICLE TRUCK
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 3

FARMER CNTR LINE THYROID	INHALED		SHINE			BACKYARD
	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
3.30E+01	2.31E-03	1.00E-05	1.76E-03	2.84E-02	3.25E-02	5.03E-01
1.43E-01						
6.80E+01	1.16E-03	2.53E-06	8.85E-04	1.43E-02	1.63E-02	2.52E-01
7.18E-02						
1.05E+02	5.64E-04	5.97E-07	4.30E-04	6.92E-03	7.92E-03	1.23E-01
3.49E-02						
2.44E+02	2.18E-04	8.94E-08	1.66E-04	2.68E-03	3.06E-03	4.74E-02
1.35E-02						
3.69E+02	1.05E-04	2.05E-08	7.98E-05	1.28E-03	1.47E-03	2.27E-02
6.47E-03						
5.61E+02	4.98E-05	4.67E-09	3.80E-05	6.12E-04	7.00E-04	1.08E-02
3.08E-03						
1.02E+03	1.89E-05	6.72E-10	1.44E-05	2.32E-04	2.66E-04	4.12E-03
1.17E-03						
1.63E+03	8.95E-06	1.51E-10	6.83E-06	1.10E-04	1.26E-04	1.95E-03
5.54E-04						
2.31E+03	4.16E-06	3.26E-11	3.18E-06	5.12E-05	5.85E-05	9.06E-04
2.58E-04						
4.27E+03	1.57E-06	4.65E-12	1.20E-06	1.93E-05	2.21E-05	3.42E-04
9.74E-05						
5.47E+03	7.17E-07	9.66E-13	5.47E-07	8.81E-06	1.01E-05	1.56E-04
4.44E-05						
1.11E+04	3.40E-07	2.18E-13	2.60E-07	4.18E-06	4.78E-06	7.40E-05
2.11E-05						
1.31E+04	1.26E-07	2.97E-14	9.60E-08	1.54E-06	1.77E-06	2.74E-05
7.78E-06						
2.13E+04	5.93E-08	6.61E-15	4.52E-08	7.28E-07	8.33E-07	1.29E-05
3.67E-06						
4.05E+04	2.71E-08	1.38E-15	2.07E-08	3.33E-07	3.80E-07	5.89E-06
1.68E-06						
7.00E+04	1.45E-08	3.93E-16	1.10E-08	1.78E-07	2.03E-07	3.15E-06
8.95E-07						
8.99E+04	8.82E-09	1.46E-16	6.73E-09	1.08E-07	1.24E-07	1.92E-06
5.46E-07						
1.21E+05	5.77E-09	6.26E-17	4.40E-09	7.09E-08	8.11E-08	1.26E-06
3.57E-07						

CRYSTAL RIVER TO HANFORD; SPENT FUEL

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 4

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	1.17E-02	3.10E-02	3.15E-03	2.12E-01	
3.80E+01					
6.80E+01	5.85E-03	1.55E-02	1.58E-03	1.07E-01	
1.91E+01					
1.05E+02	2.84E-03	7.55E-03	7.68E-04	5.33E-02	
9.26E+00					
2.44E+02	1.10E-03	2.92E-03	2.97E-04	2.12E-02	
3.58E+00					
3.69E+02	5.28E-04	1.40E-03	1.42E-04	1.07E-02	
1.72E+00					
5.61E+02	2.51E-04	6.68E-04	6.79E-05	5.32E-03	8.19E-
01					
1.02E+03	9.54E-05	2.54E-04	2.58E-05	2.12E-03	3.11E-
01					
1.63E+03	4.52E-05	1.20E-04	1.22E-05	1.06E-03	1.47E-
01					
2.31E+03	2.10E-05	5.59E-05	5.67E-06	5.30E-04	6.84E-
02					
4.27E+03	7.94E-06	2.11E-05	2.14E-06	2.11E-04	2.58E-
02					
5.47E+03	3.62E-06	9.63E-06	9.77E-07	1.06E-04	1.18E-
02					
1.11E+04	1.72E-06	4.57E-06	4.63E-07	5.29E-05	5.59E-
03					
1.31E+04	6.35E-07	1.69E-06	1.71E-07	2.11E-05	2.07E-
03					
2.13E+04	2.99E-07	7.97E-07	8.08E-08	1.06E-05	9.74E-
04					
4.05E+04	1.37E-07	3.64E-07	3.69E-08	5.28E-06	4.45E-
04					
7.00E+04	7.30E-08	1.95E-07	1.97E-08	3.33E-06	2.38E-
04					
8.99E+04	4.45E-08	1.19E-07	1.20E-08	2.64E-06	1.45E-
04					
1.21E+05	2.91E-08	7.80E-08	7.86E-09	2.10E-06	9.48E-
05					

PASQUILL CATEGORY A
VEHICLE TRUCK
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 4

FARMER CNTR LINE THYROID	INHALED		SHINE			BACKYARD
	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
3.30E+01	3.15E-03	1.37E-05	1.86E-03	2.84E-02	3.34E-02	5.14E-01
1.50E-01						
6.80E+01	1.58E-03	3.45E-06	9.32E-04	1.43E-02	1.68E-02	2.58E-01
7.52E-02						
1.05E+02	7.68E-04	8.14E-07	4.53E-04	6.93E-03	8.15E-03	1.25E-01
3.65E-02						
2.44E+02	2.97E-04	1.22E-07	1.76E-04	2.68E-03	3.15E-03	4.85E-02
1.41E-02						
3.69E+02	1.42E-04	2.80E-08	8.44E-05	1.28E-03	1.51E-03	2.33E-02
6.77E-03						
5.61E+02	6.79E-05	6.36E-09	4.03E-05	6.12E-04	7.21E-04	1.11E-02
3.23E-03						
1.02E+03	2.58E-05	9.16E-10	1.54E-05	2.32E-04	2.74E-04	4.21E-03
1.23E-03						
1.63E+03	1.22E-05	2.05E-10	7.30E-06	1.10E-04	1.30E-04	1.99E-03
5.80E-04						
2.31E+03	5.67E-06	4.44E-11	3.41E-06	5.12E-05	6.03E-05	9.27E-04
2.70E-04						
4.27E+03	2.14E-06	6.34E-12	1.29E-06	1.93E-05	2.28E-05	3.50E-04
1.02E-04						
5.47E+03	9.77E-07	1.32E-12	5.93E-07	8.81E-06	1.04E-05	1.60E-04
4.64E-05						
1.11E+04	4.63E-07	2.97E-13	2.83E-07	4.18E-06	4.93E-06	7.57E-05
2.20E-05						
1.31E+04	1.71E-07	4.05E-14	1.05E-07	1.55E-06	1.82E-06	2.80E-05
8.15E-06						
2.13E+04	8.08E-08	9.00E-15	4.99E-08	7.29E-07	8.59E-07	1.32E-05
3.84E-06						
4.05E+04	3.69E-08	1.88E-15	2.30E-08	3.33E-07	3.93E-07	6.03E-06
1.75E-06						
7.00E+04	1.97E-08	5.36E-16	1.25E-08	1.78E-07	2.10E-07	3.22E-06
9.37E-07						
8.99E+04	1.20E-08	1.99E-16	7.89E-09	1.08E-07	1.28E-07	1.96E-06
5.72E-07						
1.21E+05	7.86E-09	8.53E-17	5.32E-09	7.09E-08	8.41E-08	1.28E-06
3.74E-07						

CRYSTAL RIVER TO HANFORD; SPENT FUEL

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 5

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	5.43E+00	4.36E-01	9.25E-01	2.17E+00	
8.25E+02					
6.80E+01	2.72E+00	2.19E-01	4.64E-01	1.09E+00	
4.14E+02					
1.05E+02	1.32E+00	1.06E-01	2.26E-01	5.44E-01	
2.01E+02					
2.44E+02	5.12E-01	4.11E-02	8.73E-02	2.16E-01	
7.79E+01					
3.69E+02	2.46E-01	1.97E-02	4.19E-02	1.09E-01	
3.73E+01					
5.61E+02	1.17E-01	9.40E-03	1.99E-02	5.41E-02	
1.78E+01					
1.02E+03	4.44E-02	3.57E-03	7.57E-03	2.15E-02	
6.76E+00					
1.63E+03	2.10E-02	1.69E-03	3.58E-03	1.08E-02	
3.20E+00					
2.31E+03	9.78E-03	7.86E-04	1.67E-03	5.38E-03	
1.49E+00					
4.27E+03	3.70E-03	2.97E-04	6.30E-04	2.14E-03	5.62E-
01					
5.47E+03	1.68E-03	1.35E-04	2.87E-04	1.07E-03	2.56E-
01					
1.11E+04	7.99E-04	6.43E-05	1.36E-04	5.36E-04	1.22E-
01					
1.31E+04	2.95E-04	2.38E-05	5.03E-05	2.13E-04	4.49E-
02					
2.13E+04	1.39E-04	1.12E-05	2.37E-05	1.07E-04	2.12E-
02					
4.05E+04	6.36E-05	5.12E-06	1.08E-05	5.33E-05	9.67E-
03					
7.00E+04	3.40E-05	2.74E-06	5.79E-06	3.36E-05	5.17E-
03					
8.99E+04	2.07E-05	1.67E-06	3.53E-06	2.65E-05	3.15E-
03					
1.21E+05	1.36E-05	1.10E-06	2.31E-06	2.11E-05	2.06E-
03					

PASQUILL CATEGORY A
VEHICLE TRUCK
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 5

FARMER CNTR LINE THYROID	INHALED		SHINE			BACKYARD	
	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE	
3.30E+01	9.25E-01	4.02E-03	1.40E-02	2.25E-01	1.17E+00	1.44E+02	
1.33E+02							
6.80E+01	4.64E-01	1.01E-03	7.02E-03	1.13E-01	5.86E-01	7.25E+01	
6.66E+01							
1.05E+02	2.26E-01	2.39E-04	3.42E-03	5.50E-02	2.84E-01	3.52E+01	
3.23E+01							
2.44E+02	8.73E-02	3.58E-05	1.32E-03	2.13E-02	1.10E-01	1.36E+01	
1.25E+01							
3.69E+02	4.19E-02	8.23E-06	6.37E-04	1.02E-02	5.27E-02	6.54E+00	
6.00E+00							
5.61E+02	1.99E-02	1.87E-06	3.05E-04	4.86E-03	2.51E-02	3.11E+00	
2.86E+00							
1.02E+03	7.57E-03	2.69E-07	1.16E-04	1.84E-03	9.53E-03	1.18E+00	
1.09E+00							
1.63E+03	3.58E-03	6.03E-08	5.52E-05	8.73E-04	4.51E-03	5.60E-01	
5.14E-01							
2.31E+03	1.67E-03	1.31E-08	2.59E-05	4.06E-04	2.10E-03	2.60E-01	
2.39E-01							
4.27E+03	6.30E-04	1.86E-09	9.81E-06	1.53E-04	7.93E-04	9.84E-02	
9.03E-02							
5.47E+03	2.87E-04	3.87E-10	4.52E-06	6.99E-05	3.61E-04	4.48E-02	
4.11E-02							
1.11E+04	1.36E-04	8.71E-11	2.15E-06	3.32E-05	1.72E-04	2.13E-02	
1.95E-02							
1.31E+04	5.03E-05	1.19E-11	8.03E-07	1.23E-05	6.34E-05	7.86E-03	
7.22E-03							
2.13E+04	2.37E-05	2.65E-12	3.81E-07	5.78E-06	2.99E-05	3.71E-03	
3.40E-03							
4.05E+04	1.08E-05	5.52E-13	1.76E-07	2.64E-06	1.37E-05	1.69E-03	
1.55E-03							
7.00E+04	5.79E-06	1.57E-13	9.63E-08	1.41E-06	7.30E-06	9.04E-04	
8.30E-04							
8.99E+04	3.53E-06	5.86E-14	6.14E-08	8.60E-07	4.45E-06	5.51E-04	
5.06E-04							
1.21E+05	2.31E-06	2.51E-14	4.18E-08	5.63E-07	2.91E-06	3.61E-04	
3.31E-04							

CRYSTAL RIVER TO HANFORD; SPENT FUEL

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 6

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	7.62E+00	5.99E-01	1.30E+00	2.41E+00	
1.16E+03					
6.80E+01	3.82E+00	3.01E-01	6.51E-01	1.21E+00	
5.84E+02					
1.05E+02	1.86E+00	1.46E-01	3.16E-01	6.04E-01	
2.84E+02					
2.44E+02	7.19E-01	5.66E-02	1.22E-01	2.40E-01	
1.10E+02					
3.69E+02	3.45E-01	2.71E-02	5.87E-02	1.21E-01	
5.26E+01					
5.61E+02	1.64E-01	1.29E-02	2.80E-02	6.01E-02	
2.51E+01					
1.02E+03	6.24E-02	4.91E-03	1.06E-02	2.39E-02	
9.52E+00					
1.63E+03	2.95E-02	2.32E-03	5.02E-03	1.20E-02	
4.50E+00					
2.31E+03	1.37E-02	1.08E-03	2.34E-03	5.97E-03	
2.10E+00					
4.27E+03	5.19E-03	4.08E-04	8.83E-04	2.37E-03	7.92E-
01					
5.47E+03	2.36E-03	1.86E-04	4.02E-04	1.19E-03	3.61E-
01					
1.11E+04	1.12E-03	8.83E-05	1.91E-04	5.93E-04	1.71E-
01					
1.31E+04	4.15E-04	3.27E-05	7.05E-05	2.36E-04	6.33E-
02					
2.13E+04	1.95E-04	1.54E-05	3.33E-05	1.18E-04	2.98E-
02					
4.05E+04	8.93E-05	7.04E-06	1.52E-05	5.89E-05	1.36E-
02					
7.00E+04	4.77E-05	3.76E-06	8.11E-06	3.71E-05	7.28E-
03					
8.99E+04	2.91E-05	2.30E-06	4.95E-06	2.93E-05	4.44E-
03					
1.21E+05	1.90E-05	1.50E-06	3.24E-06	2.32E-05	2.90E-
03					

PASQUILL CATEGORY A
VEHICLE TRUCK
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 6

FARMER CNTR LINE THYROID	INHALED		SHINE			BACKYARD	
	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE	
3.30E+01	1.30E+00	5.63E-03	1.87E-02	3.06E-01	1.63E+00	2.02E+02	
1.86E+02							
6.80E+01	6.51E-01	1.42E-03	9.38E-03	1.53E-01	8.15E-01	1.02E+02	
9.32E+01							
1.05E+02	3.16E-01	3.35E-04	4.56E-03	7.46E-02	3.96E-01	4.93E+01	
4.53E+01							
2.44E+02	1.22E-01	5.01E-05	1.77E-03	2.88E-02	1.53E-01	1.91E+01	
1.75E+01							
3.69E+02	5.87E-02	1.15E-05	8.51E-04	1.38E-02	7.34E-02	9.15E+00	
8.40E+00							
5.61E+02	2.80E-02	2.62E-06	4.06E-04	6.59E-03	3.50E-02	4.36E+00	
4.00E+00							
1.02E+03	1.06E-02	3.77E-07	1.55E-04	2.50E-03	1.33E-02	1.65E+00	
1.52E+00							
1.63E+03	5.02E-03	8.45E-08	7.35E-05	1.18E-03	6.28E-03	7.83E-01	
7.19E-01							
2.31E+03	2.34E-03	1.83E-08	3.44E-05	5.51E-04	2.92E-03	3.64E-01	
3.35E-01							
4.27E+03	8.83E-04	2.61E-09	1.30E-05	2.08E-04	1.10E-03	1.38E-01	
1.26E-01							
5.47E+03	4.02E-04	5.42E-10	5.99E-06	9.48E-05	5.03E-04	6.27E-02	
5.76E-02							
1.11E+04	1.91E-04	1.22E-10	2.86E-06	4.50E-05	2.39E-04	2.98E-02	
2.73E-02							
1.31E+04	7.05E-05	1.67E-11	1.06E-06	1.66E-05	8.82E-05	1.10E-02	
1.01E-02							
2.13E+04	3.33E-05	3.71E-12	5.04E-07	7.84E-06	4.16E-05	5.19E-03	
4.76E-03							
4.05E+04	1.52E-05	7.74E-13	2.32E-07	3.58E-06	1.90E-05	2.37E-03	
2.18E-03							
7.00E+04	8.11E-06	2.21E-13	1.27E-07	1.91E-06	1.02E-05	1.27E-03	
1.16E-03							
8.99E+04	4.95E-06	8.21E-14	8.02E-08	1.17E-06	6.20E-06	7.72E-04	
7.09E-04							
1.21E+05	3.24E-06	3.51E-14	5.42E-08	7.63E-07	4.05E-06	5.05E-04	
4.63E-04							

RUN DATE: [05-10-2008 AT 18:14]

PAGE 29

CRYSTAL RIVER TO HANFORD; SPENT FUEL

INCIDENT-FREE SUMMARY

IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM

	CREW	OFF LINK	ON LINK
RUR_NR_FW	6.15E+01	3.81E-01	1.55E+01
RUR_NR_NF	2.05E+01	1.51E-01	1.42E+01
RUR_RH_FW	6.84E+00	4.23E-02	1.72E+00
RUR_RH_NF	2.28E+00	1.68E-02	1.58E+00
SUB_NR_FW	1.46E+01	9.43E+00	6.11E+00
SUB_NR_NF	1.07E+01	8.44E+00	2.75E+01
SUB_RH_FW	3.25E+00	2.10E+00	5.66E+00
SUB_RH_NF	2.37E+00	1.87E+00	2.52E+01
URB_NR_FW	1.45E-01	1.04E-02	2.18E-01
URB_NR_NF	2.83E-02	9.98E-02	4.45E-01
URB_RH_FW	3.24E-02	2.32E-03	2.03E-01
URB_RH_NF	6.87E-03	2.42E-02	4.55E-01

ZONE

RURAL	9.12E+01	5.91E-01	3.30E+01
SUBURB	3.09E+01	2.18E+01	6.45E+01
URBAN	2.13E-01	1.37E-01	1.32E+00

TOTALS: 1.22E+02 2.26E+01 9.88E+01

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

TRUCK 3.94E-04 REM

STOP EXPOSURE IN PERSON-REM

POINT-SOURCE STOP_ 6.83E+02

TOTAL: 6.83E+02

CRYSTAL RIVER TO HANFORD; SPENT FUEL

ACCIDENT SUMMARY

NUMBER OF EXPECTED ACCIDENTS

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RUR_NR_FW	1.47E-01	9.57E-02	7.29E-04	7.29E-07	1.21E-06	1.70E-06
RUR_NR_NF	4.88E-02	3.19E-02	2.43E-04	2.43E-07	4.05E-07	5.67E-07
RUR_RH_FW	1.63E-02	1.06E-02	8.10E-05	8.10E-08	1.35E-07	1.89E-07
RUR_RH_NF	5.43E-03	3.55E-03	2.70E-05	2.70E-08	4.50E-08	6.30E-08
SUB_NR_FW	7.61E-01	4.98E-01	5.05E-03	5.05E-06	3.79E-06	2.53E-06
SUB_NR_NF	2.54E-01	1.66E-01	1.68E-03	1.68E-06	1.26E-06	8.42E-07
SUB_RH_FW	8.45E-02	5.53E-02	5.62E-04	5.62E-07	4.21E-07	2.81E-07
SUB_RH_NF	2.82E-02	1.84E-02	1.87E-04	1.87E-07	1.40E-07	9.36E-08
URB_NR_FW	4.04E-02	2.64E-02	2.54E-05	2.54E-08	1.67E-08	8.69E-09
URB_NR_NF	2.16E-03	1.41E-03	1.36E-06	1.36E-09	8.92E-10	4.64E-10
URB_RH_FW	4.51E-03	2.95E-03	2.84E-06	2.84E-09	1.87E-09	9.70E-10
URB_RH_NF	2.61E-04	1.71E-04	1.64E-07	1.64E-10	1.08E-10	5.62E-11

NUMBER OF EARLY FATALITIES FROM INHALATION

ALL VALUES ARE 0.0

RADIOLOGICAL CONSEQUENCES
50 YEAR POPULATION DOSE IN PERSON-REM

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RUR_NR_FW	0.00E+00	0.00E+00	3.43E-03	3.57E-03	1.57E-01	2.18E-01
RUR_NR_NF	0.00E+00	0.00E+00	3.43E-03	3.57E-03	1.57E-01	2.18E-01
RUR_RH_FW	0.00E+00	0.00E+00	3.43E-03	3.57E-03	1.57E-01	2.18E-01
RUR_RH_NF	0.00E+00	0.00E+00	3.43E-03	3.57E-03	1.57E-01	2.18E-01
SUB_NR_FW	0.00E+00	0.00E+00	4.11E-01	4.28E-01	1.88E+01	2.62E+01
SUB_NR_NF	0.00E+00	0.00E+00	4.11E-01	4.28E-01	1.88E+01	2.62E+01
SUB_RH_FW	0.00E+00	0.00E+00	4.11E-01	4.28E-01	1.88E+01	2.62E+01
SUB_RH_NF	0.00E+00	0.00E+00	4.11E-01	4.28E-01	1.88E+01	2.62E+01
URB_NR_FW	0.00E+00	0.00E+00	1.42E+00	1.48E+00	6.50E+01	9.07E+01
URB_NR_NF	0.00E+00	0.00E+00	1.42E+00	1.48E+00	6.50E+01	9.07E+01
URB_RH_FW	0.00E+00	0.00E+00	1.42E+00	1.48E+00	6.50E+01	9.07E+01
URB_RH_NF	0.00E+00	0.00E+00	1.42E+00	1.48E+00	6.50E+01	9.07E+01

NUMBER OF EARLY MORBIDITY CASES FROM INHALATION

ALL VALUES ARE 0.0

MAXIMUM RISK FOR INDIVIDUAL IN NEAREST ISOPLETH (DOSE IN REM)
FROM INHALATION, CLOUDSHINE, AND GROUNDSHINE EXPOSURE DURING EVACUATION

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RUR_NR_FW	0.00E+00	0.00E+00	3.06E-05	3.11E-08	7.12E-06	1.40E-05
RUR_NR_NF	0.00E+00	0.00E+00	1.02E-05	1.04E-08	2.37E-06	4.66E-06
RUR_RH_FW	0.00E+00	0.00E+00	3.40E-06	3.45E-09	7.91E-07	1.55E-06
RUR_RH_NF	0.00E+00	0.00E+00	1.13E-06	1.15E-09	2.64E-07	5.18E-07
SUB_NR_FW	0.00E+00	0.00E+00	2.12E-04	2.15E-07	2.22E-05	2.08E-05
SUB_NR_NF	0.00E+00	0.00E+00	7.06E-05	7.18E-08	7.41E-06	6.92E-06
SUB_RH_FW	0.00E+00	0.00E+00	2.35E-05	2.39E-08	2.47E-06	2.31E-06
SUB_RH_NF	0.00E+00	0.00E+00	7.85E-06	7.98E-09	8.23E-07	7.69E-07
URB_NR_FW	0.00E+00	0.00E+00	1.07E-06	1.08E-09	9.80E-08	7.14E-08
URB_NR_NF	0.00E+00	0.00E+00	5.69E-08	5.78E-11	5.23E-09	3.81E-09
URB_RH_FW	0.00E+00	0.00E+00	1.19E-07	1.21E-10	1.09E-08	7.97E-09
URB_RH_NF	0.00E+00	0.00E+00	6.89E-09	7.01E-12	6.34E-10	4.62E-10

RADIOLOGICAL CONSEQUENCES IN PERSON REM
50 YEAR SOCIETAL INGESTION DOSE - EFFECTIVE

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RUR_NR_FW	0.00E+00	0.00E+00	3.44E-01	3.53E-01	7.79E+01	1.05E+02
RUR_NR_NF	0.00E+00	0.00E+00	3.44E-01	3.53E-01	7.79E+01	1.05E+02
RUR_RH_FW	0.00E+00	0.00E+00	3.44E-01	3.53E-01	7.79E+01	1.05E+02
RUR_RH_NF	0.00E+00	0.00E+00	3.44E-01	3.53E-01	7.79E+01	1.05E+02

CRYSTAL RIVER TO HANFORD; SPENT FUEL

EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

LINK	INHALED	RESUSPD	CLOUDSH	GROUNDSH	TOTAL
RUR_NR_FW	7.10E-07	5.93E-09	1.89E-07	2.16E-06	3.06E-06
RUR_NR_NF	2.37E-07	1.98E-09	6.31E-08	7.20E-07	1.02E-06
RUR_RH_FW	7.89E-08	6.59E-10	2.10E-08	2.40E-07	3.40E-07
RUR_RH_NF	2.63E-08	2.20E-10	7.01E-09	8.00E-08	1.13E-07
SUB_NR_FW	3.13E-04	2.62E-06	1.53E-04	1.75E-03	2.22E-03
SUB_NR_NF	1.04E-04	8.72E-07	5.10E-05	5.82E-04	7.39E-04
SUB_RH_FW	3.48E-05	2.91E-07	1.70E-05	1.94E-04	2.46E-04
SUB_RH_NF	1.16E-05	9.69E-08	5.67E-06	6.47E-05	8.21E-05
URB_NR_FW	5.02E-06	4.19E-08	2.66E-06	3.03E-05	3.81E-05
URB_NR_NF	2.68E-07	2.24E-09	1.42E-07	1.62E-06	2.03E-06
URB_RH_FW	5.61E-07	4.68E-09	2.97E-07	3.39E-06	4.25E-06
URB_RH_NF	3.25E-08	2.71E-10	1.72E-08	1.96E-07	2.46E-07
ZONE					
RURAL	1.05E-06	8.78E-09	2.80E-07	3.20E-06	4.54E-06
SUBURB	4.64E-04	3.88E-06	2.27E-04	2.59E-03	3.28E-03
URBAN	5.88E-06	4.91E-08	3.11E-06	3.55E-05	4.46E-05
TOTALS:	4.71E-04	3.93E-06	2.30E-04	2.63E-03	3.33E-03

RUN DATE: [05-10-2008 AT 18:14]

PAGE 32

CRYSTAL RIVER TO HANFORD; SPENT FUEL

SOCIETAL INGESTION RISK - PERSON-REM

LINK	GONADS	EFFECTIVE
RUR_NR_FW	5.72E-04	5.25E-04
RUR_NR_NF	1.91E-04	1.75E-04
RUR_RH_FW	6.35E-05	5.83E-05
RUR_RH_NF	2.12E-05	1.94E-05
TOTAL	8.47E-04	7.77E-04

SOCIETAL INGESTION RISK BY ORGAN - PERSON-REM

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
RUR_NR_FW	3.47E-04	3.32E-04	3.84E-04	3.36E-04	3.23E-04	7.48E-04
RUR_NR_NF	1.16E-04	1.11E-04	1.28E-04	1.12E-04	1.08E-04	2.49E-04
RUR_RH_FW	3.85E-05	3.69E-05	4.27E-05	3.74E-05	3.59E-05	8.32E-05
RUR_RH_NF	1.28E-05	1.23E-05	1.42E-05	1.25E-05	1.20E-05	2.77E-05
TOTAL	5.14E-04	4.93E-04	5.69E-04	4.98E-04	4.78E-04	1.11E-03

RUN DATE: [05-10-2008 AT 18:14]

PAGE 33

CRYSTAL RIVER TO HANFORD; SPENT FUEL

EXPECTED RISK VALUES - OTHER

LINK	EARLY FATALITY	EARLY MORBIDITY
RUR_NR_FW	0.00E+00	0.00E+00
RUR_NR_NF	0.00E+00	0.00E+00
RUR_RH_FW	0.00E+00	0.00E+00
RUR_RH_NF	0.00E+00	0.00E+00
SUB_NR_FW	0.00E+00	0.00E+00
SUB_NR_NF	0.00E+00	0.00E+00
SUB_RH_FW	0.00E+00	0.00E+00
SUB_RH_NF	0.00E+00	0.00E+00
URB_NR_FW	0.00E+00	0.00E+00
URB_NR_NF	0.00E+00	0.00E+00
URB_RH_FW	0.00E+00	0.00E+00
URB_RH_NF	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

CRYSTAL RIVER TO HANFORD; SPENT FUEL

LOSS OF SHIELDING RISK VALUES (PER-REM) BY CASE

LOSS OF SHIELDING TOTAL RISK VALUES

LINK =
 DISTANCE FROM CASK (M) = 0.00 0.00 0.00 0.00
 0.00 0.00
 RISK (PR-REM) = 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 0.00E+00 0.00E+00

LINK =
 DISTANCE FROM CASK (M) = 0.00 0.00 0.00 0.00
 0.00 0.00
 RISK (PR-REM) = 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 0.00E+00 0.00E+00

LINK =
 DISTANCE FROM CASK (M) = 0.00 0.00 0.00 0.00
 0.00 0.00
 RISK (PR-REM) = 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 0.00E+00 0.00E+00

LINK =
 DISTANCE FROM CASK (M) = 0.00 0.00 0.00 0.00
 0.00 0.00
 RISK (PR-REM) = 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 0.00E+00 0.00E+00

LINK =
 DISTANCE FROM CASK (M) = 0.00 0.00 0.00 0.00
 0.00 0.00
 RISK (PR-REM) = 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 0.00E+00 0.00E+00

LINK =
 DISTANCE FROM CASK (M) = 0.00 0.00 0.00 0.00
 0.00 0.00
 RISK (PR-REM) = 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 0.00E+00 0.00E+00

LINK =
 DISTANCE FROM CASK (M) = 0.00 0.00 0.00 0.00
 0.00 0.00
 RISK (PR-REM) = 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 0.00E+00 0.00E+00

LINK =
 DISTANCE FROM CASK (M) = 0.00 0.00 0.00 0.00
 0.00 0.00

RISK	(PR-REM) =	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00 0.00E+00					

LINK =					
DISTANCE FROM CASK (M) =	0.00	0.00	0.00	0.00	
0.00 0.00					

RISK	(PR-REM) =	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00 0.00E+00					

LINK =					
DISTANCE FROM CASK (M) =	0.00	0.00	0.00	0.00	
0.00 0.00					

RISK	(PR-REM) =	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00 0.00E+00					

LINK =					
DISTANCE FROM CASK (M) =	0.00	0.00	0.00	0.00	
0.00 0.00					

RISK	(PR-REM) =	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00 0.00E+00					

LINK =					
DISTANCE FROM CASK (M) =	0.00	0.00	0.00	0.00	
0.00 0.00					

RISK	(PR-REM) =	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00 0.00E+00					

CRYSTAL RIVER TO HANFORD; SPENT FUEL

TOTAL EXPOSED POPULATION: INCIDENT-FREE

RUR_NR_FW	3.54E+04	PERSONS
RUR_NR_NF	1.18E+04	PERSONS
RUR_RH_FW	3.93E+03	PERSONS
RUR_RH_NF	1.31E+03	PERSONS
SUB_NR_FW	1.01E+06	PERSONS
SUB_NR_NF	3.35E+05	PERSONS
SUB_RH_FW	1.12E+05	PERSONS
SUB_RH_NF	3.73E+04	PERSONS
URB_NR_FW	5.36E+04	PERSONS
URB_NR_NF	2.86E+03	PERSONS
URB_RH_FW	5.98E+03	PERSONS
URB_RH_NF	3.47E+02	PERSONS

TOTAL 1.61E+06 PERSONS

TOTAL EXPOSED POPULATION: ACCIDENT
(PERSONS UNDER PLUME FOOTPRINT FOR A SINGLE ACCIDENT)

RUR_NR_FW	8.10E+03	PERSONS
RUR_NR_NF	8.10E+03	PERSONS
RUR_RH_FW	8.10E+03	PERSONS
RUR_RH_NF	8.10E+03	PERSONS
SUB_NR_FW	9.71E+05	PERSONS
SUB_NR_NF	9.71E+05	PERSONS
SUB_RH_FW	9.71E+05	PERSONS
SUB_RH_NF	9.71E+05	PERSONS
URB_NR_FW	5.21E+06	PERSONS
URB_NR_NF	5.21E+06	PERSONS
URB_RH_FW	5.21E+06	PERSONS
URB_RH_NF	5.21E+06	PERSONS

CRYSTAL RIVER TO HANFORD; SPENT FUEL

LINK: RUR_NR_FW		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	4.55E-08	3.80E-10	1.83E-07	2.09E-06	2.32E-06
SFUEL	KR85	0.00E+00	0.00E+00	7.32E-10	0.00E+00	7.32E-10
SFUEL	SR90	7.58E-14	6.33E-16	1.23E-16	2.84E-15	7.94E-14
SFUEL	RU106	9.04E-11	7.55E-13	2.19E-11	2.73E-10	3.87E-10
SFUEL	CS134	2.33E-08	1.95E-10	2.67E-09	3.28E-08	5.90E-08
SFUEL	CS137	5.59E-08	4.66E-10	3.08E-09	3.82E-08	9.76E-08
SFUEL	CE144	1.79E-12	1.50E-14	9.40E-15	1.20E-13	1.94E-12
SFUEL	EU154	1.99E-12	1.66E-14	1.18E-13	1.40E-12	3.52E-12
SFUEL	PU238	2.54E-10	2.12E-12	3.97E-18	4.16E-16	2.57E-10
SFUEL	PU239	3.89E-11	3.25E-13	4.77E-19	2.52E-17	3.93E-11
SFUEL	PU240	4.45E-11	3.71E-13	6.10E-19	6.31E-17	4.48E-11
SFUEL	PU241	2.39E-10	1.99E-12	2.50E-18	4.08E-17	2.41E-10

SFUEL	AM241	1.92E-10	1.61E-12	2.90E-16	5.95E-15	1.94E-10
SFUEL	AM243	2.97E-12	2.48E-14	1.19E-17	1.79E-16	2.99E-12
SFUEL	CM244	1.46E-10	1.22E-12	2.41E-18	2.64E-16	1.47E-10
					TOTAL:	3.06E-06

LINK: RUR_NF_NF		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	1.52E-08	1.27E-10	6.09E-08	6.96E-07	7.72E-07
SFUEL	KR85	0.00E+00	0.00E+00	2.44E-10	0.00E+00	2.44E-10
SFUEL	SR90	2.53E-14	2.11E-16	4.11E-17	9.47E-16	2.65E-14
SFUEL	RU106	3.01E-11	2.52E-13	7.31E-12	9.12E-11	1.29E-10
SFUEL	CS134	7.76E-09	6.48E-11	8.90E-10	1.09E-08	1.97E-08
SFUEL	CS137	1.86E-08	1.55E-10	1.03E-09	1.27E-08	3.25E-08
SFUEL	CE144	5.97E-13	4.99E-15	3.13E-15	4.01E-14	6.45E-13
SFUEL	EU154	6.65E-13	5.55E-15	3.92E-14	4.65E-13	1.17E-12
SFUEL	PU238	8.48E-11	7.08E-13	1.32E-18	1.39E-16	8.55E-11
SFUEL	PU239	1.30E-11	1.08E-13	1.59E-19	8.40E-18	1.31E-11
SFUEL	PU240	1.48E-11	1.24E-13	2.03E-19	2.10E-17	1.49E-11
SFUEL	PU241	7.96E-11	6.65E-13	8.34E-19	1.36E-17	8.03E-11
SFUEL	AM241	6.41E-11	5.36E-13	9.65E-17	1.98E-15	6.47E-11
SFUEL	AM243	9.89E-13	8.26E-15	3.97E-18	5.96E-17	9.98E-13
SFUEL	CM244	4.86E-11	4.06E-13	8.05E-19	8.80E-17	4.90E-11
					TOTAL:	1.02E-06

LINK: RUR_RH_FW		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	5.06E-09	4.22E-11	2.03E-08	2.32E-07	2.57E-07
SFUEL	KR85	0.00E+00	0.00E+00	8.14E-11	0.00E+00	8.14E-11
SFUEL	SR90	8.42E-15	7.03E-17	1.37E-17	3.16E-16	8.82E-15
SFUEL	RU106	1.00E-11	8.39E-14	2.44E-12	3.04E-11	4.30E-11
SFUEL	CS134	2.59E-09	2.16E-11	2.97E-10	3.65E-09	6.55E-09
SFUEL	CS137	6.21E-09	5.18E-11	3.42E-10	4.25E-09	1.08E-08
SFUEL	CE144	1.99E-13	1.66E-15	1.04E-15	1.34E-14	2.15E-13
SFUEL	EU154	2.22E-13	1.85E-15	1.31E-14	1.55E-13	3.92E-13
SFUEL	PU238	2.83E-11	2.36E-13	4.41E-19	4.63E-17	2.85E-11
SFUEL	PU239	4.33E-12	3.61E-14	5.30E-20	2.80E-18	4.36E-12
SFUEL	PU240	4.94E-12	4.13E-14	6.78E-20	7.02E-18	4.98E-12
SFUEL	PU241	2.65E-11	2.22E-13	2.78E-19	4.53E-18	2.68E-11
SFUEL	AM241	2.14E-11	1.79E-13	3.22E-17	6.61E-16	2.16E-11
SFUEL	AM243	3.30E-13	2.75E-15	1.32E-18	1.99E-17	3.33E-13
SFUEL	CM244	1.62E-11	1.35E-13	2.68E-19	2.93E-17	1.63E-11
					TOTAL:	3.40E-07

LINK: RUR_RH_NF		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	1.69E-09	1.41E-11	6.77E-09	7.73E-08	8.58E-08
SFUEL	KR85	0.00E+00	0.00E+00	2.71E-11	0.00E+00	2.71E-11
SFUEL	SR90	2.81E-15	2.34E-17	4.56E-18	1.05E-16	2.94E-15
SFUEL	RU106	3.35E-12	2.80E-14	8.12E-13	1.01E-11	1.43E-11
SFUEL	CS134	8.63E-10	7.20E-12	9.89E-11	1.22E-09	2.18E-09
SFUEL	CS137	2.07E-09	1.73E-11	1.14E-10	1.42E-09	3.62E-09
SFUEL	CE144	6.64E-14	5.54E-16	3.48E-16	4.45E-15	7.17E-14
SFUEL	EU154	7.38E-14	6.17E-16	4.36E-15	5.17E-14	1.31E-13
SFUEL	PU238	9.42E-12	7.87E-14	1.47E-19	1.54E-17	9.50E-12
SFUEL	PU239	1.44E-12	1.20E-14	1.77E-20	9.33E-19	1.45E-12
SFUEL	PU240	1.65E-12	1.38E-14	2.26E-20	2.34E-18	1.66E-12
SFUEL	PU241	8.84E-12	7.39E-14	9.27E-20	1.51E-18	8.92E-12

SFUEL	AM241	7.13E-12	5.95E-14	1.07E-17	2.20E-16	7.19E-12
SFUEL	AM243	1.10E-13	9.18E-16	4.41E-19	6.62E-18	1.11E-13
SFUEL	CM244	5.40E-12	4.51E-14	8.94E-20	9.78E-18	5.44E-12
						TOTAL: 1.13E-07

LINK: SUB_NF_FW		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	3.77E-05	3.15E-07	1.51E-04	1.73E-03	1.92E-03
SFUEL	KR85	0.00E+00	0.00E+00	1.97E-07	0.00E+00	1.97E-07
SFUEL	SR90	2.17E-11	1.82E-13	3.53E-14	8.15E-13	2.28E-11
SFUEL	RU106	1.64E-08	1.37E-10	3.98E-09	4.96E-08	7.01E-08
SFUEL	CS134	5.69E-06	4.75E-08	6.52E-07	8.02E-06	1.44E-05
SFUEL	CS137	1.36E-05	1.14E-07	7.52E-07	9.34E-06	2.38E-05
SFUEL	CE144	4.68E-10	3.91E-12	2.70E-12	3.45E-11	5.09E-10
SFUEL	EU154	5.20E-10	4.35E-12	3.38E-11	4.01E-10	9.59E-10
SFUEL	PU238	7.30E-08	6.09E-10	1.14E-15	1.19E-13	7.36E-08
SFUEL	PU239	1.12E-08	9.33E-11	1.37E-16	7.22E-15	1.13E-08
SFUEL	PU240	1.28E-08	1.06E-10	1.75E-16	1.81E-14	1.29E-08
SFUEL	PU241	6.85E-08	5.72E-10	7.18E-16	1.17E-14	6.91E-08
SFUEL	AM241	5.52E-08	4.61E-10	8.31E-14	1.71E-12	5.57E-08
SFUEL	AM243	8.51E-10	7.11E-12	3.41E-15	5.12E-14	8.59E-10
SFUEL	CM244	4.18E-08	3.49E-10	6.92E-16	7.57E-14	4.22E-08
						TOTAL: 2.22E-03

LINK: SUB_NF_NF		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	1.26E-05	1.05E-07	5.05E-05	5.76E-04	6.40E-04
SFUEL	KR85	0.00E+00	0.00E+00	6.55E-08	0.00E+00	6.55E-08
SFUEL	SR90	7.25E-12	6.05E-14	1.18E-14	2.72E-13	7.59E-12
SFUEL	RU106	5.47E-09	4.57E-11	1.33E-09	1.65E-08	2.34E-08
SFUEL	CS134	1.90E-06	1.58E-08	2.17E-07	2.67E-06	4.80E-06
SFUEL	CS137	4.55E-06	3.80E-08	2.51E-07	3.11E-06	7.95E-06
SFUEL	CE144	1.56E-10	1.30E-12	8.99E-13	1.15E-11	1.70E-10
SFUEL	EU154	1.73E-10	1.45E-12	1.13E-11	1.34E-10	3.20E-10
SFUEL	PU238	2.43E-08	2.03E-10	3.80E-16	3.98E-14	2.45E-08
SFUEL	PU239	3.72E-09	3.11E-11	4.56E-17	2.41E-15	3.75E-09
SFUEL	PU240	4.25E-09	3.55E-11	5.84E-17	6.04E-15	4.29E-09
SFUEL	PU241	2.28E-08	1.91E-10	2.39E-16	3.90E-15	2.30E-08
SFUEL	AM241	1.84E-08	1.54E-10	2.77E-14	5.69E-13	1.86E-08
SFUEL	AM243	2.84E-10	2.37E-12	1.14E-15	1.71E-14	2.86E-10
SFUEL	CM244	1.39E-08	1.16E-10	2.31E-16	2.52E-14	1.41E-08
						TOTAL: 7.39E-04

LINK: SUB_RH_FW		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	4.19E-06	3.50E-08	1.68E-05	1.92E-04	2.13E-04
SFUEL	KR85	0.00E+00	0.00E+00	2.18E-08	0.00E+00	2.18E-08
SFUEL	SR90	2.42E-12	2.02E-14	3.93E-15	9.06E-14	2.53E-12
SFUEL	RU106	1.82E-09	1.52E-11	4.42E-10	5.51E-09	7.79E-09
SFUEL	CS134	6.32E-07	5.28E-09	7.25E-08	8.91E-07	1.60E-06
SFUEL	CS137	1.52E-06	1.27E-08	8.36E-08	1.04E-06	2.65E-06
SFUEL	CE144	5.20E-11	4.34E-13	3.00E-13	3.83E-12	5.65E-11
SFUEL	EU154	5.78E-11	4.83E-13	3.75E-12	4.45E-11	1.07E-10
SFUEL	PU238	8.11E-09	6.77E-11	1.27E-16	1.33E-14	8.18E-09
SFUEL	PU239	1.24E-09	1.04E-11	1.52E-17	8.03E-16	1.25E-09
SFUEL	PU240	1.42E-09	1.18E-11	1.95E-17	2.01E-15	1.43E-09
SFUEL	PU241	7.61E-09	6.35E-11	7.97E-17	1.30E-15	7.67E-09

SFUEL	AM241	6.13E-09	5.12E-11	9.23E-15	1.90E-13	6.18E-09
SFUEL	AM243	9.46E-11	7.90E-13	3.79E-16	5.69E-15	9.54E-11
SFUEL	CM244	4.65E-09	3.88E-11	7.69E-17	8.42E-15	4.68E-09
TOTAL:						2.46E-04

LINK: SUB_RH_NF		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	1.40E-06	1.17E-08	5.61E-06	6.41E-05	7.11E-05
SFUEL	KR85	0.00E+00	0.00E+00	7.28E-09	0.00E+00	7.28E-09
SFUEL	SR90	8.05E-13	6.72E-15	1.31E-15	3.02E-14	8.43E-13
SFUEL	RU106	6.08E-10	5.07E-12	1.47E-10	1.84E-09	2.60E-09
SFUEL	CS134	2.11E-07	1.76E-09	2.42E-08	2.97E-07	5.34E-07
SFUEL	CS137	5.05E-07	4.22E-09	2.79E-08	3.46E-07	8.83E-07
SFUEL	CE144	1.73E-11	1.45E-13	9.99E-14	1.28E-12	1.88E-11
SFUEL	EU154	1.93E-11	1.61E-13	1.25E-12	1.48E-11	3.55E-11
SFUEL	PU238	2.70E-09	2.26E-11	4.22E-17	4.43E-15	2.73E-09
SFUEL	PU239	4.14E-10	3.46E-12	5.07E-18	2.68E-16	4.17E-10
SFUEL	PU240	4.72E-10	3.94E-12	6.48E-18	6.71E-16	4.76E-10
SFUEL	PU241	2.54E-09	2.12E-11	2.66E-17	4.34E-16	2.56E-09
SFUEL	AM241	2.04E-09	1.71E-11	3.08E-15	6.33E-14	2.06E-09
SFUEL	AM243	3.15E-11	2.63E-13	1.26E-16	1.90E-15	3.18E-11
SFUEL	CM244	1.55E-09	1.29E-11	2.56E-17	2.81E-15	1.56E-09
TOTAL:						8.21E-05

LINK: URB_NR_FW		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	6.56E-07	5.48E-09	2.64E-06	3.01E-05	3.34E-05
SFUEL	KR85	0.00E+00	0.00E+00	2.77E-09	0.00E+00	2.77E-09
SFUEL	SR90	3.13E-13	2.61E-15	5.09E-16	1.17E-14	3.28E-13
SFUEL	RU106	1.97E-10	1.65E-12	4.79E-11	5.97E-10	8.43E-10
SFUEL	CS134	7.76E-08	6.48E-10	8.90E-09	1.09E-07	1.97E-07
SFUEL	CS137	1.86E-07	1.55E-09	1.03E-08	1.27E-07	3.25E-07
SFUEL	CE144	6.53E-12	5.45E-14	3.88E-14	4.97E-13	7.12E-12
SFUEL	EU154	7.26E-12	6.06E-14	4.87E-13	5.77E-12	1.36E-11
SFUEL	PU238	1.05E-09	8.78E-12	1.64E-17	1.72E-15	1.06E-09
SFUEL	PU239	1.61E-10	1.34E-12	1.97E-18	1.04E-16	1.62E-10
SFUEL	PU240	1.84E-10	1.53E-12	2.52E-18	2.61E-16	1.85E-10
SFUEL	PU241	9.87E-10	8.24E-12	1.03E-17	1.69E-16	9.95E-10
SFUEL	AM241	7.95E-10	6.64E-12	1.20E-15	2.46E-14	8.02E-10
SFUEL	AM243	1.23E-11	1.02E-13	4.92E-17	7.38E-16	1.24E-11
SFUEL	CM244	6.02E-10	5.03E-12	9.97E-18	1.09E-15	6.07E-10
TOTAL:						3.81E-05

LINK: URB_NR_NF		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	3.50E-08	2.93E-10	1.41E-07	1.61E-06	1.78E-06
SFUEL	KR85	0.00E+00	0.00E+00	1.48E-10	0.00E+00	1.48E-10
SFUEL	SR90	1.67E-14	1.40E-16	2.72E-17	6.27E-16	1.75E-14
SFUEL	RU106	1.05E-11	8.80E-14	2.56E-12	3.19E-11	4.50E-11
SFUEL	CS134	4.15E-09	3.46E-11	4.75E-10	5.84E-09	1.05E-08
SFUEL	CS137	9.94E-09	8.30E-11	5.48E-10	6.81E-09	1.74E-08
SFUEL	CE144	3.48E-13	2.91E-15	2.07E-15	2.65E-14	3.80E-13
SFUEL	EU154	3.88E-13	3.24E-15	2.60E-14	3.08E-13	7.25E-13
SFUEL	PU238	5.61E-11	4.69E-13	8.76E-19	9.19E-17	5.66E-11
SFUEL	PU239	8.59E-12	7.18E-14	1.05E-19	5.56E-18	8.67E-12
SFUEL	PU240	9.81E-12	8.19E-14	1.35E-19	1.39E-17	9.89E-12
SFUEL	PU241	5.27E-11	4.40E-13	5.52E-19	9.01E-18	5.31E-11

SFUEL	AM241	4.25E-11	3.55E-13	6.39E-17	1.31E-15	4.28E-11
SFUEL	AM243	6.55E-13	5.47E-15	2.63E-18	3.94E-17	6.60E-13
SFUEL	CM244	3.22E-11	2.69E-13	5.33E-19	5.83E-17	3.24E-11
						TOTAL: 2.03E-06

LINK: URB_RH_FW		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	7.33E-08	6.12E-10	2.94E-07	3.36E-06	3.73E-06
SFUEL	KR85	0.00E+00	0.00E+00	3.09E-10	0.00E+00	3.09E-10
SFUEL	SR90	3.50E-14	2.92E-16	5.68E-17	1.31E-15	3.66E-14
SFUEL	RU106	2.20E-11	1.84E-13	5.34E-12	6.66E-11	9.42E-11
SFUEL	CS134	8.67E-09	7.24E-11	9.94E-10	1.22E-08	2.20E-08
SFUEL	CS137	2.08E-08	1.74E-10	1.15E-09	1.42E-08	3.63E-08
SFUEL	CE144	7.29E-13	6.08E-15	4.34E-15	5.55E-14	7.95E-13
SFUEL	EU154	8.11E-13	6.77E-15	5.43E-14	6.44E-13	1.52E-12
SFUEL	PU238	1.17E-10	9.80E-13	1.83E-18	1.92E-16	1.18E-10
SFUEL	PU239	1.80E-11	1.50E-13	2.20E-19	1.16E-17	1.81E-11
SFUEL	PU240	2.05E-11	1.71E-13	2.82E-19	2.91E-17	2.07E-11
SFUEL	PU241	1.10E-10	9.20E-13	1.15E-18	1.88E-17	1.11E-10
SFUEL	AM241	8.88E-11	7.41E-13	1.34E-16	2.75E-15	8.95E-11
SFUEL	AM243	1.37E-12	1.14E-14	5.49E-18	8.24E-17	1.38E-12
SFUEL	CM244	6.72E-11	5.62E-13	1.11E-18	1.22E-16	6.78E-11
						TOTAL: 4.25E-06

LINK: URB_RH_NF		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
SFUEL	C060	4.25E-09	3.55E-11	1.71E-08	1.95E-07	2.16E-07
SFUEL	KR85	0.00E+00	0.00E+00	1.79E-11	0.00E+00	1.79E-11
SFUEL	SR90	2.03E-15	1.69E-17	3.30E-18	7.60E-17	2.12E-15
SFUEL	RU106	1.28E-12	1.07E-14	3.10E-13	3.86E-12	5.46E-12
SFUEL	CS134	5.02E-10	4.20E-12	5.76E-11	7.08E-10	1.27E-09
SFUEL	CS137	1.20E-09	1.01E-11	6.64E-11	8.25E-10	2.11E-09
SFUEL	CE144	4.22E-14	3.53E-16	2.51E-16	3.22E-15	4.61E-14
SFUEL	EU154	4.70E-14	3.93E-16	3.15E-15	3.73E-14	8.79E-14
SFUEL	PU238	6.80E-12	5.68E-14	1.06E-19	1.11E-17	6.86E-12
SFUEL	PU239	1.04E-12	8.70E-15	1.28E-20	6.74E-19	1.05E-12
SFUEL	PU240	1.19E-12	9.93E-15	1.63E-20	1.69E-18	1.20E-12
SFUEL	PU241	6.39E-12	5.33E-14	6.69E-20	1.09E-18	6.44E-12
SFUEL	AM241	5.15E-12	4.30E-14	7.75E-18	1.59E-16	5.19E-12
SFUEL	AM243	7.94E-14	6.63E-16	3.18E-19	4.78E-18	8.01E-14
SFUEL	CM244	3.90E-12	3.26E-14	6.46E-20	7.06E-18	3.93E-12
						TOTAL: 2.46E-07

Today is: 5-10-2008
 CLOCK TIME IS: 18:14
 CLOCK TIME IS: 18:14
 END OF RUN
 SUCCESSFUL COMPLETION

Appendix C **RADTRAN 6 Output for Test Case 9c**

RUN DATE: [05-14-2008 AT 21:00]

PAGE 1

RRRR	AAA	DDDD	TTTT	RRRR	AAA	N	N	6	000	000
R R	A A	D D	T	R R	A A	NN	N	6	0	0 0 0
R R	A A	D D	T	R R	A A	NN	NN	6	0	0 0 0
RRRR	A A	D D	T	RRRR	A A	N	NN	6666	0	0 0 0
R R	AAAAA	D D	T	R R	AAAAA	N	N	6 6	0	0 0 0
R R	A A	D D	T	R R	A A	N	N	6 6	0	0 0 0
R R	A A	DDDD	T	R R	A A	N	N	666 *	000	000

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

INPUT ECHO

RADTRAN 6 March 2006

&& TRAIN SHIPMENT

TITLE TRAIN 2

INPUT STANDARD

STD: 0 18

STD: 3 3 0

STD: .TRUE. .FALSE. .FALSE.

&& DIMEN=NSEV NAREAS

&& PARM=IANA ISEN IPSQSB

&& FORM = UNIT, SI-OUTPUT,

SI-INPUT

STD: 2.3E12

STD: 9.25E5 5.77E6 1.27E6

&& NEVAL FOR CF252

&& RPCTHY FOR I125, I129,

I131

STD: 0.0 0.0 0.0 0.0 0.0

&& TRANSFER GAMMA [COEF(1,0-

4]

STD: 7.42E-3 2.02E-2 6.17E-5 3.17E-8 0.0

&& TRANSFER NEUTRON

[COEF(2,0-4]

STD: 30 24

STD: 1 2 .0018

STD: 33 68 105 244 369

STD: 561 1018 1628 2308 4269

&& MITDDIST MITDVEL

&& ITRAIN FMINCL DDRWEF

&& CENTER LINE

DISTANCES

STD: 5468 11136 13097 21334 40502

&& FOR AVERAGE US

CLOUD

STD: 69986 89860 120878 0 0 0 0 0 0 0 0 0 0 0

&&

STD: 4.59E+02 1.53E+03 3.94E+03 1.25E+04 3.04E+04 6.85E+04 1.76E+05

4.45E+05

STD: 8.59E+05 2.55E+06 4.45E+06 1.03E+07 2.16E+07 5.52E+07 1.77E+08

4.89E+08

STD: 8.12E+08 1.35E+09 0 0 0 0 0 0 0 0 0 0 0

&& AREADA

STD: 3.42E-03 1.72E-03 8.58E-04 3.42E-04 1.72E-04 8.58E-05 3.42E-05

1.72E-05

STD: 8.58E-06 3.42E-06 1.72E-06 8.58E-07 3.42E-07 1.72E-07 8.58E-08

5.42E-08

STD: 4.30E-08 3.42E-08 0 0 0 0 0 0 0 0 0 0 0

&& DFLEV

STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	
STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	
STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	&& RADIST
STD: 0.5	&& SMLPKG
STD: 1.0 0.87 0.018	&& SHIELDING FACTORS RR RS RU
STD: 30 30 800	&& OFFLIM {FREEWAY}
STD: 27 30 800	&& OFFLIM {NON-FREEWAY}
STD: 5 8 800	&& OFFLIM {CITY STREETS}
STD: 30 30 800	&& OFFLIM {RAILWAY}
STD: 200 200 1000	&& OFFLIM {WATERWAY}
STD: 15 3 3 3 4	&& ONLINK {FWAY NONFWY STREET RAIL ADJ}
STD: 6.0 4 40.0	&& RPD FNOATT INTERDICT (ci/micro-Ci)
STD: 0.05 0.2 3.3E-4	&& BDF CULVL BRATE
STD: 0.9 0.1	&& UBF USWF
STD: 1.0 10.0 1.0	&& EVACUATION SURVEY CAMPAIGN

TRAIN 2

STD: 0.0 0.0 0.0 0.0 0.0 0.0 && PSPROB
 STD: 0.67 0.67 0.42 && TIMENDE NON-DISPERSAL EVAC TIME
 (LCF&EARLY)
 STD: 2 2 0 && FLAGS=IUOPT IACC REGCHECK (OFF)
 STD: 5E-4, 4E-4, 1.0E-4 && LCFCN(1), LCFCN(2), GECON
 STD: RT6_Ingestion.BIN && INGESTION FILE

OUTPUT CI_REM

FORM UNIT

DIMEN 1 0 18

PARM 1 3 4 0

SEVERITY

NPOP=1

NMODE=1

1.00E+00

NPOP=2

NMODE=1

1.00E+00

NPOP=3

NMODE=1

1.00E+00

RELEASE

GROUP=C0

RFRAC

1.00E+00

AERSOL

1.00E+00

RESP

1.00E+00

DEPVEL 0.05

PACKAGE PACKAGE1 4.59E+00 1.000 0.000 0.25

C060 4.00E+02 C0

END

VEHICLE 2 TRAIN1 4.592E+00 1.00 0.00 0.25 1.00

1.00 1.00 0.00 0.25

PACKAGE1 1.00

MODSTD

DDRWEF 1.80E-03

FMINCL 2.00E00

TRAIN 2

DISTOFF RAIL 3.00E01 3.00E01 8.00E02
 DISTON
 RAIL 3.00E00
 BDF 5.00E-02
 BRATE 3.30E-04
 CULVL 2.00E-01
 EVACUATION 1.00E00
 GECON 1.00E-04
 INTERDICT 1.000E+20
 LCFCON 5.00E-04 4.00E-04
 SURVEY 1.00E01
 UBF 5.20E-01
 USWF 4.80E-01
 CAMPAIGN 8.33E-02
 MITDDIST 3.00E01
 MITDVEL 2.40E01
 RPD 6.00E00
 RR 1.00E00
 RU 1.80E-02
 RS 8.70E-01
 SMALLPKG 5.00E-01
 RPCTHYROID
 I129 1.27E06

FLAGS

IACC 2
 ITRAIN 2
 IUOPT 2
 REGCHECK 1

ECONOMIC

AF_C 337.
 AF_I 6620.
 AF_R 118
 ALOT_C 930.
 ALOT_I 9700.
 ALOT_R 223.
 DRUM_DR_LM 5.0
 CO_DRUM_DR 269.7
 CROP_PROFT 0.01303
 C_WASH 32.29
 EVAC_CST_R 7.88
 EVAC_CST_S 13.61
 EVAC_CST_U 13.61
 F_CR 0.01
 F_CS 0.14
 F_CU 0.37
 F_IR 0.01
 F_IS 0.09
 F_IU 0.11
 F_RR 0.03
 F_RS 0.28

F_RU 0.24

RUN DATE: [05-14-2008 AT 21:00]

PAGE 4

TRAIN 2

F_SR 0.95
F_SS 0.41
F_SU 0.09
FBC 0.449
FR_C 0.2
FR_L 0.28
OH_C 16.40
OH_I 6.05
OH_R 5.32
RHO_RD_R 5.97E-04
RHO_RD_S 8.11E-04
RHO_RD_U 8.06E-02
RHO_RESIN 1.28
ROAD_W 8.84
SOIL_COST 1250.
SOIL_DPTH 0.03
STCK_PROFT 0.02499
VOL_DRUM 0.2167

EOF

LINK RURAL TRAIN1 5.99 1.80 1.00 1.00 1.00 1.00E+00 2.74E-07 R 2
0.32
EOF

TRAIN 2

CONTROL INPUT DATA (DIMEN & PARM)

NUMBER OF ACCIDENT SEVERITY CATEGORIES = 1
 NUMBER OF LOSS OF SHIELDING PROBABILITIES = 0
 NUMBER OF DEPOSITION AREAS (ISOPLETHS) = 18
 ECONOMIC MODEL INVOKED
 INCIDENT FREE AND ACCIDENT ANALYSES INVOKED
 DETAILED INPUT, FULL OUTPUT, CONSEQUENCE TABLES & POPULATION RISK BY
 LINK
 USER SUPPLIED OR NATIONAL AVERAGE WEATHER DILUTION INPUT
 HISTORICAL UNITS ON INPUT
 HISTORICAL UNITS ON OUTPUT
 DOSE UNITS ON OUTPUT

INGESTION FILE = RT6_Ingestion.BIN

PACKAGE AND MATERIAL CHARACTERISTICS INPUT DATA

DOSE RATE	DIMENSION	EFFECTIVE	K(0)	FRACTION	FRACTION
MATERIAL (mrem/hr)	(METERS)	DIMENSION	METERS SQ.	GAMMA	NEUTRON
PACKAGE1	2.500E-01	2.500E-01	1.266E+00	1.000E+00	0.000E+00
4.590E+00					

K(0) IS DOSE RATE CONVERSION FACTOR

TRAIN 2

VEHICLE CHARACTERISTICS INPUT DATA

VEHICLE NAME	TRAIN1
MODE TYPE	RAILWAY
EXCLUSIVE USE	NO
DOSE RATE (mrem/hr)	4.59E+00
FRACTION OF GAMMA FOR VEH	1.00E+00
FRACTION OF NEUTRON FOR V	0.00E+00
K(0) (SQ. METERS)	1.27E+00
VEHICLE SIZE (M)	2.50E-01
EFFECTIVE SIZE (M)	2.50E-01
NUMBER OF SHIPMENTS	1.00E+00
NUMBER OF CREW	1.00E+00
CREW DISTANCE (M)	1.00E+00
CREW DOSE ADJUSTMENT FACT	0.00E+00
CREW EXPOSER WIDTH (M)	2.50E-01
EFFECTIVE EXPOSER WIDTH	2.50E-01
K(0) (SQ M) CREW EXPOSURE	1.27E+00

VEHICLE	MATERIAL	NO. PACKAGES
TRAIN1		
	PACKAGE1	1.00E+00

TRANSFER					
COEFFICIENTS:	MU	A(1)	A(2)	A(3)	A(4)
GAMMA	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NEUTRON	7.420E-03	2.020E-02	6.170E-05	3.170E-08	0.000E+00

	DISTANCES (METERS)	FREEWAY	SECONDARY	STREET	RAIL	WATER
ADJACENT						
OFFLINK:						
MINIMUM DISTANCE	3.00E+01	2.70E+01	5.00E+00	3.00E+01	2.00E+02	
SIDEWALK + MINIMUM	3.00E+01	3.00E+01	8.00E+00	3.00E+01	2.00E+02	
MAXIMUM DISTANCE	8.00E+02	8.00E+02	8.00E+02	8.00E+02	1.00E+03	
ONLINK:						
OPPOSITE DIRECTION	1.50E+01	3.00E+00	3.00E+00	3.00E+00		
ADJACENT VEHICLE						
4.00E+00						

RAIL TYPE IS DEDICATED TRAIN	
MINIMUM NUMBER OF RAIL CLASSIFICATIONS/INSPECTIONS	(FMINCL) =
2.00E+00	

DISTANCE DEPENDENT RAIL WORKER EXPOSURE FACTOR (CLASS/KM) (DDRWEF) =
1.80E-03

LINK RELATED INPUT DATA

LINK	RURAL
VEHICLE	TRAIN1
DISTANCE (KM)	5.99E+00
PERSONS PER VEHICLE	1.00E+00
SPEED (KM/HR)	1.80E+00
POPULATION DENSITY (#/KM^2)	1.00E+00
VEHICLE DENSITY (#/HR)	1.00E+00
ACCIDENT RATE/KM	1.00E+00
FATALITIES/ACCIDENT	2.74E-07
ZONE	RURAL
ROAD TYPE	N/A
FARMING FRACTION	3.20E-01

TRAIN 2

ISOTOPE RELATED INPUT DATA

NUCLIDE	CURIES PER PKG	WASTE LIMIT (CI/M^3)	RELEASE GROUP	RESUSPENSION FACTOR
PACKAGE1 C060	4.00E+02	7.00E+02	C0	1.04E+00

NUCLIDE	HALF LIFE (Days)	GAMMA ENERGY (MeV/nt)	AIR IMMERISON (SHINE) DCF CLOUD (rem-m^3/Ci-s)	DCF GROUND (rem-m^2/uCi-d)	INGESTION NUCLIDE
EMISSION PACKAGE1 neu/sec/CI C060 0.00E+00	1.92E+03	2.50E+00	4.66E-01	7.51E-04	Co-60

NUCLIDE	INHALATION DOSE CONVERSION FACTORS			
	LUNG (REM/CI)	MARROW (REM/CI)	THYROID (REM/CI)	EFFECTIVE (REM/CI)
PACKAGE1 C060	1.78E+05	1.07E+04	0.00E+00	3.70E+04

RUN DATE: [05-14-2008 AT 21:00]

PAGE 8

TRAIN 2

RELEASE RELATED INPUT DATA

RELEASE FRACTIONS

GROUP	SEVER: 1
CO	1.00E+00

DEPOSITION VELOCITIES

GROUP	M/SEC
CO	5.00E-02

ACCIDENT SEVERITY FRACTIONS
FOR RAILWAY

ZONE	SEVER: 1
RURAL	0.00E+00
SUBURBAN	0.00E+00
URBAN	0.00E+00

RUN DATE: [05-14-2008 AT 21:00]

PAGE 9

TRAIN 2

AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP SEVER: 1
CO 1.00E+00

RESPIRABLE FRACTION OF AEROSOLS (BELOW 10 MICRONS AED)

GROUP SEVER: 1
CO 1.00E+00

TRAIN 2

HEALTH RELATED INPUT DATA

EARLY MORBIDITY THRESHOLD VALUE FOR LUNG 5.000E+02 REM
 EARLY MORBIDITY THRESHOLD VALUE FOR MARROW/WHOLE BODY 5.000E+01 REM
 EARLY MORBIDITY THRESHOLD VALUE FOR THYROID 2.000E+02 REM

EARLY FATALITY PROBABILITIES (EF)

DOSE(REM)	EF MARROW	DOSE(REM)	EF LUNG
680.00	1.00000	1525.00	1.00000
670.00	0.99999	1500.00	0.99999
660.00	0.99998	1475.00	0.99997
650.00	0.99996	1450.00	0.99991
640.00	0.99992	1425.00	0.99974
630.00	0.99983	1400.00	0.99933
620.00	0.99967	1375.00	0.99840
610.00	0.99938	1350.00	0.99653
600.00	0.99889	1325.00	0.99306
590.00	0.99808	1300.00	0.98709
580.00	0.99679	1275.00	0.97755
570.00	0.99482	1250.00	0.96331
560.00	0.99192	1225.00	0.94326
550.00	0.98776	1200.00	0.91656
540.00	0.98199	1175.00	0.88274
530.00	0.97423	1150.00	0.84178
520.00	0.96406	1125.00	0.79420
510.00	0.95111	1100.00	0.74095
500.00	0.93502	1075.00	0.68335
490.00	0.91551	1050.00	0.62293
480.00	0.89237	1025.00	0.56130
470.00	0.86552	1000.00	0.50000
460.00	0.83499	975.00	0.44042
450.00	0.80096	950.00	0.38372
440.00	0.76371	925.00	0.33077
430.00	0.72363	900.00	0.28218
420.00	0.68123	875.00	0.23830
410.00	0.63706	850.00	0.19925
400.00	0.59172	825.00	0.16498
390.00	0.54583	800.00	0.13529
380.00	0.50000	775.00	0.10988
370.00	0.45481	750.00	0.08837
360.00	0.41078	725.00	0.07038
350.00	0.36838	700.00	0.05548
340.00	0.32798	675.00	0.04329
330.00	0.28990	650.00	0.03341
320.00	0.25438	625.00	0.02549
310.00	0.22155	600.00	0.01922
300.00	0.19150	575.00	0.01430
290.00	0.16425	550.00	0.01050

280.00	0.13977	525.00	0.00759
270.00	0.11797	500.00	0.00000
260.00	0.09872		
250.00	0.08188		
240.00	0.06729		
230.00	0.05475		
220.00	0.04408		
210.00	0.03510		
200.00	0.02761		
190.00	0.02143		
180.00	0.01639		
170.00	0.01234		
160.00	0.00913		
150.00	0.00000		

TRAIN 2

DISPERSAL ACCIDENT INPUT DATA

AREADA (M SQ)	CENTER LINE(M)	DILUTION FACTOR*
4.590E+02	3.300E+01	3.420E-03
1.530E+03	6.800E+01	1.720E-03
3.940E+03	1.050E+02	8.580E-04
1.250E+04	2.440E+02	3.420E-04
3.040E+04	3.690E+02	1.720E-04
6.850E+04	5.610E+02	8.580E-05
1.760E+05	1.018E+03	3.420E-05
4.450E+05	1.628E+03	1.720E-05
8.590E+05	2.308E+03	8.580E-06
2.550E+06	4.269E+03	3.420E-06
4.450E+06	5.468E+03	1.720E-06
1.030E+07	1.114E+04	8.580E-07
2.160E+07	1.310E+04	3.420E-07
5.520E+07	2.133E+04	1.720E-07
1.770E+08	4.050E+04	8.580E-08
4.890E+08	6.999E+04	5.420E-08
8.120E+08	8.986E+04	4.300E-08
1.350E+09	1.209E+05	3.420E-08

* DILUTION FACTOR UNITS ARE (CI-SEC/M**3/CI-RELEASED)

OTHER DISPERSAL ACCIDENT INPUT PARAMETERS

BUILDING DOSE FACTOR	(BDF) = 5.000E-02
CONTAMINATION CLEAN UP LEVEL(micro-CI/M^2)(CULVL)	= 2.000E-01
BREATHING RATE (M**3/SEC)	(BRATE) = 3.300E-04
INTERDICTION THRESHOLD (Ci/micro-Ci)	(INTERDICT) = 1.000E+20
EVACUATION TIME (DAYS)	(EVACUATION) = 1.000E+00
SURVEY INTERVAL (DAYS)	(SURVEY) = 1.000E+01
CAMPAIGN LENGTH (YEARS)	(TIMEYR) = 8.330E-02
FRACTION OF URBAN AREAS WITH BUILDINGS	(UBF) = 5.200E-01
FRACTION OF URBAN AREAS WITH SIDEWALKS	(USWF) = 4.800E-01
RATIO OF SIDEWALK PEDESTRIAN DENSITY	(RPD) = 6.000E+00
MAXIMUM IN-TRANSIT DOSE DISTANCE (M)	(DMDIST) = 3.000E+01
MAXIMUM IN-TRANSIT DOSE VELOCITY (KM/H)	(DMVEL) = 2.400E+01
IACC VALUE: 1=NON-DISPERSAL, 2=DISPERSAL	= 2
REGULATORY CHECK, 1=DO CHECKS, 0=NO CHECKS	= 1
BUILDING SHIELDING OPTION	(IUOPT) = 2
RURAL SHIELDING FACTOR	= 1.000E+00
SUBURBAN SHIELDING FACTOR	= 8.700E-01
URBAN SHIELDING FACTOR	= 1.800E-02

RUN DATE: [05-14-2008 AT 21:00]

PAGE 12

TRAIN 2

INGESTION RELATED INPUT DATA

COMIDA INGESTION FILE USED: RT6_Ingestion.BIN

COMIDA FILE HEADER

COMIDA2 07/22/03 08:58:40 Ver. 1.11a, 1/28/96: avoiding use of UNIT
6 for HP

DOSE CONVERSION FILE USED IN COMIDA

FGRDCF 07/10/03 21:45:47 Version 1.10
Implicit daughter halflives (m) less than 90 and less than 0.100 of
parent

BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

PACKAGE	NUCLIDE	EFFECTIVE	THYROID
PACKAGE1	Co-60	1.328E+04	3.779E+03

SOCIETAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

	NUCLIDE	GONADS	BREAST	LUNGS	RED MAR	BONE SU	THYROID	REMAIND
EFFECTI	Co-60	1.6E+00	5.7E-01	4.5E-01	6.8E-01	4.8E-01	4.1E-01	2.6E+00
1.4E+00								

TRAIN 2

DECONTAMINATION ECONOMICS --- INPUT DATA

AVERAGE COMMERCIAL BUILDING ROOF FOOTPRINT	(m ²)	3.370E+02
AVERAGE COMMERCIAL BUILDING OUTSIDE HEIGHT	(m)	1.640E+01
AVERAGE COMMERCIAL LOT SIZE	(m ²)	9.300E+02
AVERAGE INDUSTRIAL BUILDING ROOF FOOTPRINT	(m ²)	6.620E+03
AVERAGE INDUSTRIAL BUILDING OUTSIDE HEIGHT	(m)	6.050E+00
AVERAGE INDUSTRIAL LOT SIZE	(m ²)	9.700E+03
AVERAGE RESIDENTIAL BUILDING ROOF FOOTPRINT	(m ²)	1.180E+02
AVERAGE RESIDENTIAL BUILDING OUTSIDE HEIGHT	(m)	5.320E+00
AVERAGE RESIDENTIAL LOT SIZE	(m ²)	2.230E+02
RURAL COMMERCIAL LAND USE FRACTION		1.000E-02
RURAL INDUSTRIAL LAND USE FRACTION		1.000E-02
RURAL RESIDENTIAL LAND USE FRACTION		3.000E-02
RURAL SOIL LAND USE FRACTION		9.500E-01
RURAL SOIL LAND FRACTION FOR CROPS		2.000E-01
RURAL SOIL LAND FRACTION FOR LIVESTOCK		2.800E-01
RURAL ROAD DENSITY	(m OF ROAD/m ² OF LAND)	5.970E-04
RURAL EVACUATION COSTS	(\$/PERSON-km ²)	7.880E+00
SUBURBAN COMMERCIAL LAND USE FRACTION		1.400E-01
SUBURBAN INDUSTRIAL LAND USE FRACTION		9.000E-02
SUBURBAN RESIDENTIAL LAND USE FRACTION		2.800E-01
SUBURBAN SOIL LAND USE FRACTION		4.100E-01
SUBURBAN ROAD DENSITY	(m OF ROAD/m ² OF LAND)	8.110E-04
SUBURBAN EVACUATION COSTS	(\$/PERSON-km ²)	1.361E+01
URBAN COMMERCIAL LAND USE FRACTION		3.700E-01
URBAN INDUSTRIAL LAND USE FRACTION		1.100E-01
URBAN RESIDENTIAL LAND USE FRACTION		2.400E-01
URBAN SOIL LAND USE FRACTION		9.000E-02
URBAN ROAD DENSITY	(m OF ROAD/m ² OF LAND)	8.060E-02
URBAN EVACUATION COSTS	(\$/PERSON-km ²)	1.361E+01
BUILDING COVER FRACTION		4.490E-01
COST OF WATER JETTING	(\$/m ²)	3.229E+01
ROAD WIDTH	(m)	8.840E+00
COST OF SOIL REMOVAL	(\$/m ³)	1.250E+03
SOIL REMOVAL DEPTH	(m)	3.000E-02
BI-ANNUAL LIVESTOCK PROFIT	(\$/m ²)	2.499E-02
ANNUAL CROP PROFIT	(\$/m ²)	1.303E-02
VOLUME OF SHIPPING CONTAINER	(m ³)	2.167E-01
RESIN DENSITY	(gm/cc)	1.280E+00
DOSE RATE FROM 1 CURIE OF Co-60	(mrem/hr)	2.697E+02
DOSE RATE LIMIT FROM 1 DRUM	(mrem/hr)	5.000E+00

END OF INPUT EDIT

RUN DATE: [05-14-2008 AT 21:00]

PAGE 14

TRAIN 2

RRRR	AAA	DDDD	TTTTT	RRRR	AAA	N	N	6	000	000
R R	A A	D D	T	R R	A A	NN	N	6	0 0	0 0
R R	A A	D D	T	R R	A A	N N	N	6	0 0	0 0
RRRR	A A	D D	T	RRRR	A A	N	NN	6666	0 0	0 0
R R	AAAAA	D D	T	R R	AAAAA	N	N	6 6	0 0	0 0
R R	A A	D D	T	R R	A A	N	N	6 6	0 0	0 0
R R	A A	DDDD	T	R R	A A	N	N	666 *	000	000

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

000	U	U	TTTTT	PPPP	U	U	TTTTT
0 0	U	U	T	P P	U	U	T
0 0	U	U	T	P P	U	U	T
0 0	U	U	T	PPPP	U	U	T
0 0	U	U	T	P	U	U	T
0 0	U	U	T	P	U	U	T
000	UUUUU	T	P	UUUUU	T		

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

RUN DATE: [05-14-2008 AT 21:00]

PAGE 15

TRAIN 2

NON-RADIOLOGICAL DATA (ACCIDENTS and FATALITIES)

DEDICATED TRAIN
TRAIN1

LINK	ACCIDENT RATE	ACCIDENTS	FATALITIES
RURAL	1.00E+00	5.99E+00	1.64E-06
TOTALS:	1.00E+00	5.99E+00	1.64E-06

RUN DATE: [05-14-2008 AT 21:00]

PAGE 16

TRAIN 2

REGULATORY CHECKS

TRAIN 2

CALCULATIONAL INFORMATION

IN CALCULATING THE DEPLETION FOR THE FOLLOWING GROUPS,
THE CONCENTRATIONS IN THE LISTED AREA HAVE BECOME NEGATIVE.
THE CONTAMINATION AND CONCENTRATIONS IN THE LISTED AREA AND
LARGER HAVE BEEN SET TO ZERO.

GROUP CO AREA 14

FOR TRAIN1 AREAS WITH TOTAL CONTAMINATION RATIO GREATER THAN
1.00E+20
(THE AREAS MARKED WITH AN 'X' ARE INTERDICTED)

AREA/SEVERITY	1
1	-
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-
10	-
11	-
12	-
13	-
14	-
15	-
16	-
17	-
18	-

RUN DATE: [05-14-2008 AT 21:00]

PAGE 18

TRAIN 2

RELEASE FRACTIONS

GROUP SEVER: 1
CO 1.00E+00

DEPOSITION VELOCITIES

GROUP M/SEC
CO 5.00E-02

DILUTION FACTORS

CHI VALUES AFTER DEPLETION (CI-SEC/M**3/CI-RELEASED)

DISTANCE	CO
3.30E+01	3.42E-03
6.80E+01	1.72E-03
1.05E+02	7.46E-04
2.44E+02	2.51E-04
3.69E+02	9.43E-05
5.61E+02	3.52E-05
1.02E+03	1.03E-05
1.63E+03	3.42E-06
2.31E+03	1.02E-06
4.27E+03	2.75E-07
5.47E+03	6.14E-08
1.11E+04	2.01E-08
1.31E+04	4.49E-09
2.13E+04	1.34E-09
4.05E+04	0.00E+00
7.00E+04	0.00E+00
8.99E+04	0.00E+00
1.21E+05	0.00E+00

RUN DATE: [05-14-2008 AT 21:00]

PAGE 19

TRAIN 2

DEPOSITION FACTORS
CHI DEPOSITED (CI/M**2/CI-RELEASED)

DISTANCE	C0
3.30E+01	1.71E-04
6.80E+01	8.59E-05
1.05E+02	3.73E-05
2.44E+02	1.25E-05
3.69E+02	4.71E-06
5.61E+02	1.76E-06
1.02E+03	5.15E-07
1.63E+03	1.71E-07
2.31E+03	5.11E-08
4.27E+03	1.38E-08
5.47E+03	3.07E-09
1.11E+04	1.00E-09
1.31E+04	2.25E-10
2.13E+04	6.69E-11
4.05E+04	0.00E+00
7.00E+04	0.00E+00
8.99E+04	0.00E+00
1.21E+05	0.00E+00

VEHICLE TRAIN1

TRAIN 2

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 1

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	8.04E+01	5.68E+01	1.67E+01	1.37E+00	
6.84E+04					
6.80E+01	4.04E+01	2.85E+01	8.39E+00	6.87E-01	
3.44E+04					
1.05E+02	1.75E+01	1.24E+01	3.64E+00	2.98E-01	
1.49E+04					
2.44E+02	5.89E+00	4.16E+00	1.22E+00	1.00E-01	
5.01E+03					
3.69E+02	2.22E+00	1.57E+00	4.60E-01	3.77E-02	
1.89E+03					
5.61E+02	8.28E-01	5.85E-01	1.72E-01	1.41E-02	
7.05E+02					
1.02E+03	2.42E-01	1.71E-01	5.03E-02	4.12E-03	
2.06E+02					
1.63E+03	8.03E-02	5.67E-02	1.67E-02	1.37E-03	
6.84E+01					
2.31E+03	2.40E-02	1.70E-02	4.99E-03	4.09E-04	
2.04E+01					
4.27E+03	6.47E-03	4.57E-03	1.34E-03	1.10E-04	
5.50E+00					
5.47E+03	1.44E-03	1.02E-03	3.00E-04	2.46E-05	
1.23E+00					
1.11E+04	4.71E-04	3.33E-04	9.80E-05	8.03E-06	4.01E-
01					
1.31E+04	1.06E-04	7.46E-05	2.19E-05	1.80E-06	8.98E-
02					
2.13E+04	3.14E-05	2.22E-05	6.54E-06	5.35E-07	2.68E-
02					
4.05E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
7.00E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
8.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.21E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE TRAIN1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 1

		INHALED		SHINE			BACKYARD
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
	3.30E+01	1.67E+01	3.80E-01	6.37E-01	5.13E+01	6.90E+01	9.09E+02
	2.59E+02						
	6.80E+01	8.39E+00	9.59E-02	3.20E-01	2.58E+01	3.46E+01	4.57E+02
	1.30E+02						
	1.05E+02	3.64E+00	1.81E-02	1.39E-01	1.12E+01	1.50E+01	1.98E+02
	5.64E+01						
	2.44E+02	1.22E+00	2.04E-03	4.67E-02	3.76E+00	5.03E+00	6.66E+01
	1.89E+01						
	3.69E+02	4.60E-01	2.89E-04	1.76E-02	1.41E+00	1.89E+00	2.51E+01
	7.13E+00						
	5.61E+02	1.72E-01	4.03E-05	6.57E-03	5.29E-01	7.07E-01	9.36E+00
	2.66E+00						
	1.02E+03	5.03E-02	3.44E-06	1.92E-03	1.54E-01	2.07E-01	2.73E+00
	7.78E-01						
	1.63E+03	1.67E-02	3.79E-07	6.37E-04	5.13E-02	6.86E-02	9.08E-01
	2.58E-01						
	2.31E+03	4.99E-03	3.39E-08	1.90E-04	1.53E-02	2.05E-02	2.71E-01
	7.72E-02						
	4.27E+03	1.34E-03	2.46E-09	5.13E-05	4.13E-03	5.52E-03	7.31E-02
	2.08E-02						
	5.47E+03	3.00E-04	1.23E-10	1.14E-05	9.21E-04	1.23E-03	1.63E-02
	4.64E-03						
	1.11E+04	9.80E-05	1.31E-11	3.74E-06	3.01E-04	4.03E-04	5.33E-03
	1.52E-03						
	1.31E+04	2.19E-05	6.55E-13	8.37E-07	6.74E-05	9.02E-05	1.19E-03
	3.40E-04						
	2.13E+04	6.54E-06	5.82E-14	2.49E-07	2.01E-05	2.69E-05	3.56E-04
	1.01E-04						
	4.05E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	0.00E+00						
	7.00E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	0.00E+00						
	8.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	0.00E+00						
	1.21E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	0.00E+00						

RUN DATE: [05-14-2008 AT 21:00]

PAGE 21

TRAIN 2

INCIDENT-FREE SUMMARY

IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM

LINK	CREW	YARD	OFF LINK	ON LINK
RURAL	0.00E+00	1.97E-06	4.02E-07	1.12E-05

ZONE

RURAL	0.00E+00	1.97E-06	4.02E-07	1.12E-05
SUBURB	0.00E+00	0.00E+00	0.00E+00	0.00E+00
URBAN	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TRAIN1 CLASSIFICATION-NONLINK 3.65E-04

TOTALS: 0.00E+00 3.67E-04 4.02E-07 1.12E-05

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

TRAIN1 2.22E-08 REM

RUN DATE: [05-14-2008 AT 21:00]

PAGE 22

TRAIN 2

ACCIDENT SUMMARY

NUMBER OF EXPECTED ACCIDENTS

ALL VALUES ARE 0.0

NUMBER OF EARLY FATALITIES FROM INHALATION

ALL VALUES ARE 0.0

RADIOLOGICAL CONSEQUENCES
50 YEAR POPULATION DOSE IN PERSON-REM

LINK	SEVER: 1
RURAL	3.10E-01

NUMBER OF EARLY MORBIDITY CASES FROM INHALATION

LINK	SEVER: 1
RURAL	4.59E-04

MAXIMUM RISK FOR INDIVIDUAL IN NEAREST ISOPLETH (DOSE IN REM)
FROM INHALATION, CLOUDSHINE, AND GROUNDSHINE EXPOSURE DURING EVACUATION
ALL VALUES ARE 0.0

RADIOLOGICAL CONSEQUENCES IN PERSON REM
50 YEAR SOCIETAL INGESTION DOSE - EFFECTIVE

LINK	SEVER: 1
RURAL	1.81E+00

RUN DATE: [05-14-2008 AT 21:00]

PAGE 23

TRAIN 2

EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

LINK	INHALED	RESUSPD	CLOUDSH	GROUNDSH	TOTAL
RURAL	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ZONE					
RURAL	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SUBURB	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
URBAN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTALS:	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

RUN DATE: [05-14-2008 AT 21:00]

PAGE 24

TRAIN 2

SOCIETAL INGESTION RISK - PERSON-REM

LINK	GONADS	EFFECTIVE
RURAL	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

SOCIETAL INGESTION RISK BY ORGAN - PERSON-REM

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
RURAL	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EXPECTED RISK VALUES - OTHER

LINK	EARLY	EARLY
	FATALITY	MORBIDITY
RURAL	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

RUN DATE: [05-14-2008 AT 21:00]

PAGE 25

TRAIN 2

TOTAL EXPOSED POPULATION: INCIDENT-FREE

RURAL 1.00E+01 PERSONS

TOTAL 1.00E+01 PERSONS

TOTAL EXPOSED POPULATION: ACCIDENT
(PERSONS UNDER PLUME FOOTPRINT FOR A SINGLE ACCIDENT)

RURAL 5.52E+01 PERSONS

TRAIN 2

LINK: RURAL	EXPECTED VALUES OF POPULATION RISK IN PERSON-REM				
MATERIAL ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
ALL VALUES WERE 0.0					

Today is: 5-14-2008
CLOCK TIME IS: 21: 0

TRAIN 2

CLEANUP VARIABLES FOR PACKAGE....PACKAGE1

RURAL ZONE AREA INFORMATION FOR THE FRACTIONAL RELEASE ISOTOPES

NODE REMOVED (Ci)	INNER (m)	OUTER (m)	ISO_AREA (m^2)	AREA_USED (m^2)	AREA_SOIL (m^2)	RESIN (m^3)
1	0.0	33.0	4.59E+02	2.17E+01	2.33E+02	2.12E-03
1.74E+01						
2	0.0	68.0	1.07E+03	5.07E+01	5.44E+02	2.49E-03
2.04E+01						
3	0.0	105.0	2.41E+03	1.14E+02	1.22E+03	2.43E-03
2.00E+01						
4	0.0	244.0	8.56E+03	4.05E+02	4.35E+03	2.90E-03
2.38E+01						
5	0.0	369.0	1.79E+04	8.47E+02	9.10E+03	2.28E-03
1.87E+01						
6	0.0	561.0	3.81E+04	1.80E+03	1.94E+04	1.82E-03
1.49E+01						
7	0.0	1018.0	1.08E+05	5.09E+03	5.46E+04	1.50E-03
1.23E+01						
8	0.0	1628.0	2.69E+05	1.27E+04	1.37E+05	1.24E-03
1.02E+01						
9	0.0	2308.0	4.14E+05	1.96E+04	2.10E+05	5.66E-04
4.65E+00						
10	0.0	4269.0	1.69E+06	8.00E+04	8.59E+05	6.06E-04
4.98E+00						
11	0.0	5468.0	1.90E+06	8.99E+04	9.65E+05	1.32E-04
1.09E+00						
12	0.0	11136.0	5.85E+06	2.77E+05	2.97E+06	7.96E-05
6.54E-01						
13	0.0	13097.0	1.13E+07	5.35E+05	5.74E+06	1.00E-15
0.00E+00						

DEPOSITION BY ISOTOPE FOR GROUP....CO
1.00000

RELEASE FRACTION =

NODE	C060 (u-Ci/m^2)
1	6.84E+04
2	3.44E+04
3	1.49E+04
4	5.01E+03
5	1.89E+03
6	7.05E+02
7	2.06E+02
8	6.84E+01
9	2.04E+01
10	5.50E+00

11 1.23E+00
 12 4.01E-01
 13 8.98E-02

COST INFORMATION FOR RELEASE FROM ALL PACKAGES ON:
 VEHICLE = TRAIN1 ON LINK= RURAL

NODE EVACUATION (\$)	OUTER (m)	DRUMS	RESIN (\$)	WASH ALL (\$)	SOIL (\$)	CROP_STOCK (\$)
1	33.0	80	2.77E+05	7.02E+02	8.75E+03	4.19E+00
1.66E-06						
2	68.0	94	3.25E+05	1.64E+03	2.04E+04	9.77E+00
9.04E-06						
3	105.0	92	3.18E+05	3.68E+03	4.59E+04	2.20E+01
4.58E-05						
4	244.0	110	3.80E+05	1.31E+04	1.63E+05	7.81E+01
5.77E-04						
5	369.0	86	2.97E+05	2.74E+04	3.41E+05	1.63E+02
2.52E-03						
6	561.0	69	2.39E+05	5.82E+04	7.26E+05	3.48E+02
1.14E-02						
7	1018.0	57	1.97E+05	1.64E+05	2.05E+06	9.81E+02
9.11E-02						
8	1628.0	47	1.63E+05	4.11E+05	5.13E+06	2.45E+03
5.70E-01						
9	2308.0	21	7.26E+04	6.33E+05	7.89E+06	3.78E+03
1.35E+00						
10	4269.0	23	7.95E+04	2.58E+06	3.22E+07	1.54E+04
2.25E+01						
11	5468.0	5	1.73E+04	2.90E+06	3.62E+07	1.73E+04
2.84E+01						
12	11136.0	3	1.04E+04	8.94E+06	1.11E+08	5.34E+04
2.70E+02						
13	13097.0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00						

TOTAL DRUMS = 687
 TOTAL DOSE (mrem/hr) = 3.43E+03
 DOSE PER DRUM (mrem/hr) = 5.00E+00

CLOCK TIME IS: 21: 0
 EOI
 END OF RUN
 SUCCESSFUL COMPLETION

Appendix D **RADTRAN 6.0 Output for Test Case 10a**

RUN DATE: [05-14-2008 AT 21:05]

PAGE 1

RRRR	AAA	DDDD	TTTT	RRRR	AAA	N	N	6	000	000
R R A A D D	T	R R A A NN	N	6	0	0	0	0		
R R A A D D	T	R R A A NN	NN	6	0	0	0	0		
RRRR A A D D	T	RRRR A A N NN	NN	6666	0	0	0	0		
R R AAAAA D D	T	R R AAAAA N N	N	6 6	0	0	0	0		
R R A A D D	T	R R A A N N	N	6 6	0	0	0	0		
R R A A DDDD	T	R R A A N N	N	666 *	000	000				

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

INPUT ECHO

RADTRAN 6 November 2007

TITLE LOS AVERAGE RADIOLOGICAL HAND CALC

INPUT STANDARD

STD: 0 18

STD: 3 3 0

STD: .TRUE. .FALSE. .FALSE.

&& DIMEN=NSEV NAREAS

&& PARM=IANA ISEN IPSQSB

&& FORM = UNIT, SI-OUTPUT,

SI-INPUT

STD: 2.3E12

STD: 9.25E5 5.77E6 1.27E6

&& NEVAL FOR CF252

&& RPCTHY FOR I125, I129,

I131

STD: 0.0 0.0 0.0 0.0 0.0

&& TRANSFER GAMMA [COEF(1,0-

4]

STD: 7.42E-3 2.02E-2 6.17E-5 3.17E-8 0.0

&& TRANSFER NEUTRON

[COEF(2,0-4]

STD: 30 24

STD: 1 2 .0018

STD: 33 68 105 244 369

STD: 561 1018 1628 2308 4269

&& MITDDIST MITDVEL

&& ITRAIN FMINCL DDRWEF

&&

&& CENTER LINE

DISTANCES

STD: 5468 11136 13097 21334 40502

&& FOR AVERAGE US

CLOUD

STD: 69986 89860 120878 0 0 0 0 0 0 0 0 0 0 0 0 &&

STD: 4.59E+02 1.53E+03 3.94E+03 1.25E+04 3.04E+04 6.85E+04 1.76E+05

4.45E+05

STD: 8.59E+05 2.55E+06 4.45E+06 1.03E+07 2.16E+07 5.52E+07 1.77E+08

4.89E+08

STD: 8.12E+08 1.35E+09 0 0 0 0 0 0 0 0 0 0 0 0 && AREADA

STD: 3.42E-03 1.72E-03 8.58E-04 3.42E-04 1.72E-04 8.58E-05 3.42E-05

1.72E-05

STD: 8.58E-06 3.42E-06 1.72E-06 8.58E-07 3.42E-07 1.72E-07 8.58E-08

5.42E-08

STD: 4.30E-08 3.42E-08 0 0 0 0 0 0 0 0 0 0 0 0 && DFLEV

STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0

STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	
STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	&& RADIST
STD: 0.5	&& SMLPKG
STD: 1.0 0.87 0.018	&& SHIELDING FACTORS RR RS RU
STD: 30 30 800	&& OFFLIM {FREEWAY}
STD: 27 30 800	&& OFFLIM {NON-FREEWAY}
STD: 5 8 800	&& OFFLIM {CITY STREETS}
STD: 30 30 800	&& OFFLIM {RAILWAY}
STD: 200 200 1000	&& OFFLIM {WATERWAY}
STD: 15 3 3 3 4	&& ONLINK {FWAY NONFWY STREET RAIL ADJ}
STD: 6.0 4 40.0	&& RPD FNOATT INTERDICT (ci/micro-Ci)
STD: 0.05 0.2 3.3E-4	&& BDF CULVL BRATE
STD: 0.9 0.1	&& UBF USWF
STD: 1.0 10.0 1.0	&& EVACUATION SURVEY CAMPAIGN

LOS AVERAGE RADIOLOGICAL HAND CALC

```

      STD: 0.0 0.0 0.0 0.0 0.0 0.0    && PSPROB
      STD: 0.67 0.67 0.42              && TIMENDE NON-DISPERSAL EVAC TIME
(LCF&EARLY)
      STD: 2 2 0                      && FLAGS=IUOPT IACC REGCHECK (OFF)
      STD: 5E-4, 4E-4, 1.0E-4         && LCFCON(1), LCFCON(2), GECON
      STD: RT6_Ingestion.BIN           && INGESTION FILE

OUTPUT CI_REM
FORM UNIT
DIMEN 19 10 18
PARM 0 3 4 0
SEVERITY
  NPOP=1
    NMODE=1
      1.53E-8
    5.88E-5 1.18E-6 7.49E-8 4.65E-7 3.31E-9
    0.0 1.13E-8 8.03E-11 0.0 1.44E-10
    1.02E-12 0.0 7.49E-11 0.0 0.0
    0.0 5.86E-6 0.99993
  NPOP=2
    NMODE=1
      1.53E-8
    5.88E-5 1.18E-6 7.49E-8 4.65E-7 3.31E-9
    0.0 1.13E-8 8.03E-11 0.0 1.44E-10
    1.02E-12 0.0 7.49E-11 0.0 0.0
    0.0 5.86E-6 0.99993
  NPOP=3
    NMODE=1
      1.53E-8
    5.88E-5 1.18E-6 7.49E-8 4.65E-7 3.31E-9
    0.0 1.13E-8 8.03E-11 0.0 1.44E-10
    1.02E-12 0.0 7.49E-11 0.0 0.0
    0.0 5.86E-6 0.99993
RELEASE
  GROUP=CRUD
    RFRAC
      0.0020
    0.0014 0.0018 0.0032 0.0018 0.0021
    0.0031 0.0020 0.0022 0.0025 0.0020
    0.0022 0.0025 0.0064 0.0059 0.0033
    0.0033 0.0025 0.0
    AERSOL
      1.0

```

LOS AVERAGE RADIOLOGICAL HAND CALC

1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0

RESP

1.0

1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0

DEPVEL 0.1

GROUP=KR

RFRAC

0.8

0.14 0.18 0.84 0.43 0.49
 0.85 0.82 0.89 0.91 0.82
 0.89 0.91 0.84 0.85 0.91
 0.91 0.84 0.0

AERSOL

1.0

1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0

RESP

1.0

1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0

DEPVEL 0.0

GROUP=RUTH

RFRAC

6.0E-7

1.0E-07 1.3E-07 3.8E-06 3.2E-07 3.7E-07
 2.1E-06 6.1E-07 6.7E-07 6.8E-07 6.1E-07
 6.7E-07 6.8E-07 8.4E-05 5.0E-05 6.4E-06
 6.4E-06 6.7E-08 0.0

AERSOL

1.0

1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0

RESP

1.0

1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0 1.0 1.0
 1.0 1.0 1.0

DEPVEL 0.1

GROUP=CS

RFRAC

LOS AVERAGE RADIOLOGICAL HAND CALC

```

      2.4E-8
4.1E-09 5.4E-09 3.6E-05 1.3E-08 1.5E-08
2.7E-05 2.4E-08 2.7E-08 5.9E-06 2.4E-08
2.7E-08 5.9E-06 9.6E-05 5.5E-05 5.9E-06
5.9E-06 1.7E-05 0.0
      AERSOL
      1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
      RESP
      1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
      DEPVEL 0.1
      GROUP=PART
      RFRAC
      6.0E-7
1.0E-07 1.3E-07 3.8E-06 3.2E-07 3.7E-07
2.1E-06 6.1E-07 6.7E-07 6.8E-07 6.1E-07
6.7E-07 6.8E-07 1.8E-05 9.0E-06 6.8E-07
6.8E-07 6.7E-08 0.0
      AERSOL
      1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
      RESP
      1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
      DEPVEL 0.1
LOS_SHIELD
      NPOP=1
      ACIDNT_PRB *FROM 6672 TABLE 8.12
      1.71E-06 4.63E-07 3.21E-08 2.53E-10 2.20E-05
      5.97E-06 4.14E-07 3.27E-09 4.90E-05 1.66E-09
      FRAC_LOST
      0.052      0.158      0.264      0.368      0.033
      0.096      0.158      0.255      0.029      0.500
      NPOP=2
      ACIDNT_PRB *(AGAIN)
      1.71E-06 4.63E-07 3.21E-08 2.53E-10 2.20E-05
      5.97E-06 4.14E-07 3.27E-09 4.90E-05 1.66E-09
      FRAC_LOST
      0.052      0.158      0.264      0.368      0.033

```

0.096 0.158 0.255 0.029 0.500

LOS AVERAGE RADIOLOGICAL HAND CALC

```

NPOP=3
ACIDNT_PRB *(AGAIN)
    1.71E-06  4.63E-07  3.21E-08  2.53E-10  2.20E-05
    5.97E-06  4.14E-07  3.27E-09  4.90E-05  1.66E-09
FRAC_LOST
    0.052      0.158      0.264      0.368      0.033
    0.096      0.158      0.255      0.029      0.500
PACKAGE PACKAGE_1 13.0 1.0 0.0 5.21
C060      173.4 CRUD
KR85      5220 KR
SR90      160800 PART
Y90       160800 PART
RU106     132900 RUTH
CS134     209700 CS
CS137     237000 CS
CE144     116100 PART
PM147     77400 PART
EU154     25260 PART
PU238     14430 PART
PU239     642 PART
PU240     1284 PART
PU241     195600 PART
AM241     1308 PART
AM242M    39.9 PART
AM243     75.3 PART
CM242     1128 PART
CM243     86.4 PART
CM244     16860 PART
END
VEHICLE -1 VEHICLE_1 1.30E01 1.0 0.0 5.21 1.0 2.0 3.0 1.0 0.71
    PACKAGE_1 1.0
MODSTD
DISTOFF FREEWAY 3.00E01 3.00E01 8.00E02
DISTOFF SECONDARY 2.70E01 3.00E01 8.00E02
DISTOFF STREET 5.00E00 8.00E00 8.00E02
DISTON
    FREEWAY 1.50E01
    SECONDARY 3.00E00
    STREET 3.00E00
    ADJACENT 4.00E00
BDF 5.00E-02
BRATE 3.30E-04
CULVL 2.00E-01
EVACUATION 1.00E00
GECON 1.00E-04
INTERDICT 1.0E05
LCFCON 5.00E-04 4.00E-04
SURVEY 1.00E01
UBF 5.20E-01
USWF 4.80E-01
CAMPAIGN 8.33E-02
MITDDIST 3.00E01

```

MITDVEL 2.40E01

LOS AVERAGE RADIOLOGICAL HAND CALC

RPD 6.00E00
 RR 1.00E00
 RU 1.80E-02
 RS 8.70E-01
 SMALLPKG 5.00E-01
 RPCTHYROID
 I131 1.27E06

FLAGS

IACC 2
 IUOPT 2
 REGCHECK 0

EOF

LINK LINK_R VEHICLE_1 1777 88.0 2.0 6 460.0 4.4E-08 0.5 R 1 1.0
 LINK LINK_S VEHICLE_1 541 72.0 2.0 720 780.0 4.4E-08 0.5 S 1 0.0
 LINK LINK_U VEHICLE_1 35 40.0 2.0 3800 2800.0 4.4E-08 0.5 U 1 0.0

* LOSS OF SHIELDING STOP

	NAME	VEHICLE	PEOPLE	DISTANCE	SHLD	FCTR	EXPOS	TIME
0.67	LOS_STOP PUBLICLOSR	VEHICLE_1	1.00	1.0	100	1.000		
0.67	LOS_STOP PUBLICLOSS	VEHICLE_1	1.00	1.0	50	1.000		
0.46	LOS_STOP PUBLICLOSU	VEHICLE_1	1.00	1.0	20	1.000		
	LOS_STOP FIRSTLOSR	VEHICLE_1	1.00	1.0	100	1.000	1.0	
	LOS_STOP FIRSTLOSS	VEHICLE_1	1.00	1.0	50	1.000	1.0	
	LOS_STOP FIRSTLOSU	VEHICLE_1	1.00	1.0	20	1.000	1.0	

EOF

LOS AVERAGE RADIOLOGICAL HAND CALC

CONTROL INPUT DATA (DIMEN & PARM)

NUMBER OF ACCIDENT SEVERITY CATEGORIES = 19
 NUMBER OF LOSS OF SHIELDING PROBABILITIES = 10
 NUMBER OF DEPOSITION AREAS (ISOPLETHS) = 18
 INCIDENT FREE AND ACCIDENT ANALYSES INVOKED
 DETAILED INPUT, FULL OUTPUT, CONSEQUENCE TABLES & POPULATION RISK BY
 LINK
 USER SUPPLIED OR NATIONAL AVERAGE WEATHER DILUTION INPUT
 HISTORICAL UNITS ON INPUT
 HISTORICAL UNITS ON OUTPUT
 DOSE UNITS ON OUTPUT

 INGESTION FILE = RT6_Ingestion.BIN

PACKAGE AND MATERIAL CHARACTERISTICS INPUT DATA

DOSE RATE		DIMENSION	EFFECTIVE	K(0)	FRACTION	FRACTION
(mrem/hr)	MATERIAL	(METERS)	DIMENSION	METERS SQ.	GAMMA	NEUTRON
1.300E+01	PACKAGE_1	5.210E+00	4.682E+00	1.116E+01	1.000E+00	0.000E+00

K(0) IS DOSE RATE CONVERSION FACTOR

LOS AVERAGE RADIOLOGICAL HAND CALC

VEHICLE CHARACTERISTICS INPUT DATA

VEHICLE NAME	VEHICLE_1
MODE TYPE	HIGHWAY
EXCLUSIVE USE	YES
DOSE RATE (mrem/hr)	1.30E+01
FRACTION OF GAMMA FOR VEH	1.00E+00
FRACTION OF NEUTRON FOR V	0.00E+00
K(0) (SQ. METERS)	1.12E+01
VEHICLE SIZE (M)	5.21E+00
EFFECTIVE SIZE (M)	4.68E+00
NUMBER OF SHIPMENTS	1.00E+00
NUMBER OF CREW	2.00E+00
CREW DISTANCE (M)	3.00E+00
CREW DOSE ADJUSTMENT FACT	1.00E+00
CREW EXPOSER WIDTH (M)	7.10E-01
EFFECTIVE EXPOSER WIDTH	7.10E-01
K(0) (SQ M) CREW EXPOSURE	1.84E+00

VEHICLE	MATERIAL	NO. PACKAGES
VEHICLE_1	PACKAGE_1	1.00E+00

TRANSFER					
COEFFICIENTS:	MU	A(1)	A(2)	A(3)	A(4)
GAMMA	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NEUTRON	7.420E-03	2.020E-02	6.170E-05	3.170E-08	0.000E+00

	DISTANCES (METERS)	FREEWAY	SECONDARY	STREET	RAIL	WATER
ADJACENT						
OFFLINK:						
MINIMUM DISTANCE	3.00E+01	2.70E+01	5.00E+00	3.00E+01	2.00E+02	
SIDEWALK + MINIMUM	3.00E+01	3.00E+01	8.00E+00	3.00E+01	2.00E+02	
MAXIMUM DISTANCE	8.00E+02	8.00E+02	8.00E+02	8.00E+02	1.00E+03	
ONLINK:						
OPPOSITE DIRECTION	1.50E+01	3.00E+00	3.00E+00	3.00E+00		
ADJACENT VEHICLE						
4.00E+00						

LINK RELATED INPUT DATA

LINK	LINK_R	LINK_S	LINK_U
------	--------	--------	--------

VEHICLE	VEHICLE_1	VEHICLE_1	VEHICLE_1
DISTANCE (KM)	1.78E+03	5.41E+02	3.50E+01
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00
SPEED (KM/HR)	8.80E+01	7.20E+01	4.00E+01
POPULATION DENSITY (#/KM^2)	6.00E+00	7.20E+02	3.80E+03
VEHICLE DENSITY (#/HR)	4.60E+02	7.80E+02	2.80E+03
ACCIDENT RATE/KM	4.40E-08	4.40E-08	4.40E-08
FATALITIES/ACCIDENT	5.00E-01	5.00E-01	5.00E-01
ZONE	RURAL	SUBURBAN	URBAN
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	1.00E+00	0.00E+00	0.00E+00

LOS AVERAGE RADIOLOGICAL HAND CALC

LOSS OF SHIELDING STOP RELATED INPUT DATA

LOSS SHIELDING STOP	PUBLICLOSSR	PUBLICLOSS	PUBLICLOSSU	FIRSTLOSSR
FIRSTLOSS				
VEHICLE	VEHICLE_1	VEHICLE_1	VEHICLE_1	VEHICLE_1
VEHICLE_1				
ZONE	RURAL	RURAL	RURAL	RURAL
RURAL				
NUMB PEOLPE EXPOSED	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00				
MINIMUM DISTANCE(M)	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00				
MAXIMUM DISTANCE(M)	1.00E+02	5.00E+01	2.00E+01	1.00E+02
5.00E+01				
SHIELDING FACTOR	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00				
EXPOSURE TIME (HR)	6.70E-01	6.70E-01	4.60E-01	1.00E+00
1.00E+00				
LOSS SHIELDING STOP	FIRSTLOSSU			
VEHICLE	VEHICLE_1			
ZONE	RURAL			
NUMB PEOLPE EXPOSED	1.00E+00			
MINIMUM DISTANCE(M)	1.00E+00			
MAXIMUM DISTANCE(M)	2.00E+01			
SHIELDING FACTOR	1.00E+00			
EXPOSURE TIME (HR)	1.00E+00			

RURAL		SUBURBAN		URBAN	
FAIL	PROB	FAIL	PROB	FAIL	PROB
5.20E-02	1.71E-06	5.20E-02	1.71E-06	5.20E-02	1.71E-06
1.58E-01	4.63E-07	1.58E-01	4.63E-07	1.58E-01	4.63E-07
2.64E-01	3.21E-08	2.64E-01	3.21E-08	2.64E-01	3.21E-08
3.68E-01	2.53E-10	3.68E-01	2.53E-10	3.68E-01	2.53E-10
3.30E-02	2.20E-05	3.30E-02	2.20E-05	3.30E-02	2.20E-05
9.60E-02	5.97E-06	9.60E-02	5.97E-06	9.60E-02	5.97E-06
1.58E-01	4.14E-07	1.58E-01	4.14E-07	1.58E-01	4.14E-07
2.55E-01	3.27E-09	2.55E-01	3.27E-09	2.55E-01	3.27E-09
2.90E-02	4.90E-05	2.90E-02	4.90E-05	2.90E-02	4.90E-05
5.00E-01	1.66E-09	5.00E-01	1.66E-09	5.00E-01	1.66E-09

LOS AVERAGE RADIOLOGICAL HAND CALC

ISOTOPE RELATED INPUT DATA

NUCLIDE	CURIES PER PKG	WASTE LIMIT (CI/M^3)	RELEASE GROUP	RESUSPENSION FACTOR
PACKAGE_1				
C060	1.73E+02	7.00E+02	CRUD	1.08E+00
KR85	5.22E+03	7.00E+02	KR	1.00E+00
SR90	1.61E+05	4.00E-02	PART	1.08E+00
Y90	1.61E+05	7.00E+02	PART	1.08E+00
RU106	1.33E+05	7.00E+02	RUTH	1.08E+00
CS134	2.10E+05	7.00E+02	CS	1.08E+00
CS137	2.37E+05	1.00E+00	CS	1.08E+00
CE144	1.16E+05	7.00E+02	PART	1.08E+00
PM147	7.74E+04	7.00E+02	PART	1.08E+00
EU154	2.53E+04	7.00E+02	PART	1.08E+00
PU238	1.44E+04	1.97E-01	PART	1.08E+00
PU239	6.42E+02	1.97E-01	PART	1.08E+00
PU240	1.28E+03	1.97E-01	PART	1.08E+00
PU241	1.96E+05	6.89E+00	PART	1.08E+00
AM241	1.31E+03	1.19E-01	PART	1.08E+00
AM242M	3.99E+01	7.00E+02	PART	1.08E+00
AM243	7.53E+01	1.19E-01	PART	1.08E+00
CM242	1.13E+03	1.40E+01	PART	1.08E+00
CM243	8.64E+01	7.00E-02	PART	1.08E+00
CM244	1.69E+04	7.00E-02	PART	1.08E+00

LOS AVERAGE RADIOLOGICAL HAND CALC

NUCLIDE NEUTRON EMISSION PACKAGE_1 neu/sec/CI	HALF LIFE (Days)	GAMMA ENERGY (MeV/nt)	AIR IMMERISON (SHINE) DCF CLOUD (rem-m ³ /Ci-s)	GROUND (rem-m ² /uCi-d)	INGESTION NUCLIDE
C060 0.00E+00	1.92E+03	2.50E+00	4.66E-01	7.51E-04	Co-60
KR85 0.00E+00	3.91E+03	2.21E-03	4.40E-04	8.44E-07	NONE
SR90 0.00E+00	1.06E+04	0.00E+00	2.79E-05	9.08E-08	Sr-90
Y90 0.00E+00	2.67E+00	1.69E-06	7.03E-04	1.70E-06	Y-90
RU106 0.00E+00	3.68E+02	2.01E-01	3.85E-02	6.78E-05	Ru-106
CS134 0.00E+00	7.52E+02	1.55E+00	2.80E-01	4.86E-04	Cs-134
CS137 0.00E+00	1.10E+04	5.69E-02	1.01E-01	1.77E-04	Cs-137
CE144 0.00E+00	2.84E+02	5.27E-02	1.04E-02	1.88E-05	Ce-144
PM147 0.00E+00	9.58E+02	4.37E-06	2.56E-06	1.09E-08	Pm-147
EU154 0.00E+00	3.21E+03	1.22E+00	2.27E-01	3.80E-04	Eu-154
PU238 0.00E+00	3.20E+04	1.81E-03	1.81E-05	2.68E-07	Pu-238
PU239 0.00E+00	8.78E+06	7.96E-04	1.57E-05	1.17E-07	Pu-239
PU240 0.00E+00	2.39E+06	1.73E-03	1.76E-05	2.57E-07	Pu-240
PU241 0.00E+00	5.26E+03	2.54E-06	2.68E-07	6.17E-10	Pu-241
AM241 0.00E+00	1.58E+05	3.24E-02	3.03E-03	8.79E-06	Am-241
AM242M 0.00E+00	5.55E+04	5.11E-03	1.17E-04	9.65E-07	Am-242m
AM243 0.00E+00	2.69E+06	5.59E-02	8.07E-03	1.71E-05	Am-243
CM242 0.00E+00	1.63E+02	1.83E-03	2.11E-05	3.06E-07	Cm-242
CM243 0.00E+00	1.04E+04	1.34E-01	2.18E-02	4.00E-05	Cm-243
CM244 0.00E+00	6.61E+03	1.70E-03	1.82E-05	2.81E-07	Cm-244

LOS AVERAGE RADIOLOGICAL HAND CALC

ISOTOPE RELATED INPUT DATA

NUCLIDE	INHALATION DOSE CONVERSION FACTORS			
	LUNG (REM/CI)	MARROW (REM/CI)	THYROID (REM/CI)	EFFECTIVE (REM/CI)
PACKAGE_1				
C060	1.78E+05	1.07E+04	0.00E+00	3.70E+04
KR85	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SR90	7.03E+05	4.07E+04	0.00E+00	1.33E+05
Y90	2.59E+04	3.70E+02	0.00E+00	5.18E+03
RU106	7.03E+05	6.29E+03	0.00E+00	1.04E+05
CS134	1.78E+05	1.15E+04	0.00E+00	3.37E+04
CS137	2.18E+05	6.29E+03	0.00E+00	3.59E+04
CE144	6.66E+05	5.18E+04	0.00E+00	1.33E+05
PM147	7.03E+04	4.81E+03	0.00E+00	1.85E+04
EU154	2.92E+05	3.70E+04	0.00E+00	1.96E+05
PU238	1.26E+08	1.37E+07	0.00E+00	1.70E+08
PU239	1.11E+08	1.30E+07	0.00E+00	1.85E+08
PU240	1.11E+08	1.30E+07	0.00E+00	1.85E+08
PU241	2.85E+04	1.33E+04	0.00E+00	3.33E+06
AM241	1.22E+08	8.14E+06	0.00E+00	1.55E+08
AM242M	1.96E+07	4.07E+06	0.00E+00	1.37E+08
AM243	1.15E+08	7.77E+06	0.00E+00	1.52E+08
CM242	1.30E+08	4.07E+06	0.00E+00	1.92E+07
CM243	1.37E+08	8.51E+06	0.00E+00	1.15E+08
CM244	1.37E+08	8.51E+06	0.00E+00	9.99E+07

LOS AVERAGE RADIOLOGICAL HAND CALC

RELEASE RELATED INPUT DATA

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6	SEVER: 7
CRUD	2.00E-03	1.40E-03	1.80E-03	3.20E-03	1.80E-03	2.10E-03	3.10E-03
KR	8.00E-01	1.40E-01	1.80E-01	8.40E-01	4.30E-01	4.90E-01	8.50E-01
RUTH	6.00E-07	1.00E-07	1.30E-07	3.80E-06	3.20E-07	3.70E-07	2.10E-06
CS	2.40E-08	4.10E-09	5.40E-09	3.60E-05	1.30E-08	1.50E-08	2.70E-05
PART	6.00E-07	1.00E-07	1.30E-07	3.80E-06	3.20E-07	3.70E-07	2.10E-06

GROUP	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13	SEVER:14
CRUD	2.00E-03	2.20E-03	2.50E-03	2.00E-03	2.20E-03	2.50E-03	6.40E-03
KR	8.20E-01	8.90E-01	9.10E-01	8.20E-01	8.90E-01	9.10E-01	8.40E-01
RUTH	6.10E-07	6.70E-07	6.80E-07	6.10E-07	6.70E-07	6.80E-07	8.40E-05
CS	2.40E-08	2.70E-08	5.90E-06	2.40E-08	2.70E-08	5.90E-06	9.60E-05
PART	6.10E-07	6.70E-07	6.80E-07	6.10E-07	6.70E-07	6.80E-07	1.80E-05

GROUP	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19
CRUD	5.90E-03	3.30E-03	3.30E-03	2.50E-03	0.00E+00
KR	8.50E-01	9.10E-01	9.10E-01	8.40E-01	0.00E+00
RUTH	5.00E-05	6.40E-06	6.40E-06	6.70E-08	0.00E+00
CS	5.50E-05	5.90E-06	5.90E-06	1.70E-05	0.00E+00
PART	9.00E-06	6.80E-07	6.80E-07	6.70E-08	0.00E+00

DEPOSITION VELOCITIES

GROUP	M/SEC
CRUD	1.00E-01
KR	0.00E+00
RUTH	1.00E-01
CS	1.00E-01
PART	1.00E-01

ACCIDENT SEVERITY FRACTIONS
FOR HIGHWAY

ZONE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6	SEVER: 7
RURAL	1.53E-08	5.88E-05	1.18E-06	7.49E-08	4.65E-07	3.31E-09	0.00E+00
SUBURBAN	1.53E-08	5.88E-05	1.18E-06	7.49E-08	4.65E-07	3.31E-09	0.00E+00
URBAN	1.53E-08	5.88E-05	1.18E-06	7.49E-08	4.65E-07	3.31E-09	0.00E+00

ZONE	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13	SEVER:14
RURAL	1.13E-08	8.03E-11	0.00E+00	1.44E-10	1.02E-12	0.00E+00	7.49E-11
SUBURBAN	1.13E-08	8.03E-11	0.00E+00	1.44E-10	1.02E-12	0.00E+00	7.49E-11
URBAN	1.13E-08	8.03E-11	0.00E+00	1.44E-10	1.02E-12	0.00E+00	7.49E-11

ZONE	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19
------	----------	----------	----------	----------	----------

RURAL	0.00E+00	0.00E+00	0.00E+00	5.86E-06	1.00E+00
SUBURBAN	0.00E+00	0.00E+00	0.00E+00	5.86E-06	1.00E+00
URBAN	0.00E+00	0.00E+00	0.00E+00	5.86E-06	1.00E+00

LOS AVERAGE RADIOLOGICAL HAND CALC

AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6	SEVER: 7
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

GROUP	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13	SEVER:14
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

GROUP	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

LOS AVERAGE RADIOLOGICAL HAND CALC

RESPIRABLE FRACTION OF AEROSOLS (BELOW 10 MICRONS AED)

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6	SEVER: 7
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

GROUP	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13	SEVER:14
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

GROUP	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

LOS AVERAGE RADIOLOGICAL HAND CALC

HEALTH RELATED INPUT DATA

EARLY MORBIDITY THRESHOLD VALUE FOR LUNG 5.000E+02 REM
 EARLY MORBIDITY THRESHOLD VALUE FOR MARROW/WHOLE BODY 5.000E+01 REM
 EARLY MORBIDITY THRESHOLD VALUE FOR THYROID 2.000E+02 REM

EARLY FATALITY PROBABILITIES (EF)

DOSE(REM)	EF MARROW	DOSE(REM)	EF LUNG
680.00	1.00000	1525.00	1.00000
670.00	0.99999	1500.00	0.99999
660.00	0.99998	1475.00	0.99997
650.00	0.99996	1450.00	0.99991
640.00	0.99992	1425.00	0.99974
630.00	0.99983	1400.00	0.99933
620.00	0.99967	1375.00	0.99840
610.00	0.99938	1350.00	0.99653
600.00	0.99889	1325.00	0.99306
590.00	0.99808	1300.00	0.98709
580.00	0.99679	1275.00	0.97755
570.00	0.99482	1250.00	0.96331
560.00	0.99192	1225.00	0.94326
550.00	0.98776	1200.00	0.91656
540.00	0.98199	1175.00	0.88274
530.00	0.97423	1150.00	0.84178
520.00	0.96406	1125.00	0.79420
510.00	0.95111	1100.00	0.74095
500.00	0.93502	1075.00	0.68335
490.00	0.91551	1050.00	0.62293
480.00	0.89237	1025.00	0.56130
470.00	0.86552	1000.00	0.50000
460.00	0.83499	975.00	0.44042
450.00	0.80096	950.00	0.38372
440.00	0.76371	925.00	0.33077
430.00	0.72363	900.00	0.28218
420.00	0.68123	875.00	0.23830
410.00	0.63706	850.00	0.19925
400.00	0.59172	825.00	0.16498
390.00	0.54583	800.00	0.13529
380.00	0.50000	775.00	0.10988
370.00	0.45481	750.00	0.08837
360.00	0.41078	725.00	0.07038
350.00	0.36838	700.00	0.05548
340.00	0.32798	675.00	0.04329
330.00	0.28990	650.00	0.03341
320.00	0.25438	625.00	0.02549
310.00	0.22155	600.00	0.01922
300.00	0.19150	575.00	0.01430
290.00	0.16425	550.00	0.01050

280.00	0.13977	525.00	0.00759
270.00	0.11797	500.00	0.00000
260.00	0.09872		
250.00	0.08188		
240.00	0.06729		
230.00	0.05475		
220.00	0.04408		
210.00	0.03510		
200.00	0.02761		
190.00	0.02143		
180.00	0.01639		
170.00	0.01234		
160.00	0.00913		
150.00	0.00000		

LOS AVERAGE RADIOLOGICAL HAND CALC

DISPERSAL ACCIDENT INPUT DATA

AREADA (M SQ)	CENTER LINE(M)	DILUTION FACTOR*
4.590E+02	3.300E+01	3.420E-03
1.530E+03	6.800E+01	1.720E-03
3.940E+03	1.050E+02	8.580E-04
1.250E+04	2.440E+02	3.420E-04
3.040E+04	3.690E+02	1.720E-04
6.850E+04	5.610E+02	8.580E-05
1.760E+05	1.018E+03	3.420E-05
4.450E+05	1.628E+03	1.720E-05
8.590E+05	2.308E+03	8.580E-06
2.550E+06	4.269E+03	3.420E-06
4.450E+06	5.468E+03	1.720E-06
1.030E+07	1.114E+04	8.580E-07
2.160E+07	1.310E+04	3.420E-07
5.520E+07	2.133E+04	1.720E-07
1.770E+08	4.050E+04	8.580E-08
4.890E+08	6.999E+04	5.420E-08
8.120E+08	8.986E+04	4.300E-08
1.350E+09	1.209E+05	3.420E-08

* DILUTION FACTOR UNITS ARE (CI-SEC/M**3/CI-RELEASED)

OTHER DISPERSAL ACCIDENT INPUT PARAMETERS

BUILDING DOSE FACTOR	(BDF) = 5.000E-02
CONTAMINATION CLEAN UP LEVEL(micro-CI/M^2)(CULVL)	= 2.000E-01
BREATHING RATE (M**3/SEC)	(BRATE) = 3.300E-04
INTERDICTION THRESHOLD (Ci/micro-Ci)	(INTERDICT) = 1.000E+05
EVACUATION TIME (DAYS)	(EVACUATION) = 1.000E+00
SURVEY INTERVAL (DAYS)	(SURVEY) = 1.000E+01
CAMPAIGN LENGTH (YEARS)	(TIMEYR) = 8.330E-02
FRACTION OF URBAN AREAS WITH BUILDINGS	(UBF) = 5.200E-01
FRACTION OF URBAN AREAS WITH SIDEWALKS	(USWF) = 4.800E-01
RATIO OF SIDEWALK PEDESTRIAN DENSITY	(RPD) = 6.000E+00
MAXIMUM IN-TRANSIT DOSE DISTANCE (M)	(DMDIST) = 3.000E+01
MAXIMUM IN-TRANSIT DOSE VELOCITY (KM/H)	(DMVEL) = 2.400E+01
IACC VALUE: 1=NON-DISPERSAL, 2=DISPERSAL	= 2
REGULATORY CHECK, 1=DO CHECKS, 0=NO CHECKS	= 0
BUILDING SHIELDING OPTION	(IUOPT) = 2
RURAL SHIELDING FACTOR	= 1.000E+00
SUBURBAN SHIELDING FACTOR	= 8.700E-01
URBAN SHIELDING FACTOR	= 1.800E-02

RUN DATE: [05-14-2008 AT 21:05]

PAGE 18

LOS AVERAGE RADIOLOGICAL HAND CALC

INGESTION RELATED INPUT DATA

COMIDA INGESTION FILE USED: RT6_Ingestion.BIN

COMIDA FILE HEADER

COMIDA2 07/22/03 08:58:40 Ver. 1.11a, 1/28/96: avoiding use of UNIT
6 for HP

DOSE CONVERSION FILE USED IN COMIDA

FGRDCF 07/10/03 21:45:47 Version 1.10
Implicit daughter halflives (m) less than 90 and less than 0.100 of
parent

NO INGESTION WILL BE CALCULATED FOR THE FOLLOWING ISOTOPES
INGESTION NUCLIDES ARE NOT IN INGESTION FILE

PACKAGE	ISOTOPE	INGESTION NUCLIDE
PACKAGE_1	KR85	NONE

BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

PACKAGE	NUCLIDE	EFFECTIVE	THYROID
PACKAGE_1	Co-60	1.328E+04	3.779E+03
PACKAGE_1	Sr-90	7.984E+04	3.131E+03
PACKAGE_1	Y-90	2.048E+01	8.868E-05
PACKAGE_1	Ru-106	6.681E+03	1.273E+03
PACKAGE_1	Cs-134	2.232E+05	1.984E+05
PACKAGE_1	Cs-137	1.704E+05	1.590E+05
PACKAGE_1	Ce-144	3.780E+03	3.411E+00
PACKAGE_1	Pm-147	4.392E+02	4.842E-05
PACKAGE_1	Eu-154	4.260E+03	9.427E+01
PACKAGE_1	Pu-238	7.414E+05	6.848E+00
PACKAGE_1	Pu-239	8.229E+05	6.447E+00
PACKAGE_1	Pu-240	8.228E+05	6.464E+00
PACKAGE_1	Pu-241	1.624E+04	9.444E-02
PACKAGE_1	Am-241	8.471E+05	1.136E+01
PACKAGE_1	Am-242m	8.183E+05	3.248E+00
PACKAGE_1	Am-243	8.435E+05	5.859E+01
PACKAGE_1	Cm-242	1.979E+04	5.631E+00
PACKAGE_1	Cm-243	9.653E+05	4.478E+01
PACKAGE_1	Cm-244	7.686E+05	1.190E+01

SOCIETAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

NUCLIDE GONADS BREAST LUNGS RED MAR BONE SU THYROID REMAIND
EFFECTI

Co-60	1.6E+00	5.7E-01	4.5E-01	6.8E-01	4.8E-01	4.1E-01	2.6E+00
1.4E+00							
Sr-90	5.2E-01	5.2E-01	5.2E-01	6.6E+01	1.4E+02	5.2E-01	2.1E+00
1.3E+01							
Y-90	1.0E-08	8.9E-09	8.9E-09	2.6E-07	2.6E-07	8.9E-09	6.8E-03
03							
Ru-106	1.6E-01	1.4E-01	1.4E-01	1.4E-01	1.4E-01	1.3E-01	2.0E+00
01							
Cs-134	2.6E+01	2.2E+01	2.2E+01	2.4E+01	2.2E+01	2.2E+01	2.8E+01
2.5E+01							
Cs-137	2.0E+01	1.8E+01	1.9E+01	1.9E+01	1.8E+01	1.8E+01	2.1E+01
2.0E+01							
Ce-144	4.9E-03	8.6E-04	4.6E-04	6.2E-03	8.9E-03	3.6E-04	1.3E+00
01							
Pm-147	1.1E-06	1.2E-07	3.2E-08	3.4E-03	4.3E-02	5.1E-09	1.5E-01
02							
Eu-154	2.4E-01	4.9E-02	3.8E-02	2.0E-01	7.9E-01	1.0E-02	1.1E+00
01							
Pu-238	2.2E+01	8.0E-04	8.0E-04	1.2E+02	1.5E+03	7.6E-04	5.7E+01
8.2E+01							
Pu-239	2.5E+01	7.3E-04	7.4E-04	1.3E+02	1.7E+03	7.1E-04	6.1E+01
9.1E+01							
Pu-240	2.5E+01	7.6E-04	7.7E-04	1.3E+02	1.7E+03	7.1E-04	6.1E+01
9.1E+01							
Pu-241	5.5E-01	2.6E-05	4.4E-05	2.7E+00	3.4E+01	1.1E-05	1.1E+00
1.8E+00							
Am-241	2.6E+01	2.5E-03	3.2E-03	1.4E+02	1.7E+03	1.3E-03	6.3E+01
9.3E+01							
Am-242m	2.5E+01	1.2E-03	1.6E-03	1.3E+02	1.7E+03	3.6E-04	5.9E+01
9.0E+01							
Am-243	2.6E+01	1.3E-02	1.9E-02	1.4E+02	1.7E+03	6.5E-03	6.3E+01
9.3E+01							
Cm-242	3.6E-01	6.2E-04	6.1E-04	2.5E+00	3.1E+01	6.1E-04	2.8E+00
2.1E+00							
Cm-243	3.0E+01	1.2E-02	1.3E-02	1.7E+02	2.1E+03	5.5E-03	8.6E+01
1.2E+02							
Cm-244	2.3E+01	1.5E-03	1.5E-03	1.3E+02	1.7E+03	1.4E-03	7.1E+01
9.4E+01							

END OF INPUT EDIT

LOS AVERAGE RADIOLOGICAL HAND CALC

RRRR	AAA	DDDD	TTTTT	RRRR	AAA	N	N	6	000	000
R R	A A	D D	T	R R	A A	NN	N	6	0 0	0 0
R R	A A	D D	T	R R	A A	N N	N	6	0 0	0 0
RRRR	A A	D D	T	RRRR	A A	N	NN	6666	0 0	0 0
R R	AAAAA	D D	T	R R	AAAAA	N	N	6 6	0 0	0 0
R R	A A	D D	T	R R	A A	N	N	6 6	0 0	0 0
R R	A A	DDDD	T	R R	A A	N	N	666 *	000	000

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

000	U	U	TTTTT	PPPP	U	U	TTTTT
0 0	U	U	T	P P	U	U	T
0 0	U	U	T	P P	U	U	T
0 0	U	U	T	PPPP	U	U	T
0 0	U	U	T	P	U	U	T
0 0	U	U	T	P	U	U	T
000	UUUUU	T	P	UUUUU	T		

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

RUN DATE: [05-14-2008 AT 21:05]

PAGE 20

LOS AVERAGE RADIOLOGICAL HAND CALC

NON-RADIOLOGICAL DATA (ACCIDENTS and FATALITIES)

		HIGHWAY VEHICLE_1	
LINK	ACCIDENT RATE	ACCIDENTS	FATALITIES
LINK_R	4.40E-08	7.82E-05	3.91E-05
LINK_S	4.40E-08	2.38E-05	1.19E-05
LINK_U	4.40E-08	1.54E-06	7.70E-07
TOTALS:	1.32E-07	1.04E-04	5.18E-05

RUN DATE: [05-14-2008 AT 21:05]

PAGE 21

LOS AVERAGE RADIOLOGICAL HAND CALC

REGULATORY CHECKS HAVE BEEN DISABLED

LOS AVERAGE RADIOLOGICAL HAND CALC

CALCULATIONAL INFORMATION

IN CALCULATING THE DEPLETION FOR THE FOLLOWING GROUPS,
THE CONCENTRATIONS IN THE LISTED AREA HAVE BECOME NEGATIVE.
THE CONTAMINATION AND CONCENTRATIONS IN THE LISTED AREA AND
LARGER HAVE BEEN SET TO ZERO.

GROUP CRUD AREA 6
GROUP RUTH AREA 6
GROUP CS AREA 6
GROUP PART AREA 6

FOR VEHICLE_1 AREAS WITH TOTAL CONTAMINATION RATIO GREATER THAN
1.00E+05

(THE AREAS MARKED WITH AN 'X' ARE INTERDICTED)

AREA/SEVERITY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

LOS AVERAGE RADIOLOGICAL HAND CALC

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6	SEVER: 7
CRUD	2.00E-03	1.40E-03	1.80E-03	3.20E-03	1.80E-03	2.10E-03	3.10E-03
KR	8.00E-01	1.40E-01	1.80E-01	8.40E-01	4.30E-01	4.90E-01	8.50E-01
RUTH	6.00E-07	1.00E-07	1.30E-07	3.80E-06	3.20E-07	3.70E-07	2.10E-06
CS	2.40E-08	4.10E-09	5.40E-09	3.60E-05	1.30E-08	1.50E-08	2.70E-05
PART	6.00E-07	1.00E-07	1.30E-07	3.80E-06	3.20E-07	3.70E-07	2.10E-06
GROUP	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13	SEVER:14
CRUD	2.00E-03	2.20E-03	2.50E-03	2.00E-03	2.20E-03	2.50E-03	6.40E-03
KR	8.20E-01	8.90E-01	9.10E-01	8.20E-01	8.90E-01	9.10E-01	8.40E-01
RUTH	6.10E-07	6.70E-07	6.80E-07	6.10E-07	6.70E-07	6.80E-07	8.40E-05
CS	2.40E-08	2.70E-08	5.90E-06	2.40E-08	2.70E-08	5.90E-06	9.60E-05
PART	6.10E-07	6.70E-07	6.80E-07	6.10E-07	6.70E-07	6.80E-07	1.80E-05
GROUP	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19		
CRUD	5.90E-03	3.30E-03	3.30E-03	2.50E-03	0.00E+00		
KR	8.50E-01	9.10E-01	9.10E-01	8.40E-01	0.00E+00		
RUTH	5.00E-05	6.40E-06	6.40E-06	6.70E-08	0.00E+00		
CS	5.50E-05	5.90E-06	5.90E-06	1.70E-05	0.00E+00		
PART	9.00E-06	6.80E-07	6.80E-07	6.70E-08	0.00E+00		

DEPOSITION VELOCITIES

GROUP	M/SEC
CRUD	1.00E-01
KR	0.00E+00
RUTH	1.00E-01
CS	1.00E-01
PART	1.00E-01

DILUTION FACTORS

CHI VALUES AFTER DEPLETION (CI-SEC/M**3/CI-RELEASED)

DISTANCE	CRUD	KR	RUTH	CS	PART
3.30E+01	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03
6.80E+01	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03
1.05E+02	6.34E-04	8.58E-04	6.34E-04	6.34E-04	6.34E-04
2.44E+02	1.67E-04	3.42E-04	1.67E-04	1.67E-04	1.67E-04
3.69E+02	3.61E-05	1.72E-04	3.61E-05	3.61E-05	3.61E-05
5.61E+02	6.11E-06	8.58E-05	6.11E-06	6.11E-06	6.11E-06
1.02E+03	0.00E+00	3.42E-05	0.00E+00	0.00E+00	0.00E+00
1.63E+03	0.00E+00	1.72E-05	0.00E+00	0.00E+00	0.00E+00
2.31E+03	0.00E+00	8.58E-06	0.00E+00	0.00E+00	0.00E+00
4.27E+03	0.00E+00	3.42E-06	0.00E+00	0.00E+00	0.00E+00
5.47E+03	0.00E+00	1.72E-06	0.00E+00	0.00E+00	0.00E+00
1.11E+04	0.00E+00	8.58E-07	0.00E+00	0.00E+00	0.00E+00
1.31E+04	0.00E+00	3.42E-07	0.00E+00	0.00E+00	0.00E+00

2.13E+04	0.00E+00	1.72E-07	0.00E+00	0.00E+00	0.00E+00
4.05E+04	0.00E+00	8.58E-08	0.00E+00	0.00E+00	0.00E+00
7.00E+04	0.00E+00	5.42E-08	0.00E+00	0.00E+00	0.00E+00
8.99E+04	0.00E+00	4.30E-08	0.00E+00	0.00E+00	0.00E+00
1.21E+05	0.00E+00	3.42E-08	0.00E+00	0.00E+00	0.00E+00

LOS AVERAGE RADIOLOGICAL HAND CALC

DEPOSITION FACTORS
CHI DEPOSITED (CI/M**2/CI-RELEASED)

DISTANCE	CRUD	KR	RUTH	CS	PART
3.30E+01	3.42E-04	0.00E+00	3.42E-04	3.42E-04	3.42E-04
6.80E+01	1.72E-04	0.00E+00	1.72E-04	1.72E-04	1.72E-04
1.05E+02	6.34E-05	0.00E+00	6.34E-05	6.34E-05	6.34E-05
2.44E+02	1.67E-05	0.00E+00	1.67E-05	1.67E-05	1.67E-05
3.69E+02	3.61E-06	0.00E+00	3.61E-06	3.61E-06	3.61E-06
5.61E+02	6.11E-07	0.00E+00	6.11E-07	6.11E-07	6.11E-07
1.02E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.63E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.31E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.27E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.47E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.11E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.31E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.13E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.05E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.00E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.21E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

VEHICLE VEHICLE_1

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 1

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	3.44E+00	3.77E-01	3.71E+00	1.43E+01	
3.08E+02					
6.80E+01	1.73E+00	1.89E-01	1.86E+00	7.18E+00	
1.55E+02					
1.05E+02	6.38E-01	7.02E-02	6.87E-01	3.58E+00	
5.71E+01					
2.44E+02	1.68E-01	1.87E-02	1.81E-01	1.43E+00	
1.50E+01					
3.69E+02	3.63E-02	4.23E-03	3.92E-02	7.18E-01	
3.25E+00					
5.61E+02	6.15E-03	8.20E-04	6.63E-03	3.58E-01	5.50E-
01					
1.02E+03	0.00E+00	6.28E-05	0.00E+00	1.43E-01	
0.00E+00					
1.63E+03	0.00E+00	3.16E-05	0.00E+00	7.18E-02	
0.00E+00					
2.31E+03	0.00E+00	1.58E-05	0.00E+00	3.58E-02	
0.00E+00					
4.27E+03	0.00E+00	6.28E-06	0.00E+00	1.43E-02	
0.00E+00					
5.47E+03	0.00E+00	3.16E-06	0.00E+00	7.18E-03	
0.00E+00					
1.11E+04	0.00E+00	1.58E-06	0.00E+00	3.58E-03	
0.00E+00					
1.31E+04	0.00E+00	6.28E-07	0.00E+00	1.43E-03	
0.00E+00					
2.13E+04	0.00E+00	3.16E-07	0.00E+00	7.18E-04	
0.00E+00					
4.05E+04	0.00E+00	1.58E-07	0.00E+00	3.58E-04	
0.00E+00					
7.00E+04	0.00E+00	9.96E-08	0.00E+00	2.26E-04	
0.00E+00					
8.99E+04	0.00E+00	7.90E-08	0.00E+00	1.80E-04	
0.00E+00					
1.21E+05	0.00E+00	6.28E-08	0.00E+00	1.43E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 1

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID	3.30E+01	3.71E+00	1.77E-01	6.87E-03	9.45E-02	3.99E+00	1.13E+01
1.24E+00	6.80E+01	1.86E+00	4.47E-02	3.45E-03	4.75E-02	1.96E+00	5.69E+00
6.22E-01	1.05E+02	6.87E-01	6.08E-03	1.68E-03	1.75E-02	7.13E-01	2.10E+00
2.29E-01	2.44E+02	1.81E-01	4.22E-04	6.57E-04	4.61E-03	1.87E-01	5.53E-01
6.04E-02	3.69E+02	3.92E-02	1.97E-05	3.22E-04	9.98E-04	4.05E-02	1.20E-01
1.31E-02	5.61E+02	6.63E-03	5.66E-07	1.59E-04	1.69E-04	6.96E-03	2.02E-02
2.21E-03	1.02E+03	0.00E+00	0.00E+00	6.28E-05	0.00E+00	6.28E-05	0.00E+00
0.00E+00	1.63E+03	0.00E+00	0.00E+00	3.16E-05	0.00E+00	3.16E-05	0.00E+00
0.00E+00	2.31E+03	0.00E+00	0.00E+00	1.58E-05	0.00E+00	1.58E-05	0.00E+00
0.00E+00	4.27E+03	0.00E+00	0.00E+00	6.28E-06	0.00E+00	6.28E-06	0.00E+00
0.00E+00	5.47E+03	0.00E+00	0.00E+00	3.16E-06	0.00E+00	3.16E-06	0.00E+00
0.00E+00	1.11E+04	0.00E+00	0.00E+00	1.58E-06	0.00E+00	1.58E-06	0.00E+00
0.00E+00	1.31E+04	0.00E+00	0.00E+00	6.28E-07	0.00E+00	6.28E-07	0.00E+00
0.00E+00	2.13E+04	0.00E+00	0.00E+00	3.16E-07	0.00E+00	3.16E-07	0.00E+00
0.00E+00	4.05E+04	0.00E+00	0.00E+00	1.58E-07	0.00E+00	1.58E-07	0.00E+00
0.00E+00	7.00E+04	0.00E+00	0.00E+00	9.96E-08	0.00E+00	9.96E-08	0.00E+00
0.00E+00	8.99E+04	0.00E+00	0.00E+00	7.90E-08	0.00E+00	7.90E-08	0.00E+00
0.00E+00	1.21E+05	0.00E+00	0.00E+00	6.28E-08	0.00E+00	6.28E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 2

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	6.11E-01	1.13E-01	6.26E-01	2.50E+00	
1.15E+02					
6.80E+01	3.07E-01	5.67E-02	3.14E-01	1.26E+00	
5.76E+01					
1.05E+02	1.13E-01	2.10E-02	1.16E-01	6.27E-01	
2.12E+01					
2.44E+02	2.98E-02	5.56E-03	3.05E-02	2.50E-01	
5.59E+00					
3.69E+02	6.45E-03	1.24E-03	6.61E-03	1.26E-01	
1.21E+00					
5.61E+02	1.09E-03	2.27E-04	1.12E-03	6.27E-02	2.05E-
01					
1.02E+03	0.00E+00	1.10E-05	0.00E+00	2.50E-02	
0.00E+00					
1.63E+03	0.00E+00	5.53E-06	0.00E+00	1.26E-02	
0.00E+00					
2.31E+03	0.00E+00	2.76E-06	0.00E+00	6.27E-03	
0.00E+00					
4.27E+03	0.00E+00	1.10E-06	0.00E+00	2.50E-03	
0.00E+00					
5.47E+03	0.00E+00	5.53E-07	0.00E+00	1.26E-03	
0.00E+00					
1.11E+04	0.00E+00	2.76E-07	0.00E+00	6.27E-04	
0.00E+00					
1.31E+04	0.00E+00	1.10E-07	0.00E+00	2.50E-04	
0.00E+00					
2.13E+04	0.00E+00	5.53E-08	0.00E+00	1.26E-04	
0.00E+00					
4.05E+04	0.00E+00	2.76E-08	0.00E+00	6.27E-05	
0.00E+00					
7.00E+04	0.00E+00	1.74E-08	0.00E+00	3.96E-05	
0.00E+00					
8.99E+04	0.00E+00	1.38E-08	0.00E+00	3.14E-05	
0.00E+00					
1.21E+05	0.00E+00	1.10E-08	0.00E+00	2.50E-05	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 2

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		6.26E-01	2.99E-02	1.49E-03	6.32E-02	7.20E-01	2.73E+00
4.48E-01							
6.80E+01		3.14E-01	7.54E-03	7.50E-04	3.18E-02	3.54E-01	1.37E+00
2.25E-01							
1.05E+02		1.16E-01	1.03E-03	3.49E-04	1.17E-02	1.29E-01	5.06E-01
8.31E-02							
2.44E+02		3.05E-02	7.12E-05	1.29E-04	3.08E-03	3.38E-02	1.33E-01
2.19E-02							
3.69E+02		6.61E-03	3.33E-06	5.94E-05	6.67E-04	7.34E-03	2.88E-02
4.73E-03							
5.61E+02		1.12E-03	9.55E-08	2.83E-05	1.13E-04	1.26E-03	4.88E-03
8.01E-04							
1.02E+03		0.00E+00	0.00E+00	1.10E-05	0.00E+00	1.10E-05	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	5.53E-06	0.00E+00	5.53E-06	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	2.76E-06	0.00E+00	2.76E-06	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	1.10E-06	0.00E+00	1.10E-06	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	5.53E-07	0.00E+00	5.53E-07	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	2.76E-07	0.00E+00	2.76E-07	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	1.10E-07	0.00E+00	1.10E-07	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	5.53E-08	0.00E+00	5.53E-08	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	2.76E-08	0.00E+00	2.76E-08	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.74E-08	0.00E+00	1.74E-08	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	1.38E-08	0.00E+00	1.38E-08	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	1.10E-08	0.00E+00	1.10E-08	0.00E+00
0.00E+00							

RUN DATE: [05-14-2008 AT 21:05]

PAGE 27

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 3

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	7.93E-01	1.46E-01	8.13E-01	3.21E+00	
1.48E+02					
6.80E+01	3.99E-01	7.32E-02	4.09E-01	1.62E+00	
7.43E+01					
1.05E+02	1.47E-01	2.71E-02	1.51E-01	8.06E-01	
2.74E+01					
2.44E+02	3.87E-02	7.18E-03	3.97E-02	3.21E-01	
7.21E+00					
3.69E+02	8.38E-03	1.60E-03	8.59E-03	1.62E-01	
1.56E+00					
5.61E+02	1.42E-03	2.93E-04	1.45E-03	8.06E-02	2.64E-
01					
1.02E+03	0.00E+00	1.41E-05	0.00E+00	3.21E-02	
0.00E+00					
1.63E+03	0.00E+00	7.11E-06	0.00E+00	1.62E-02	
0.00E+00					
2.31E+03	0.00E+00	3.55E-06	0.00E+00	8.06E-03	
0.00E+00					
4.27E+03	0.00E+00	1.41E-06	0.00E+00	3.21E-03	
0.00E+00					
5.47E+03	0.00E+00	7.11E-07	0.00E+00	1.62E-03	
0.00E+00					
1.11E+04	0.00E+00	3.55E-07	0.00E+00	8.06E-04	
0.00E+00					
1.31E+04	0.00E+00	1.41E-07	0.00E+00	3.21E-04	
0.00E+00					
2.13E+04	0.00E+00	7.11E-08	0.00E+00	1.62E-04	
0.00E+00					
4.05E+04	0.00E+00	3.55E-08	0.00E+00	8.06E-05	
0.00E+00					
7.00E+04	0.00E+00	2.24E-08	0.00E+00	5.09E-05	
0.00E+00					
8.99E+04	0.00E+00	1.78E-08	0.00E+00	4.04E-05	
0.00E+00					
1.21E+05	0.00E+00	1.41E-08	0.00E+00	3.21E-05	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 3

		INHALED		SHINE			BACKYARD
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
	3.30E+01	8.13E-01	3.88E-02	1.92E-03	8.13E-02	9.35E-01	3.54E+00
	5.80E-01						
	6.80E+01	4.09E-01	9.80E-03	9.64E-04	4.08E-02	4.60E-01	1.78E+00
	2.91E-01						
	1.05E+02	1.51E-01	1.33E-03	4.48E-04	1.51E-02	1.68E-01	6.56E-01
	1.07E-01						
	2.44E+02	3.97E-02	9.25E-05	1.66E-04	3.97E-03	4.39E-02	1.73E-01
	2.83E-02						
	3.69E+02	8.59E-03	4.33E-06	7.64E-05	8.58E-04	9.53E-03	3.74E-02
	6.12E-03						
	5.61E+02	1.45E-03	1.24E-07	3.64E-05	1.45E-04	1.64E-03	6.32E-03
	1.04E-03						
	1.02E+03	0.00E+00	0.00E+00	1.41E-05	0.00E+00	1.41E-05	0.00E+00
	0.00E+00						
	1.63E+03	0.00E+00	0.00E+00	7.11E-06	0.00E+00	7.11E-06	0.00E+00
	0.00E+00						
	2.31E+03	0.00E+00	0.00E+00	3.55E-06	0.00E+00	3.55E-06	0.00E+00
	0.00E+00						
	4.27E+03	0.00E+00	0.00E+00	1.41E-06	0.00E+00	1.41E-06	0.00E+00
	0.00E+00						
	5.47E+03	0.00E+00	0.00E+00	7.11E-07	0.00E+00	7.11E-07	0.00E+00
	0.00E+00						
	1.11E+04	0.00E+00	0.00E+00	3.55E-07	0.00E+00	3.55E-07	0.00E+00
	0.00E+00						
	1.31E+04	0.00E+00	0.00E+00	1.41E-07	0.00E+00	1.41E-07	0.00E+00
	0.00E+00						
	2.13E+04	0.00E+00	0.00E+00	7.11E-08	0.00E+00	7.11E-08	0.00E+00
	0.00E+00						
	4.05E+04	0.00E+00	0.00E+00	3.55E-08	0.00E+00	3.55E-08	0.00E+00
	0.00E+00						
	7.00E+04	0.00E+00	0.00E+00	2.24E-08	0.00E+00	2.24E-08	0.00E+00
	0.00E+00						
	8.99E+04	0.00E+00	0.00E+00	1.78E-08	0.00E+00	1.78E-08	0.00E+00
	0.00E+00						
	1.21E+05	0.00E+00	0.00E+00	1.41E-08	0.00E+00	1.41E-08	0.00E+00
	0.00E+00						

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 4

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	2.51E+01	3.84E+00	2.40E+01	1.51E+01	
6.87E+03					
6.80E+01	1.26E+01	1.93E+00	1.21E+01	7.58E+00	
3.45E+03					
1.05E+02	4.65E+00	7.12E-01	4.46E+00	3.77E+00	
1.27E+03					
2.44E+02	1.22E+00	1.88E-01	1.17E+00	1.50E+00	
3.35E+02					
3.69E+02	2.65E-01	4.08E-02	2.54E-01	7.55E-01	
7.25E+01					
5.61E+02	4.48E-02	7.01E-03	4.30E-02	3.76E-01	
1.23E+01					
1.02E+03	0.00E+00	6.60E-05	0.00E+00	1.50E-01	
0.00E+00					
1.63E+03	0.00E+00	3.32E-05	0.00E+00	7.54E-02	
0.00E+00					
2.31E+03	0.00E+00	1.66E-05	0.00E+00	3.76E-02	
0.00E+00					
4.27E+03	0.00E+00	6.60E-06	0.00E+00	1.50E-02	
0.00E+00					
5.47E+03	0.00E+00	3.32E-06	0.00E+00	7.54E-03	
0.00E+00					
1.11E+04	0.00E+00	1.66E-06	0.00E+00	3.76E-03	
0.00E+00					
1.31E+04	0.00E+00	6.60E-07	0.00E+00	1.50E-03	
0.00E+00					
2.13E+04	0.00E+00	3.32E-07	0.00E+00	7.54E-04	
0.00E+00					
4.05E+04	0.00E+00	1.66E-07	0.00E+00	3.76E-04	
0.00E+00					
7.00E+04	0.00E+00	1.05E-07	0.00E+00	2.38E-04	
0.00E+00					
8.99E+04	0.00E+00	8.30E-08	0.00E+00	1.89E-04	
0.00E+00					
1.21E+05	0.00E+00	6.60E-08	0.00E+00	1.50E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 4

		INHALED		SHINE			BACKYARD
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID	3.30E+01	2.40E+01	1.15E+00	1.78E-02	1.94E+00	2.72E+01	1.13E+03
9.78E+02	6.80E+01	1.21E+01	2.90E-01	8.95E-03	9.74E-01	1.34E+01	5.69E+02
4.91E+02	1.05E+02	4.46E+00	3.95E-02	3.74E-03	3.59E-01	4.86E+00	2.10E+02
1.81E+02	2.44E+02	1.17E+00	2.74E-03	1.21E-03	9.46E-02	1.27E+00	5.53E+01
4.77E+01	3.69E+02	2.54E-01	1.28E-04	4.50E-04	2.05E-02	2.75E-01	1.20E+01
1.03E+01	5.61E+02	4.30E-02	3.67E-06	1.86E-04	3.47E-03	4.66E-02	2.03E+00
1.75E+00	1.02E+03	0.00E+00	0.00E+00	6.60E-05	0.00E+00	6.60E-05	0.00E+00
0.00E+00	1.63E+03	0.00E+00	0.00E+00	3.32E-05	0.00E+00	3.32E-05	0.00E+00
0.00E+00	2.31E+03	0.00E+00	0.00E+00	1.66E-05	0.00E+00	1.66E-05	0.00E+00
0.00E+00	4.27E+03	0.00E+00	0.00E+00	6.60E-06	0.00E+00	6.60E-06	0.00E+00
0.00E+00	5.47E+03	0.00E+00	0.00E+00	3.32E-06	0.00E+00	3.32E-06	0.00E+00
0.00E+00	1.11E+04	0.00E+00	0.00E+00	1.66E-06	0.00E+00	1.66E-06	0.00E+00
0.00E+00	1.31E+04	0.00E+00	0.00E+00	6.60E-07	0.00E+00	6.60E-07	0.00E+00
0.00E+00	2.13E+04	0.00E+00	0.00E+00	3.32E-07	0.00E+00	3.32E-07	0.00E+00
0.00E+00	4.05E+04	0.00E+00	0.00E+00	1.66E-07	0.00E+00	1.66E-07	0.00E+00
0.00E+00	7.00E+04	0.00E+00	0.00E+00	1.05E-07	0.00E+00	1.05E-07	0.00E+00
0.00E+00	8.99E+04	0.00E+00	0.00E+00	8.30E-08	0.00E+00	8.30E-08	0.00E+00
0.00E+00	1.21E+05	0.00E+00	0.00E+00	6.60E-08	0.00E+00	6.60E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 5

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	1.86E+00	2.35E-01	1.98E+00	7.68E+00	
2.08E+02					
6.80E+01	9.35E-01	1.18E-01	9.96E-01	3.86E+00	
1.04E+02					
1.05E+02	3.45E-01	4.38E-02	3.68E-01	1.93E+00	
3.85E+01					
2.44E+02	9.08E-02	1.17E-02	9.68E-02	7.68E-01	
1.01E+01					
3.69E+02	1.97E-02	2.62E-03	2.09E-02	3.86E-01	
2.19E+00					
5.61E+02	3.33E-03	4.99E-04	3.54E-03	1.93E-01	3.71E-
01					
1.02E+03	0.00E+00	3.38E-05	0.00E+00	7.68E-02	
0.00E+00					
1.63E+03	0.00E+00	1.70E-05	0.00E+00	3.86E-02	
0.00E+00					
2.31E+03	0.00E+00	8.47E-06	0.00E+00	1.93E-02	
0.00E+00					
4.27E+03	0.00E+00	3.38E-06	0.00E+00	7.68E-03	
0.00E+00					
5.47E+03	0.00E+00	1.70E-06	0.00E+00	3.86E-03	
0.00E+00					
1.11E+04	0.00E+00	8.47E-07	0.00E+00	1.93E-03	
0.00E+00					
1.31E+04	0.00E+00	3.38E-07	0.00E+00	7.68E-04	
0.00E+00					
2.13E+04	0.00E+00	1.70E-07	0.00E+00	3.86E-04	
0.00E+00					
4.05E+04	0.00E+00	8.47E-08	0.00E+00	1.93E-04	
0.00E+00					
7.00E+04	0.00E+00	5.35E-08	0.00E+00	1.22E-04	
0.00E+00					
8.99E+04	0.00E+00	4.25E-08	0.00E+00	9.65E-05	
0.00E+00					
1.21E+05	0.00E+00	3.38E-08	0.00E+00	7.68E-05	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 5

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
	3.30E+01	1.98E+00	9.47E-02	3.89E-03	8.30E-02	2.16E+00	6.63E+00
	8.30E-01						
	6.80E+01	9.96E-01	2.39E-02	1.96E-03	4.17E-02	1.06E+00	3.33E+00
	4.17E-01						
	1.05E+02	3.68E-01	3.25E-03	9.43E-04	1.54E-02	3.87E-01	1.23E+00
	1.54E-01						
	2.44E+02	9.68E-02	2.26E-04	3.63E-04	4.05E-03	1.01E-01	3.23E-01
	4.05E-02						
	3.69E+02	2.09E-02	1.06E-05	1.75E-04	8.77E-04	2.20E-02	7.00E-02
	8.76E-03						
	5.61E+02	3.54E-03	3.03E-07	8.57E-05	1.48E-04	3.78E-03	1.18E-02
	1.48E-03						
	1.02E+03	0.00E+00	0.00E+00	3.38E-05	0.00E+00	3.38E-05	0.00E+00
	0.00E+00						
	1.63E+03	0.00E+00	0.00E+00	1.70E-05	0.00E+00	1.70E-05	0.00E+00
	0.00E+00						
	2.31E+03	0.00E+00	0.00E+00	8.47E-06	0.00E+00	8.47E-06	0.00E+00
	0.00E+00						
	4.27E+03	0.00E+00	0.00E+00	3.38E-06	0.00E+00	3.38E-06	0.00E+00
	0.00E+00						
	5.47E+03	0.00E+00	0.00E+00	1.70E-06	0.00E+00	1.70E-06	0.00E+00
	0.00E+00						
	1.11E+04	0.00E+00	0.00E+00	8.47E-07	0.00E+00	8.47E-07	0.00E+00
	0.00E+00						
	1.31E+04	0.00E+00	0.00E+00	3.38E-07	0.00E+00	3.38E-07	0.00E+00
	0.00E+00						
	2.13E+04	0.00E+00	0.00E+00	1.70E-07	0.00E+00	1.70E-07	0.00E+00
	0.00E+00						
	4.05E+04	0.00E+00	0.00E+00	8.47E-08	0.00E+00	8.47E-08	0.00E+00
	0.00E+00						
	7.00E+04	0.00E+00	0.00E+00	5.35E-08	0.00E+00	5.35E-08	0.00E+00
	0.00E+00						
	8.99E+04	0.00E+00	0.00E+00	4.25E-08	0.00E+00	4.25E-08	0.00E+00
	0.00E+00						
	1.21E+05	0.00E+00	0.00E+00	3.38E-08	0.00E+00	3.38E-08	0.00E+00
	0.00E+00						

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 6

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	2.15E+00	2.73E-01	2.29E+00	8.75E+00	
2.41E+02					
6.80E+01	1.08E+00	1.37E-01	1.15E+00	4.40E+00	
1.21E+02					
1.05E+02	3.99E-01	5.08E-02	4.25E-01	2.20E+00	
4.47E+01					
2.44E+02	1.05E-01	1.35E-02	1.12E-01	8.75E-01	
1.18E+01					
3.69E+02	2.27E-02	3.03E-03	2.42E-02	4.40E-01	
2.55E+00					
5.61E+02	3.85E-03	5.77E-04	4.10E-03	2.19E-01	4.31E-
01					
1.02E+03	0.00E+00	3.85E-05	0.00E+00	8.75E-02	
0.00E+00					
1.63E+03	0.00E+00	1.94E-05	0.00E+00	4.40E-02	
0.00E+00					
2.31E+03	0.00E+00	9.66E-06	0.00E+00	2.19E-02	
0.00E+00					
4.27E+03	0.00E+00	3.85E-06	0.00E+00	8.75E-03	
0.00E+00					
5.47E+03	0.00E+00	1.94E-06	0.00E+00	4.40E-03	
0.00E+00					
1.11E+04	0.00E+00	9.66E-07	0.00E+00	2.19E-03	
0.00E+00					
1.31E+04	0.00E+00	3.85E-07	0.00E+00	8.75E-04	
0.00E+00					
2.13E+04	0.00E+00	1.94E-07	0.00E+00	4.40E-04	
0.00E+00					
4.05E+04	0.00E+00	9.66E-08	0.00E+00	2.19E-04	
0.00E+00					
7.00E+04	0.00E+00	6.10E-08	0.00E+00	1.39E-04	
0.00E+00					
8.99E+04	0.00E+00	4.84E-08	0.00E+00	1.10E-04	
0.00E+00					
1.21E+05	0.00E+00	3.85E-08	0.00E+00	8.75E-05	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 6

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		2.29E+00	1.09E-01	4.45E-03	9.68E-02	2.50E+00	7.67E+00
9.63E-01							
6.80E+01		1.15E+00	2.76E-02	2.24E-03	4.86E-02	1.23E+00	3.86E+00
4.84E-01							
1.05E+02		4.25E-01	3.76E-03	1.08E-03	1.79E-02	4.48E-01	1.42E+00
1.78E-01							
2.44E+02		1.12E-01	2.61E-04	4.14E-04	4.73E-03	1.17E-01	3.75E-01
4.70E-02							
3.69E+02		2.42E-02	1.22E-05	2.00E-04	1.02E-03	2.55E-02	8.10E-02
1.02E-02							
5.61E+02		4.10E-03	3.50E-07	9.76E-05	1.73E-04	4.37E-03	1.37E-02
1.72E-03							
1.02E+03		0.00E+00	0.00E+00	3.85E-05	0.00E+00	3.85E-05	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	1.94E-05	0.00E+00	1.94E-05	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	9.66E-06	0.00E+00	9.66E-06	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	3.85E-06	0.00E+00	3.85E-06	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	1.94E-06	0.00E+00	1.94E-06	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	9.66E-07	0.00E+00	9.66E-07	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	3.85E-07	0.00E+00	3.85E-07	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	1.94E-07	0.00E+00	1.94E-07	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	9.66E-08	0.00E+00	9.66E-08	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	6.10E-08	0.00E+00	6.10E-08	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	4.84E-08	0.00E+00	4.84E-08	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	3.85E-08	0.00E+00	3.85E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 7

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	1.46E+01	2.57E+00	1.34E+01	1.52E+01	
4.96E+03					
6.80E+01	7.34E+00	1.29E+00	6.74E+00	7.66E+00	
2.49E+03					
1.05E+02	2.71E+00	4.77E-01	2.49E+00	3.82E+00	
9.19E+02					
2.44E+02	7.13E-01	1.26E-01	6.55E-01	1.52E+00	
2.42E+02					
3.69E+02	1.54E-01	2.74E-02	1.42E-01	7.64E-01	
5.24E+01					
5.61E+02	2.61E-02	4.75E-03	2.40E-02	3.81E-01	
8.86E+00					
1.02E+03	0.00E+00	6.68E-05	0.00E+00	1.52E-01	
0.00E+00					
1.63E+03	0.00E+00	3.36E-05	0.00E+00	7.63E-02	
0.00E+00					
2.31E+03	0.00E+00	1.68E-05	0.00E+00	3.81E-02	
0.00E+00					
4.27E+03	0.00E+00	6.68E-06	0.00E+00	1.52E-02	
0.00E+00					
5.47E+03	0.00E+00	3.36E-06	0.00E+00	7.63E-03	
0.00E+00					
1.11E+04	0.00E+00	1.68E-06	0.00E+00	3.81E-03	
0.00E+00					
1.31E+04	0.00E+00	6.68E-07	0.00E+00	1.52E-03	
0.00E+00					
2.13E+04	0.00E+00	3.36E-07	0.00E+00	7.63E-04	
0.00E+00					
4.05E+04	0.00E+00	1.68E-07	0.00E+00	3.81E-04	
0.00E+00					
7.00E+04	0.00E+00	1.06E-07	0.00E+00	2.40E-04	
0.00E+00					
8.99E+04	0.00E+00	8.39E-08	0.00E+00	1.91E-04	
0.00E+00					
1.21E+05	0.00E+00	6.68E-08	0.00E+00	1.52E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 7

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		1.34E+01	6.41E-01	1.53E-02	1.48E+00	1.56E+01	8.39E+02
7.33E+02							
6.80E+01		6.74E+00	1.62E-01	7.67E-03	7.43E-01	7.66E+00	4.22E+02
3.68E+02							
1.05E+02		2.49E+00	2.20E-02	3.26E-03	2.74E-01	2.79E+00	1.56E+02
1.36E+02							
2.44E+02		6.55E-01	1.53E-03	1.09E-03	7.22E-02	7.30E-01	4.10E+01
3.58E+01							
3.69E+02		1.42E-01	7.15E-05	4.26E-04	1.56E-02	1.58E-01	8.86E+00
7.74E+00							
5.61E+02		2.40E-02	2.05E-06	1.83E-04	2.64E-03	2.68E-02	1.50E+00
1.31E+00							
1.02E+03		0.00E+00	0.00E+00	6.68E-05	0.00E+00	6.68E-05	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.36E-05	0.00E+00	3.36E-05	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.68E-05	0.00E+00	1.68E-05	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	6.68E-06	0.00E+00	6.68E-06	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.36E-06	0.00E+00	3.36E-06	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.68E-06	0.00E+00	1.68E-06	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	6.68E-07	0.00E+00	6.68E-07	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.36E-07	0.00E+00	3.36E-07	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.68E-07	0.00E+00	1.68E-07	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.06E-07	0.00E+00	1.06E-07	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.39E-08	0.00E+00	8.39E-08	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	6.68E-08	0.00E+00	6.68E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 8

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	3.50E+00	3.81E-01	3.77E+00	1.46E+01	
3.11E+02					
6.80E+01	1.76E+00	1.92E-01	1.89E+00	7.36E+00	
1.56E+02					
1.05E+02	6.48E-01	7.11E-02	6.99E-01	3.67E+00	
5.77E+01					
2.44E+02	1.71E-01	1.89E-02	1.84E-01	1.46E+00	
1.52E+01					
3.69E+02	3.69E-02	4.28E-03	3.98E-02	7.36E-01	
3.28E+00					
5.61E+02	6.25E-03	8.32E-04	6.74E-03	3.67E-01	5.56E-
01					
1.02E+03	0.00E+00	6.44E-05	0.00E+00	1.46E-01	
0.00E+00					
1.63E+03	0.00E+00	3.24E-05	0.00E+00	7.36E-02	
0.00E+00					
2.31E+03	0.00E+00	1.62E-05	0.00E+00	3.67E-02	
0.00E+00					
4.27E+03	0.00E+00	6.44E-06	0.00E+00	1.46E-02	
0.00E+00					
5.47E+03	0.00E+00	3.24E-06	0.00E+00	7.36E-03	
0.00E+00					
1.11E+04	0.00E+00	1.62E-06	0.00E+00	3.67E-03	
0.00E+00					
1.31E+04	0.00E+00	6.44E-07	0.00E+00	1.46E-03	
0.00E+00					
2.13E+04	0.00E+00	3.24E-07	0.00E+00	7.36E-04	
0.00E+00					
4.05E+04	0.00E+00	1.62E-07	0.00E+00	3.67E-04	
0.00E+00					
7.00E+04	0.00E+00	1.02E-07	0.00E+00	2.32E-04	
0.00E+00					
8.99E+04	0.00E+00	8.10E-08	0.00E+00	1.84E-04	
0.00E+00					
1.21E+05	0.00E+00	6.44E-08	0.00E+00	1.46E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 8

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		3.77E+00	1.80E-01	7.03E-03	9.45E-02	4.05E+00	1.15E+01
1.24E+00							
6.80E+01		1.89E+00	4.54E-02	3.53E-03	4.75E-02	1.99E+00	5.77E+00
6.23E-01							
1.05E+02		6.99E-01	6.19E-03	1.72E-03	1.75E-02	7.24E-01	2.13E+00
2.30E-01							
2.44E+02		1.84E-01	4.29E-04	6.73E-04	4.61E-03	1.90E-01	5.60E-01
6.05E-02							
3.69E+02		3.98E-02	2.01E-05	3.30E-04	9.98E-04	4.12E-02	1.21E-01
1.31E-02							
5.61E+02		6.74E-03	5.75E-07	1.63E-04	1.69E-04	7.07E-03	2.05E-02
2.22E-03							
1.02E+03		0.00E+00	0.00E+00	6.44E-05	0.00E+00	6.44E-05	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.24E-05	0.00E+00	3.24E-05	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.62E-05	0.00E+00	1.62E-05	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	6.44E-06	0.00E+00	6.44E-06	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.24E-06	0.00E+00	3.24E-06	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.62E-06	0.00E+00	1.62E-06	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	6.44E-07	0.00E+00	6.44E-07	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.24E-07	0.00E+00	3.24E-07	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.62E-07	0.00E+00	1.62E-07	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.02E-07	0.00E+00	1.02E-07	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.10E-08	0.00E+00	8.10E-08	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	6.44E-08	0.00E+00	6.44E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 9

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	3.84E+00	4.19E-01	4.14E+00	1.59E+01	
3.42E+02					
6.80E+01	1.93E+00	2.11E-01	2.08E+00	7.99E+00	
1.72E+02					
1.05E+02	7.12E-01	7.81E-02	7.68E-01	3.99E+00	
6.34E+01					
2.44E+02	1.88E-01	2.08E-02	2.02E-01	1.59E+00	
1.67E+01					
3.69E+02	4.06E-02	4.70E-03	4.37E-02	7.99E-01	
3.61E+00					
5.61E+02	6.87E-03	9.12E-04	7.40E-03	3.99E-01	6.11E-
01					
1.02E+03	0.00E+00	6.99E-05	0.00E+00	1.59E-01	
0.00E+00					
1.63E+03	0.00E+00	3.52E-05	0.00E+00	7.99E-02	
0.00E+00					
2.31E+03	0.00E+00	1.75E-05	0.00E+00	3.99E-02	
0.00E+00					
4.27E+03	0.00E+00	6.99E-06	0.00E+00	1.59E-02	
0.00E+00					
5.47E+03	0.00E+00	3.52E-06	0.00E+00	7.99E-03	
0.00E+00					
1.11E+04	0.00E+00	1.75E-06	0.00E+00	3.99E-03	
0.00E+00					
1.31E+04	0.00E+00	6.99E-07	0.00E+00	1.59E-03	
0.00E+00					
2.13E+04	0.00E+00	3.52E-07	0.00E+00	7.99E-04	
0.00E+00					
4.05E+04	0.00E+00	1.75E-07	0.00E+00	3.99E-04	
0.00E+00					
7.00E+04	0.00E+00	1.11E-07	0.00E+00	2.52E-04	
0.00E+00					
8.99E+04	0.00E+00	8.79E-08	0.00E+00	2.00E-04	
0.00E+00					
1.21E+05	0.00E+00	6.99E-08	0.00E+00	1.59E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 9

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID	3.30E+01	4.14E+00	1.98E-01	7.63E-03	1.04E-01	4.45E+00	1.26E+01
1.38E+00	6.80E+01	2.08E+00	4.99E-02	3.84E-03	5.23E-02	2.19E+00	6.35E+00
6.93E-01	1.05E+02	7.68E-01	6.79E-03	1.87E-03	1.93E-02	7.96E-01	2.34E+00
2.56E-01	2.44E+02	2.02E-01	4.71E-04	7.31E-04	5.08E-03	2.08E-01	6.16E-01
6.74E-02	3.69E+02	4.37E-02	2.21E-05	3.58E-04	1.10E-03	4.52E-02	1.33E-01
1.46E-02	5.61E+02	7.40E-03	6.32E-07	1.77E-04	1.86E-04	7.76E-03	2.26E-02
2.47E-03	1.02E+03	0.00E+00	0.00E+00	6.99E-05	0.00E+00	6.99E-05	0.00E+00
0.00E+00	1.63E+03	0.00E+00	0.00E+00	3.52E-05	0.00E+00	3.52E-05	0.00E+00
0.00E+00	2.31E+03	0.00E+00	0.00E+00	1.75E-05	0.00E+00	1.75E-05	0.00E+00
0.00E+00	4.27E+03	0.00E+00	0.00E+00	6.99E-06	0.00E+00	6.99E-06	0.00E+00
0.00E+00	5.47E+03	0.00E+00	0.00E+00	3.52E-06	0.00E+00	3.52E-06	0.00E+00
0.00E+00	1.11E+04	0.00E+00	0.00E+00	1.75E-06	0.00E+00	1.75E-06	0.00E+00
0.00E+00	1.31E+04	0.00E+00	0.00E+00	6.99E-07	0.00E+00	6.99E-07	0.00E+00
0.00E+00	2.13E+04	0.00E+00	0.00E+00	3.52E-07	0.00E+00	3.52E-07	0.00E+00
0.00E+00	4.05E+04	0.00E+00	0.00E+00	1.75E-07	0.00E+00	1.75E-07	0.00E+00
0.00E+00	7.00E+04	0.00E+00	0.00E+00	1.11E-07	0.00E+00	1.11E-07	0.00E+00
0.00E+00	8.99E+04	0.00E+00	0.00E+00	8.79E-08	0.00E+00	8.79E-08	0.00E+00
0.00E+00	1.21E+05	0.00E+00	0.00E+00	6.99E-08	0.00E+00	6.99E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=10

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	4.50E+00	7.54E-01	4.31E+00	1.63E+01	
1.26E+03					
6.80E+01	2.26E+00	3.79E-01	2.16E+00	8.18E+00	
6.33E+02					
1.05E+02	8.34E-01	1.40E-01	7.99E-01	4.08E+00	
2.34E+02					
2.44E+02	2.20E-01	3.72E-02	2.10E-01	1.63E+00	
6.15E+01					
3.69E+02	4.75E-02	8.25E-03	4.55E-02	8.17E-01	
1.33E+01					
5.61E+02	8.04E-03	1.51E-03	7.70E-03	4.08E-01	
2.25E+00					
1.02E+03	0.00E+00	7.15E-05	0.00E+00	1.62E-01	
0.00E+00					
1.63E+03	0.00E+00	3.59E-05	0.00E+00	8.17E-02	
0.00E+00					
2.31E+03	0.00E+00	1.79E-05	0.00E+00	4.08E-02	
0.00E+00					
4.27E+03	0.00E+00	7.15E-06	0.00E+00	1.62E-02	
0.00E+00					
5.47E+03	0.00E+00	3.59E-06	0.00E+00	8.17E-03	
0.00E+00					
1.11E+04	0.00E+00	1.79E-06	0.00E+00	4.08E-03	
0.00E+00					
1.31E+04	0.00E+00	7.15E-07	0.00E+00	1.62E-03	
0.00E+00					
2.13E+04	0.00E+00	3.59E-07	0.00E+00	8.17E-04	
0.00E+00					
4.05E+04	0.00E+00	1.79E-07	0.00E+00	4.08E-04	
0.00E+00					
7.00E+04	0.00E+00	1.13E-07	0.00E+00	2.57E-04	
0.00E+00					
8.99E+04	0.00E+00	8.99E-08	0.00E+00	2.04E-04	
0.00E+00					
1.21E+05	0.00E+00	7.15E-08	0.00E+00	1.62E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=10

FARMER		INHALED		SHINE			BACKYARD
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		4.31E+00	2.06E-01	9.54E-03	4.06E-01	4.93E+00	1.88E+02
1.61E+02							
6.80E+01		2.16E+00	5.19E-02	4.79E-03	2.04E-01	2.42E+00	9.45E+01
8.07E+01							
1.05E+02		7.99E-01	7.07E-03	2.24E-03	7.53E-02	8.83E-01	3.49E+01
2.98E+01							
2.44E+02		2.10E-01	4.90E-04	8.31E-04	1.98E-02	2.31E-01	9.18E+00
7.84E+00							
3.69E+02		4.55E-02	2.29E-05	3.85E-04	4.29E-03	5.02E-02	1.99E+00
1.70E+00							
5.61E+02		7.70E-03	6.57E-07	1.84E-04	7.26E-04	8.61E-03	3.36E-01
2.87E-01							
1.02E+03		0.00E+00	0.00E+00	7.15E-05	0.00E+00	7.15E-05	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.59E-05	0.00E+00	3.59E-05	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.79E-05	0.00E+00	1.79E-05	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	7.15E-06	0.00E+00	7.15E-06	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.59E-06	0.00E+00	3.59E-06	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.79E-06	0.00E+00	1.79E-06	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	7.15E-07	0.00E+00	7.15E-07	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.59E-07	0.00E+00	3.59E-07	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.79E-07	0.00E+00	1.79E-07	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.13E-07	0.00E+00	1.13E-07	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.99E-08	0.00E+00	8.99E-08	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	7.15E-08	0.00E+00	7.15E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=11

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	3.50E+00	3.81E-01	3.77E+00	1.46E+01	
3.11E+02					
6.80E+01	1.76E+00	1.92E-01	1.89E+00	7.36E+00	
1.56E+02					
1.05E+02	6.48E-01	7.11E-02	6.99E-01	3.67E+00	
5.77E+01					
2.44E+02	1.71E-01	1.89E-02	1.84E-01	1.46E+00	
1.52E+01					
3.69E+02	3.69E-02	4.28E-03	3.98E-02	7.36E-01	
3.28E+00					
5.61E+02	6.25E-03	8.32E-04	6.74E-03	3.67E-01	5.56E-
01					
1.02E+03	0.00E+00	6.44E-05	0.00E+00	1.46E-01	
0.00E+00					
1.63E+03	0.00E+00	3.24E-05	0.00E+00	7.36E-02	
0.00E+00					
2.31E+03	0.00E+00	1.62E-05	0.00E+00	3.67E-02	
0.00E+00					
4.27E+03	0.00E+00	6.44E-06	0.00E+00	1.46E-02	
0.00E+00					
5.47E+03	0.00E+00	3.24E-06	0.00E+00	7.36E-03	
0.00E+00					
1.11E+04	0.00E+00	1.62E-06	0.00E+00	3.67E-03	
0.00E+00					
1.31E+04	0.00E+00	6.44E-07	0.00E+00	1.46E-03	
0.00E+00					
2.13E+04	0.00E+00	3.24E-07	0.00E+00	7.36E-04	
0.00E+00					
4.05E+04	0.00E+00	1.62E-07	0.00E+00	3.67E-04	
0.00E+00					
7.00E+04	0.00E+00	1.02E-07	0.00E+00	2.32E-04	
0.00E+00					
8.99E+04	0.00E+00	8.10E-08	0.00E+00	1.84E-04	
0.00E+00					
1.21E+05	0.00E+00	6.44E-08	0.00E+00	1.46E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=11

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
	3.30E+01	3.77E+00	1.80E-01	7.03E-03	9.45E-02	4.05E+00	1.15E+01
	1.24E+00						
	6.80E+01	1.89E+00	4.54E-02	3.53E-03	4.75E-02	1.99E+00	5.77E+00
	6.23E-01						
	1.05E+02	6.99E-01	6.19E-03	1.72E-03	1.75E-02	7.24E-01	2.13E+00
	2.30E-01						
	2.44E+02	1.84E-01	4.29E-04	6.73E-04	4.61E-03	1.90E-01	5.60E-01
	6.05E-02						
	3.69E+02	3.98E-02	2.01E-05	3.30E-04	9.98E-04	4.12E-02	1.21E-01
	1.31E-02						
	5.61E+02	6.74E-03	5.75E-07	1.63E-04	1.69E-04	7.07E-03	2.05E-02
	2.22E-03						
	1.02E+03	0.00E+00	0.00E+00	6.44E-05	0.00E+00	6.44E-05	0.00E+00
	0.00E+00						
	1.63E+03	0.00E+00	0.00E+00	3.24E-05	0.00E+00	3.24E-05	0.00E+00
	0.00E+00						
	2.31E+03	0.00E+00	0.00E+00	1.62E-05	0.00E+00	1.62E-05	0.00E+00
	0.00E+00						
	4.27E+03	0.00E+00	0.00E+00	6.44E-06	0.00E+00	6.44E-06	0.00E+00
	0.00E+00						
	5.47E+03	0.00E+00	0.00E+00	3.24E-06	0.00E+00	3.24E-06	0.00E+00
	0.00E+00						
	1.11E+04	0.00E+00	0.00E+00	1.62E-06	0.00E+00	1.62E-06	0.00E+00
	0.00E+00						
	1.31E+04	0.00E+00	0.00E+00	6.44E-07	0.00E+00	6.44E-07	0.00E+00
	0.00E+00						
	2.13E+04	0.00E+00	0.00E+00	3.24E-07	0.00E+00	3.24E-07	0.00E+00
	0.00E+00						
	4.05E+04	0.00E+00	0.00E+00	1.62E-07	0.00E+00	1.62E-07	0.00E+00
	0.00E+00						
	7.00E+04	0.00E+00	0.00E+00	1.02E-07	0.00E+00	1.02E-07	0.00E+00
	0.00E+00						
	8.99E+04	0.00E+00	0.00E+00	8.10E-08	0.00E+00	8.10E-08	0.00E+00
	0.00E+00						
	1.21E+05	0.00E+00	0.00E+00	6.44E-08	0.00E+00	6.44E-08	0.00E+00
	0.00E+00						

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=12

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	3.84E+00	4.19E-01	4.14E+00	1.59E+01	
3.42E+02					
6.80E+01	1.93E+00	2.11E-01	2.08E+00	7.99E+00	
1.72E+02					
1.05E+02	7.12E-01	7.81E-02	7.68E-01	3.99E+00	
6.34E+01					
2.44E+02	1.88E-01	2.08E-02	2.02E-01	1.59E+00	
1.67E+01					
3.69E+02	4.06E-02	4.70E-03	4.37E-02	7.99E-01	
3.61E+00					
5.61E+02	6.87E-03	9.12E-04	7.40E-03	3.99E-01	6.11E-
01					
1.02E+03	0.00E+00	6.99E-05	0.00E+00	1.59E-01	
0.00E+00					
1.63E+03	0.00E+00	3.52E-05	0.00E+00	7.99E-02	
0.00E+00					
2.31E+03	0.00E+00	1.75E-05	0.00E+00	3.99E-02	
0.00E+00					
4.27E+03	0.00E+00	6.99E-06	0.00E+00	1.59E-02	
0.00E+00					
5.47E+03	0.00E+00	3.52E-06	0.00E+00	7.99E-03	
0.00E+00					
1.11E+04	0.00E+00	1.75E-06	0.00E+00	3.99E-03	
0.00E+00					
1.31E+04	0.00E+00	6.99E-07	0.00E+00	1.59E-03	
0.00E+00					
2.13E+04	0.00E+00	3.52E-07	0.00E+00	7.99E-04	
0.00E+00					
4.05E+04	0.00E+00	1.75E-07	0.00E+00	3.99E-04	
0.00E+00					
7.00E+04	0.00E+00	1.11E-07	0.00E+00	2.52E-04	
0.00E+00					
8.99E+04	0.00E+00	8.79E-08	0.00E+00	2.00E-04	
0.00E+00					
1.21E+05	0.00E+00	6.99E-08	0.00E+00	1.59E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=12

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID	3.30E+01	4.14E+00	1.98E-01	7.63E-03	1.04E-01	4.45E+00	1.26E+01
1.38E+00	6.80E+01	2.08E+00	4.99E-02	3.84E-03	5.23E-02	2.19E+00	6.35E+00
6.93E-01	1.05E+02	7.68E-01	6.79E-03	1.87E-03	1.93E-02	7.96E-01	2.34E+00
2.56E-01	2.44E+02	2.02E-01	4.71E-04	7.31E-04	5.08E-03	2.08E-01	6.16E-01
6.74E-02	3.69E+02	4.37E-02	2.21E-05	3.58E-04	1.10E-03	4.52E-02	1.33E-01
1.46E-02	5.61E+02	7.40E-03	6.32E-07	1.77E-04	1.86E-04	7.76E-03	2.26E-02
2.47E-03	1.02E+03	0.00E+00	0.00E+00	6.99E-05	0.00E+00	6.99E-05	0.00E+00
0.00E+00	1.63E+03	0.00E+00	0.00E+00	3.52E-05	0.00E+00	3.52E-05	0.00E+00
0.00E+00	2.31E+03	0.00E+00	0.00E+00	1.75E-05	0.00E+00	1.75E-05	0.00E+00
0.00E+00	4.27E+03	0.00E+00	0.00E+00	6.99E-06	0.00E+00	6.99E-06	0.00E+00
0.00E+00	5.47E+03	0.00E+00	0.00E+00	3.52E-06	0.00E+00	3.52E-06	0.00E+00
0.00E+00	1.11E+04	0.00E+00	0.00E+00	1.75E-06	0.00E+00	1.75E-06	0.00E+00
0.00E+00	1.31E+04	0.00E+00	0.00E+00	6.99E-07	0.00E+00	6.99E-07	0.00E+00
0.00E+00	2.13E+04	0.00E+00	0.00E+00	3.52E-07	0.00E+00	3.52E-07	0.00E+00
0.00E+00	4.05E+04	0.00E+00	0.00E+00	1.75E-07	0.00E+00	1.75E-07	0.00E+00
0.00E+00	7.00E+04	0.00E+00	0.00E+00	1.11E-07	0.00E+00	1.11E-07	0.00E+00
0.00E+00	8.99E+04	0.00E+00	0.00E+00	8.79E-08	0.00E+00	8.79E-08	0.00E+00
0.00E+00	1.21E+05	0.00E+00	0.00E+00	6.99E-08	0.00E+00	6.99E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=13

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	4.50E+00	7.54E-01	4.31E+00	1.63E+01	
1.26E+03					
6.80E+01	2.26E+00	3.79E-01	2.16E+00	8.18E+00	
6.33E+02					
1.05E+02	8.34E-01	1.40E-01	7.99E-01	4.08E+00	
2.34E+02					
2.44E+02	2.20E-01	3.72E-02	2.10E-01	1.63E+00	
6.15E+01					
3.69E+02	4.75E-02	8.25E-03	4.55E-02	8.17E-01	
1.33E+01					
5.61E+02	8.04E-03	1.51E-03	7.70E-03	4.08E-01	
2.25E+00					
1.02E+03	0.00E+00	7.15E-05	0.00E+00	1.62E-01	
0.00E+00					
1.63E+03	0.00E+00	3.59E-05	0.00E+00	8.17E-02	
0.00E+00					
2.31E+03	0.00E+00	1.79E-05	0.00E+00	4.08E-02	
0.00E+00					
4.27E+03	0.00E+00	7.15E-06	0.00E+00	1.62E-02	
0.00E+00					
5.47E+03	0.00E+00	3.59E-06	0.00E+00	8.17E-03	
0.00E+00					
1.11E+04	0.00E+00	1.79E-06	0.00E+00	4.08E-03	
0.00E+00					
1.31E+04	0.00E+00	7.15E-07	0.00E+00	1.62E-03	
0.00E+00					
2.13E+04	0.00E+00	3.59E-07	0.00E+00	8.17E-04	
0.00E+00					
4.05E+04	0.00E+00	1.79E-07	0.00E+00	4.08E-04	
0.00E+00					
7.00E+04	0.00E+00	1.13E-07	0.00E+00	2.57E-04	
0.00E+00					
8.99E+04	0.00E+00	8.99E-08	0.00E+00	2.04E-04	
0.00E+00					
1.21E+05	0.00E+00	7.15E-08	0.00E+00	1.62E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=13

FARMER		INHALED		SHINE			BACKYARD
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		4.31E+00	2.06E-01	9.54E-03	4.06E-01	4.93E+00	1.88E+02
1.61E+02							
6.80E+01		2.16E+00	5.19E-02	4.79E-03	2.04E-01	2.42E+00	9.45E+01
8.07E+01							
1.05E+02		7.99E-01	7.07E-03	2.24E-03	7.53E-02	8.83E-01	3.49E+01
2.98E+01							
2.44E+02		2.10E-01	4.90E-04	8.31E-04	1.98E-02	2.31E-01	9.18E+00
7.84E+00							
3.69E+02		4.55E-02	2.29E-05	3.85E-04	4.29E-03	5.02E-02	1.99E+00
1.70E+00							
5.61E+02		7.70E-03	6.57E-07	1.84E-04	7.26E-04	8.61E-03	3.36E-01
2.87E-01							
1.02E+03		0.00E+00	0.00E+00	7.15E-05	0.00E+00	7.15E-05	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.59E-05	0.00E+00	3.59E-05	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.79E-05	0.00E+00	1.79E-05	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	7.15E-06	0.00E+00	7.15E-06	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.59E-06	0.00E+00	3.59E-06	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.79E-06	0.00E+00	1.79E-06	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	7.15E-07	0.00E+00	7.15E-07	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.59E-07	0.00E+00	3.59E-07	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.79E-07	0.00E+00	1.79E-07	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.13E-07	0.00E+00	1.13E-07	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.99E-08	0.00E+00	8.99E-08	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	7.15E-08	0.00E+00	7.15E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=14

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	1.18E+02	1.40E+01	1.14E+02	1.52E+01	
2.36E+04					
6.80E+01	5.92E+01	7.03E+00	5.71E+01	7.66E+00	
1.19E+04					
1.05E+02	2.19E+01	2.60E+00	2.11E+01	3.81E+00	
4.38E+03					
2.44E+02	5.75E+00	6.84E-01	5.54E+00	1.51E+00	
1.15E+03					
3.69E+02	1.25E+00	1.48E-01	1.20E+00	7.57E-01	
2.49E+02					
5.61E+02	2.11E-01	2.52E-02	2.03E-01	3.77E-01	
4.22E+01					
1.02E+03	0.00E+00	6.60E-05	0.00E+00	1.50E-01	
0.00E+00					
1.63E+03	0.00E+00	3.32E-05	0.00E+00	7.54E-02	
0.00E+00					
2.31E+03	0.00E+00	1.66E-05	0.00E+00	3.76E-02	
0.00E+00					
4.27E+03	0.00E+00	6.60E-06	0.00E+00	1.50E-02	
0.00E+00					
5.47E+03	0.00E+00	3.32E-06	0.00E+00	7.54E-03	
0.00E+00					
1.11E+04	0.00E+00	1.66E-06	0.00E+00	3.76E-03	
0.00E+00					
1.31E+04	0.00E+00	6.60E-07	0.00E+00	1.50E-03	
0.00E+00					
2.13E+04	0.00E+00	3.32E-07	0.00E+00	7.54E-04	
0.00E+00					
4.05E+04	0.00E+00	1.66E-07	0.00E+00	3.76E-04	
0.00E+00					
7.00E+04	0.00E+00	1.05E-07	0.00E+00	2.38E-04	
0.00E+00					
8.99E+04	0.00E+00	8.30E-08	0.00E+00	1.89E-04	
0.00E+00					
1.21E+05	0.00E+00	6.60E-08	0.00E+00	1.50E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=14

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		1.14E+02	5.42E+00	3.74E-02	5.33E+00	1.24E+02	3.16E+03
2.61E+03							
6.80E+01		5.71E+01	1.37E+00	1.88E-02	2.68E+00	6.11E+01	1.59E+03
1.31E+03							
1.05E+02		2.11E+01	1.86E-01	7.37E-03	9.89E-01	2.22E+01	5.85E+02
4.84E+02							
2.44E+02		5.54E+00	1.29E-02	2.16E-03	2.60E-01	5.82E+00	1.54E+02
1.28E+02							
3.69E+02		1.20E+00	6.05E-04	6.57E-04	5.63E-02	1.26E+00	3.34E+01
2.76E+01							
5.61E+02		2.03E-01	1.73E-05	2.21E-04	9.53E-03	2.13E-01	5.65E+00
4.67E+00							
1.02E+03		0.00E+00	0.00E+00	6.60E-05	0.00E+00	6.60E-05	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.32E-05	0.00E+00	3.32E-05	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.66E-05	0.00E+00	1.66E-05	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	6.60E-06	0.00E+00	6.60E-06	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.32E-06	0.00E+00	3.32E-06	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.66E-06	0.00E+00	1.66E-06	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	6.60E-07	0.00E+00	6.60E-07	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.32E-07	0.00E+00	3.32E-07	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.66E-07	0.00E+00	1.66E-07	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.05E-07	0.00E+00	1.05E-07	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.30E-08	0.00E+00	8.30E-08	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	6.60E-08	0.00E+00	6.60E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=15

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	6.06E+01	7.54E+00	5.70E+01	1.53E+01	
1.34E+04					
6.80E+01	3.04E+01	3.79E+00	2.87E+01	7.70E+00	
6.73E+03					
1.05E+02	1.12E+01	1.40E+00	1.06E+01	3.83E+00	
2.48E+03					
2.44E+02	2.96E+00	3.68E-01	2.78E+00	1.52E+00	
6.54E+02					
3.69E+02	6.40E-01	7.99E-02	6.03E-01	7.65E-01	
1.42E+02					
5.61E+02	1.08E-01	1.36E-02	1.02E-01	3.81E-01	
2.40E+01					
1.02E+03	0.00E+00	6.68E-05	0.00E+00	1.52E-01	
0.00E+00					
1.63E+03	0.00E+00	3.36E-05	0.00E+00	7.63E-02	
0.00E+00					
2.31E+03	0.00E+00	1.68E-05	0.00E+00	3.81E-02	
0.00E+00					
4.27E+03	0.00E+00	6.68E-06	0.00E+00	1.52E-02	
0.00E+00					
5.47E+03	0.00E+00	3.36E-06	0.00E+00	7.63E-03	
0.00E+00					
1.11E+04	0.00E+00	1.68E-06	0.00E+00	3.81E-03	
0.00E+00					
1.31E+04	0.00E+00	6.68E-07	0.00E+00	1.52E-03	
0.00E+00					
2.13E+04	0.00E+00	3.36E-07	0.00E+00	7.63E-04	
0.00E+00					
4.05E+04	0.00E+00	1.68E-07	0.00E+00	3.81E-04	
0.00E+00					
7.00E+04	0.00E+00	1.06E-07	0.00E+00	2.40E-04	
0.00E+00					
8.99E+04	0.00E+00	8.39E-08	0.00E+00	1.91E-04	
0.00E+00					
1.21E+05	0.00E+00	6.68E-08	0.00E+00	1.52E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=15

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		5.70E+01	2.72E+00	2.49E-02	3.16E+00	6.30E+01	1.79E+03
1.50E+03							
6.80E+01		2.87E+01	6.88E-01	1.25E-02	1.59E+00	3.09E+01	9.01E+02
7.52E+02							
1.05E+02		1.06E+01	9.36E-02	5.06E-03	5.85E-01	1.13E+01	3.32E+02
2.78E+02							
2.44E+02		2.78E+00	6.49E-03	1.56E-03	1.54E-01	2.95E+00	8.75E+01
7.31E+01							
3.69E+02		6.03E-01	3.04E-04	5.29E-04	3.33E-02	6.37E-01	1.89E+01
1.58E+01							
5.61E+02		1.02E-01	8.70E-06	2.00E-04	5.64E-03	1.08E-01	3.20E+00
2.68E+00							
1.02E+03		0.00E+00	0.00E+00	6.68E-05	0.00E+00	6.68E-05	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.36E-05	0.00E+00	3.36E-05	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.68E-05	0.00E+00	1.68E-05	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	6.68E-06	0.00E+00	6.68E-06	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.36E-06	0.00E+00	3.36E-06	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.68E-06	0.00E+00	1.68E-06	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	6.68E-07	0.00E+00	6.68E-07	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.36E-07	0.00E+00	3.36E-07	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.68E-07	0.00E+00	1.68E-07	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.06E-07	0.00E+00	1.06E-07	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.39E-08	0.00E+00	8.39E-08	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	6.68E-08	0.00E+00	6.68E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=16

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	5.13E+00	8.15E-01	4.40E+00	1.63E+01	
1.57E+03					
6.80E+01	2.58E+00	4.09E-01	2.21E+00	8.18E+00	
7.88E+02					
1.05E+02	9.51E-01	1.51E-01	8.16E-01	4.08E+00	
2.91E+02					
2.44E+02	2.50E-01	4.01E-02	2.15E-01	1.63E+00	
7.65E+01					
3.69E+02	5.42E-02	8.89E-03	4.65E-02	8.17E-01	
1.66E+01					
5.61E+02	9.17E-03	1.62E-03	7.87E-03	4.08E-01	
2.80E+00					
1.02E+03	0.00E+00	7.15E-05	0.00E+00	1.62E-01	
0.00E+00					
1.63E+03	0.00E+00	3.59E-05	0.00E+00	8.17E-02	
0.00E+00					
2.31E+03	0.00E+00	1.79E-05	0.00E+00	4.08E-02	
0.00E+00					
4.27E+03	0.00E+00	7.15E-06	0.00E+00	1.62E-02	
0.00E+00					
5.47E+03	0.00E+00	3.59E-06	0.00E+00	8.17E-03	
0.00E+00					
1.11E+04	0.00E+00	1.79E-06	0.00E+00	4.08E-03	
0.00E+00					
1.31E+04	0.00E+00	7.15E-07	0.00E+00	1.62E-03	
0.00E+00					
2.13E+04	0.00E+00	3.59E-07	0.00E+00	8.17E-04	
0.00E+00					
4.05E+04	0.00E+00	1.79E-07	0.00E+00	4.08E-04	
0.00E+00					
7.00E+04	0.00E+00	1.13E-07	0.00E+00	2.57E-04	
0.00E+00					
8.99E+04	0.00E+00	8.99E-08	0.00E+00	2.04E-04	
0.00E+00					
1.21E+05	0.00E+00	7.15E-08	0.00E+00	1.62E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=16

FARMER		INHALED		SHINE			BACKYARD
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		4.40E+00	2.10E-01	9.86E-03	4.59E-01	5.08E+00	1.90E+02
1.61E+02							
6.80E+01		2.21E+00	5.31E-02	4.96E-03	2.31E-01	2.50E+00	9.57E+01
8.10E+01							
1.05E+02		8.16E-01	7.22E-03	2.30E-03	8.51E-02	9.11E-01	3.53E+01
2.99E+01							
2.44E+02		2.15E-01	5.01E-04	8.47E-04	2.24E-02	2.39E-01	9.30E+00
7.87E+00							
3.69E+02		4.65E-02	2.34E-05	3.88E-04	4.85E-03	5.18E-02	2.01E+00
1.70E+00							
5.61E+02		7.87E-03	6.72E-07	1.84E-04	8.21E-04	8.88E-03	3.40E-01
2.88E-01							
1.02E+03		0.00E+00	0.00E+00	7.15E-05	0.00E+00	7.15E-05	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.59E-05	0.00E+00	3.59E-05	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.79E-05	0.00E+00	1.79E-05	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	7.15E-06	0.00E+00	7.15E-06	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.59E-06	0.00E+00	3.59E-06	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.79E-06	0.00E+00	1.79E-06	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	7.15E-07	0.00E+00	7.15E-07	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.59E-07	0.00E+00	3.59E-07	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.79E-07	0.00E+00	1.79E-07	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.13E-07	0.00E+00	1.13E-07	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.99E-08	0.00E+00	8.99E-08	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	7.15E-08	0.00E+00	7.15E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=17

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	5.13E+00	8.15E-01	4.40E+00	1.63E+01	
1.57E+03					
6.80E+01	2.58E+00	4.09E-01	2.21E+00	8.18E+00	
7.88E+02					
1.05E+02	9.51E-01	1.51E-01	8.16E-01	4.08E+00	
2.91E+02					
2.44E+02	2.50E-01	4.01E-02	2.15E-01	1.63E+00	
7.65E+01					
3.69E+02	5.42E-02	8.89E-03	4.65E-02	8.17E-01	
1.66E+01					
5.61E+02	9.17E-03	1.62E-03	7.87E-03	4.08E-01	
2.80E+00					
1.02E+03	0.00E+00	7.15E-05	0.00E+00	1.62E-01	
0.00E+00					
1.63E+03	0.00E+00	3.59E-05	0.00E+00	8.17E-02	
0.00E+00					
2.31E+03	0.00E+00	1.79E-05	0.00E+00	4.08E-02	
0.00E+00					
4.27E+03	0.00E+00	7.15E-06	0.00E+00	1.62E-02	
0.00E+00					
5.47E+03	0.00E+00	3.59E-06	0.00E+00	8.17E-03	
0.00E+00					
1.11E+04	0.00E+00	1.79E-06	0.00E+00	4.08E-03	
0.00E+00					
1.31E+04	0.00E+00	7.15E-07	0.00E+00	1.62E-03	
0.00E+00					
2.13E+04	0.00E+00	3.59E-07	0.00E+00	8.17E-04	
0.00E+00					
4.05E+04	0.00E+00	1.79E-07	0.00E+00	4.08E-04	
0.00E+00					
7.00E+04	0.00E+00	1.13E-07	0.00E+00	2.57E-04	
0.00E+00					
8.99E+04	0.00E+00	8.99E-08	0.00E+00	2.04E-04	
0.00E+00					
1.21E+05	0.00E+00	7.15E-08	0.00E+00	1.62E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=17

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		4.40E+00	2.10E-01	9.86E-03	4.59E-01	5.08E+00	1.90E+02
1.61E+02							
6.80E+01		2.21E+00	5.31E-02	4.96E-03	2.31E-01	2.50E+00	9.57E+01
8.10E+01							
1.05E+02		8.16E-01	7.22E-03	2.30E-03	8.51E-02	9.11E-01	3.53E+01
2.99E+01							
2.44E+02		2.15E-01	5.01E-04	8.47E-04	2.24E-02	2.39E-01	9.30E+00
7.87E+00							
3.69E+02		4.65E-02	2.34E-05	3.88E-04	4.85E-03	5.18E-02	2.01E+00
1.70E+00							
5.61E+02		7.87E-03	6.72E-07	1.84E-04	8.21E-04	8.88E-03	3.40E-01
2.88E-01							
1.02E+03		0.00E+00	0.00E+00	7.15E-05	0.00E+00	7.15E-05	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.59E-05	0.00E+00	3.59E-05	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.79E-05	0.00E+00	1.79E-05	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	7.15E-06	0.00E+00	7.15E-06	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.59E-06	0.00E+00	3.59E-06	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.79E-06	0.00E+00	1.79E-06	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	7.15E-07	0.00E+00	7.15E-07	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.59E-07	0.00E+00	3.59E-07	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.79E-07	0.00E+00	1.79E-07	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.13E-07	0.00E+00	1.13E-07	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.99E-08	0.00E+00	8.99E-08	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	7.15E-08	0.00E+00	7.15E-08	0.00E+00
0.00E+00							

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=18

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	2.17E+00	1.07E+00	7.29E-01	1.50E+01	
2.77E+03					
6.80E+01	1.09E+00	5.37E-01	3.66E-01	7.56E+00	
1.39E+03					
1.05E+02	4.02E-01	1.99E-01	1.35E-01	3.77E+00	
5.13E+02					
2.44E+02	1.06E-01	5.25E-02	3.56E-02	1.50E+00	
1.35E+02					
3.69E+02	2.29E-02	1.16E-02	7.70E-03	7.54E-01	
2.92E+01					
5.61E+02	3.88E-03	2.07E-03	1.30E-03	3.76E-01	
4.94E+00					
1.02E+03	0.00E+00	6.60E-05	0.00E+00	1.50E-01	
0.00E+00					
1.63E+03	0.00E+00	3.32E-05	0.00E+00	7.54E-02	
0.00E+00					
2.31E+03	0.00E+00	1.66E-05	0.00E+00	3.76E-02	
0.00E+00					
4.27E+03	0.00E+00	6.60E-06	0.00E+00	1.50E-02	
0.00E+00					
5.47E+03	0.00E+00	3.32E-06	0.00E+00	7.54E-03	
0.00E+00					
1.11E+04	0.00E+00	1.66E-06	0.00E+00	3.76E-03	
0.00E+00					
1.31E+04	0.00E+00	6.60E-07	0.00E+00	1.50E-03	
0.00E+00					
2.13E+04	0.00E+00	3.32E-07	0.00E+00	7.54E-04	
0.00E+00					
4.05E+04	0.00E+00	1.66E-07	0.00E+00	3.76E-04	
0.00E+00					
7.00E+04	0.00E+00	1.05E-07	0.00E+00	2.38E-04	
0.00E+00					
8.99E+04	0.00E+00	8.30E-08	0.00E+00	1.89E-04	
0.00E+00					
1.21E+05	0.00E+00	6.60E-08	0.00E+00	1.50E-04	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=18

		INHALED		SHINE			BACKYARD
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
	3.30E+01	7.29E-01	3.48E-02	1.21E-02	9.47E-01	1.72E+00	5.10E+02
	4.62E+02						
	6.80E+01	3.66E-01	8.79E-03	6.08E-03	4.76E-01	8.57E-01	2.56E+02
	2.32E+02						
	1.05E+02	1.35E-01	1.20E-03	2.67E-03	1.76E-01	3.15E-01	9.45E+01
	8.56E+01						
	2.44E+02	3.56E-02	8.30E-05	9.28E-04	4.62E-02	8.28E-02	2.49E+01
	2.25E+01						
	3.69E+02	7.70E-03	3.88E-06	3.90E-04	1.00E-02	1.81E-02	5.38E+00
	4.87E+00						
	5.61E+02	1.30E-03	1.11E-07	1.75E-04	1.69E-03	3.17E-03	9.11E-01
	8.25E-01						
	1.02E+03	0.00E+00	0.00E+00	6.60E-05	0.00E+00	6.60E-05	0.00E+00
	0.00E+00						
	1.63E+03	0.00E+00	0.00E+00	3.32E-05	0.00E+00	3.32E-05	0.00E+00
	0.00E+00						
	2.31E+03	0.00E+00	0.00E+00	1.66E-05	0.00E+00	1.66E-05	0.00E+00
	0.00E+00						
	4.27E+03	0.00E+00	0.00E+00	6.60E-06	0.00E+00	6.60E-06	0.00E+00
	0.00E+00						
	5.47E+03	0.00E+00	0.00E+00	3.32E-06	0.00E+00	3.32E-06	0.00E+00
	0.00E+00						
	1.11E+04	0.00E+00	0.00E+00	1.66E-06	0.00E+00	1.66E-06	0.00E+00
	0.00E+00						
	1.31E+04	0.00E+00	0.00E+00	6.60E-07	0.00E+00	6.60E-07	0.00E+00
	0.00E+00						
	2.13E+04	0.00E+00	0.00E+00	3.32E-07	0.00E+00	3.32E-07	0.00E+00
	0.00E+00						
	4.05E+04	0.00E+00	0.00E+00	1.66E-07	0.00E+00	1.66E-07	0.00E+00
	0.00E+00						
	7.00E+04	0.00E+00	0.00E+00	1.05E-07	0.00E+00	1.05E-07	0.00E+00
	0.00E+00						
	8.99E+04	0.00E+00	0.00E+00	8.30E-08	0.00E+00	8.30E-08	0.00E+00
	0.00E+00						
	1.21E+05	0.00E+00	0.00E+00	6.60E-08	0.00E+00	6.60E-08	0.00E+00
	0.00E+00						

LOS AVERAGE RADIOLOGICAL HAND CALC

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=19

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
6.80E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.05E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.44E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
3.69E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
5.61E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.02E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.63E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.31E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
4.27E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
5.47E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.11E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.31E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.13E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
4.05E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
7.00E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
8.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.21E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN REM)
FROM EXPOSURE DURING EVACUATION
SEVERITY=19

		INHALED		SHINE		BACKYARD
FARMER						
CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID						
ALL VALUES WERE 0.0						

RUN DATE: [05-14-2008 AT 21:05]

PAGE 44

LOS AVERAGE RADIOLOGICAL HAND CALC

INCIDENT-FREE SUMMARY

IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM

	CREW	OFF LINK	ON LINK
LINK_R	1.08E-01	3.66E-04	1.47E-02
LINK_S	4.02E-02	1.42E-02	1.14E-02
LINK_U	4.68E-03	1.81E-04	8.95E-03

ZONE

RURAL	1.08E-01	3.66E-04	1.47E-02
SUBURB	4.02E-02	1.42E-02	1.14E-02
URBAN	4.68E-03	1.81E-04	8.95E-03

TOTALS: 1.53E-01 1.48E-02 3.50E-02

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

VEHICLE_1 5.55E-07 REM

LOS AVERAGE RADIOLOGICAL HAND CALC

ACCIDENT SUMMARY

NUMBER OF EXPECTED ACCIDENTS

CATEGORY	LINK_R	LINK_S	LINK_U
1	1.20E-12	3.64E-13	2.36E-14
2	4.60E-09	1.40E-09	9.06E-11
3	9.23E-11	2.81E-11	1.82E-12
4	5.86E-12	1.78E-12	1.15E-13
5	3.64E-11	1.11E-11	7.16E-13
6	2.59E-13	7.88E-14	5.10E-15
7	0.00E+00	0.00E+00	0.00E+00
8	8.84E-13	2.69E-13	1.74E-14
9	6.28E-15	1.91E-15	1.24E-16
10	0.00E+00	0.00E+00	0.00E+00
11	1.13E-14	3.43E-15	2.22E-16
12	7.98E-17	2.43E-17	1.57E-18
13	0.00E+00	0.00E+00	0.00E+00
14	5.86E-15	1.78E-15	1.15E-16
15	0.00E+00	0.00E+00	0.00E+00
16	0.00E+00	0.00E+00	0.00E+00
17	0.00E+00	0.00E+00	0.00E+00
18	4.58E-10	1.39E-10	9.02E-12
19	7.82E-05	2.38E-05	1.54E-06

NUMBER OF EARLY FATALITIES FROM INHALATION

ALL VALUES ARE 0.0

RADIOLOGICAL CONSEQUENCES
50 YEAR POPULATION DOSE IN PERSON-REM

CATEGORY	LINK_R	LINK_S	LINK_U
1	7.22E-02	8.67E+00	1.33E+02
2	1.28E-02	1.54E+00	2.36E+01
3	1.66E-02	2.00E+00	3.06E+01
4	4.77E-01	5.72E+01	8.78E+02
5	3.91E-02	4.69E+00	7.19E+01
6	4.52E-02	5.42E+00	8.31E+01
7	2.72E-01	3.26E+01	5.01E+02
8	7.34E-02	8.81E+00	1.35E+02
9	8.06E-02	9.68E+00	1.48E+02
10	8.77E-02	1.05E+01	1.61E+02
11	7.34E-02	8.81E+00	1.35E+02

12	8.06E-02	9.68E+00	1.48E+02
13	8.77E-02	1.05E+01	1.61E+02
14	2.20E+00	2.64E+02	4.04E+03
15	1.11E+00	1.33E+02	2.04E+03
16	9.01E-02	1.08E+01	1.66E+02
17	9.01E-02	1.08E+01	1.66E+02
18	2.75E-02	3.30E+00	5.05E+01
19	0.00E+00	0.00E+00	0.00E+00

NUMBER OF EARLY MORBIDITY CASES FROM INHALATION

ALL VALUES ARE 0.0

MAXIMUM RISK FOR INDIVIDUAL IN NEAREST ISOPLETH (DOSE IN REM) FROM INHALATION, CLOUDSHINE, AND GROUNDSHINE EXPOSURE DURING EVACUATION

CATEGORY	LINK_R	LINK_S	LINK_U
1	4.57E-12	1.39E-12	9.00E-14
2	3.33E-09	1.01E-09	6.55E-11
3	8.66E-11	2.64E-11	1.71E-12
4	1.69E-10	5.15E-11	3.33E-12
5	7.62E-11	2.32E-11	1.50E-12
6	6.28E-13	1.91E-13	1.24E-14
7	0.00E+00	0.00E+00	0.00E+00
8	3.43E-12	1.04E-12	6.75E-14
9	2.68E-14	8.14E-15	5.27E-16
10	0.00E+00	0.00E+00	0.00E+00
11	4.37E-14	1.33E-14	8.60E-16
12	3.40E-16	1.03E-16	6.69E-18
13	0.00E+00	0.00E+00	0.00E+00
14	7.72E-13	2.35E-13	1.52E-14
15	0.00E+00	0.00E+00	0.00E+00
16	0.00E+00	0.00E+00	0.00E+00
17	0.00E+00	0.00E+00	0.00E+00
18	1.48E-09	4.52E-10	2.92E-11
19	0.00E+00	0.00E+00	0.00E+00

LOS AVERAGE RADIOLOGICAL HAND CALC

LOSS OF SHIELDING STOP = PUBLICLOS R FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-01	4.43E-01	2.77E-01	1.98E-01	1.53E-01	1.60E-03	
3.77E-04							
3.30E-02	1.15E+00	5.14E-01	3.21E-01	2.30E-01	1.78E-01	1.95E-03	
4.57E-04							
5.20E-02	1.94E+00	8.67E-01	5.42E-01	3.88E-01	3.00E-01	4.32E-03	
9.98E-04							
9.60E-02	3.94E+00	1.76E+00	1.10E+00	7.89E-01	6.09E-01	1.46E-02	
3.35E-03							
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02	
9.44E-03							
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02	
9.44E-03							
2.55E-01	1.22E+01	5.46E+00	3.41E+00	2.44E+00	1.89E+00	1.13E-01	
2.59E-02							
2.64E-01	1.27E+01	5.69E+00	3.55E+00	2.54E+00	1.96E+00	1.22E-01	
2.79E-02							
3.68E-01	1.87E+01	8.36E+00	5.22E+00	3.74E+00	2.89E+00	2.47E-01	
5.65E-02							
5.00E-01	2.66E+01	1.19E+01	7.45E+00	5.34E+00	4.12E+00	4.75E-01	
1.08E-01							
	50.0	100.0					
SLMP FRAC	m TO CASK	m TO CASK					
2.90E-02	5.58E-05	1.32E-05					
3.30E-02	6.71E-05	1.58E-05					
5.20E-02	1.44E-04	3.33E-05					
9.60E-02	4.78E-04	1.10E-04					
1.58E-01	1.34E-03	3.07E-04					
1.58E-01	1.34E-03	3.07E-04					
2.55E-01	3.69E-03	8.43E-04					
2.64E-01	3.97E-03	9.07E-04					
3.68E-01	8.03E-03	1.83E-03					
5.00E-01	1.54E-02	3.52E-03					

LOSS OF SHIELDING STOP = PUBLICLOS R FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-01	4.43E-01	2.77E-01	1.98E-01	1.53E-01	1.60E-03	
3.77E-04							

3.30E-02	1.15E+00	5.14E-01	3.21E-01	2.30E-01	1.78E-01	1.95E-03
4.57E-04						
5.20E-02	1.94E+00	8.67E-01	5.42E-01	3.88E-01	3.00E-01	4.32E-03
9.98E-04						
9.60E-02	3.94E+00	1.76E+00	1.10E+00	7.89E-01	6.09E-01	1.46E-02
3.35E-03						
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02
9.44E-03						
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02
9.44E-03						
2.55E-01	1.22E+01	5.46E+00	3.41E+00	2.44E+00	1.89E+00	1.13E-01
2.59E-02						
2.64E-01	1.27E+01	5.69E+00	3.55E+00	2.54E+00	1.96E+00	1.22E-01
2.79E-02						
3.68E-01	1.87E+01	8.36E+00	5.22E+00	3.74E+00	2.89E+00	2.47E-01
5.65E-02						
5.00E-01	2.66E+01	1.19E+01	7.45E+00	5.34E+00	4.12E+00	4.75E-01
1.08E-01						

	50.0	100.0
SLMP FRAC	m TO CASK	m TO CASK
2.90E-02	5.58E-05	1.32E-05
3.30E-02	6.71E-05	1.58E-05
5.20E-02	1.44E-04	3.33E-05
9.60E-02	4.78E-04	1.10E-04
1.58E-01	1.34E-03	3.07E-04
1.58E-01	1.34E-03	3.07E-04
2.55E-01	3.69E-03	8.43E-04
2.64E-01	3.97E-03	9.07E-04
3.68E-01	8.03E-03	1.83E-03
5.00E-01	1.54E-02	3.52E-03

LOSS OF SHIELDING STOP = PUBLICLOS FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-01	4.43E-01	2.77E-01	1.98E-01	1.53E-01	1.60E-03	
3.77E-04							
3.30E-02	1.15E+00	5.14E-01	3.21E-01	2.30E-01	1.78E-01	1.95E-03	
4.57E-04							
5.20E-02	1.94E+00	8.67E-01	5.42E-01	3.88E-01	3.00E-01	4.32E-03	
9.98E-04							
9.60E-02	3.94E+00	1.76E+00	1.10E+00	7.89E-01	6.09E-01	1.46E-02	
3.35E-03							
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02	
9.44E-03							
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02	
9.44E-03							
2.55E-01	1.22E+01	5.46E+00	3.41E+00	2.44E+00	1.89E+00	1.13E-01	
2.59E-02							
2.64E-01	1.27E+01	5.69E+00	3.55E+00	2.54E+00	1.96E+00	1.22E-01	
2.79E-02							
3.68E-01	1.87E+01	8.36E+00	5.22E+00	3.74E+00	2.89E+00	2.47E-01	
5.65E-02							

5.00E-01	2.66E+01	1.19E+01	7.45E+00	5.34E+00	4.12E+00	4.75E-01
1.08E-01						

	50.0	100.0
SLMP FRAC	m TO CASK	m TO CASK
2.90E-02	5.58E-05	1.32E-05
3.30E-02	6.71E-05	1.58E-05
5.20E-02	1.44E-04	3.33E-05
9.60E-02	4.78E-04	1.10E-04
1.58E-01	1.34E-03	3.07E-04
1.58E-01	1.34E-03	3.07E-04
2.55E-01	3.69E-03	8.43E-04
2.64E-01	3.97E-03	9.07E-04
3.68E-01	8.03E-03	1.83E-03
5.00E-01	1.54E-02	3.52E-03

LOSS OF SHIELDING STOP = PUBLICLOSS FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-01	4.43E-01	2.77E-01	1.98E-01	1.53E-01	1.60E-03	
3.77E-04							
3.30E-02	1.15E+00	5.14E-01	3.21E-01	2.30E-01	1.78E-01	1.95E-03	
4.57E-04							
5.20E-02	1.94E+00	8.67E-01	5.42E-01	3.88E-01	3.00E-01	4.32E-03	
9.98E-04							
9.60E-02	3.94E+00	1.76E+00	1.10E+00	7.89E-01	6.09E-01	1.46E-02	
3.35E-03							
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02	
9.44E-03							
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02	
9.44E-03							
2.55E-01	1.22E+01	5.46E+00	3.41E+00	2.44E+00	1.89E+00	1.13E-01	
2.59E-02							
2.64E-01	1.27E+01	5.69E+00	3.55E+00	2.54E+00	1.96E+00	1.22E-01	
2.79E-02							
3.68E-01	1.87E+01	8.36E+00	5.22E+00	3.74E+00	2.89E+00	2.47E-01	
5.65E-02							
5.00E-01	2.66E+01	1.19E+01	7.45E+00	5.34E+00	4.12E+00	4.75E-01	
1.08E-01							

	50.0
SLMP FRAC	m TO CASK
2.90E-02	5.58E-05
3.30E-02	6.71E-05
5.20E-02	1.44E-04
9.60E-02	4.78E-04
1.58E-01	1.34E-03
1.58E-01	1.34E-03
2.55E-01	3.69E-03
2.64E-01	3.97E-03
3.68E-01	8.03E-03
5.00E-01	1.54E-02

LOSS OF SHIELDING STOP = PUBLICLOSS FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-01	4.43E-01	2.77E-01	1.98E-01	1.53E-01	1.60E-03	
3.77E-04							
3.30E-02	1.15E+00	5.14E-01	3.21E-01	2.30E-01	1.78E-01	1.95E-03	
4.57E-04							
5.20E-02	1.94E+00	8.67E-01	5.42E-01	3.88E-01	3.00E-01	4.32E-03	
9.98E-04							
9.60E-02	3.94E+00	1.76E+00	1.10E+00	7.89E-01	6.09E-01	1.46E-02	
3.35E-03							
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02	
9.44E-03							
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02	
9.44E-03							
2.55E-01	1.22E+01	5.46E+00	3.41E+00	2.44E+00	1.89E+00	1.13E-01	
2.59E-02							
2.64E-01	1.27E+01	5.69E+00	3.55E+00	2.54E+00	1.96E+00	1.22E-01	
2.79E-02							
3.68E-01	1.87E+01	8.36E+00	5.22E+00	3.74E+00	2.89E+00	2.47E-01	
5.65E-02							
5.00E-01	2.66E+01	1.19E+01	7.45E+00	5.34E+00	4.12E+00	4.75E-01	
1.08E-01							

	50.0
SLMP FRAC	m TO CASK
2.90E-02	5.58E-05
3.30E-02	6.71E-05
5.20E-02	1.44E-04
9.60E-02	4.78E-04
1.58E-01	1.34E-03
1.58E-01	1.34E-03
2.55E-01	3.69E-03
2.64E-01	3.97E-03
3.68E-01	8.03E-03
5.00E-01	1.54E-02

LOSS OF SHIELDING STOP = PUBLICLOSS FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-01	4.43E-01	2.77E-01	1.98E-01	1.53E-01	1.60E-03	
3.77E-04							
3.30E-02	1.15E+00	5.14E-01	3.21E-01	2.30E-01	1.78E-01	1.95E-03	
4.57E-04							
5.20E-02	1.94E+00	8.67E-01	5.42E-01	3.88E-01	3.00E-01	4.32E-03	
9.98E-04							
9.60E-02	3.94E+00	1.76E+00	1.10E+00	7.89E-01	6.09E-01	1.46E-02	
3.35E-03							

1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02
9.44E-03						
1.58E-01	7.01E+00	3.14E+00	1.96E+00	1.40E+00	1.08E+00	4.13E-02
9.44E-03						
2.55E-01	1.22E+01	5.46E+00	3.41E+00	2.44E+00	1.89E+00	1.13E-01
2.59E-02						
2.64E-01	1.27E+01	5.69E+00	3.55E+00	2.54E+00	1.96E+00	1.22E-01
2.79E-02						
3.68E-01	1.87E+01	8.36E+00	5.22E+00	3.74E+00	2.89E+00	2.47E-01
5.65E-02						
5.00E-01	2.66E+01	1.19E+01	7.45E+00	5.34E+00	4.12E+00	4.75E-01
1.08E-01						

	50.0
SLMP FRAC	m TO CASK
2.90E-02	5.58E-05
3.30E-02	6.71E-05
5.20E-02	1.44E-04
9.60E-02	4.78E-04
1.58E-01	1.34E-03
1.58E-01	1.34E-03
2.55E-01	3.69E-03
2.64E-01	3.97E-03
3.68E-01	8.03E-03
5.00E-01	1.54E-02

LOS AVERAGE RADIOLOGICAL HAND CALC

LOSS OF SHIELDING STOP = PUBLICLOSU FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	6.78E-01	3.04E-01	1.90E-01	1.36E-01	1.05E-01	1.10E-03	
2.59E-04							
3.30E-02	7.87E-01	3.53E-01	2.20E-01	1.58E-01	1.22E-01	1.34E-03	
3.14E-04							
5.20E-02	1.33E+00	5.95E-01	3.72E-01	2.67E-01	2.06E-01	2.97E-03	
6.85E-04							
9.60E-02	2.70E+00	1.21E+00	7.56E-01	5.41E-01	4.18E-01	1.00E-02	
2.30E-03							
1.58E-01	4.81E+00	2.15E+00	1.35E+00	9.64E-01	7.44E-01	2.83E-02	
6.48E-03							
1.58E-01	4.81E+00	2.15E+00	1.35E+00	9.64E-01	7.44E-01	2.83E-02	
6.48E-03							
2.55E-01	8.38E+00	3.75E+00	2.34E+00	1.68E+00	1.30E+00	7.79E-02	
1.78E-02							
2.64E-01	8.72E+00	3.90E+00	2.44E+00	1.75E+00	1.35E+00	8.39E-02	
1.92E-02							
3.68E-01	1.28E+01	5.74E+00	3.58E+00	2.57E+00	1.98E+00	1.70E-01	
3.88E-02							
5.00E-01	1.83E+01	8.19E+00	5.11E+00	3.66E+00	2.83E+00	3.26E-01	
7.44E-02							

SLMP FRAC
2.90E-02
3.30E-02
5.20E-02
9.60E-02
1.58E-01
1.58E-01
2.55E-01
2.64E-01
3.68E-01
5.00E-01

LOSS OF SHIELDING STOP = PUBLICLOSU FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	6.78E-01	3.04E-01	1.90E-01	1.36E-01	1.05E-01	1.10E-03	
2.59E-04							

3.30E-02	7.87E-01	3.53E-01	2.20E-01	1.58E-01	1.22E-01	1.34E-03
3.14E-04						
5.20E-02	1.33E+00	5.95E-01	3.72E-01	2.67E-01	2.06E-01	2.97E-03
6.85E-04						
9.60E-02	2.70E+00	1.21E+00	7.56E-01	5.41E-01	4.18E-01	1.00E-02
2.30E-03						
1.58E-01	4.81E+00	2.15E+00	1.35E+00	9.64E-01	7.44E-01	2.83E-02
6.48E-03						
1.58E-01	4.81E+00	2.15E+00	1.35E+00	9.64E-01	7.44E-01	2.83E-02
6.48E-03						
2.55E-01	8.38E+00	3.75E+00	2.34E+00	1.68E+00	1.30E+00	7.79E-02
1.78E-02						
2.64E-01	8.72E+00	3.90E+00	2.44E+00	1.75E+00	1.35E+00	8.39E-02
1.92E-02						
3.68E-01	1.28E+01	5.74E+00	3.58E+00	2.57E+00	1.98E+00	1.70E-01
3.88E-02						
5.00E-01	1.83E+01	8.19E+00	5.11E+00	3.66E+00	2.83E+00	3.26E-01
7.44E-02						

SLMP FRAC

2.90E-02
3.30E-02
5.20E-02
9.60E-02
1.58E-01
1.58E-01
2.55E-01
2.64E-01
3.68E-01
5.00E-01

LOSS OF SHIELDING STOP = PUBLICLOSU FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	6.78E-01	3.04E-01	1.90E-01	1.36E-01	1.05E-01	1.10E-03	
2.59E-04							
3.30E-02	7.87E-01	3.53E-01	2.20E-01	1.58E-01	1.22E-01	1.34E-03	
3.14E-04							
5.20E-02	1.33E+00	5.95E-01	3.72E-01	2.67E-01	2.06E-01	2.97E-03	
6.85E-04							
9.60E-02	2.70E+00	1.21E+00	7.56E-01	5.41E-01	4.18E-01	1.00E-02	
2.30E-03							
1.58E-01	4.81E+00	2.15E+00	1.35E+00	9.64E-01	7.44E-01	2.83E-02	
6.48E-03							
1.58E-01	4.81E+00	2.15E+00	1.35E+00	9.64E-01	7.44E-01	2.83E-02	
6.48E-03							
2.55E-01	8.38E+00	3.75E+00	2.34E+00	1.68E+00	1.30E+00	7.79E-02	
1.78E-02							
2.64E-01	8.72E+00	3.90E+00	2.44E+00	1.75E+00	1.35E+00	8.39E-02	
1.92E-02							
3.68E-01	1.28E+01	5.74E+00	3.58E+00	2.57E+00	1.98E+00	1.70E-01	
3.88E-02							

5.00E-01 1.83E+01 8.19E+00 5.11E+00 3.66E+00 2.83E+00 3.26E-01
7.44E-02

SLMP FRAC

2.90E-02
3.30E-02
5.20E-02
9.60E-02
1.58E-01
1.58E-01
2.55E-01
2.64E-01
3.68E-01
5.00E-01

LOSS OF SHIELDING STOP = FIRSTLOSR FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E+00	6.61E-01	4.13E-01	2.96E-01	2.29E-01	2.39E-03	
5.63E-04							
3.30E-02	1.71E+00	7.67E-01	4.79E-01	3.43E-01	2.65E-01	2.91E-03	
6.82E-04							
5.20E-02	2.89E+00	1.29E+00	8.09E-01	5.80E-01	4.48E-01	6.45E-03	
1.49E-03							
9.60E-02	5.87E+00	2.63E+00	1.64E+00	1.18E+00	9.09E-01	2.18E-02	
5.00E-03							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
2.55E-01	1.82E+01	8.15E+00	5.09E+00	3.65E+00	2.82E+00	1.69E-01	
3.87E-02							
2.64E-01	1.90E+01	8.49E+00	5.30E+00	3.80E+00	2.93E+00	1.82E-01	
4.17E-02							
3.68E-01	2.79E+01	1.25E+01	7.79E+00	5.58E+00	4.31E+00	3.69E-01	
8.43E-02							
5.00E-01	3.98E+01	1.78E+01	1.11E+01	7.96E+00	6.15E+00	7.08E-01	
1.62E-01							

	50.0	100.0
SLMP FRAC	m TO CASK	m TO CASK
2.90E-02	8.33E-05	1.97E-05
3.30E-02	1.00E-04	2.35E-05
5.20E-02	2.15E-04	4.98E-05
9.60E-02	7.13E-04	1.64E-04
1.58E-01	2.00E-03	4.58E-04
1.58E-01	2.00E-03	4.58E-04
2.55E-01	5.50E-03	1.26E-03
2.64E-01	5.92E-03	1.35E-03
3.68E-01	1.20E-02	2.74E-03
5.00E-01	2.30E-02	5.25E-03

LOSS OF SHIELDING STOP = FIRSTLOSR FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E+00	6.61E-01	4.13E-01	2.96E-01	2.29E-01	2.39E-03	
5.63E-04							
3.30E-02	1.71E+00	7.67E-01	4.79E-01	3.43E-01	2.65E-01	2.91E-03	
6.82E-04							
5.20E-02	2.89E+00	1.29E+00	8.09E-01	5.80E-01	4.48E-01	6.45E-03	
1.49E-03							
9.60E-02	5.87E+00	2.63E+00	1.64E+00	1.18E+00	9.09E-01	2.18E-02	
5.00E-03							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
2.55E-01	1.82E+01	8.15E+00	5.09E+00	3.65E+00	2.82E+00	1.69E-01	
3.87E-02							
2.64E-01	1.90E+01	8.49E+00	5.30E+00	3.80E+00	2.93E+00	1.82E-01	
4.17E-02							
3.68E-01	2.79E+01	1.25E+01	7.79E+00	5.58E+00	4.31E+00	3.69E-01	
8.43E-02							
5.00E-01	3.98E+01	1.78E+01	1.11E+01	7.96E+00	6.15E+00	7.08E-01	
1.62E-01							
	50.0	100.0					
SLMP FRAC	m TO CASK	m TO CASK					
2.90E-02	8.33E-05	1.97E-05					
3.30E-02	1.00E-04	2.35E-05					
5.20E-02	2.15E-04	4.98E-05					
9.60E-02	7.13E-04	1.64E-04					
1.58E-01	2.00E-03	4.58E-04					
1.58E-01	2.00E-03	4.58E-04					
2.55E-01	5.50E-03	1.26E-03					
2.64E-01	5.92E-03	1.35E-03					
3.68E-01	1.20E-02	2.74E-03					
5.00E-01	2.30E-02	5.25E-03					

LOSS OF SHIELDING STOP = FIRSTLOSR FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E+00	6.61E-01	4.13E-01	2.96E-01	2.29E-01	2.39E-03	
5.63E-04							
3.30E-02	1.71E+00	7.67E-01	4.79E-01	3.43E-01	2.65E-01	2.91E-03	
6.82E-04							
5.20E-02	2.89E+00	1.29E+00	8.09E-01	5.80E-01	4.48E-01	6.45E-03	
1.49E-03							
9.60E-02	5.87E+00	2.63E+00	1.64E+00	1.18E+00	9.09E-01	2.18E-02	
5.00E-03							

1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02
1.41E-02						
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02
1.41E-02						
2.55E-01	1.82E+01	8.15E+00	5.09E+00	3.65E+00	2.82E+00	1.69E-01
3.87E-02						
2.64E-01	1.90E+01	8.49E+00	5.30E+00	3.80E+00	2.93E+00	1.82E-01
4.17E-02						
3.68E-01	2.79E+01	1.25E+01	7.79E+00	5.58E+00	4.31E+00	3.69E-01
8.43E-02						
5.00E-01	3.98E+01	1.78E+01	1.11E+01	7.96E+00	6.15E+00	7.08E-01
1.62E-01						

	50.0	100.0
SLMP FRAC	m TO CASK	m TO CASK
2.90E-02	8.33E-05	1.97E-05
3.30E-02	1.00E-04	2.35E-05
5.20E-02	2.15E-04	4.98E-05
9.60E-02	7.13E-04	1.64E-04
1.58E-01	2.00E-03	4.58E-04
1.58E-01	2.00E-03	4.58E-04
2.55E-01	5.50E-03	1.26E-03
2.64E-01	5.92E-03	1.35E-03
3.68E-01	1.20E-02	2.74E-03
5.00E-01	2.30E-02	5.25E-03

LOS AVERAGE RADIOLOGICAL HAND CALC

LOSS OF SHIELDING STOP = FIRSTLOSS FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E+00	6.61E-01	4.13E-01	2.96E-01	2.29E-01	2.39E-03	
5.63E-04							
3.30E-02	1.71E+00	7.67E-01	4.79E-01	3.43E-01	2.65E-01	2.91E-03	
6.82E-04							
5.20E-02	2.89E+00	1.29E+00	8.09E-01	5.80E-01	4.48E-01	6.45E-03	
1.49E-03							
9.60E-02	5.87E+00	2.63E+00	1.64E+00	1.18E+00	9.09E-01	2.18E-02	
5.00E-03							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
2.55E-01	1.82E+01	8.15E+00	5.09E+00	3.65E+00	2.82E+00	1.69E-01	
3.87E-02							
2.64E-01	1.90E+01	8.49E+00	5.30E+00	3.80E+00	2.93E+00	1.82E-01	
4.17E-02							
3.68E-01	2.79E+01	1.25E+01	7.79E+00	5.58E+00	4.31E+00	3.69E-01	
8.43E-02							
5.00E-01	3.98E+01	1.78E+01	1.11E+01	7.96E+00	6.15E+00	7.08E-01	
1.62E-01							
	50.0						
SLMP FRAC	m TO CASK						
2.90E-02	8.33E-05						
3.30E-02	1.00E-04						
5.20E-02	2.15E-04						
9.60E-02	7.13E-04						
1.58E-01	2.00E-03						
1.58E-01	2.00E-03						
2.55E-01	5.50E-03						
2.64E-01	5.92E-03						
3.68E-01	1.20E-02						
5.00E-01	2.30E-02						

LOSS OF SHIELDING STOP = FIRSTLOSS FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E+00	6.61E-01	4.13E-01	2.96E-01	2.29E-01	2.39E-03	
5.63E-04							

3.30E-02	1.71E+00	7.67E-01	4.79E-01	3.43E-01	2.65E-01	2.91E-03
6.82E-04						
5.20E-02	2.89E+00	1.29E+00	8.09E-01	5.80E-01	4.48E-01	6.45E-03
1.49E-03						
9.60E-02	5.87E+00	2.63E+00	1.64E+00	1.18E+00	9.09E-01	2.18E-02
5.00E-03						
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02
1.41E-02						
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02
1.41E-02						
2.55E-01	1.82E+01	8.15E+00	5.09E+00	3.65E+00	2.82E+00	1.69E-01
3.87E-02						
2.64E-01	1.90E+01	8.49E+00	5.30E+00	3.80E+00	2.93E+00	1.82E-01
4.17E-02						
3.68E-01	2.79E+01	1.25E+01	7.79E+00	5.58E+00	4.31E+00	3.69E-01
8.43E-02						
5.00E-01	3.98E+01	1.78E+01	1.11E+01	7.96E+00	6.15E+00	7.08E-01
1.62E-01						

	50.0
SLMP FRAC	m TO CASK
2.90E-02	8.33E-05
3.30E-02	1.00E-04
5.20E-02	2.15E-04
9.60E-02	7.13E-04
1.58E-01	2.00E-03
1.58E-01	2.00E-03
2.55E-01	5.50E-03
2.64E-01	5.92E-03
3.68E-01	1.20E-02
5.00E-01	2.30E-02

LOSS OF SHIELDING STOP = FIRSTLOSS FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E+00	6.61E-01	4.13E-01	2.96E-01	2.29E-01	2.39E-03	
5.63E-04							
3.30E-02	1.71E+00	7.67E-01	4.79E-01	3.43E-01	2.65E-01	2.91E-03	
6.82E-04							
5.20E-02	2.89E+00	1.29E+00	8.09E-01	5.80E-01	4.48E-01	6.45E-03	
1.49E-03							
9.60E-02	5.87E+00	2.63E+00	1.64E+00	1.18E+00	9.09E-01	2.18E-02	
5.00E-03							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
2.55E-01	1.82E+01	8.15E+00	5.09E+00	3.65E+00	2.82E+00	1.69E-01	
3.87E-02							
2.64E-01	1.90E+01	8.49E+00	5.30E+00	3.80E+00	2.93E+00	1.82E-01	
4.17E-02							
3.68E-01	2.79E+01	1.25E+01	7.79E+00	5.58E+00	4.31E+00	3.69E-01	
8.43E-02							

5.00E-01	3.98E+01	1.78E+01	1.11E+01	7.96E+00	6.15E+00	7.08E-01
1.62E-01						

	50.0
SLMP FRAC	m TO CASK
2.90E-02	8.33E-05
3.30E-02	1.00E-04
5.20E-02	2.15E-04
9.60E-02	7.13E-04
1.58E-01	2.00E-03
1.58E-01	2.00E-03
2.55E-01	5.50E-03
2.64E-01	5.92E-03
3.68E-01	1.20E-02
5.00E-01	2.30E-02

LOSS OF SHIELDING STOP = FIRSTLOSU FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E+00	6.61E-01	4.13E-01	2.96E-01	2.29E-01	2.39E-03	
5.63E-04							
3.30E-02	1.71E+00	7.67E-01	4.79E-01	3.43E-01	2.65E-01	2.91E-03	
6.82E-04							
5.20E-02	2.89E+00	1.29E+00	8.09E-01	5.80E-01	4.48E-01	6.45E-03	
1.49E-03							
9.60E-02	5.87E+00	2.63E+00	1.64E+00	1.18E+00	9.09E-01	2.18E-02	
5.00E-03							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
2.55E-01	1.82E+01	8.15E+00	5.09E+00	3.65E+00	2.82E+00	1.69E-01	
3.87E-02							
2.64E-01	1.90E+01	8.49E+00	5.30E+00	3.80E+00	2.93E+00	1.82E-01	
4.17E-02							
3.68E-01	2.79E+01	1.25E+01	7.79E+00	5.58E+00	4.31E+00	3.69E-01	
8.43E-02							
5.00E-01	3.98E+01	1.78E+01	1.11E+01	7.96E+00	6.15E+00	7.08E-01	
1.62E-01							

SLMP FRAC
2.90E-02
3.30E-02
5.20E-02
9.60E-02
1.58E-01
1.58E-01
2.55E-01
2.64E-01
3.68E-01
5.00E-01

LOSS OF SHIELDING STOP = FIRSTLOSU FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
2.90E-02	1.47E+00	6.61E-01	4.13E-01	2.96E-01	2.29E-01	2.39E-03	
5.63E-04							
3.30E-02	1.71E+00	7.67E-01	4.79E-01	3.43E-01	2.65E-01	2.91E-03	
6.82E-04							
5.20E-02	2.89E+00	1.29E+00	8.09E-01	5.80E-01	4.48E-01	6.45E-03	
1.49E-03							
9.60E-02	5.87E+00	2.63E+00	1.64E+00	1.18E+00	9.09E-01	2.18E-02	
5.00E-03							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02	
1.41E-02							
2.55E-01	1.82E+01	8.15E+00	5.09E+00	3.65E+00	2.82E+00	1.69E-01	
3.87E-02							
2.64E-01	1.90E+01	8.49E+00	5.30E+00	3.80E+00	2.93E+00	1.82E-01	
4.17E-02							
3.68E-01	2.79E+01	1.25E+01	7.79E+00	5.58E+00	4.31E+00	3.69E-01	
8.43E-02							
5.00E-01	3.98E+01	1.78E+01	1.11E+01	7.96E+00	6.15E+00	7.08E-01	
1.62E-01							

SLMP FRAC
2.90E-02
3.30E-02
5.20E-02
9.60E-02
1.58E-01
1.58E-01
2.55E-01
2.64E-01
3.68E-01
5.00E-01

LOSS OF SHIELDING STOP = FIRSTLOSU FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_REM)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
2.90E-02	1.47E+00	6.61E-01	4.13E-01	2.96E-01	2.29E-01	2.39E-03	
5.63E-04							
3.30E-02	1.71E+00	7.67E-01	4.79E-01	3.43E-01	2.65E-01	2.91E-03	
6.82E-04							
5.20E-02	2.89E+00	1.29E+00	8.09E-01	5.80E-01	4.48E-01	6.45E-03	
1.49E-03							
9.60E-02	5.87E+00	2.63E+00	1.64E+00	1.18E+00	9.09E-01	2.18E-02	
5.00E-03							

1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02
1.41E-02						
1.58E-01	1.05E+01	4.68E+00	2.93E+00	2.10E+00	1.62E+00	6.16E-02
1.41E-02						
2.55E-01	1.82E+01	8.15E+00	5.09E+00	3.65E+00	2.82E+00	1.69E-01
3.87E-02						
2.64E-01	1.90E+01	8.49E+00	5.30E+00	3.80E+00	2.93E+00	1.82E-01
4.17E-02						
3.68E-01	2.79E+01	1.25E+01	7.79E+00	5.58E+00	4.31E+00	3.69E-01
8.43E-02						
5.00E-01	3.98E+01	1.78E+01	1.11E+01	7.96E+00	6.15E+00	7.08E-01
1.62E-01						

SLMP FRAC

2.90E-02
 3.30E-02
 5.20E-02
 9.60E-02
 1.58E-01
 1.58E-01
 2.55E-01
 2.64E-01
 3.68E-01
 5.00E-01

LOS AVERAGE RADIOLOGICAL HAND CALC

LOSS OF SHIELDING STOP ON LINK = LINK_R
 MAXIMUM RADIOLOGICAL DOSE (P_REM) AT 2 M FROM CASK

	STOP	STOP	STOP	STOP	STOP	STOP
SLMP	FRACPUBLIC	CLOSRPUBLIC	CLOSSPUBLIC	CLOSR	FIRSTLOSS	FIRSTLOSU
2.90E-02	1.93E+00	1.93E+00	1.32E+00	2.87E+00	2.87E+00	2.87E+00
3.30E-02	2.19E+00	2.19E+00	1.50E+00	3.27E+00	3.27E+00	3.27E+00
5.20E-02	3.45E+00	3.45E+00	2.37E+00	5.15E+00	5.15E+00	5.15E+00
9.60E-02	6.36E+00	6.36E+00	4.37E+00	9.49E+00	9.49E+00	9.49E+00
1.58E-01	9.76E+00	9.76E+00	6.70E+00	1.46E+01	1.46E+01	1.46E+01
1.58E-01	9.76E+00	9.76E+00	6.70E+00	1.46E+01	1.46E+01	1.46E+01
2.55E-01	1.46E+01	1.46E+01	1.00E+01	2.18E+01	2.18E+01	2.18E+01
2.64E-01	1.50E+01	1.50E+01	1.03E+01	2.24E+01	2.24E+01	2.24E+01
3.68E-01	1.99E+01	1.99E+01	1.36E+01	2.96E+01	2.96E+01	2.96E+01
5.00E-01	2.57E+01	2.57E+01	1.76E+01	3.83E+01	3.83E+01	3.83E+01

LOSS OF SHIELDING STOP ON LINK = LINK_S
 MAXIMUM RADIOLOGICAL DOSE (P_REM) AT 2 M FROM CASK

	STOP	STOP	STOP	STOP	STOP	STOP
SLMP	FRACPUBLIC	CLOSRPUBLIC	CLOSSPUBLIC	CLOSR	FIRSTLOSS	FIRSTLOSU
2.90E-02	1.93E+00	1.93E+00	1.32E+00	2.87E+00	2.87E+00	2.87E+00
3.30E-02	2.19E+00	2.19E+00	1.50E+00	3.27E+00	3.27E+00	3.27E+00
5.20E-02	3.45E+00	3.45E+00	2.37E+00	5.15E+00	5.15E+00	5.15E+00
9.60E-02	6.36E+00	6.36E+00	4.37E+00	9.49E+00	9.49E+00	9.49E+00
1.58E-01	9.76E+00	9.76E+00	6.70E+00	1.46E+01	1.46E+01	1.46E+01
1.58E-01	9.76E+00	9.76E+00	6.70E+00	1.46E+01	1.46E+01	1.46E+01
2.55E-01	1.46E+01	1.46E+01	1.00E+01	2.18E+01	2.18E+01	2.18E+01
2.64E-01	1.50E+01	1.50E+01	1.03E+01	2.24E+01	2.24E+01	2.24E+01
3.68E-01	1.99E+01	1.99E+01	1.36E+01	2.96E+01	2.96E+01	2.96E+01
5.00E-01	2.57E+01	2.57E+01	1.76E+01	3.83E+01	3.83E+01	3.83E+01

LOSS OF SHIELDING STOP ON LINK = LINK_U
 MAXIMUM RADIOLOGICAL DOSE (P_REM) AT 2 M FROM CASK

	STOP	STOP	STOP	STOP	STOP	STOP
SLMP	FRACPUBLIC	CLOSRPUBLIC	CLOSSPUBLIC	CLOSR	FIRSTLOSS	FIRSTLOSU
2.90E-02	1.93E+00	1.93E+00	1.32E+00	2.87E+00	2.87E+00	2.87E+00
3.30E-02	2.19E+00	2.19E+00	1.50E+00	3.27E+00	3.27E+00	3.27E+00
5.20E-02	3.45E+00	3.45E+00	2.37E+00	5.15E+00	5.15E+00	5.15E+00
9.60E-02	6.36E+00	6.36E+00	4.37E+00	9.49E+00	9.49E+00	9.49E+00
1.58E-01	9.76E+00	9.76E+00	6.70E+00	1.46E+01	1.46E+01	1.46E+01
1.58E-01	9.76E+00	9.76E+00	6.70E+00	1.46E+01	1.46E+01	1.46E+01
2.55E-01	1.46E+01	1.46E+01	1.00E+01	2.18E+01	2.18E+01	2.18E+01
2.64E-01	1.50E+01	1.50E+01	1.03E+01	2.24E+01	2.24E+01	2.24E+01
3.68E-01	1.99E+01	1.99E+01	1.36E+01	2.96E+01	2.96E+01	2.96E+01
5.00E-01	2.57E+01	2.57E+01	1.76E+01	3.83E+01	3.83E+01	3.83E+01

RADIOLOGICAL CONSEQUENCES IN PERSON REM
 50 YEAR SOCIETAL INGESTION DOSE - EFFECTIVE

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SEVER: 7						
LINK_R	6.32E-02	3.91E-02	3.93E-02	2.60E-01	5.41E-02	5.39E-02
2.66E-01						
LINK	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13
SEVER:14						
LINK_R	6.34E-02	6.35E-02	2.35E-01	6.34E-02	6.35E-02	2.35E-01
2.11E-01						
LINK	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19	
LINK_R	2.11E-01	1.91E-01	1.91E-01	2.88E-01	0.00E+00	

LOS AVERAGE RADIOLOGICAL HAND CALC

EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

LINK	INHALED	RESUSPD	CLOUDSH	GROUNDSH	TOTAL
LINK_R	6.06E-11	5.06E-12	2.19E-12	9.49E-12	7.74E-11
LINK_S	2.22E-09	1.85E-10	8.02E-11	3.47E-10	2.83E-09
LINK_U	2.20E-09	1.84E-10	7.96E-11	3.44E-10	2.81E-09
ZONE					
RURAL	6.06E-11	5.06E-12	2.19E-12	9.49E-12	7.74E-11
SUBURB	2.22E-09	1.85E-10	8.02E-11	3.47E-10	2.83E-09
URBAN	2.20E-09	1.84E-10	7.96E-11	3.44E-10	2.81E-09
TOTALS:	4.47E-09	3.74E-10	1.62E-10	7.00E-10	5.71E-09

RUN DATE: [05-14-2008 AT 21:05]

PAGE 51

LOS AVERAGE RADIOLOGICAL HAND CALC

SOCIETAL INGESTION RISK - PERSON-REM

LINK	GONADS	EFFECTIVE
LINK_R	2.43E-10	3.19E-10
TOTAL	2.43E-10	3.19E-10

SOCIETAL INGESTION RISK BY ORGAN - PERSON-REM

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
LINK_R	1.54E-10	1.52E-10	4.73E-10	1.82E-09	1.49E-10	3.38E-10
TOTAL	1.54E-10	1.52E-10	4.73E-10	1.82E-09	1.49E-10	3.38E-10

EXPECTED RISK VALUES - OTHER

LINK	EARLY	EARLY
	FATALITY	MORBIDITY
LINK_R	0.00E+00	0.00E+00
LINK_S	0.00E+00	0.00E+00
LINK_U	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

LOS AVERAGE RADIOLOGICAL HAND CALC

LOSS OF SHIELDING RISK VALUES (PER-REM) BY CASE

LOSS OF SHIELDING STOP PUBLICLOS

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-07	LINK =LINK_R	1.07E-04	4.80E-05	3.00E-05	2.15E-05	1.66E-05
	5.97E-08					
	DISTANCE	50.0	100.0			
	LINK =LINK_R	8.65E-09	2.01E-09			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-07	LINK =LINK_S	1.07E-04	4.80E-05	3.00E-05	2.15E-05	1.66E-05
	5.97E-08					
	DISTANCE	50.0	100.0			
	LINK =LINK_S	8.65E-09	2.01E-09			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-07	LINK =LINK_U	1.07E-04	4.80E-05	3.00E-05	2.15E-05	1.66E-05
	5.97E-08					
	DISTANCE	50.0	100.0			
	LINK =LINK_U	8.65E-09	2.01E-09			

LOSS OF SHIELDING STOP PUBLICLOSS

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-07	LINK =LINK_R	1.07E-04	4.80E-05	3.00E-05	2.15E-05	1.66E-05
	5.97E-08					
	DISTANCE	50.0	100.0			
	LINK =LINK_R	8.65E-09	2.01E-09			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-07	LINK =LINK_S	1.07E-04	4.80E-05	3.00E-05	2.15E-05	1.66E-05
	5.97E-08					
	DISTANCE	50.0	100.0			
	LINK =LINK_S	8.65E-09	2.01E-09			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-07	LINK =LINK_U	1.07E-04	4.80E-05	3.00E-05	2.15E-05	1.66E-05
	5.97E-08					
	DISTANCE	50.0	100.0			
	LINK =LINK_U	8.65E-09	2.01E-09			

LOSS OF SHIELDING STOP PUBLICLOSU

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_R	7.35E-05	3.29E-05	2.06E-05	1.47E-05	1.14E-05
1.77E-07	4.10E-08					
	DISTANCE					
LINK	=LINK_R					
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_S	7.35E-05	3.29E-05	2.06E-05	1.47E-05	1.14E-05
1.77E-07	4.10E-08					
	DISTANCE					
LINK	=LINK_S					
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_U	7.35E-05	3.29E-05	2.06E-05	1.47E-05	1.14E-05
1.77E-07	4.10E-08					
	DISTANCE					
LINK	=LINK_U					

LOSS OF SHIELDING STOP FIRSTLOSR

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_R	1.60E-04	7.16E-05	4.48E-05	3.21E-05	2.48E-05
3.84E-07	8.91E-08					
	DISTANCE	50.0	100.0			
LINK	=LINK_R	1.29E-08	3.00E-09			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_S	1.60E-04	7.16E-05	4.48E-05	3.21E-05	2.48E-05
3.84E-07	8.91E-08					
	DISTANCE	50.0	100.0			
LINK	=LINK_S	1.29E-08	3.00E-09			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_U	1.60E-04	7.16E-05	4.48E-05	3.21E-05	2.48E-05
3.84E-07	8.91E-08					
	DISTANCE	50.0	100.0			
LINK	=LINK_U	1.29E-08	3.00E-09			

LOSS OF SHIELDING STOP FIRSTLOSS

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_R	1.60E-04	7.16E-05	4.48E-05	3.21E-05	2.48E-05
3.84E-07	8.91E-08					
	DISTANCE	50.0	100.0			
LINK	=LINK_R	1.29E-08	3.00E-09			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_S	1.60E-04	7.16E-05	4.48E-05	3.21E-05	2.48E-05
3.84E-07	8.91E-08					
	DISTANCE	50.0	100.0			
LINK	=LINK_S	1.29E-08	3.00E-09			

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
	LINK =LINK_U	1.60E-04	7.16E-05	4.48E-05	3.21E-05	2.48E-05
3.84E-07	8.91E-08					
	DISTANCE	50.0	100.0			
	LINK =LINK_U	1.29E-08	3.00E-09			

LOSS OF SHIELDING STOP FIRSTLOSU

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
	LINK =LINK_R	1.60E-04	7.16E-05	4.48E-05	3.21E-05	2.48E-05
3.84E-07	8.91E-08					
	DISTANCE					
	LINK =LINK_R					
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
	LINK =LINK_S	1.60E-04	7.16E-05	4.48E-05	3.21E-05	2.48E-05
3.84E-07	8.91E-08					
	DISTANCE					
	LINK =LINK_S					
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
	LINK =LINK_U	1.60E-04	7.16E-05	4.48E-05	3.21E-05	2.48E-05
3.84E-07	8.91E-08					
	DISTANCE					
	LINK =LINK_U					

LOSS OF SHIELDING TOTAL RISK VALUES

	LINK =LINK_U					
	DISTANCE FROM CASK (M) =	1.00	2.00	3.00	4.00	
5.00	10.00					
	RISK (PR-REM) =	6.00E-08	2.69E-08	1.68E-08	1.20E-08	9.29E-
09	1.44E-10					

	LINK =LINK_U					
	DISTANCE FROM CASK (M) =	1.00	2.00	3.00	4.00	
5.00	10.00					
	RISK (PR-REM) =	1.83E-08	8.18E-09	5.11E-09	3.66E-09	2.83E-
09	4.39E-11					

	LINK =LINK_U					
	DISTANCE FROM CASK (M) =	1.00	2.00	3.00	4.00	
5.00	10.00					
	RISK (PR-REM) =	1.18E-09	5.29E-10	3.31E-10	2.37E-10	1.83E-
10	2.84E-12					

LOS AVERAGE RADIOLOGICAL HAND CALC

TOTAL EXPOSED POPULATION: INCIDENT-FREE

LINK_R 1.79E+04 PERSONS
 LINK_S 6.52E+05 PERSONS
 LINK_U 2.23E+05 PERSONS

TOTAL 8.93E+05 PERSONS

TOTAL EXPOSED POPULATION: ACCIDENT
 (PERSONS UNDER PLUME FOOTPRINT FOR A SINGLE ACCIDENT)

LINK_R 8.10E+03 PERSONS
 LINK_S 9.72E+05 PERSONS
 LINK_U 5.13E+06 PERSONS

LOS AVERAGE RADIOLOGICAL HAND CALC

LINK: LINK_R		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
PACKAGE_1	C060	1.86E-13	1.56E-14	3.74E-14	4.43E-12	4.67E-12
PACKAGE_1	KR85	0.00E+00	0.00E+00	2.12E-12	0.00E+00	2.12E-12
PACKAGE_1	SR90	1.75E-15	1.47E-16	1.43E-19	3.41E-17	1.94E-15
PACKAGE_1	Y90	2.24E-17	1.87E-18	3.59E-18	5.62E-16	5.90E-16
PACKAGE_1	RU106	1.34E-14	1.12E-15	1.63E-16	2.10E-14	3.57E-14
PACKAGE_1	CS134	2.43E-13	2.03E-14	2.78E-14	3.55E-12	3.84E-12
PACKAGE_1	CS137	2.06E-13	1.72E-14	1.13E-14	1.46E-12	1.70E-12
PACKAGE_1	CE144	7.66E-15	6.40E-16	3.84E-17	5.09E-15	1.34E-14
PACKAGE_1	PM147	1.20E-18	1.00E-19	6.30E-21	1.97E-18	3.28E-18
PACKAGE_1	EU154	3.23E-15	2.70E-16	1.82E-16	2.24E-14	2.61E-14
PACKAGE_1	PU238	1.06E-11	8.89E-13	8.30E-21	9.03E-18	1.15E-11
PACKAGE_1	PU239	5.23E-13	4.37E-14	3.20E-22	1.75E-19	5.67E-13
PACKAGE_1	PU240	1.05E-12	8.74E-14	7.18E-22	7.71E-19	1.13E-12
PACKAGE_1	PU241	3.18E-12	2.66E-13	1.67E-21	2.82E-19	3.45E-12
PACKAGE_1	AM241	1.67E-12	1.40E-13	1.26E-19	2.69E-17	1.81E-12
PACKAGE_1	AM242M	4.94E-14	4.12E-15	1.48E-22	8.99E-20	5.35E-14
PACKAGE_1	AM243	9.64E-14	8.05E-15	1.93E-20	3.01E-18	1.04E-13
PACKAGE_1	CM242	2.11E-14	1.76E-15	7.57E-22	8.05E-19	2.28E-14
PACKAGE_1	CM243	7.71E-14	6.44E-15	5.99E-20	8.07E-18	8.36E-14
PACKAGE_1	CM244	1.18E-11	9.84E-13	9.76E-21	1.11E-17	1.28E-11
					TOTAL:	7.74E-11

LINK: LINK_S		EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
PACKAGE_1	C060	6.81E-12	5.69E-13	1.37E-12	1.62E-10	1.71E-10
PACKAGE_1	KR85	0.00E+00	0.00E+00	7.74E-11	0.00E+00	7.74E-11
PACKAGE_1	SR90	6.41E-14	5.35E-15	5.21E-18	1.25E-15	7.07E-14
PACKAGE_1	Y90	8.20E-16	6.84E-17	1.31E-16	2.05E-14	2.16E-14
PACKAGE_1	RU106	4.90E-13	4.09E-14	5.95E-15	7.69E-13	1.31E-12
PACKAGE_1	CS134	8.87E-12	7.41E-13	1.02E-12	1.30E-10	1.40E-10

PACKAGE_1	CS137	7.52E-12	6.28E-13	4.15E-13	5.34E-11	6.19E-11
PACKAGE_1	CE144	2.80E-13	2.34E-14	1.40E-15	1.86E-13	4.91E-13
PACKAGE_1	PM147	4.39E-17	3.67E-18	2.30E-19	7.20E-17	1.20E-16
PACKAGE_1	EU154	1.18E-13	9.86E-15	6.66E-15	8.19E-13	9.54E-13
PACKAGE_1	PU238	3.89E-10	3.25E-11	3.03E-19	3.30E-16	4.21E-10
PACKAGE_1	PU239	1.91E-11	1.60E-12	1.17E-20	6.41E-18	2.07E-11
PACKAGE_1	PU240	3.82E-11	3.19E-12	2.62E-20	2.82E-17	4.14E-11
PACKAGE_1	PU241	1.16E-10	9.70E-12	6.09E-20	1.03E-17	1.26E-10
PACKAGE_1	AM241	6.12E-11	5.11E-12	4.60E-18	9.81E-16	6.63E-11
PACKAGE_1	AM242M	1.80E-12	1.51E-13	5.42E-21	3.29E-18	1.96E-12
PACKAGE_1	AM243	3.52E-12	2.94E-13	7.06E-19	1.10E-16	3.82E-12
PACKAGE_1	CM242	7.70E-13	6.43E-14	2.76E-20	2.94E-17	8.34E-13
PACKAGE_1	CM243	2.82E-12	2.35E-13	2.19E-18	2.95E-16	3.05E-12
PACKAGE_1	CM244	4.30E-10	3.59E-11	3.56E-19	4.04E-16	4.66E-10
					TOTAL:	2.83E-09

LINK: LINK_U		EXPECTED	VALUES OF	POPULATION	RISK IN PERSON-REM	
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
PACKAGE_1	C060	6.76E-12	5.64E-13	1.36E-12	1.61E-10	1.69E-10
PACKAGE_1	KR85	0.00E+00	0.00E+00	7.68E-11	0.00E+00	7.68E-11
PACKAGE_1	SR90	6.36E-14	5.31E-15	5.17E-18	1.24E-15	7.02E-14
PACKAGE_1	Y90	8.13E-16	6.79E-17	1.30E-16	2.04E-14	2.14E-14
PACKAGE_1	RU106	4.87E-13	4.06E-14	5.90E-15	7.63E-13	1.30E-12
PACKAGE_1	CS134	8.80E-12	7.35E-13	1.01E-12	1.29E-10	1.39E-10
PACKAGE_1	CS137	7.46E-12	6.23E-13	4.11E-13	5.30E-11	6.15E-11
PACKAGE_1	CE144	2.78E-13	2.32E-14	1.39E-15	1.85E-13	4.87E-13
PACKAGE_1	PM147	4.36E-17	3.64E-18	2.28E-19	7.14E-17	1.19E-16
PACKAGE_1	EU154	1.17E-13	9.79E-15	6.61E-15	8.13E-13	9.46E-13
PACKAGE_1	PU238	3.86E-10	3.22E-11	3.01E-19	3.27E-16	4.18E-10
PACKAGE_1	PU239	1.90E-11	1.58E-12	1.16E-20	6.36E-18	2.06E-11
PACKAGE_1	PU240	3.79E-11	3.17E-12	2.60E-20	2.79E-17	4.11E-11
PACKAGE_1	PU241	1.15E-10	9.63E-12	6.04E-20	1.02E-17	1.25E-10
PACKAGE_1	AM241	6.07E-11	5.07E-12	4.57E-18	9.74E-16	6.58E-11
PACKAGE_1	AM242M	1.79E-12	1.50E-13	5.38E-21	3.26E-18	1.94E-12
PACKAGE_1	AM243	3.49E-12	2.92E-13	7.00E-19	1.09E-16	3.79E-12
PACKAGE_1	CM242	7.64E-13	6.38E-14	2.74E-20	2.92E-17	8.27E-13
PACKAGE_1	CM243	2.80E-12	2.34E-13	2.17E-18	2.93E-16	3.03E-12
PACKAGE_1	CM244	4.27E-10	3.57E-11	3.54E-19	4.01E-16	4.63E-10
					TOTAL:	2.81E-09

EOI
END OF RUN
SUCCESSFUL COMPLETION

Appendix E **RADTRAN 6.0 Output for Test Case 11a**

RUN DATE: [05-14-2008 AT 21:18]

PAGE 1

RRRR	AAA	DDDD	TTTT	RRRR	AAA	N	N	6	000	000
R R	A A	D D	T	R R	A A	NN	N	6	0	0 0 0
R R	A A	D D	T	R R	A A	NN	NN	6	0	0 0 0
RRRR	A A	D D	T	RRRR	A A	N	NN	6666	0	0 0 0
R R	AAAAA	D D	T	R R	AAAAA	N	N	6 6	0	0 0 0
R R	A A	D D	T	R R	A A	N	N	6 6	0	0 0 0
R R	A A	DDDD	T	R R	A A	N	N	666 *	000	000

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

INPUT ECHO

RADTRAN 6 November 2007

TITLE LOS HISTORICAL TO SI CHECK

INPUT STANDARD

STD: 0 18

STD: 3 3 0

STD: .TRUE. .FALSE. .FALSE.

&& DIMEN=NSEV NAREAS

&& PARM=IANA ISEN IPSQSB

&& FORM = UNIT, SI-OUTPUT,

SI-INPUT

STD: 2.3E12

STD: 9.25E5 5.77E6 1.27E6

&& NEVAL FOR CF252

&& RPCTHY FOR I125, I129,

I131

STD: 0.0 0.0 0.0 0.0 0.0

&& TRANSFER GAMMA [COEF(1,0-

4]

STD: 7.42E-3 2.02E-2 6.17E-5 3.17E-8 0.0

&& TRANSFER NEUTRON

[COEF(2,0-4]

STD: 30 24

STD: 1 2 .0018

STD: 33 68 105 244 369

STD: 561 1018 1628 2308 4269

&& MITDDIST MITDVEL

&& ITRAIN FMINCL DDRWEF

&&

&& CENTER LINE

DISTANCES

STD: 5468 11136 13097 21334 40502

&& FOR AVERAGE US

CLOUD

STD: 69986 89860 120878 0 0 0 0 0 0 0 0 0 0 0 0 &&

STD: 4.59E+02 1.53E+03 3.94E+03 1.25E+04 3.04E+04 6.85E+04 1.76E+05

4.45E+05

STD: 8.59E+05 2.55E+06 4.45E+06 1.03E+07 2.16E+07 5.52E+07 1.77E+08

4.89E+08

STD: 8.12E+08 1.35E+09 0 0 0 0 0 0 0 0 0 0 0 0 && AREADA

STD: 3.42E-03 1.72E-03 8.58E-04 3.42E-04 1.72E-04 8.58E-05 3.42E-05

1.72E-05

STD: 8.58E-06 3.42E-06 1.72E-06 8.58E-07 3.42E-07 1.72E-07 8.58E-08

5.42E-08

STD: 4.30E-08 3.42E-08 0 0 0 0 0 0 0 0 0 0 0 0 && DFLEV

STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0

STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	
STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0 0	&& RADIST
STD: 0.5	&& SMLPKG
STD: 1.0 0.87 0.018	&& SHIELDING FACTORS RR RS RU
STD: 30 30 800	&& OFFLIM {FREEWAY}
STD: 27 30 800	&& OFFLIM {NON-FREEWAY}
STD: 5 8 800	&& OFFLIM {CITY STREETS}
STD: 30 30 800	&& OFFLIM {RAILWAY}
STD: 200 200 1000	&& OFFLIM {WATERWAY}
STD: 15 3 3 3 4	&& ONLINK {FWAY NONFWY STREET RAIL ADJ}
STD: 6.0 4 40.0	&& RPD FNOATT INTERDICT (ci/micro-Ci)
STD: 0.05 0.2 3.3E-4	&& BDF CULVL BRATE
STD: 0.9 0.1	&& UBF USWF
STD: 1.0 10.0 1.0	&& EVACUATION SURVEY CAMPAIGN

LOS HISTORICAL TO SI CHECK

STD: 0.0 0.0 0.0 0.0 0.0 0.0 && PSPROB
 STD: 0.67 0.67 0.42 && TIMENDE NON-DISPERSAL EVAC TIME
 (LCF&EARLY)
 STD: 2 2 0 && FLAGS=IUOPT IACC REGCHECK (OFF)
 STD: 5E-4, 4E-4, 1.0E-4 && LCFCN(1), LCFCN(2), GECON
 STD: RT6_Ingestion.BIN && INGESTION FILE

FORM UNIT

DIMEN 19 10 18

PARM 0 3 4 0

BQ_SV

SEVERITY

NPOP=1

NMODE=1

1.53E-8

5.88E-5 1.18E-6 7.49E-8 4.65E-7 3.31E-9

0.0 1.13E-8 8.03E-11 0.0 1.44E-10

1.02E-12 0.0 7.49E-11 0.0 0.0

0.0 5.86E-6 0.99993

NPOP=2

NMODE=1

1.53E-8

5.88E-5 1.18E-6 7.49E-8 4.65E-7 3.31E-9

0.0 1.13E-8 8.03E-11 0.0 1.44E-10

1.02E-12 0.0 7.49E-11 0.0 0.0

0.0 5.86E-6 0.99993

NPOP=3

NMODE=1

1.53E-8

5.88E-5 1.18E-6 7.49E-8 4.65E-7 3.31E-9

0.0 1.13E-8 8.03E-11 0.0 1.44E-10

1.02E-12 0.0 7.49E-11 0.0 0.0

0.0 5.86E-6 0.99993

RELEASE

GROUP=CRUD

RFRAC

0.0020

0.0014 0.0018 0.0032 0.0018 0.0021

0.0031 0.0020 0.0022 0.0025 0.0020

0.0022 0.0025 0.0064 0.0059 0.0033

0.0033 0.0025 0.0

AERSOL

LOS HISTORICAL TO SI CHECK

```

      1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
      RESP
      1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
      DEPVEL 0.1
      GROUP=KR
      RFRAC
      0.8
0.14 0.18 0.84 0.43 0.49
0.85 0.82 0.89 0.91 0.82
0.89 0.91 0.84 0.85 0.91
0.91 0.84 0.0
      AERSOL
      1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
      RESP
      1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
      DEPVEL 0.0
      GROUP=RUTH
      RFRAC
      6.0E-7
1.0E-07 1.3E-07 3.8E-06 3.2E-07 3.7E-07
2.1E-06 6.1E-07 6.7E-07 6.8E-07 6.1E-07
6.7E-07 6.8E-07 8.4E-05 5.0E-05 6.4E-06
6.4E-06 6.7E-08 0.0
      AERSOL
      1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
      RESP
      1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
      DEPVEL 0.1

```

GROUP=CS

LOS HISTORICAL TO SI CHECK

```

RFRAC
  2.4E-8
4.1E-09 5.4E-09 3.6E-05 1.3E-08 1.5E-08
2.7E-05 2.4E-08 2.7E-08 5.9E-06 2.4E-08
2.7E-08 5.9E-06 9.6E-05 5.5E-05 5.9E-06
5.9E-06 1.7E-05 0.0
AERSOL
  1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
RESP
  1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
DEPVEL 0.1
GROUP=PART
RFRAC
  6.0E-7
1.0E-07 1.3E-07 3.8E-06 3.2E-07 3.7E-07
2.1E-06 6.1E-07 6.7E-07 6.8E-07 6.1E-07
6.7E-07 6.8E-07 1.8E-05 9.0E-06 6.8E-07
6.8E-07 6.7E-08 0.0
AERSOL
  1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
RESP
  1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0 1.0 1.0
1.0 1.0 1.0
DEPVEL 0.1
LOS_SHIELD
NPOP=1
ACIDNT_PRB *FROM 6672 TABLE 8.12
  1.71E-06 4.63E-07 3.21E-08 2.53E-10 2.20E-05
  5.97E-06 4.14E-07 3.27E-09 4.90E-05 1.66E-09
FRAC_LOST
  0.052      0.158      0.264      0.368      0.033
  0.096      0.158      0.255      0.029      0.500
NPOP=2
ACIDNT_PRB *(AGAIN)
  1.71E-06 4.63E-07 3.21E-08 2.53E-10 2.20E-05
  5.97E-06 4.14E-07 3.27E-09 4.90E-05 1.66E-09
FRAC_LOST

```

0.052 0.158 0.264 0.368 0.033

LOS HISTORICAL TO SI CHECK

	0.096	0.158	0.255	0.029	0.500
--	-------	-------	-------	-------	-------

NPOP=3

ACIDNT_PRB *(AGAIN)

	1.71E-06	4.63E-07	3.21E-08	2.53E-10	2.20E-05
	5.97E-06	4.14E-07	3.27E-09	4.90E-05	1.66E-09

FRAC_LOST

	0.052	0.158	0.264	0.368	0.033
	0.096	0.158	0.255	0.029	0.500

PACKAGE PACKAGE_1 13.0 1.0 0.0 5.21

C060 173.4 CRUD

KR85 5220 KR

SR90 160800 PART

Y90 160800 PART

RU106 132900 RUTH

CS134 209700 CS

CS137 237000 CS

CE144 116100 PART

PM147 77400 PART

EU154 25260 PART

PU238 14430 PART

PU239 642 PART

PU240 1284 PART

PU241 195600 PART

AM241 1308 PART

AM242M 39.9 PART

AM243 75.3 PART

CM242 1128 PART

CM243 86.4 PART

CM244 16860 PART

END

VEHICLE -1 VEHICLE_1 1.30E01 1.0 0.0 5.21 1.0 2.0 3.0 1.0 0.71

PACKAGE_1 1.0

MODSTD

DISTOFF FREEWAY 3.00E01 3.00E01 8.00E02

DISTOFF SECONDARY 2.70E01 3.00E01 8.00E02

DISTOFF STREET 5.00E00 8.00E00 8.00E02

DISTON

FREEWAY 1.50E01

SECONDARY 3.00E00

STREET 3.00E00

ADJACENT 4.00E00

BDF 5.00E-02

BRATE 3.30E-04

CULVL 2.00E-01

EVACUATION 1.00E00

GECON 1.00E-04

INTERDICT 1.0E05

LCFCON 5.00E-04 4.00E-04

SURVEY 1.00E01

UBF 5.20E-01

USWF 4.80E-01

CAMPAIGN 8.33E-02

MITDDIST 3.00E01

LOS HISTORICAL TO SI CHECK

MITDVEL 2.40E01
 RPD 6.00E00
 RR 1.00E00
 RU 1.80E-02
 RS 8.70E-01
 SMALLPKG 5.00E-01
 RPCTHYROID
 I131 1.27E06

FLAGS

IACC 2
 IUOPT 2
 REGCHECK 0

EOF

LINK LINK_R VEHICLE_1 1777 88.0 2.0 6 460.0 4.4E-08 0.5 R 1 1.0
 LINK LINK_S VEHICLE_1 541 72.0 2.0 720 780.0 4.4E-08 0.5 S 1 0.0
 LINK LINK_U VEHICLE_1 35 40.0 2.0 3800 2800.0 4.4E-08 0.5 U 1 0.0

* LOSS OF SHIELDING STOP

	NAME	VEHICLE	PEOPLE	DISTANCE	SHLD	FCTR	EXPOS	TIME
0.67	LOS_STOP PUBLICLOSR	VEHICLE_1	1.00	1.0	100	1.000		
0.67	LOS_STOP PUBLICLOSS	VEHICLE_1	1.00	1.0	50	1.000		
0.46	LOS_STOP PUBLICLOSU	VEHICLE_1	1.00	1.0	20	1.000		
	LOS_STOP FIRSTLOSR	VEHICLE_1	1.00	1.0	100	1.000	1.0	
	LOS_STOP FIRSTLOSS	VEHICLE_1	1.00	1.0	50	1.000	1.0	
	LOS_STOP FIRSTLOSU	VEHICLE_1	1.00	1.0	20	1.000	1.0	

EOF

LOS HISTORICAL TO SI CHECK

CONTROL INPUT DATA (DIMEN & PARM)

NUMBER OF ACCIDENT SEVERITY CATEGORIES = 19
 NUMBER OF LOSS OF SHIELDING PROBABILITIES = 10
 NUMBER OF DEPOSITION AREAS (ISOPLETHS) = 18
 INCIDENT FREE AND ACCIDENT ANALYSES INVOKED
 DETAILED INPUT, FULL OUTPUT, CONSEQUENCE TABLES & POPULATION RISK BY
 LINK
 USER SUPPLIED OR NATIONAL AVERAGE WEATHER DILUTION INPUT
 HISTORICAL UNITS ON INPUT
 SI UNITS ON OUTPUT
 DOSE UNITS ON OUTPUT

 INGESTION FILE = RT6_Ingestion.BIN

PACKAGE AND MATERIAL CHARACTERISTICS INPUT DATA

	DIMENSION	EFFECTIVE	K(0)	FRACTION	FRACTION
DOSE RATE					
(Sv/hr)	MATERIAL (METERS)	DIMENSION	METERS SQ.	GAMMA	NEUTRON
PACKAGE_1	5.210E+00	4.682E+00	1.116E+01	1.000E+00	0.000E+00
1.300E-04					

K(0) IS DOSE RATE CONVERSION FACTOR

LOS HISTORICAL TO SI CHECK

VEHICLE CHARACTERISTICS INPUT DATA

VEHICLE NAME	VEHICLE_1
MODE TYPE	HIGHWAY
EXCLUSIVE USE	YES
DOSE RATE (Sv/hr)	1.30E-04
FRACTION OF GAMMA FOR VEH	1.00E+00
FRACTION OF NEUTRON FOR V	0.00E+00
K(0) (SQ. METERS)	1.12E+01
VEHICLE SIZE (M)	5.21E+00
EFFECTIVE SIZE (M)	4.68E+00
NUMBER OF SHIPMENTS	1.00E+00
NUMBER OF CREW	2.00E+00
CREW DISTANCE (M)	3.00E+00
CREW DOSE ADJUSTMENT FACT	1.00E+00
CREW EXPOSER WIDTH (M)	7.10E-01
EFFECTIVE EXPOSER WIDTH	7.10E-01
K(0) (SQ M) CREW EXPOSURE	1.84E+00

VEHICLE	MATERIAL	NO. PACKAGES
VEHICLE_1	PACKAGE_1	1.00E+00

TRANSFER					
COEFFICIENTS:	MU	A(1)	A(2)	A(3)	A(4)
GAMMA	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NEUTRON	7.420E-03	2.020E-02	6.170E-05	3.170E-08	0.000E+00

	DISTANCES (METERS)	FREEWAY	SECONDARY	STREET	RAIL	WATER
ADJACENT						
OFFLINK:						
MINIMUM DISTANCE	3.00E+01	2.70E+01	5.00E+00	3.00E+01	2.00E+02	
SIDEWALK + MINIMUM	3.00E+01	3.00E+01	8.00E+00	3.00E+01	2.00E+02	
MAXIMUM DISTANCE	8.00E+02	8.00E+02	8.00E+02	8.00E+02	1.00E+03	
ONLINK:						
OPPOSITE DIRECTION	1.50E+01	3.00E+00	3.00E+00	3.00E+00		
ADJACENT VEHICLE						
4.00E+00						

LINK RELATED INPUT DATA

LINK	LINK_R	LINK_S	LINK_U
------	--------	--------	--------

VEHICLE	VEHICLE_1	VEHICLE_1	VEHICLE_1
DISTANCE (KM)	1.78E+03	5.41E+02	3.50E+01
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00
SPEED (KM/HR)	8.80E+01	7.20E+01	4.00E+01
POPULATION DENSITY (#/KM^2)	6.00E+00	7.20E+02	3.80E+03
VEHICLE DENSITY (#/HR)	4.60E+02	7.80E+02	2.80E+03
ACCIDENT RATE/KM	4.40E-08	4.40E-08	4.40E-08
FATALITIES/ACCIDENT	5.00E-01	5.00E-01	5.00E-01
ZONE	RURAL	SUBURBAN	URBAN
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	1.00E+00	0.00E+00	0.00E+00

LOS HISTORICAL TO SI CHECK

LOSS OF SHIELDING STOP RELATED INPUT DATA

LOSS SHIELDING STOP	PUBLICLOSSR	PUBLICLOSS	PUBLICLOSSU	FIRSTLOSSR
FIRSTLOSS				
VEHICLE	VEHICLE_1	VEHICLE_1	VEHICLE_1	VEHICLE_1
VEHICLE_1				
ZONE	RURAL	RURAL	RURAL	RURAL
RURAL				
NUMB PEOLPE EXPOSED	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00				
MINIMUM DISTANCE(M)	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00				
MAXIMUM DISTANCE(M)	1.00E+02	5.00E+01	2.00E+01	1.00E+02
5.00E+01				
SHIELDING FACTOR	1.00E+00	1.00E+00	1.00E+00	1.00E+00
1.00E+00				
EXPOSURE TIME (HR)	6.70E-01	6.70E-01	4.60E-01	1.00E+00
1.00E+00				
LOSS SHIELDING STOP	FIRSTLOSSU			
VEHICLE	VEHICLE_1			
ZONE	RURAL			
NUMB PEOLPE EXPOSED	1.00E+00			
MINIMUM DISTANCE(M)	1.00E+00			
MAXIMUM DISTANCE(M)	2.00E+01			
SHIELDING FACTOR	1.00E+00			
EXPOSURE TIME (HR)	1.00E+00			

RURAL		SUBURBAN		URBAN	
FAIL	PROB	FAIL	PROB	FAIL	PROB
5.20E-02	1.71E-06	5.20E-02	1.71E-06	5.20E-02	1.71E-06
1.58E-01	4.63E-07	1.58E-01	4.63E-07	1.58E-01	4.63E-07
2.64E-01	3.21E-08	2.64E-01	3.21E-08	2.64E-01	3.21E-08
3.68E-01	2.53E-10	3.68E-01	2.53E-10	3.68E-01	2.53E-10
3.30E-02	2.20E-05	3.30E-02	2.20E-05	3.30E-02	2.20E-05
9.60E-02	5.97E-06	9.60E-02	5.97E-06	9.60E-02	5.97E-06
1.58E-01	4.14E-07	1.58E-01	4.14E-07	1.58E-01	4.14E-07
2.55E-01	3.27E-09	2.55E-01	3.27E-09	2.55E-01	3.27E-09
2.90E-02	4.90E-05	2.90E-02	4.90E-05	2.90E-02	4.90E-05
5.00E-01	1.66E-09	5.00E-01	1.66E-09	5.00E-01	1.66E-09

LOS HISTORICAL TO SI CHECK

ISOTOPE RELATED INPUT DATA

NUCLIDE	BECQUERELS	WASTE	RELEASE	RESUSPENSION
	PER PKG	LIMIT	GROUP	FACTOR
PACKAGE_1		(BQ/M^3)		
C060	6.42E+12	1.89E-08	CRUD	1.08E+00
KR85	1.93E+14	1.89E-08	KR	1.00E+00
SR90	5.95E+15	1.08E-12	PART	1.08E+00
Y90	5.95E+15	1.89E-08	PART	1.08E+00
RU106	4.92E+15	1.89E-08	RUTH	1.08E+00
CS134	7.76E+15	1.89E-08	CS	1.08E+00
CS137	8.77E+15	2.70E-11	CS	1.08E+00
CE144	4.30E+15	1.89E-08	PART	1.08E+00
PM147	2.86E+15	1.89E-08	PART	1.08E+00
EU154	9.35E+14	1.89E-08	PART	1.08E+00
PU238	5.34E+14	5.32E-12	PART	1.08E+00
PU239	2.38E+13	5.32E-12	PART	1.08E+00
PU240	4.75E+13	5.32E-12	PART	1.08E+00
PU241	7.24E+15	1.86E-10	PART	1.08E+00
AM241	4.84E+13	3.21E-12	PART	1.08E+00
AM242M	1.48E+12	1.89E-08	PART	1.08E+00
AM243	2.79E+12	3.21E-12	PART	1.08E+00
CM242	4.17E+13	3.78E-10	PART	1.08E+00
CM243	3.20E+12	1.89E-12	PART	1.08E+00
CM244	6.24E+14	1.89E-12	PART	1.08E+00

LOS HISTORICAL TO SI CHECK

NUCLIDE NEUTRON EMISSION PACKAGE_1 neu/sec/BQ	HALF LIFE (Days)	GAMMA ENERGY (MeV/nt)	AIR IMMERISON (SHINE) DCF CLOUD (Sv-m ³ /Bq-s)	GROUND (Sv-m ² /Bq-s)	INGESTION NUCLIDE
C060 0.00E+00	1.92E+03	2.50E+00	1.26E-13	2.35E-15	Co-60
KR85 0.00E+00	3.91E+03	2.21E-03	1.19E-16	2.64E-18	NONE
SR90 0.00E+00	1.06E+04	0.00E+00	7.54E-18	2.84E-19	Sr-90
Y90 0.00E+00	2.67E+00	1.69E-06	1.90E-16	5.32E-18	Y-90
RU106 0.00E+00	3.68E+02	2.01E-01	1.04E-14	2.12E-16	Ru-106
CS134 0.00E+00	7.52E+02	1.55E+00	7.57E-14	1.52E-15	Cs-134
CS137 0.00E+00	1.10E+04	5.69E-02	2.73E-14	5.54E-16	Cs-137
CE144 0.00E+00	2.84E+02	5.27E-02	2.81E-15	5.88E-17	Ce-144
PM147 0.00E+00	9.58E+02	4.37E-06	6.92E-19	3.41E-20	Pm-147
EU154 0.00E+00	3.21E+03	1.22E+00	6.14E-14	1.19E-15	Eu-154
PU238 0.00E+00	3.20E+04	1.81E-03	4.89E-18	8.38E-19	Pu-238
PU239 0.00E+00	8.78E+06	7.96E-04	4.24E-18	3.66E-19	Pu-239
PU240 0.00E+00	2.39E+06	1.73E-03	4.76E-18	8.04E-19	Pu-240
PU241 0.00E+00	5.26E+03	2.54E-06	7.24E-20	1.93E-21	Pu-241
AM241 0.00E+00	1.58E+05	3.24E-02	8.19E-16	2.75E-17	Am-241
AM242M 0.00E+00	5.55E+04	5.11E-03	3.16E-17	3.02E-18	Am-242m
AM243 0.00E+00	2.69E+06	5.59E-02	2.18E-15	5.35E-17	Am-243
CM242 0.00E+00	1.63E+02	1.83E-03	5.70E-18	9.57E-19	Cm-242
CM243 0.00E+00	1.04E+04	1.34E-01	5.89E-15	1.25E-16	Cm-243
CM244 0.00E+00	6.61E+03	1.70E-03	4.92E-18	8.79E-19	Cm-244

LOS HISTORICAL TO SI CHECK

ISOTOPE RELATED INPUT DATA

NUCLIDE	INHALATION DOSE CONVERSION FACTORS			
	LUNG (SV/BQ)	MARROW (SV/BQ)	THYROID (SV/BQ)	EFFECTIVE (SV/BQ)
PACKAGE_1				
C060	4.81E-08	2.89E-09	0.00E+00	1.00E-08
KR85	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SR90	1.90E-07	1.10E-08	0.00E+00	3.59E-08
Y90	7.00E-09	1.00E-10	0.00E+00	1.40E-09
RU106	1.90E-07	1.70E-09	0.00E+00	2.81E-08
CS134	4.81E-08	3.11E-09	0.00E+00	9.11E-09
CS137	5.89E-08	1.70E-09	0.00E+00	9.70E-09
CE144	1.80E-07	1.40E-08	0.00E+00	3.59E-08
PM147	1.90E-08	1.30E-09	0.00E+00	5.00E-09
EU154	7.89E-08	1.00E-08	0.00E+00	5.30E-08
PU238	3.41E-05	3.70E-06	0.00E+00	4.59E-05
PU239	3.00E-05	3.51E-06	0.00E+00	5.00E-05
PU240	3.00E-05	3.51E-06	0.00E+00	5.00E-05
PU241	7.70E-09	3.59E-09	0.00E+00	9.00E-07
AM241	3.30E-05	2.20E-06	0.00E+00	4.19E-05
AM242M	5.30E-06	1.10E-06	0.00E+00	3.70E-05
AM243	3.11E-05	2.10E-06	0.00E+00	4.11E-05
CM242	3.51E-05	1.10E-06	0.00E+00	5.19E-06
CM243	3.70E-05	2.30E-06	0.00E+00	3.11E-05
CM244	3.70E-05	2.30E-06	0.00E+00	2.70E-05

LOS HISTORICAL TO SI CHECK

RELEASE RELATED INPUT DATA

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6	SEVER: 7
CRUD	2.00E-03	1.40E-03	1.80E-03	3.20E-03	1.80E-03	2.10E-03	3.10E-03
KR	8.00E-01	1.40E-01	1.80E-01	8.40E-01	4.30E-01	4.90E-01	8.50E-01
RUTH	6.00E-07	1.00E-07	1.30E-07	3.80E-06	3.20E-07	3.70E-07	2.10E-06
CS	2.40E-08	4.10E-09	5.40E-09	3.60E-05	1.30E-08	1.50E-08	2.70E-05
PART	6.00E-07	1.00E-07	1.30E-07	3.80E-06	3.20E-07	3.70E-07	2.10E-06

GROUP	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13	SEVER:14
CRUD	2.00E-03	2.20E-03	2.50E-03	2.00E-03	2.20E-03	2.50E-03	6.40E-03
KR	8.20E-01	8.90E-01	9.10E-01	8.20E-01	8.90E-01	9.10E-01	8.40E-01
RUTH	6.10E-07	6.70E-07	6.80E-07	6.10E-07	6.70E-07	6.80E-07	8.40E-05
CS	2.40E-08	2.70E-08	5.90E-06	2.40E-08	2.70E-08	5.90E-06	9.60E-05
PART	6.10E-07	6.70E-07	6.80E-07	6.10E-07	6.70E-07	6.80E-07	1.80E-05

GROUP	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19
CRUD	5.90E-03	3.30E-03	3.30E-03	2.50E-03	0.00E+00
KR	8.50E-01	9.10E-01	9.10E-01	8.40E-01	0.00E+00
RUTH	5.00E-05	6.40E-06	6.40E-06	6.70E-08	0.00E+00
CS	5.50E-05	5.90E-06	5.90E-06	1.70E-05	0.00E+00
PART	9.00E-06	6.80E-07	6.80E-07	6.70E-08	0.00E+00

DEPOSITION VELOCITIES

GROUP	M/SEC
CRUD	1.00E-01
KR	0.00E+00
RUTH	1.00E-01
CS	1.00E-01
PART	1.00E-01

ACCIDENT SEVERITY FRACTIONS
FOR HIGHWAY

ZONE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6	SEVER: 7
RURAL	1.53E-08	5.88E-05	1.18E-06	7.49E-08	4.65E-07	3.31E-09	0.00E+00
SUBURBAN	1.53E-08	5.88E-05	1.18E-06	7.49E-08	4.65E-07	3.31E-09	0.00E+00
URBAN	1.53E-08	5.88E-05	1.18E-06	7.49E-08	4.65E-07	3.31E-09	0.00E+00

ZONE	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13	SEVER:14
RURAL	1.13E-08	8.03E-11	0.00E+00	1.44E-10	1.02E-12	0.00E+00	7.49E-11
SUBURBAN	1.13E-08	8.03E-11	0.00E+00	1.44E-10	1.02E-12	0.00E+00	7.49E-11
URBAN	1.13E-08	8.03E-11	0.00E+00	1.44E-10	1.02E-12	0.00E+00	7.49E-11

ZONE	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19
------	----------	----------	----------	----------	----------

RURAL	0.00E+00	0.00E+00	0.00E+00	5.86E-06	1.00E+00
SUBURBAN	0.00E+00	0.00E+00	0.00E+00	5.86E-06	1.00E+00
URBAN	0.00E+00	0.00E+00	0.00E+00	5.86E-06	1.00E+00

LOS HISTORICAL TO SI CHECK

AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6	SEVER: 7
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

GROUP	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13	SEVER:14
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

GROUP	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

LOS HISTORICAL TO SI CHECK

RESPIRABLE FRACTION OF AEROSOLS (BELOW 10 MICRONS AED)

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6	SEVER: 7
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

GROUP	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13	SEVER:14
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

GROUP	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19
CRUD	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

LOS HISTORICAL TO SI CHECK

HEALTH RELATED INPUT DATA

EARLY MORBIDITY THRESHOLD VALUE FOR LUNG 5.000E+00 SV
 EARLY MORBIDITY THRESHOLD VALUE FOR MARROW/WHOLE BODY 5.000E-01 SV
 EARLY MORBIDITY THRESHOLD VALUE FOR THYROID 2.000E+00 SV

EARLY FATALITY PROBABILITIES (EF)

DOSE(SV)	EF MARROW	DOSE(SV)	EF LUNG
6.80	1.00000	15.25	1.00000
6.70	0.99999	15.00	0.99999
6.60	0.99998	14.75	0.99997
6.50	0.99996	14.50	0.99991
6.40	0.99992	14.25	0.99974
6.30	0.99983	14.00	0.99933
6.20	0.99967	13.75	0.99840
6.10	0.99938	13.50	0.99653
6.00	0.99889	13.25	0.99306
5.90	0.99808	13.00	0.98709
5.80	0.99679	12.75	0.97755
5.70	0.99482	12.50	0.96331
5.60	0.99192	12.25	0.94326
5.50	0.98776	12.00	0.91656
5.40	0.98199	11.75	0.88274
5.30	0.97423	11.50	0.84178
5.20	0.96406	11.25	0.79420
5.10	0.95111	11.00	0.74095
5.00	0.93502	10.75	0.68335
4.90	0.91551	10.50	0.62293
4.80	0.89237	10.25	0.56130
4.70	0.86552	10.00	0.50000
4.60	0.83499	9.75	0.44042
4.50	0.80096	9.50	0.38372
4.40	0.76371	9.25	0.33077
4.30	0.72363	9.00	0.28218
4.20	0.68123	8.75	0.23830
4.10	0.63706	8.50	0.19925
4.00	0.59172	8.25	0.16498
3.90	0.54583	8.00	0.13529
3.80	0.50000	7.75	0.10988
3.70	0.45481	7.50	0.08837
3.60	0.41078	7.25	0.07038
3.50	0.36838	7.00	0.05548
3.40	0.32798	6.75	0.04329
3.30	0.28990	6.50	0.03341
3.20	0.25438	6.25	0.02549
3.10	0.22155	6.00	0.01922
3.00	0.19150	5.75	0.01430
2.90	0.16425	5.50	0.01050

2.80	0.13977	5.25	0.00759
2.70	0.11797	5.00	0.00000
2.60	0.09872		
2.50	0.08188		
2.40	0.06729		
2.30	0.05475		
2.20	0.04408		
2.10	0.03510		
2.00	0.02761		
1.90	0.02143		
1.80	0.01639		
1.70	0.01234		
1.60	0.00913		
1.50	0.00000		

LOS HISTORICAL TO SI CHECK

DISPERSAL ACCIDENT INPUT DATA

AREADA (M SQ)	CENTER LINE(M)	DILUTION FACTOR*
4.590E+02	3.300E+01	3.420E-03
1.530E+03	6.800E+01	1.720E-03
3.940E+03	1.050E+02	8.580E-04
1.250E+04	2.440E+02	3.420E-04
3.040E+04	3.690E+02	1.720E-04
6.850E+04	5.610E+02	8.580E-05
1.760E+05	1.018E+03	3.420E-05
4.450E+05	1.628E+03	1.720E-05
8.590E+05	2.308E+03	8.580E-06
2.550E+06	4.269E+03	3.420E-06
4.450E+06	5.468E+03	1.720E-06
1.030E+07	1.114E+04	8.580E-07
2.160E+07	1.310E+04	3.420E-07
5.520E+07	2.133E+04	1.720E-07
1.770E+08	4.050E+04	8.580E-08
4.890E+08	6.999E+04	5.420E-08
8.120E+08	8.986E+04	4.300E-08
1.350E+09	1.209E+05	3.420E-08

* DILUTION FACTOR UNITS ARE (BQ-SEC/M**3/BQ-RELEASED)

OTHER DISPERSAL ACCIDENT INPUT PARAMETERS

BUILDING DOSE FACTOR	(BDF) = 5.000E-02
CONTAMINATION CLEAN UP LEVEL (BQ/M**2)	(CULVL) = 7.400E+03
BREATHING RATE (M**3/SEC)	(BRATE) = 3.300E-04
INTERDICTION THRESHOLD (Mega-Bq/Bq)	(INTERDICT) = 1.000E+05
EVACUATION TIME (DAYS)	(EVACUATION) = 1.000E+00
SURVEY INTERVAL (DAYS)	(SURVEY) = 1.000E+01
CAMPAIGN LENGTH (YEARS)	(TIMEYR) = 8.330E-02
FRACTION OF URBAN AREAS WITH BUILDINGS	(UBF) = 5.200E-01
FRACTION OF URBAN AREAS WITH SIDEWALKS	(USWF) = 4.800E-01
RATIO OF SIDEWALK PEDESTRIAN DENSITY	(RPD) = 6.000E+00
MAXIMUM IN-TRANSIT DOSE DISTANCE (M)	(DMDIST) = 3.000E+01
MAXIMUM IN-TRANSIT DOSE VELOCITY (KM/H)	(DMVEL) = 2.400E+01
IACC VALUE: 1=NON-DISPERSAL, 2=DISPERSAL	= 2
REGULATORY CHECK, 1=DO CHECKS, 0=NO CHECKS	= 0

OUTPUT IS IN STANDARD INTERNATIONAL UNITS (BQ AND SV)

BUILDING SHIELDING OPTION	(IUOPT) = 2
RURAL SHIELDING FACTOR	= 1.000E+00
SUBURBAN SHIELDING FACTOR	= 8.700E-01
URBAN SHIELDING FACTOR	= 1.800E-02

RUN DATE: [05-14-2008 AT 21:18]

PAGE 18

LOS HISTORICAL TO SI CHECK

INGESTION RELATED INPUT DATA

COMIDA INGESTION FILE USED: RT6_Ingestion.BIN

COMIDA FILE HEADER

COMIDA2 07/22/03 08:58:40 Ver. 1.11a, 1/28/96: avoiding use of UNIT
6 for HP

DOSE CONVERSION FILE USED IN COMIDA

FGRDCF 07/10/03 21:45:47 Version 1.10
Implicit daughter halflives (m) less than 90 and less than 0.100 of
parent

NO INGESTION WILL BE CALCULATED FOR THE FOLLOWING ISOTOPES
INGESTION NUCLIDES ARE NOT IN INGESTION FILE

PACKAGE	ISOTOPE	INGESTION NUCLIDE
PACKAGE_1	KR85	NONE

BACKYARD FARMER INGESTION DOSE (SV/BQ DEPOSITED)

PACKAGE	NUCLIDE	EFFECTIVE	THYROID
PACKAGE_1	Co-60	3.591E-09	1.021E-09
PACKAGE_1	Sr-90	2.158E-08	8.463E-10
PACKAGE_1	Y-90	5.535E-12	2.397E-17
PACKAGE_1	Ru-106	1.806E-09	3.441E-10
PACKAGE_1	Cs-134	6.032E-08	5.362E-08
PACKAGE_1	Cs-137	4.604E-08	4.298E-08
PACKAGE_1	Ce-144	1.022E-09	9.219E-13
PACKAGE_1	Pm-147	1.187E-10	1.309E-17
PACKAGE_1	Eu-154	1.151E-09	2.548E-11
PACKAGE_1	Pu-238	2.004E-07	1.851E-12
PACKAGE_1	Pu-239	2.224E-07	1.742E-12
PACKAGE_1	Pu-240	2.224E-07	1.747E-12
PACKAGE_1	Pu-241	4.390E-09	2.553E-14
PACKAGE_1	Am-241	2.289E-07	3.071E-12
PACKAGE_1	Am-242m	2.212E-07	8.777E-13
PACKAGE_1	Am-243	2.280E-07	1.583E-11
PACKAGE_1	Cm-242	5.350E-09	1.522E-12
PACKAGE_1	Cm-243	2.609E-07	1.210E-11
PACKAGE_1	Cm-244	2.077E-07	3.217E-12

SOCIETAL INGESTION DOSE (PERSON-SV/BQ DEPOSITED)

NUCLIDE GONADS BREAST LUNGS RED MAR BONE SU THYROID REMAIND
EFFECTI

13	Co-60	4.4E-13	1.5E-13	1.2E-13	1.8E-13	1.3E-13	1.1E-13	6.9E-13	3.9E-
12	Sr-90	1.4E-13	1.4E-13	1.4E-13	1.8E-11	3.9E-11	1.4E-13	5.7E-13	3.6E-
16	Y-90	2.7E-21	2.4E-21	2.4E-21	7.0E-20	7.0E-20	2.4E-21	1.8E-15	5.5E-
13	Ru-106	4.2E-14	3.7E-14	3.7E-14	3.8E-14	3.7E-14	3.6E-14	5.5E-13	1.9E-
12	Cs-134	7.1E-12	5.9E-12	6.0E-12	6.4E-12	6.0E-12	6.0E-12	7.6E-12	6.8E-
12	Cs-137	5.5E-12	4.9E-12	5.0E-12	5.2E-12	5.0E-12	5.0E-12	5.7E-12	5.3E-
13	Ce-144	1.3E-15	2.3E-16	1.2E-16	1.7E-15	2.4E-15	9.7E-17	3.6E-13	1.1E-
14	Pm-147	3.0E-19	3.3E-20	8.7E-21	9.3E-16	1.2E-14	1.4E-21	4.0E-14	1.3E-
13	Eu-154	6.5E-14	1.3E-14	1.0E-14	5.5E-14	2.1E-13	2.7E-15	3.0E-13	1.2E-
11	Pu-238	6.0E-12	2.1E-16	2.2E-16	3.2E-11	4.0E-10	2.0E-16	1.5E-11	2.2E-
11	Pu-239	6.8E-12	2.0E-16	2.0E-16	3.6E-11	4.5E-10	1.9E-16	1.7E-11	2.5E-
11	Pu-240	6.8E-12	2.0E-16	2.1E-16	3.6E-11	4.5E-10	1.9E-16	1.7E-11	2.5E-
13	Pu-241	1.5E-13	6.9E-18	1.2E-17	7.3E-13	9.1E-12	2.8E-18	2.9E-13	4.9E-
11	Am-241	6.9E-12	6.7E-16	8.6E-16	3.7E-11	4.6E-10	3.4E-16	1.7E-11	2.5E-
11	Am-242m	6.8E-12	3.1E-16	4.2E-16	3.6E-11	4.5E-10	9.7E-17	1.6E-11	2.4E-
11	Am-243	7.0E-12	3.6E-15	5.0E-15	3.7E-11	4.6E-10	1.7E-15	1.7E-11	2.5E-
13	Cm-242	9.7E-14	1.7E-16	1.7E-16	6.7E-13	8.3E-12	1.7E-16	7.5E-13	5.8E-
11	Cm-243	8.1E-12	3.3E-15	3.6E-15	4.6E-11	5.8E-10	1.5E-15	2.3E-11	3.2E-
11	Cm-244	6.2E-12	4.1E-16	4.1E-16	3.6E-11	4.5E-10	3.9E-16	1.9E-11	2.5E-

END OF INPUT EDIT

LOS HISTORICAL TO SI CHECK

RRRR	AAA	DDDD	TTTTT	RRRR	AAA	N	N	6	000	000
R R	A A	D D	T	R R	A A	NN	N	6	0 0	0 0
R R	A A	D D	T	R R	A A	N N	N	6	0 0	0 0
RRRR	A A	D D	T	RRRR	A A	N	NN	6666	0 0	0 0
R R	AAAAA	D D	T	R R	AAAAA	N	N	6 6	0 0	0 0
R R	A A	D D	T	R R	A A	N	N	6 6	0 0	0 0
R R	A A	DDDD	T	R R	A A	N	N	666 *	000	000

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

000	U	U	TTTTT	PPPP	U	U	TTTTT
0 0	U	U	T	P P	U	U	T
0 0	U	U	T	P P	U	U	T
0 0	U	U	T	PPPP	U	U	T
0 0	U	U	T	P	U	U	T
0 0	U	U	T	P	U	U	T
000	UUUUU	T	P	UUUUU	T		

RADTRAN 6.00 September 28, 2007

Copyright 2007 Sandia Corporation

RUN DATE: [05-14-2008 AT 21:18]

PAGE 20

LOS HISTORICAL TO SI CHECK

NON-RADIOLOGICAL DATA (ACCIDENTS and FATALITIES)

		HIGHWAY VEHICLE_1	
LINK	ACCIDENT RATE	ACCIDENTS	FATALITIES
LINK_R	4.40E-08	7.82E-05	3.91E-05
LINK_S	4.40E-08	2.38E-05	1.19E-05
LINK_U	4.40E-08	1.54E-06	7.70E-07
TOTALS:	1.32E-07	1.04E-04	5.18E-05

RUN DATE: [05-14-2008 AT 21:18]

PAGE 21

LOS HISTORICAL TO SI CHECK

REGULATORY CHECKS HAVE BEEN DISABLED

LOS HISTORICAL TO SI CHECK

CALCULATIONAL INFORMATION

IN CALCULATING THE DEPLETION FOR THE FOLLOWING GROUPS,
THE CONCENTRATIONS IN THE LISTED AREA HAVE BECOME NEGATIVE.
THE CONTAMINATION AND CONCENTRATIONS IN THE LISTED AREA AND
LARGER HAVE BEEN SET TO ZERO.

GROUP CRUD AREA 6
GROUP RUTH AREA 6
GROUP CS AREA 6
GROUP PART AREA 6

FOR VEHICLE_1 AREAS WITH TOTAL CONTAMINATION RATIO GREATER THAN
1.00E+05

(THE AREAS MARKED WITH AN 'X' ARE INTERDICTED)

AREA/SEVERITY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

LOS HISTORICAL TO SI CHECK

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6	SEVER: 7
CRUD	2.00E-03	1.40E-03	1.80E-03	3.20E-03	1.80E-03	2.10E-03	3.10E-03
KR	8.00E-01	1.40E-01	1.80E-01	8.40E-01	4.30E-01	4.90E-01	8.50E-01
RUTH	6.00E-07	1.00E-07	1.30E-07	3.80E-06	3.20E-07	3.70E-07	2.10E-06
CS	2.40E-08	4.10E-09	5.40E-09	3.60E-05	1.30E-08	1.50E-08	2.70E-05
PART	6.00E-07	1.00E-07	1.30E-07	3.80E-06	3.20E-07	3.70E-07	2.10E-06

GROUP	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13	SEVER:14
CRUD	2.00E-03	2.20E-03	2.50E-03	2.00E-03	2.20E-03	2.50E-03	6.40E-03
KR	8.20E-01	8.90E-01	9.10E-01	8.20E-01	8.90E-01	9.10E-01	8.40E-01
RUTH	6.10E-07	6.70E-07	6.80E-07	6.10E-07	6.70E-07	6.80E-07	8.40E-05
CS	2.40E-08	2.70E-08	5.90E-06	2.40E-08	2.70E-08	5.90E-06	9.60E-05
PART	6.10E-07	6.70E-07	6.80E-07	6.10E-07	6.70E-07	6.80E-07	1.80E-05

GROUP	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19
CRUD	5.90E-03	3.30E-03	3.30E-03	2.50E-03	0.00E+00
KR	8.50E-01	9.10E-01	9.10E-01	8.40E-01	0.00E+00
RUTH	5.00E-05	6.40E-06	6.40E-06	6.70E-08	0.00E+00
CS	5.50E-05	5.90E-06	5.90E-06	1.70E-05	0.00E+00
PART	9.00E-06	6.80E-07	6.80E-07	6.70E-08	0.00E+00

DEPOSITION VELOCITIES

GROUP	M/SEC
CRUD	1.00E-01
KR	0.00E+00
RUTH	1.00E-01
CS	1.00E-01
PART	1.00E-01

DILUTION FACTORS

CHI VALUES AFTER DEPLETION (BQ-SEC/M**3/BQ-RELEASED)

DISTANCE	CRUD	KR	RUTH	CS	PART
3.30E+01	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03
6.80E+01	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03
1.05E+02	6.34E-04	8.58E-04	6.34E-04	6.34E-04	6.34E-04
2.44E+02	1.67E-04	3.42E-04	1.67E-04	1.67E-04	1.67E-04
3.69E+02	3.61E-05	1.72E-04	3.61E-05	3.61E-05	3.61E-05
5.61E+02	6.11E-06	8.58E-05	6.11E-06	6.11E-06	6.11E-06
1.02E+03	0.00E+00	3.42E-05	0.00E+00	0.00E+00	0.00E+00
1.63E+03	0.00E+00	1.72E-05	0.00E+00	0.00E+00	0.00E+00
2.31E+03	0.00E+00	8.58E-06	0.00E+00	0.00E+00	0.00E+00
4.27E+03	0.00E+00	3.42E-06	0.00E+00	0.00E+00	0.00E+00
5.47E+03	0.00E+00	1.72E-06	0.00E+00	0.00E+00	0.00E+00
1.11E+04	0.00E+00	8.58E-07	0.00E+00	0.00E+00	0.00E+00
1.31E+04	0.00E+00	3.42E-07	0.00E+00	0.00E+00	0.00E+00

2.13E+04	0.00E+00	1.72E-07	0.00E+00	0.00E+00	0.00E+00
4.05E+04	0.00E+00	8.58E-08	0.00E+00	0.00E+00	0.00E+00
7.00E+04	0.00E+00	5.42E-08	0.00E+00	0.00E+00	0.00E+00
8.99E+04	0.00E+00	4.30E-08	0.00E+00	0.00E+00	0.00E+00
1.21E+05	0.00E+00	3.42E-08	0.00E+00	0.00E+00	0.00E+00

RUN DATE: [05-14-2008 AT 21:18]

PAGE 24

LOS HISTORICAL TO SI CHECK

DEPOSITION FACTORS
CHI DEPOSITED (BQ/M**2/BQ-RELEASED)

DISTANCE	CRUD	KR	RUTH	CS	PART
3.30E+01	3.42E-04	0.00E+00	3.42E-04	3.42E-04	3.42E-04
6.80E+01	1.72E-04	0.00E+00	1.72E-04	1.72E-04	1.72E-04
1.05E+02	6.34E-05	0.00E+00	6.34E-05	6.34E-05	6.34E-05
2.44E+02	1.67E-05	0.00E+00	1.67E-05	1.67E-05	1.67E-05
3.69E+02	3.61E-06	0.00E+00	3.61E-06	3.61E-06	3.61E-06
5.61E+02	6.11E-07	0.00E+00	6.11E-07	6.11E-07	6.11E-07
1.02E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.63E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.31E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.27E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.47E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.11E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.31E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.13E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4.05E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.00E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.21E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

VEHICLE VEHICLE_1

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 1

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	3.44E-02	3.77E-03	3.71E-02	1.43E-01	
1.14E+07					
6.80E+01	1.73E-02	1.89E-03	1.86E-02	7.18E-02	
5.72E+06					
1.05E+02	6.38E-03	7.02E-04	6.87E-03	3.58E-02	
2.11E+06					
2.44E+02	1.68E-03	1.87E-04	1.81E-03	1.43E-02	
5.56E+05					
3.69E+02	3.63E-04	4.23E-05	3.92E-04	7.18E-03	
1.20E+05					
5.61E+02	6.15E-05	8.20E-06	6.63E-05	3.58E-03	
2.04E+04					
1.02E+03	0.00E+00	6.28E-07	0.00E+00	1.43E-03	
0.00E+00					
1.63E+03	0.00E+00	3.16E-07	0.00E+00	7.18E-04	
0.00E+00					
2.31E+03	0.00E+00	1.58E-07	0.00E+00	3.58E-04	
0.00E+00					
4.27E+03	0.00E+00	6.28E-08	0.00E+00	1.43E-04	
0.00E+00					
5.47E+03	0.00E+00	3.16E-08	0.00E+00	7.18E-05	
0.00E+00					
1.11E+04	0.00E+00	1.58E-08	0.00E+00	3.58E-05	
0.00E+00					
1.31E+04	0.00E+00	6.28E-09	0.00E+00	1.43E-05	
0.00E+00					
2.13E+04	0.00E+00	3.16E-09	0.00E+00	7.18E-06	
0.00E+00					
4.05E+04	0.00E+00	1.58E-09	0.00E+00	3.58E-06	
0.00E+00					
7.00E+04	0.00E+00	9.96E-10	0.00E+00	2.26E-06	
0.00E+00					
8.99E+04	0.00E+00	7.90E-10	0.00E+00	1.80E-06	
0.00E+00					
1.21E+05	0.00E+00	6.28E-10	0.00E+00	1.43E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 1

FARMER		INHALED		SHINE			BACKYARD
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		3.71E-02	1.77E-03	6.87E-05	9.45E-04	3.99E-02	1.13E-01
1.24E-02							
6.80E+01		1.86E-02	4.47E-04	3.45E-05	4.75E-04	1.96E-02	5.69E-02
6.22E-03							
1.05E+02		6.87E-03	6.08E-05	1.68E-05	1.75E-04	7.13E-03	2.10E-02
2.29E-03							
2.44E+02		1.81E-03	4.22E-06	6.57E-06	4.61E-05	1.87E-03	5.53E-03
6.04E-04							
3.69E+02		3.92E-04	1.97E-07	3.22E-06	9.98E-06	4.05E-04	1.20E-03
1.31E-04							
5.61E+02		6.63E-05	5.66E-09	1.59E-06	1.69E-06	6.96E-05	2.02E-04
2.21E-05							
1.02E+03		0.00E+00	0.00E+00	6.28E-07	0.00E+00	6.28E-07	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.16E-07	0.00E+00	3.16E-07	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.58E-07	0.00E+00	1.58E-07	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	6.28E-08	0.00E+00	6.28E-08	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.16E-08	0.00E+00	3.16E-08	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.58E-08	0.00E+00	1.58E-08	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	6.28E-09	0.00E+00	6.28E-09	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.16E-09	0.00E+00	3.16E-09	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.58E-09	0.00E+00	1.58E-09	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	9.96E-10	0.00E+00	9.96E-10	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	7.90E-10	0.00E+00	7.90E-10	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	6.28E-10	0.00E+00	6.28E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 2

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	6.11E-03	1.13E-03	6.26E-03	2.50E-02	
4.24E+06					
6.80E+01	3.07E-03	5.67E-04	3.14E-03	1.26E-02	
2.13E+06					
1.05E+02	1.13E-03	2.10E-04	1.16E-03	6.27E-03	
7.86E+05					
2.44E+02	2.98E-04	5.56E-05	3.05E-04	2.50E-03	
2.07E+05					
3.69E+02	6.45E-05	1.24E-05	6.61E-05	1.26E-03	
4.48E+04					
5.61E+02	1.09E-05	2.27E-06	1.12E-05	6.27E-04	
7.58E+03					
1.02E+03	0.00E+00	1.10E-07	0.00E+00	2.50E-04	
0.00E+00					
1.63E+03	0.00E+00	5.53E-08	0.00E+00	1.26E-04	
0.00E+00					
2.31E+03	0.00E+00	2.76E-08	0.00E+00	6.27E-05	
0.00E+00					
4.27E+03	0.00E+00	1.10E-08	0.00E+00	2.50E-05	
0.00E+00					
5.47E+03	0.00E+00	5.53E-09	0.00E+00	1.26E-05	
0.00E+00					
1.11E+04	0.00E+00	2.76E-09	0.00E+00	6.27E-06	
0.00E+00					
1.31E+04	0.00E+00	1.10E-09	0.00E+00	2.50E-06	
0.00E+00					
2.13E+04	0.00E+00	5.53E-10	0.00E+00	1.26E-06	
0.00E+00					
4.05E+04	0.00E+00	2.76E-10	0.00E+00	6.27E-07	
0.00E+00					
7.00E+04	0.00E+00	1.74E-10	0.00E+00	3.96E-07	
0.00E+00					
8.99E+04	0.00E+00	1.38E-10	0.00E+00	3.14E-07	
0.00E+00					
1.21E+05	0.00E+00	1.10E-10	0.00E+00	2.50E-07	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 2

FARMER CNTR LINE THYROID	INHALED		SHINE			BACKYARD	
	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE	
3.30E+01	6.26E-03	2.99E-04	1.49E-05	6.32E-04	7.20E-03	2.73E-02	
4.48E-03							
6.80E+01	3.14E-03	7.54E-05	7.50E-06	3.18E-04	3.54E-03	1.37E-02	
2.25E-03							
1.05E+02	1.16E-03	1.03E-05	3.49E-06	1.17E-04	1.29E-03	5.06E-03	
8.31E-04							
2.44E+02	3.05E-04	7.12E-07	1.29E-06	3.08E-05	3.38E-04	1.33E-03	
2.19E-04							
3.69E+02	6.61E-05	3.33E-08	5.94E-07	6.67E-06	7.34E-05	2.88E-04	
4.73E-05							
5.61E+02	1.12E-05	9.55E-10	2.83E-07	1.13E-06	1.26E-05	4.88E-05	
8.01E-06							
1.02E+03	0.00E+00	0.00E+00	1.10E-07	0.00E+00	1.10E-07	0.00E+00	
0.00E+00							
1.63E+03	0.00E+00	0.00E+00	5.53E-08	0.00E+00	5.53E-08	0.00E+00	
0.00E+00							
2.31E+03	0.00E+00	0.00E+00	2.76E-08	0.00E+00	2.76E-08	0.00E+00	
0.00E+00							
4.27E+03	0.00E+00	0.00E+00	1.10E-08	0.00E+00	1.10E-08	0.00E+00	
0.00E+00							
5.47E+03	0.00E+00	0.00E+00	5.53E-09	0.00E+00	5.53E-09	0.00E+00	
0.00E+00							
1.11E+04	0.00E+00	0.00E+00	2.76E-09	0.00E+00	2.76E-09	0.00E+00	
0.00E+00							
1.31E+04	0.00E+00	0.00E+00	1.10E-09	0.00E+00	1.10E-09	0.00E+00	
0.00E+00							
2.13E+04	0.00E+00	0.00E+00	5.53E-10	0.00E+00	5.53E-10	0.00E+00	
0.00E+00							
4.05E+04	0.00E+00	0.00E+00	2.76E-10	0.00E+00	2.76E-10	0.00E+00	
0.00E+00							
7.00E+04	0.00E+00	0.00E+00	1.74E-10	0.00E+00	1.74E-10	0.00E+00	
0.00E+00							
8.99E+04	0.00E+00	0.00E+00	1.38E-10	0.00E+00	1.38E-10	0.00E+00	
0.00E+00							
1.21E+05	0.00E+00	0.00E+00	1.10E-10	0.00E+00	1.10E-10	0.00E+00	
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 3

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	7.93E-03	1.46E-03	8.13E-03	3.21E-02	
5.47E+06					
6.80E+01	3.99E-03	7.32E-04	4.09E-03	1.62E-02	
2.75E+06					
1.05E+02	1.47E-03	2.71E-04	1.51E-03	8.06E-03	
1.01E+06					
2.44E+02	3.87E-04	7.18E-05	3.97E-04	3.21E-03	
2.67E+05					
3.69E+02	8.38E-05	1.60E-05	8.59E-05	1.62E-03	
5.78E+04					
5.61E+02	1.42E-05	2.93E-06	1.45E-05	8.06E-04	
9.77E+03					
1.02E+03	0.00E+00	1.41E-07	0.00E+00	3.21E-04	
0.00E+00					
1.63E+03	0.00E+00	7.11E-08	0.00E+00	1.62E-04	
0.00E+00					
2.31E+03	0.00E+00	3.55E-08	0.00E+00	8.06E-05	
0.00E+00					
4.27E+03	0.00E+00	1.41E-08	0.00E+00	3.21E-05	
0.00E+00					
5.47E+03	0.00E+00	7.11E-09	0.00E+00	1.62E-05	
0.00E+00					
1.11E+04	0.00E+00	3.55E-09	0.00E+00	8.06E-06	
0.00E+00					
1.31E+04	0.00E+00	1.41E-09	0.00E+00	3.21E-06	
0.00E+00					
2.13E+04	0.00E+00	7.11E-10	0.00E+00	1.62E-06	
0.00E+00					
4.05E+04	0.00E+00	3.55E-10	0.00E+00	8.06E-07	
0.00E+00					
7.00E+04	0.00E+00	2.24E-10	0.00E+00	5.09E-07	
0.00E+00					
8.99E+04	0.00E+00	1.78E-10	0.00E+00	4.04E-07	
0.00E+00					
1.21E+05	0.00E+00	1.41E-10	0.00E+00	3.21E-07	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 3

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		8.13E-03	3.88E-04	1.92E-05	8.13E-04	9.35E-03	3.54E-02
5.80E-03							
6.80E+01		4.09E-03	9.80E-05	9.64E-06	4.08E-04	4.60E-03	1.78E-02
2.91E-03							
1.05E+02		1.51E-03	1.33E-05	4.48E-06	1.51E-04	1.68E-03	6.56E-03
1.07E-03							
2.44E+02		3.97E-04	9.25E-07	1.66E-06	3.97E-05	4.39E-04	1.73E-03
2.83E-04							
3.69E+02		8.59E-05	4.33E-08	7.64E-07	8.58E-06	9.53E-05	3.74E-04
6.12E-05							
5.61E+02		1.45E-05	1.24E-09	3.64E-07	1.45E-06	1.64E-05	6.32E-05
1.04E-05							
1.02E+03		0.00E+00	0.00E+00	1.41E-07	0.00E+00	1.41E-07	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	7.11E-08	0.00E+00	7.11E-08	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	3.55E-08	0.00E+00	3.55E-08	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	1.41E-08	0.00E+00	1.41E-08	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	7.11E-09	0.00E+00	7.11E-09	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	3.55E-09	0.00E+00	3.55E-09	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	1.41E-09	0.00E+00	1.41E-09	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	7.11E-10	0.00E+00	7.11E-10	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	3.55E-10	0.00E+00	3.55E-10	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	2.24E-10	0.00E+00	2.24E-10	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	1.78E-10	0.00E+00	1.78E-10	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	1.41E-10	0.00E+00	1.41E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 4

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	2.51E-01	3.84E-02	2.40E-01	1.51E-01	
2.54E+08					
6.80E+01	1.26E-01	1.93E-02	1.21E-01	7.58E-02	
1.28E+08					
1.05E+02	4.65E-02	7.12E-03	4.46E-02	3.77E-02	
4.71E+07					
2.44E+02	1.22E-02	1.88E-03	1.17E-02	1.50E-02	
1.24E+07					
3.69E+02	2.65E-03	4.08E-04	2.54E-03	7.55E-03	
2.68E+06					
5.61E+02	4.48E-04	7.01E-05	4.30E-04	3.76E-03	
4.54E+05					
1.02E+03	0.00E+00	6.60E-07	0.00E+00	1.50E-03	
0.00E+00					
1.63E+03	0.00E+00	3.32E-07	0.00E+00	7.54E-04	
0.00E+00					
2.31E+03	0.00E+00	1.66E-07	0.00E+00	3.76E-04	
0.00E+00					
4.27E+03	0.00E+00	6.60E-08	0.00E+00	1.50E-04	
0.00E+00					
5.47E+03	0.00E+00	3.32E-08	0.00E+00	7.54E-05	
0.00E+00					
1.11E+04	0.00E+00	1.66E-08	0.00E+00	3.76E-05	
0.00E+00					
1.31E+04	0.00E+00	6.60E-09	0.00E+00	1.50E-05	
0.00E+00					
2.13E+04	0.00E+00	3.32E-09	0.00E+00	7.54E-06	
0.00E+00					
4.05E+04	0.00E+00	1.66E-09	0.00E+00	3.76E-06	
0.00E+00					
7.00E+04	0.00E+00	1.05E-09	0.00E+00	2.38E-06	
0.00E+00					
8.99E+04	0.00E+00	8.30E-10	0.00E+00	1.89E-06	
0.00E+00					
1.21E+05	0.00E+00	6.60E-10	0.00E+00	1.50E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 4

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID	3.30E+01	2.40E-01	1.15E-02	1.78E-04	1.94E-02	2.72E-01	1.13E+01
9.78E+00	6.80E+01	1.21E-01	2.90E-03	8.95E-05	9.74E-03	1.34E-01	5.69E+00
4.91E+00	1.05E+02	4.46E-02	3.95E-04	3.74E-05	3.59E-03	4.86E-02	2.10E+00
1.81E+00	2.44E+02	1.17E-02	2.74E-05	1.21E-05	9.46E-04	1.27E-02	5.53E-01
4.77E-01	3.69E+02	2.54E-03	1.28E-06	4.50E-06	2.05E-04	2.75E-03	1.20E-01
1.03E-01	5.61E+02	4.30E-04	3.67E-08	1.86E-06	3.47E-05	4.66E-04	2.03E-02
1.75E-02	1.02E+03	0.00E+00	0.00E+00	6.60E-07	0.00E+00	6.60E-07	0.00E+00
0.00E+00	1.63E+03	0.00E+00	0.00E+00	3.32E-07	0.00E+00	3.32E-07	0.00E+00
0.00E+00	2.31E+03	0.00E+00	0.00E+00	1.66E-07	0.00E+00	1.66E-07	0.00E+00
0.00E+00	4.27E+03	0.00E+00	0.00E+00	6.60E-08	0.00E+00	6.60E-08	0.00E+00
0.00E+00	5.47E+03	0.00E+00	0.00E+00	3.32E-08	0.00E+00	3.32E-08	0.00E+00
0.00E+00	1.11E+04	0.00E+00	0.00E+00	1.66E-08	0.00E+00	1.66E-08	0.00E+00
0.00E+00	1.31E+04	0.00E+00	0.00E+00	6.60E-09	0.00E+00	6.60E-09	0.00E+00
0.00E+00	2.13E+04	0.00E+00	0.00E+00	3.32E-09	0.00E+00	3.32E-09	0.00E+00
0.00E+00	4.05E+04	0.00E+00	0.00E+00	1.66E-09	0.00E+00	1.66E-09	0.00E+00
0.00E+00	7.00E+04	0.00E+00	0.00E+00	1.05E-09	0.00E+00	1.05E-09	0.00E+00
0.00E+00	8.99E+04	0.00E+00	0.00E+00	8.30E-10	0.00E+00	8.30E-10	0.00E+00
0.00E+00	1.21E+05	0.00E+00	0.00E+00	6.60E-10	0.00E+00	6.60E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 5

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	1.86E-02	2.35E-03	1.98E-02	7.68E-02	
7.69E+06					
6.80E+01	9.35E-03	1.18E-03	9.96E-03	3.86E-02	
3.86E+06					
1.05E+02	3.45E-03	4.38E-04	3.68E-03	1.93E-02	
1.42E+06					
2.44E+02	9.08E-04	1.17E-04	9.68E-04	7.68E-03	
3.75E+05					
3.69E+02	1.97E-04	2.62E-05	2.09E-04	3.86E-03	
8.12E+04					
5.61E+02	3.33E-05	4.99E-06	3.54E-05	1.93E-03	
1.37E+04					
1.02E+03	0.00E+00	3.38E-07	0.00E+00	7.68E-04	
0.00E+00					
1.63E+03	0.00E+00	1.70E-07	0.00E+00	3.86E-04	
0.00E+00					
2.31E+03	0.00E+00	8.47E-08	0.00E+00	1.93E-04	
0.00E+00					
4.27E+03	0.00E+00	3.38E-08	0.00E+00	7.68E-05	
0.00E+00					
5.47E+03	0.00E+00	1.70E-08	0.00E+00	3.86E-05	
0.00E+00					
1.11E+04	0.00E+00	8.47E-09	0.00E+00	1.93E-05	
0.00E+00					
1.31E+04	0.00E+00	3.38E-09	0.00E+00	7.68E-06	
0.00E+00					
2.13E+04	0.00E+00	1.70E-09	0.00E+00	3.86E-06	
0.00E+00					
4.05E+04	0.00E+00	8.47E-10	0.00E+00	1.93E-06	
0.00E+00					
7.00E+04	0.00E+00	5.35E-10	0.00E+00	1.22E-06	
0.00E+00					
8.99E+04	0.00E+00	4.25E-10	0.00E+00	9.65E-07	
0.00E+00					
1.21E+05	0.00E+00	3.38E-10	0.00E+00	7.68E-07	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 5

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID	3.30E+01	1.98E-02	9.47E-04	3.89E-05	8.30E-04	2.16E-02	6.63E-02
8.30E-03	6.80E+01	9.96E-03	2.39E-04	1.96E-05	4.17E-04	1.06E-02	3.33E-02
4.17E-03	1.05E+02	3.68E-03	3.25E-05	9.43E-06	1.54E-04	3.87E-03	1.23E-02
1.54E-03	2.44E+02	9.68E-04	2.26E-06	3.63E-06	4.05E-05	1.01E-03	3.23E-03
4.05E-04	3.69E+02	2.09E-04	1.06E-07	1.75E-06	8.77E-06	2.20E-04	7.00E-04
8.76E-05	5.61E+02	3.54E-05	3.03E-09	8.57E-07	1.48E-06	3.78E-05	1.18E-04
1.48E-05	1.02E+03	0.00E+00	0.00E+00	3.38E-07	0.00E+00	3.38E-07	0.00E+00
0.00E+00	1.63E+03	0.00E+00	0.00E+00	1.70E-07	0.00E+00	1.70E-07	0.00E+00
0.00E+00	2.31E+03	0.00E+00	0.00E+00	8.47E-08	0.00E+00	8.47E-08	0.00E+00
0.00E+00	4.27E+03	0.00E+00	0.00E+00	3.38E-08	0.00E+00	3.38E-08	0.00E+00
0.00E+00	5.47E+03	0.00E+00	0.00E+00	1.70E-08	0.00E+00	1.70E-08	0.00E+00
0.00E+00	1.11E+04	0.00E+00	0.00E+00	8.47E-09	0.00E+00	8.47E-09	0.00E+00
0.00E+00	1.31E+04	0.00E+00	0.00E+00	3.38E-09	0.00E+00	3.38E-09	0.00E+00
0.00E+00	2.13E+04	0.00E+00	0.00E+00	1.70E-09	0.00E+00	1.70E-09	0.00E+00
0.00E+00	4.05E+04	0.00E+00	0.00E+00	8.47E-10	0.00E+00	8.47E-10	0.00E+00
0.00E+00	7.00E+04	0.00E+00	0.00E+00	5.35E-10	0.00E+00	5.35E-10	0.00E+00
0.00E+00	8.99E+04	0.00E+00	0.00E+00	4.25E-10	0.00E+00	4.25E-10	0.00E+00
0.00E+00	1.21E+05	0.00E+00	0.00E+00	3.38E-10	0.00E+00	3.38E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 6

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	2.15E-02	2.73E-03	2.29E-02	8.75E-02	
8.93E+06					
6.80E+01	1.08E-02	1.37E-03	1.15E-02	4.40E-02	
4.49E+06					
1.05E+02	3.99E-03	5.08E-04	4.25E-03	2.20E-02	
1.66E+06					
2.44E+02	1.05E-03	1.35E-04	1.12E-03	8.75E-03	
4.36E+05					
3.69E+02	2.27E-04	3.03E-05	2.42E-04	4.40E-03	
9.43E+04					
5.61E+02	3.85E-05	5.77E-06	4.10E-05	2.19E-03	
1.60E+04					
1.02E+03	0.00E+00	3.85E-07	0.00E+00	8.75E-04	
0.00E+00					
1.63E+03	0.00E+00	1.94E-07	0.00E+00	4.40E-04	
0.00E+00					
2.31E+03	0.00E+00	9.66E-08	0.00E+00	2.19E-04	
0.00E+00					
4.27E+03	0.00E+00	3.85E-08	0.00E+00	8.75E-05	
0.00E+00					
5.47E+03	0.00E+00	1.94E-08	0.00E+00	4.40E-05	
0.00E+00					
1.11E+04	0.00E+00	9.66E-09	0.00E+00	2.19E-05	
0.00E+00					
1.31E+04	0.00E+00	3.85E-09	0.00E+00	8.75E-06	
0.00E+00					
2.13E+04	0.00E+00	1.94E-09	0.00E+00	4.40E-06	
0.00E+00					
4.05E+04	0.00E+00	9.66E-10	0.00E+00	2.19E-06	
0.00E+00					
7.00E+04	0.00E+00	6.10E-10	0.00E+00	1.39E-06	
0.00E+00					
8.99E+04	0.00E+00	4.84E-10	0.00E+00	1.10E-06	
0.00E+00					
1.21E+05	0.00E+00	3.85E-10	0.00E+00	8.75E-07	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 6

FARMER CNTR LINE THYROID	INHALED		SHINE			BACKYARD	
	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE	
3.30E+01	2.29E-02	1.09E-03	4.45E-05	9.68E-04	2.50E-02	7.67E-02	
9.63E-03							
6.80E+01	1.15E-02	2.76E-04	2.24E-05	4.86E-04	1.23E-02	3.86E-02	
4.84E-03							
1.05E+02	4.25E-03	3.76E-05	1.08E-05	1.79E-04	4.48E-03	1.42E-02	
1.78E-03							
2.44E+02	1.12E-03	2.61E-06	4.14E-06	4.73E-05	1.17E-03	3.75E-03	
4.70E-04							
3.69E+02	2.42E-04	1.22E-07	2.00E-06	1.02E-05	2.55E-04	8.10E-04	
1.02E-04							
5.61E+02	4.10E-05	3.50E-09	9.76E-07	1.73E-06	4.37E-05	1.37E-04	
1.72E-05							
1.02E+03	0.00E+00	0.00E+00	3.85E-07	0.00E+00	3.85E-07	0.00E+00	
0.00E+00							
1.63E+03	0.00E+00	0.00E+00	1.94E-07	0.00E+00	1.94E-07	0.00E+00	
0.00E+00							
2.31E+03	0.00E+00	0.00E+00	9.66E-08	0.00E+00	9.66E-08	0.00E+00	
0.00E+00							
4.27E+03	0.00E+00	0.00E+00	3.85E-08	0.00E+00	3.85E-08	0.00E+00	
0.00E+00							
5.47E+03	0.00E+00	0.00E+00	1.94E-08	0.00E+00	1.94E-08	0.00E+00	
0.00E+00							
1.11E+04	0.00E+00	0.00E+00	9.66E-09	0.00E+00	9.66E-09	0.00E+00	
0.00E+00							
1.31E+04	0.00E+00	0.00E+00	3.85E-09	0.00E+00	3.85E-09	0.00E+00	
0.00E+00							
2.13E+04	0.00E+00	0.00E+00	1.94E-09	0.00E+00	1.94E-09	0.00E+00	
0.00E+00							
4.05E+04	0.00E+00	0.00E+00	9.66E-10	0.00E+00	9.66E-10	0.00E+00	
0.00E+00							
7.00E+04	0.00E+00	0.00E+00	6.10E-10	0.00E+00	6.10E-10	0.00E+00	
0.00E+00							
8.99E+04	0.00E+00	0.00E+00	4.84E-10	0.00E+00	4.84E-10	0.00E+00	
0.00E+00							
1.21E+05	0.00E+00	0.00E+00	3.85E-10	0.00E+00	3.85E-10	0.00E+00	
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 7

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	1.46E-01	2.57E-02	1.34E-01	1.52E-01	
1.83E+08					
6.80E+01	7.34E-02	1.29E-02	6.74E-02	7.66E-02	
9.22E+07					
1.05E+02	2.71E-02	4.77E-03	2.49E-02	3.82E-02	
3.40E+07					
2.44E+02	7.13E-03	1.26E-03	6.55E-03	1.52E-02	
8.95E+06					
3.69E+02	1.54E-03	2.74E-04	1.42E-03	7.64E-03	
1.94E+06					
5.61E+02	2.61E-04	4.75E-05	2.40E-04	3.81E-03	
3.28E+05					
1.02E+03	0.00E+00	6.68E-07	0.00E+00	1.52E-03	
0.00E+00					
1.63E+03	0.00E+00	3.36E-07	0.00E+00	7.63E-04	
0.00E+00					
2.31E+03	0.00E+00	1.68E-07	0.00E+00	3.81E-04	
0.00E+00					
4.27E+03	0.00E+00	6.68E-08	0.00E+00	1.52E-04	
0.00E+00					
5.47E+03	0.00E+00	3.36E-08	0.00E+00	7.63E-05	
0.00E+00					
1.11E+04	0.00E+00	1.68E-08	0.00E+00	3.81E-05	
0.00E+00					
1.31E+04	0.00E+00	6.68E-09	0.00E+00	1.52E-05	
0.00E+00					
2.13E+04	0.00E+00	3.36E-09	0.00E+00	7.63E-06	
0.00E+00					
4.05E+04	0.00E+00	1.68E-09	0.00E+00	3.81E-06	
0.00E+00					
7.00E+04	0.00E+00	1.06E-09	0.00E+00	2.40E-06	
0.00E+00					
8.99E+04	0.00E+00	8.39E-10	0.00E+00	1.91E-06	
0.00E+00					
1.21E+05	0.00E+00	6.68E-10	0.00E+00	1.52E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 7

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
	3.30E+01	1.34E-01	6.41E-03	1.53E-04	1.48E-02	1.56E-01	8.39E+00
	7.33E+00						
	6.80E+01	6.74E-02	1.62E-03	7.67E-05	7.43E-03	7.66E-02	4.22E+00
	3.68E+00						
	1.05E+02	2.49E-02	2.20E-04	3.26E-05	2.74E-03	2.79E-02	1.56E+00
	1.36E+00						
	2.44E+02	6.55E-03	1.53E-05	1.09E-05	7.22E-04	7.30E-03	4.10E-01
	3.58E-01						
	3.69E+02	1.42E-03	7.15E-07	4.26E-06	1.56E-04	1.58E-03	8.86E-02
	7.74E-02						
	5.61E+02	2.40E-04	2.05E-08	1.83E-06	2.64E-05	2.68E-04	1.50E-02
	1.31E-02						
	1.02E+03	0.00E+00	0.00E+00	6.68E-07	0.00E+00	6.68E-07	0.00E+00
	0.00E+00						
	1.63E+03	0.00E+00	0.00E+00	3.36E-07	0.00E+00	3.36E-07	0.00E+00
	0.00E+00						
	2.31E+03	0.00E+00	0.00E+00	1.68E-07	0.00E+00	1.68E-07	0.00E+00
	0.00E+00						
	4.27E+03	0.00E+00	0.00E+00	6.68E-08	0.00E+00	6.68E-08	0.00E+00
	0.00E+00						
	5.47E+03	0.00E+00	0.00E+00	3.36E-08	0.00E+00	3.36E-08	0.00E+00
	0.00E+00						
	1.11E+04	0.00E+00	0.00E+00	1.68E-08	0.00E+00	1.68E-08	0.00E+00
	0.00E+00						
	1.31E+04	0.00E+00	0.00E+00	6.68E-09	0.00E+00	6.68E-09	0.00E+00
	0.00E+00						
	2.13E+04	0.00E+00	0.00E+00	3.36E-09	0.00E+00	3.36E-09	0.00E+00
	0.00E+00						
	4.05E+04	0.00E+00	0.00E+00	1.68E-09	0.00E+00	1.68E-09	0.00E+00
	0.00E+00						
	7.00E+04	0.00E+00	0.00E+00	1.06E-09	0.00E+00	1.06E-09	0.00E+00
	0.00E+00						
	8.99E+04	0.00E+00	0.00E+00	8.39E-10	0.00E+00	8.39E-10	0.00E+00
	0.00E+00						
	1.21E+05	0.00E+00	0.00E+00	6.68E-10	0.00E+00	6.68E-10	0.00E+00
	0.00E+00						

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 8

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	3.50E-02	3.81E-03	3.77E-02	1.46E-01	
1.15E+07					
6.80E+01	1.76E-02	1.92E-03	1.89E-02	7.36E-02	
5.78E+06					
1.05E+02	6.48E-03	7.11E-04	6.99E-03	3.67E-02	
2.13E+06					
2.44E+02	1.71E-03	1.89E-04	1.84E-03	1.46E-02	
5.62E+05					
3.69E+02	3.69E-04	4.28E-05	3.98E-04	7.36E-03	
1.22E+05					
5.61E+02	6.25E-05	8.32E-06	6.74E-05	3.67E-03	
2.06E+04					
1.02E+03	0.00E+00	6.44E-07	0.00E+00	1.46E-03	
0.00E+00					
1.63E+03	0.00E+00	3.24E-07	0.00E+00	7.36E-04	
0.00E+00					
2.31E+03	0.00E+00	1.62E-07	0.00E+00	3.67E-04	
0.00E+00					
4.27E+03	0.00E+00	6.44E-08	0.00E+00	1.46E-04	
0.00E+00					
5.47E+03	0.00E+00	3.24E-08	0.00E+00	7.36E-05	
0.00E+00					
1.11E+04	0.00E+00	1.62E-08	0.00E+00	3.67E-05	
0.00E+00					
1.31E+04	0.00E+00	6.44E-09	0.00E+00	1.46E-05	
0.00E+00					
2.13E+04	0.00E+00	3.24E-09	0.00E+00	7.36E-06	
0.00E+00					
4.05E+04	0.00E+00	1.62E-09	0.00E+00	3.67E-06	
0.00E+00					
7.00E+04	0.00E+00	1.02E-09	0.00E+00	2.32E-06	
0.00E+00					
8.99E+04	0.00E+00	8.10E-10	0.00E+00	1.84E-06	
0.00E+00					
1.21E+05	0.00E+00	6.44E-10	0.00E+00	1.46E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 8

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
	3.30E+01	3.77E-02	1.80E-03	7.03E-05	9.45E-04	4.05E-02	1.15E-01
	1.24E-02						
	6.80E+01	1.89E-02	4.54E-04	3.53E-05	4.75E-04	1.99E-02	5.77E-02
	6.23E-03						
	1.05E+02	6.99E-03	6.19E-05	1.72E-05	1.75E-04	7.24E-03	2.13E-02
	2.30E-03						
	2.44E+02	1.84E-03	4.29E-06	6.73E-06	4.61E-05	1.90E-03	5.60E-03
	6.05E-04						
	3.69E+02	3.98E-04	2.01E-07	3.30E-06	9.98E-06	4.12E-04	1.21E-03
	1.31E-04						
	5.61E+02	6.74E-05	5.75E-09	1.63E-06	1.69E-06	7.07E-05	2.05E-04
	2.22E-05						
	1.02E+03	0.00E+00	0.00E+00	6.44E-07	0.00E+00	6.44E-07	0.00E+00
	0.00E+00						
	1.63E+03	0.00E+00	0.00E+00	3.24E-07	0.00E+00	3.24E-07	0.00E+00
	0.00E+00						
	2.31E+03	0.00E+00	0.00E+00	1.62E-07	0.00E+00	1.62E-07	0.00E+00
	0.00E+00						
	4.27E+03	0.00E+00	0.00E+00	6.44E-08	0.00E+00	6.44E-08	0.00E+00
	0.00E+00						
	5.47E+03	0.00E+00	0.00E+00	3.24E-08	0.00E+00	3.24E-08	0.00E+00
	0.00E+00						
	1.11E+04	0.00E+00	0.00E+00	1.62E-08	0.00E+00	1.62E-08	0.00E+00
	0.00E+00						
	1.31E+04	0.00E+00	0.00E+00	6.44E-09	0.00E+00	6.44E-09	0.00E+00
	0.00E+00						
	2.13E+04	0.00E+00	0.00E+00	3.24E-09	0.00E+00	3.24E-09	0.00E+00
	0.00E+00						
	4.05E+04	0.00E+00	0.00E+00	1.62E-09	0.00E+00	1.62E-09	0.00E+00
	0.00E+00						
	7.00E+04	0.00E+00	0.00E+00	1.02E-09	0.00E+00	1.02E-09	0.00E+00
	0.00E+00						
	8.99E+04	0.00E+00	0.00E+00	8.10E-10	0.00E+00	8.10E-10	0.00E+00
	0.00E+00						
	1.21E+05	0.00E+00	0.00E+00	6.44E-10	0.00E+00	6.44E-10	0.00E+00
	0.00E+00						

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 9

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	3.84E-02	4.19E-03	4.14E-02	1.59E-01	
1.27E+07					
6.80E+01	1.93E-02	2.11E-03	2.08E-02	7.99E-02	
6.36E+06					
1.05E+02	7.12E-03	7.81E-04	7.68E-03	3.99E-02	
2.34E+06					
2.44E+02	1.88E-03	2.08E-04	2.02E-03	1.59E-02	
6.17E+05					
3.69E+02	4.06E-04	4.70E-05	4.37E-04	7.99E-03	
1.34E+05					
5.61E+02	6.87E-05	9.12E-06	7.40E-05	3.99E-03	
2.26E+04					
1.02E+03	0.00E+00	6.99E-07	0.00E+00	1.59E-03	
0.00E+00					
1.63E+03	0.00E+00	3.52E-07	0.00E+00	7.99E-04	
0.00E+00					
2.31E+03	0.00E+00	1.75E-07	0.00E+00	3.99E-04	
0.00E+00					
4.27E+03	0.00E+00	6.99E-08	0.00E+00	1.59E-04	
0.00E+00					
5.47E+03	0.00E+00	3.52E-08	0.00E+00	7.99E-05	
0.00E+00					
1.11E+04	0.00E+00	1.75E-08	0.00E+00	3.99E-05	
0.00E+00					
1.31E+04	0.00E+00	6.99E-09	0.00E+00	1.59E-05	
0.00E+00					
2.13E+04	0.00E+00	3.52E-09	0.00E+00	7.99E-06	
0.00E+00					
4.05E+04	0.00E+00	1.75E-09	0.00E+00	3.99E-06	
0.00E+00					
7.00E+04	0.00E+00	1.11E-09	0.00E+00	2.52E-06	
0.00E+00					
8.99E+04	0.00E+00	8.79E-10	0.00E+00	2.00E-06	
0.00E+00					
1.21E+05	0.00E+00	6.99E-10	0.00E+00	1.59E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY= 9

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		4.14E-02	1.98E-03	7.63E-05	1.04E-03	4.45E-02	1.26E-01
1.38E-02							
6.80E+01		2.08E-02	4.99E-04	3.84E-05	5.23E-04	2.19E-02	6.35E-02
6.93E-03							
1.05E+02		7.68E-03	6.79E-05	1.87E-05	1.93E-04	7.96E-03	2.34E-02
2.56E-03							
2.44E+02		2.02E-03	4.71E-06	7.31E-06	5.08E-05	2.08E-03	6.16E-03
6.74E-04							
3.69E+02		4.37E-04	2.21E-07	3.58E-06	1.10E-05	4.52E-04	1.33E-03
1.46E-04							
5.61E+02		7.40E-05	6.32E-09	1.77E-06	1.86E-06	7.76E-05	2.26E-04
2.47E-05							
1.02E+03		0.00E+00	0.00E+00	6.99E-07	0.00E+00	6.99E-07	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.52E-07	0.00E+00	3.52E-07	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.75E-07	0.00E+00	1.75E-07	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	6.99E-08	0.00E+00	6.99E-08	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.52E-08	0.00E+00	3.52E-08	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.75E-08	0.00E+00	1.75E-08	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	6.99E-09	0.00E+00	6.99E-09	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.52E-09	0.00E+00	3.52E-09	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.75E-09	0.00E+00	1.75E-09	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.11E-09	0.00E+00	1.11E-09	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.79E-10	0.00E+00	8.79E-10	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	6.99E-10	0.00E+00	6.99E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=10

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	4.50E-02	7.54E-03	4.31E-02	1.63E-01	
4.66E+07					
6.80E+01	2.26E-02	3.79E-03	2.16E-02	8.18E-02	
2.34E+07					
1.05E+02	8.34E-03	1.40E-03	7.99E-03	4.08E-02	
8.64E+06					
2.44E+02	2.20E-03	3.72E-04	2.10E-03	1.63E-02	
2.28E+06					
3.69E+02	4.75E-04	8.25E-05	4.55E-04	8.17E-03	
4.92E+05					
5.61E+02	8.04E-05	1.51E-05	7.70E-05	4.08E-03	
8.33E+04					
1.02E+03	0.00E+00	7.15E-07	0.00E+00	1.62E-03	
0.00E+00					
1.63E+03	0.00E+00	3.59E-07	0.00E+00	8.17E-04	
0.00E+00					
2.31E+03	0.00E+00	1.79E-07	0.00E+00	4.08E-04	
0.00E+00					
4.27E+03	0.00E+00	7.15E-08	0.00E+00	1.62E-04	
0.00E+00					
5.47E+03	0.00E+00	3.59E-08	0.00E+00	8.17E-05	
0.00E+00					
1.11E+04	0.00E+00	1.79E-08	0.00E+00	4.08E-05	
0.00E+00					
1.31E+04	0.00E+00	7.15E-09	0.00E+00	1.62E-05	
0.00E+00					
2.13E+04	0.00E+00	3.59E-09	0.00E+00	8.17E-06	
0.00E+00					
4.05E+04	0.00E+00	1.79E-09	0.00E+00	4.08E-06	
0.00E+00					
7.00E+04	0.00E+00	1.13E-09	0.00E+00	2.57E-06	
0.00E+00					
8.99E+04	0.00E+00	8.99E-10	0.00E+00	2.04E-06	
0.00E+00					
1.21E+05	0.00E+00	7.15E-10	0.00E+00	1.62E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=10

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		4.31E-02	2.06E-03	9.54E-05	4.06E-03	4.93E-02	1.88E+00
1.61E+00							
6.80E+01		2.16E-02	5.19E-04	4.79E-05	2.04E-03	2.42E-02	9.45E-01
8.07E-01							
1.05E+02		7.99E-03	7.07E-05	2.24E-05	7.53E-04	8.83E-03	3.49E-01
2.98E-01							
2.44E+02		2.10E-03	4.90E-06	8.31E-06	1.98E-04	2.31E-03	9.18E-02
7.84E-02							
3.69E+02		4.55E-04	2.29E-07	3.85E-06	4.29E-05	5.02E-04	1.99E-02
1.70E-02							
5.61E+02		7.70E-05	6.57E-09	1.84E-06	7.26E-06	8.61E-05	3.36E-03
2.87E-03							
1.02E+03		0.00E+00	0.00E+00	7.15E-07	0.00E+00	7.15E-07	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.59E-07	0.00E+00	3.59E-07	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.79E-07	0.00E+00	1.79E-07	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	7.15E-08	0.00E+00	7.15E-08	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.59E-08	0.00E+00	3.59E-08	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.79E-08	0.00E+00	1.79E-08	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	7.15E-09	0.00E+00	7.15E-09	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.59E-09	0.00E+00	3.59E-09	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.79E-09	0.00E+00	1.79E-09	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.13E-09	0.00E+00	1.13E-09	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.99E-10	0.00E+00	8.99E-10	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	7.15E-10	0.00E+00	7.15E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=11

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	3.50E-02	3.81E-03	3.77E-02	1.46E-01	
1.15E+07					
6.80E+01	1.76E-02	1.92E-03	1.89E-02	7.36E-02	
5.78E+06					
1.05E+02	6.48E-03	7.11E-04	6.99E-03	3.67E-02	
2.13E+06					
2.44E+02	1.71E-03	1.89E-04	1.84E-03	1.46E-02	
5.62E+05					
3.69E+02	3.69E-04	4.28E-05	3.98E-04	7.36E-03	
1.22E+05					
5.61E+02	6.25E-05	8.32E-06	6.74E-05	3.67E-03	
2.06E+04					
1.02E+03	0.00E+00	6.44E-07	0.00E+00	1.46E-03	
0.00E+00					
1.63E+03	0.00E+00	3.24E-07	0.00E+00	7.36E-04	
0.00E+00					
2.31E+03	0.00E+00	1.62E-07	0.00E+00	3.67E-04	
0.00E+00					
4.27E+03	0.00E+00	6.44E-08	0.00E+00	1.46E-04	
0.00E+00					
5.47E+03	0.00E+00	3.24E-08	0.00E+00	7.36E-05	
0.00E+00					
1.11E+04	0.00E+00	1.62E-08	0.00E+00	3.67E-05	
0.00E+00					
1.31E+04	0.00E+00	6.44E-09	0.00E+00	1.46E-05	
0.00E+00					
2.13E+04	0.00E+00	3.24E-09	0.00E+00	7.36E-06	
0.00E+00					
4.05E+04	0.00E+00	1.62E-09	0.00E+00	3.67E-06	
0.00E+00					
7.00E+04	0.00E+00	1.02E-09	0.00E+00	2.32E-06	
0.00E+00					
8.99E+04	0.00E+00	8.10E-10	0.00E+00	1.84E-06	
0.00E+00					
1.21E+05	0.00E+00	6.44E-10	0.00E+00	1.46E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=11

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
	3.30E+01	3.77E-02	1.80E-03	7.03E-05	9.45E-04	4.05E-02	1.15E-01
	1.24E-02						
	6.80E+01	1.89E-02	4.54E-04	3.53E-05	4.75E-04	1.99E-02	5.77E-02
	6.23E-03						
	1.05E+02	6.99E-03	6.19E-05	1.72E-05	1.75E-04	7.24E-03	2.13E-02
	2.30E-03						
	2.44E+02	1.84E-03	4.29E-06	6.73E-06	4.61E-05	1.90E-03	5.60E-03
	6.05E-04						
	3.69E+02	3.98E-04	2.01E-07	3.30E-06	9.98E-06	4.12E-04	1.21E-03
	1.31E-04						
	5.61E+02	6.74E-05	5.75E-09	1.63E-06	1.69E-06	7.07E-05	2.05E-04
	2.22E-05						
	1.02E+03	0.00E+00	0.00E+00	6.44E-07	0.00E+00	6.44E-07	0.00E+00
	0.00E+00						
	1.63E+03	0.00E+00	0.00E+00	3.24E-07	0.00E+00	3.24E-07	0.00E+00
	0.00E+00						
	2.31E+03	0.00E+00	0.00E+00	1.62E-07	0.00E+00	1.62E-07	0.00E+00
	0.00E+00						
	4.27E+03	0.00E+00	0.00E+00	6.44E-08	0.00E+00	6.44E-08	0.00E+00
	0.00E+00						
	5.47E+03	0.00E+00	0.00E+00	3.24E-08	0.00E+00	3.24E-08	0.00E+00
	0.00E+00						
	1.11E+04	0.00E+00	0.00E+00	1.62E-08	0.00E+00	1.62E-08	0.00E+00
	0.00E+00						
	1.31E+04	0.00E+00	0.00E+00	6.44E-09	0.00E+00	6.44E-09	0.00E+00
	0.00E+00						
	2.13E+04	0.00E+00	0.00E+00	3.24E-09	0.00E+00	3.24E-09	0.00E+00
	0.00E+00						
	4.05E+04	0.00E+00	0.00E+00	1.62E-09	0.00E+00	1.62E-09	0.00E+00
	0.00E+00						
	7.00E+04	0.00E+00	0.00E+00	1.02E-09	0.00E+00	1.02E-09	0.00E+00
	0.00E+00						
	8.99E+04	0.00E+00	0.00E+00	8.10E-10	0.00E+00	8.10E-10	0.00E+00
	0.00E+00						
	1.21E+05	0.00E+00	0.00E+00	6.44E-10	0.00E+00	6.44E-10	0.00E+00
	0.00E+00						

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=12

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	3.84E-02	4.19E-03	4.14E-02	1.59E-01	
1.27E+07					
6.80E+01	1.93E-02	2.11E-03	2.08E-02	7.99E-02	
6.36E+06					
1.05E+02	7.12E-03	7.81E-04	7.68E-03	3.99E-02	
2.34E+06					
2.44E+02	1.88E-03	2.08E-04	2.02E-03	1.59E-02	
6.17E+05					
3.69E+02	4.06E-04	4.70E-05	4.37E-04	7.99E-03	
1.34E+05					
5.61E+02	6.87E-05	9.12E-06	7.40E-05	3.99E-03	
2.26E+04					
1.02E+03	0.00E+00	6.99E-07	0.00E+00	1.59E-03	
0.00E+00					
1.63E+03	0.00E+00	3.52E-07	0.00E+00	7.99E-04	
0.00E+00					
2.31E+03	0.00E+00	1.75E-07	0.00E+00	3.99E-04	
0.00E+00					
4.27E+03	0.00E+00	6.99E-08	0.00E+00	1.59E-04	
0.00E+00					
5.47E+03	0.00E+00	3.52E-08	0.00E+00	7.99E-05	
0.00E+00					
1.11E+04	0.00E+00	1.75E-08	0.00E+00	3.99E-05	
0.00E+00					
1.31E+04	0.00E+00	6.99E-09	0.00E+00	1.59E-05	
0.00E+00					
2.13E+04	0.00E+00	3.52E-09	0.00E+00	7.99E-06	
0.00E+00					
4.05E+04	0.00E+00	1.75E-09	0.00E+00	3.99E-06	
0.00E+00					
7.00E+04	0.00E+00	1.11E-09	0.00E+00	2.52E-06	
0.00E+00					
8.99E+04	0.00E+00	8.79E-10	0.00E+00	2.00E-06	
0.00E+00					
1.21E+05	0.00E+00	6.99E-10	0.00E+00	1.59E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=12

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID	3.30E+01	4.14E-02	1.98E-03	7.63E-05	1.04E-03	4.45E-02	1.26E-01
1.38E-02	6.80E+01	2.08E-02	4.99E-04	3.84E-05	5.23E-04	2.19E-02	6.35E-02
6.93E-03	1.05E+02	7.68E-03	6.79E-05	1.87E-05	1.93E-04	7.96E-03	2.34E-02
2.56E-03	2.44E+02	2.02E-03	4.71E-06	7.31E-06	5.08E-05	2.08E-03	6.16E-03
6.74E-04	3.69E+02	4.37E-04	2.21E-07	3.58E-06	1.10E-05	4.52E-04	1.33E-03
1.46E-04	5.61E+02	7.40E-05	6.32E-09	1.77E-06	1.86E-06	7.76E-05	2.26E-04
2.47E-05	1.02E+03	0.00E+00	0.00E+00	6.99E-07	0.00E+00	6.99E-07	0.00E+00
0.00E+00	1.63E+03	0.00E+00	0.00E+00	3.52E-07	0.00E+00	3.52E-07	0.00E+00
0.00E+00	2.31E+03	0.00E+00	0.00E+00	1.75E-07	0.00E+00	1.75E-07	0.00E+00
0.00E+00	4.27E+03	0.00E+00	0.00E+00	6.99E-08	0.00E+00	6.99E-08	0.00E+00
0.00E+00	5.47E+03	0.00E+00	0.00E+00	3.52E-08	0.00E+00	3.52E-08	0.00E+00
0.00E+00	1.11E+04	0.00E+00	0.00E+00	1.75E-08	0.00E+00	1.75E-08	0.00E+00
0.00E+00	1.31E+04	0.00E+00	0.00E+00	6.99E-09	0.00E+00	6.99E-09	0.00E+00
0.00E+00	2.13E+04	0.00E+00	0.00E+00	3.52E-09	0.00E+00	3.52E-09	0.00E+00
0.00E+00	4.05E+04	0.00E+00	0.00E+00	1.75E-09	0.00E+00	1.75E-09	0.00E+00
0.00E+00	7.00E+04	0.00E+00	0.00E+00	1.11E-09	0.00E+00	1.11E-09	0.00E+00
0.00E+00	8.99E+04	0.00E+00	0.00E+00	8.79E-10	0.00E+00	8.79E-10	0.00E+00
0.00E+00	1.21E+05	0.00E+00	0.00E+00	6.99E-10	0.00E+00	6.99E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=13

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	4.50E-02	7.54E-03	4.31E-02	1.63E-01	
4.66E+07					
6.80E+01	2.26E-02	3.79E-03	2.16E-02	8.18E-02	
2.34E+07					
1.05E+02	8.34E-03	1.40E-03	7.99E-03	4.08E-02	
8.64E+06					
2.44E+02	2.20E-03	3.72E-04	2.10E-03	1.63E-02	
2.28E+06					
3.69E+02	4.75E-04	8.25E-05	4.55E-04	8.17E-03	
4.92E+05					
5.61E+02	8.04E-05	1.51E-05	7.70E-05	4.08E-03	
8.33E+04					
1.02E+03	0.00E+00	7.15E-07	0.00E+00	1.62E-03	
0.00E+00					
1.63E+03	0.00E+00	3.59E-07	0.00E+00	8.17E-04	
0.00E+00					
2.31E+03	0.00E+00	1.79E-07	0.00E+00	4.08E-04	
0.00E+00					
4.27E+03	0.00E+00	7.15E-08	0.00E+00	1.62E-04	
0.00E+00					
5.47E+03	0.00E+00	3.59E-08	0.00E+00	8.17E-05	
0.00E+00					
1.11E+04	0.00E+00	1.79E-08	0.00E+00	4.08E-05	
0.00E+00					
1.31E+04	0.00E+00	7.15E-09	0.00E+00	1.62E-05	
0.00E+00					
2.13E+04	0.00E+00	3.59E-09	0.00E+00	8.17E-06	
0.00E+00					
4.05E+04	0.00E+00	1.79E-09	0.00E+00	4.08E-06	
0.00E+00					
7.00E+04	0.00E+00	1.13E-09	0.00E+00	2.57E-06	
0.00E+00					
8.99E+04	0.00E+00	8.99E-10	0.00E+00	2.04E-06	
0.00E+00					
1.21E+05	0.00E+00	7.15E-10	0.00E+00	1.62E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=13

		INHALED		SHINE		BACKYARD	
FARMER	CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID	3.30E+01	4.31E-02	2.06E-03	9.54E-05	4.06E-03	4.93E-02	1.88E+00
1.61E+00	6.80E+01	2.16E-02	5.19E-04	4.79E-05	2.04E-03	2.42E-02	9.45E-01
8.07E-01	1.05E+02	7.99E-03	7.07E-05	2.24E-05	7.53E-04	8.83E-03	3.49E-01
2.98E-01	2.44E+02	2.10E-03	4.90E-06	8.31E-06	1.98E-04	2.31E-03	9.18E-02
7.84E-02	3.69E+02	4.55E-04	2.29E-07	3.85E-06	4.29E-05	5.02E-04	1.99E-02
1.70E-02	5.61E+02	7.70E-05	6.57E-09	1.84E-06	7.26E-06	8.61E-05	3.36E-03
2.87E-03	1.02E+03	0.00E+00	0.00E+00	7.15E-07	0.00E+00	7.15E-07	0.00E+00
0.00E+00	1.63E+03	0.00E+00	0.00E+00	3.59E-07	0.00E+00	3.59E-07	0.00E+00
0.00E+00	2.31E+03	0.00E+00	0.00E+00	1.79E-07	0.00E+00	1.79E-07	0.00E+00
0.00E+00	4.27E+03	0.00E+00	0.00E+00	7.15E-08	0.00E+00	7.15E-08	0.00E+00
0.00E+00	5.47E+03	0.00E+00	0.00E+00	3.59E-08	0.00E+00	3.59E-08	0.00E+00
0.00E+00	1.11E+04	0.00E+00	0.00E+00	1.79E-08	0.00E+00	1.79E-08	0.00E+00
0.00E+00	1.31E+04	0.00E+00	0.00E+00	7.15E-09	0.00E+00	7.15E-09	0.00E+00
0.00E+00	2.13E+04	0.00E+00	0.00E+00	3.59E-09	0.00E+00	3.59E-09	0.00E+00
0.00E+00	4.05E+04	0.00E+00	0.00E+00	1.79E-09	0.00E+00	1.79E-09	0.00E+00
0.00E+00	7.00E+04	0.00E+00	0.00E+00	1.13E-09	0.00E+00	1.13E-09	0.00E+00
0.00E+00	8.99E+04	0.00E+00	0.00E+00	8.99E-10	0.00E+00	8.99E-10	0.00E+00
0.00E+00	1.21E+05	0.00E+00	0.00E+00	7.15E-10	0.00E+00	7.15E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=14

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	1.18E+00	1.40E-01	1.14E+00	1.52E-01	
8.74E+08					
6.80E+01	5.92E-01	7.03E-02	5.71E-01	7.66E-02	
4.39E+08					
1.05E+02	2.19E-01	2.60E-02	2.11E-01	3.81E-02	
1.62E+08					
2.44E+02	5.75E-02	6.84E-03	5.54E-02	1.51E-02	
4.26E+07					
3.69E+02	1.25E-02	1.48E-03	1.20E-02	7.57E-03	
9.23E+06					
5.61E+02	2.11E-03	2.52E-04	2.03E-03	3.77E-03	
1.56E+06					
1.02E+03	0.00E+00	6.60E-07	0.00E+00	1.50E-03	
0.00E+00					
1.63E+03	0.00E+00	3.32E-07	0.00E+00	7.54E-04	
0.00E+00					
2.31E+03	0.00E+00	1.66E-07	0.00E+00	3.76E-04	
0.00E+00					
4.27E+03	0.00E+00	6.60E-08	0.00E+00	1.50E-04	
0.00E+00					
5.47E+03	0.00E+00	3.32E-08	0.00E+00	7.54E-05	
0.00E+00					
1.11E+04	0.00E+00	1.66E-08	0.00E+00	3.76E-05	
0.00E+00					
1.31E+04	0.00E+00	6.60E-09	0.00E+00	1.50E-05	
0.00E+00					
2.13E+04	0.00E+00	3.32E-09	0.00E+00	7.54E-06	
0.00E+00					
4.05E+04	0.00E+00	1.66E-09	0.00E+00	3.76E-06	
0.00E+00					
7.00E+04	0.00E+00	1.05E-09	0.00E+00	2.38E-06	
0.00E+00					
8.99E+04	0.00E+00	8.30E-10	0.00E+00	1.89E-06	
0.00E+00					
1.21E+05	0.00E+00	6.60E-10	0.00E+00	1.50E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=14

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		1.14E+00	5.42E-02	3.74E-04	5.33E-02	1.24E+00	3.16E+01
2.61E+01							
6.80E+01		5.71E-01	1.37E-02	1.88E-04	2.68E-02	6.11E-01	1.59E+01
1.31E+01							
1.05E+02		2.11E-01	1.86E-03	7.37E-05	9.89E-03	2.22E-01	5.85E+00
4.84E+00							
2.44E+02		5.54E-02	1.29E-04	2.16E-05	2.60E-03	5.82E-02	1.54E+00
1.28E+00							
3.69E+02		1.20E-02	6.05E-06	6.57E-06	5.63E-04	1.26E-02	3.34E-01
2.76E-01							
5.61E+02		2.03E-03	1.73E-07	2.21E-06	9.53E-05	2.13E-03	5.65E-02
4.67E-02							
1.02E+03		0.00E+00	0.00E+00	6.60E-07	0.00E+00	6.60E-07	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.32E-07	0.00E+00	3.32E-07	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.66E-07	0.00E+00	1.66E-07	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	6.60E-08	0.00E+00	6.60E-08	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.32E-08	0.00E+00	3.32E-08	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.66E-08	0.00E+00	1.66E-08	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	6.60E-09	0.00E+00	6.60E-09	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.32E-09	0.00E+00	3.32E-09	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.66E-09	0.00E+00	1.66E-09	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.05E-09	0.00E+00	1.05E-09	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.30E-10	0.00E+00	8.30E-10	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	6.60E-10	0.00E+00	6.60E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=15

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	6.06E-01	7.54E-02	5.70E-01	1.53E-01	
4.96E+08					
6.80E+01	3.04E-01	3.79E-02	2.87E-01	7.70E-02	
2.49E+08					
1.05E+02	1.12E-01	1.40E-02	1.06E-01	3.83E-02	
9.19E+07					
2.44E+02	2.96E-02	3.68E-03	2.78E-02	1.52E-02	
2.42E+07					
3.69E+02	6.40E-03	7.99E-04	6.03E-03	7.65E-03	
5.24E+06					
5.61E+02	1.08E-03	1.36E-04	1.02E-03	3.81E-03	
8.86E+05					
1.02E+03	0.00E+00	6.68E-07	0.00E+00	1.52E-03	
0.00E+00					
1.63E+03	0.00E+00	3.36E-07	0.00E+00	7.63E-04	
0.00E+00					
2.31E+03	0.00E+00	1.68E-07	0.00E+00	3.81E-04	
0.00E+00					
4.27E+03	0.00E+00	6.68E-08	0.00E+00	1.52E-04	
0.00E+00					
5.47E+03	0.00E+00	3.36E-08	0.00E+00	7.63E-05	
0.00E+00					
1.11E+04	0.00E+00	1.68E-08	0.00E+00	3.81E-05	
0.00E+00					
1.31E+04	0.00E+00	6.68E-09	0.00E+00	1.52E-05	
0.00E+00					
2.13E+04	0.00E+00	3.36E-09	0.00E+00	7.63E-06	
0.00E+00					
4.05E+04	0.00E+00	1.68E-09	0.00E+00	3.81E-06	
0.00E+00					
7.00E+04	0.00E+00	1.06E-09	0.00E+00	2.40E-06	
0.00E+00					
8.99E+04	0.00E+00	8.39E-10	0.00E+00	1.91E-06	
0.00E+00					
1.21E+05	0.00E+00	6.68E-10	0.00E+00	1.52E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=15

FARMER		INHALED		SHINE		BACKYARD	
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		5.70E-01	2.72E-02	2.49E-04	3.16E-02	6.30E-01	1.79E+01
1.50E+01							
6.80E+01		2.87E-01	6.88E-03	1.25E-04	1.59E-02	3.09E-01	9.01E+00
7.52E+00							
1.05E+02		1.06E-01	9.36E-04	5.06E-05	5.85E-03	1.13E-01	3.32E+00
2.78E+00							
2.44E+02		2.78E-02	6.49E-05	1.56E-05	1.54E-03	2.95E-02	8.75E-01
7.31E-01							
3.69E+02		6.03E-03	3.04E-06	5.29E-06	3.33E-04	6.37E-03	1.89E-01
1.58E-01							
5.61E+02		1.02E-03	8.70E-08	2.00E-06	5.64E-05	1.08E-03	3.20E-02
2.68E-02							
1.02E+03		0.00E+00	0.00E+00	6.68E-07	0.00E+00	6.68E-07	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.36E-07	0.00E+00	3.36E-07	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.68E-07	0.00E+00	1.68E-07	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	6.68E-08	0.00E+00	6.68E-08	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.36E-08	0.00E+00	3.36E-08	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.68E-08	0.00E+00	1.68E-08	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	6.68E-09	0.00E+00	6.68E-09	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.36E-09	0.00E+00	3.36E-09	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.68E-09	0.00E+00	1.68E-09	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.06E-09	0.00E+00	1.06E-09	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.39E-10	0.00E+00	8.39E-10	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	6.68E-10	0.00E+00	6.68E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=16

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	5.13E-02	8.15E-03	4.40E-02	1.63E-01	
5.80E+07					
6.80E+01	2.58E-02	4.09E-03	2.21E-02	8.18E-02	
2.91E+07					
1.05E+02	9.51E-03	1.51E-03	8.16E-03	4.08E-02	
1.08E+07					
2.44E+02	2.50E-03	4.01E-04	2.15E-03	1.63E-02	
2.83E+06					
3.69E+02	5.42E-04	8.89E-05	4.65E-04	8.17E-03	
6.12E+05					
5.61E+02	9.17E-05	1.62E-05	7.87E-05	4.08E-03	
1.04E+05					
1.02E+03	0.00E+00	7.15E-07	0.00E+00	1.62E-03	
0.00E+00					
1.63E+03	0.00E+00	3.59E-07	0.00E+00	8.17E-04	
0.00E+00					
2.31E+03	0.00E+00	1.79E-07	0.00E+00	4.08E-04	
0.00E+00					
4.27E+03	0.00E+00	7.15E-08	0.00E+00	1.62E-04	
0.00E+00					
5.47E+03	0.00E+00	3.59E-08	0.00E+00	8.17E-05	
0.00E+00					
1.11E+04	0.00E+00	1.79E-08	0.00E+00	4.08E-05	
0.00E+00					
1.31E+04	0.00E+00	7.15E-09	0.00E+00	1.62E-05	
0.00E+00					
2.13E+04	0.00E+00	3.59E-09	0.00E+00	8.17E-06	
0.00E+00					
4.05E+04	0.00E+00	1.79E-09	0.00E+00	4.08E-06	
0.00E+00					
7.00E+04	0.00E+00	1.13E-09	0.00E+00	2.57E-06	
0.00E+00					
8.99E+04	0.00E+00	8.99E-10	0.00E+00	2.04E-06	
0.00E+00					
1.21E+05	0.00E+00	7.15E-10	0.00E+00	1.62E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=16

FARMER		INHALED		SHINE			BACKYARD
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		4.40E-02	2.10E-03	9.86E-05	4.59E-03	5.08E-02	1.90E+00
1.61E+00							
6.80E+01		2.21E-02	5.31E-04	4.96E-05	2.31E-03	2.50E-02	9.57E-01
8.10E-01							
1.05E+02		8.16E-03	7.22E-05	2.30E-05	8.51E-04	9.11E-03	3.53E-01
2.99E-01							
2.44E+02		2.15E-03	5.01E-06	8.47E-06	2.24E-04	2.39E-03	9.30E-02
7.87E-02							
3.69E+02		4.65E-04	2.34E-07	3.88E-06	4.85E-05	5.18E-04	2.01E-02
1.70E-02							
5.61E+02		7.87E-05	6.72E-09	1.84E-06	8.21E-06	8.88E-05	3.40E-03
2.88E-03							
1.02E+03		0.00E+00	0.00E+00	7.15E-07	0.00E+00	7.15E-07	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.59E-07	0.00E+00	3.59E-07	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.79E-07	0.00E+00	1.79E-07	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	7.15E-08	0.00E+00	7.15E-08	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.59E-08	0.00E+00	3.59E-08	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.79E-08	0.00E+00	1.79E-08	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	7.15E-09	0.00E+00	7.15E-09	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.59E-09	0.00E+00	3.59E-09	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.79E-09	0.00E+00	1.79E-09	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.13E-09	0.00E+00	1.13E-09	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.99E-10	0.00E+00	8.99E-10	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	7.15E-10	0.00E+00	7.15E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=17

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	5.13E-02	8.15E-03	4.40E-02	1.63E-01	
5.80E+07					
6.80E+01	2.58E-02	4.09E-03	2.21E-02	8.18E-02	
2.91E+07					
1.05E+02	9.51E-03	1.51E-03	8.16E-03	4.08E-02	
1.08E+07					
2.44E+02	2.50E-03	4.01E-04	2.15E-03	1.63E-02	
2.83E+06					
3.69E+02	5.42E-04	8.89E-05	4.65E-04	8.17E-03	
6.12E+05					
5.61E+02	9.17E-05	1.62E-05	7.87E-05	4.08E-03	
1.04E+05					
1.02E+03	0.00E+00	7.15E-07	0.00E+00	1.62E-03	
0.00E+00					
1.63E+03	0.00E+00	3.59E-07	0.00E+00	8.17E-04	
0.00E+00					
2.31E+03	0.00E+00	1.79E-07	0.00E+00	4.08E-04	
0.00E+00					
4.27E+03	0.00E+00	7.15E-08	0.00E+00	1.62E-04	
0.00E+00					
5.47E+03	0.00E+00	3.59E-08	0.00E+00	8.17E-05	
0.00E+00					
1.11E+04	0.00E+00	1.79E-08	0.00E+00	4.08E-05	
0.00E+00					
1.31E+04	0.00E+00	7.15E-09	0.00E+00	1.62E-05	
0.00E+00					
2.13E+04	0.00E+00	3.59E-09	0.00E+00	8.17E-06	
0.00E+00					
4.05E+04	0.00E+00	1.79E-09	0.00E+00	4.08E-06	
0.00E+00					
7.00E+04	0.00E+00	1.13E-09	0.00E+00	2.57E-06	
0.00E+00					
8.99E+04	0.00E+00	8.99E-10	0.00E+00	2.04E-06	
0.00E+00					
1.21E+05	0.00E+00	7.15E-10	0.00E+00	1.62E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=17

FARMER		INHALED		SHINE			BACKYARD
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		4.40E-02	2.10E-03	9.86E-05	4.59E-03	5.08E-02	1.90E+00
1.61E+00							
6.80E+01		2.21E-02	5.31E-04	4.96E-05	2.31E-03	2.50E-02	9.57E-01
8.10E-01							
1.05E+02		8.16E-03	7.22E-05	2.30E-05	8.51E-04	9.11E-03	3.53E-01
2.99E-01							
2.44E+02		2.15E-03	5.01E-06	8.47E-06	2.24E-04	2.39E-03	9.30E-02
7.87E-02							
3.69E+02		4.65E-04	2.34E-07	3.88E-06	4.85E-05	5.18E-04	2.01E-02
1.70E-02							
5.61E+02		7.87E-05	6.72E-09	1.84E-06	8.21E-06	8.88E-05	3.40E-03
2.88E-03							
1.02E+03		0.00E+00	0.00E+00	7.15E-07	0.00E+00	7.15E-07	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.59E-07	0.00E+00	3.59E-07	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.79E-07	0.00E+00	1.79E-07	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	7.15E-08	0.00E+00	7.15E-08	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.59E-08	0.00E+00	3.59E-08	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.79E-08	0.00E+00	1.79E-08	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	7.15E-09	0.00E+00	7.15E-09	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.59E-09	0.00E+00	3.59E-09	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.79E-09	0.00E+00	1.79E-09	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.13E-09	0.00E+00	1.13E-09	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.99E-10	0.00E+00	8.99E-10	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	7.15E-10	0.00E+00	7.15E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=18

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	2.17E-02	1.07E-02	7.29E-03	1.50E-01	
1.02E+08					
6.80E+01	1.09E-02	5.37E-03	3.66E-03	7.56E-02	
5.14E+07					
1.05E+02	4.02E-03	1.99E-03	1.35E-03	3.77E-02	
1.90E+07					
2.44E+02	1.06E-03	5.25E-04	3.56E-04	1.50E-02	
5.00E+06					
3.69E+02	2.29E-04	1.16E-04	7.70E-05	7.54E-03	
1.08E+06					
5.61E+02	3.88E-05	2.07E-05	1.30E-05	3.76E-03	
1.83E+05					
1.02E+03	0.00E+00	6.60E-07	0.00E+00	1.50E-03	
0.00E+00					
1.63E+03	0.00E+00	3.32E-07	0.00E+00	7.54E-04	
0.00E+00					
2.31E+03	0.00E+00	1.66E-07	0.00E+00	3.76E-04	
0.00E+00					
4.27E+03	0.00E+00	6.60E-08	0.00E+00	1.50E-04	
0.00E+00					
5.47E+03	0.00E+00	3.32E-08	0.00E+00	7.54E-05	
0.00E+00					
1.11E+04	0.00E+00	1.66E-08	0.00E+00	3.76E-05	
0.00E+00					
1.31E+04	0.00E+00	6.60E-09	0.00E+00	1.50E-05	
0.00E+00					
2.13E+04	0.00E+00	3.32E-09	0.00E+00	7.54E-06	
0.00E+00					
4.05E+04	0.00E+00	1.66E-09	0.00E+00	3.76E-06	
0.00E+00					
7.00E+04	0.00E+00	1.05E-09	0.00E+00	2.38E-06	
0.00E+00					
8.99E+04	0.00E+00	8.30E-10	0.00E+00	1.89E-06	
0.00E+00					
1.21E+05	0.00E+00	6.60E-10	0.00E+00	1.50E-06	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=18

FARMER		INHALED		SHINE			BACKYARD
CNTR	LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID							
3.30E+01		7.29E-03	3.48E-04	1.21E-04	9.47E-03	1.72E-02	5.10E+00
4.62E+00							
6.80E+01		3.66E-03	8.79E-05	6.08E-05	4.76E-03	8.57E-03	2.56E+00
2.32E+00							
1.05E+02		1.35E-03	1.20E-05	2.67E-05	1.76E-03	3.15E-03	9.45E-01
8.56E-01							
2.44E+02		3.56E-04	8.30E-07	9.28E-06	4.62E-04	8.28E-04	2.49E-01
2.25E-01							
3.69E+02		7.70E-05	3.88E-08	3.90E-06	1.00E-04	1.81E-04	5.38E-02
4.87E-02							
5.61E+02		1.30E-05	1.11E-09	1.75E-06	1.69E-05	3.17E-05	9.11E-03
8.25E-03							
1.02E+03		0.00E+00	0.00E+00	6.60E-07	0.00E+00	6.60E-07	0.00E+00
0.00E+00							
1.63E+03		0.00E+00	0.00E+00	3.32E-07	0.00E+00	3.32E-07	0.00E+00
0.00E+00							
2.31E+03		0.00E+00	0.00E+00	1.66E-07	0.00E+00	1.66E-07	0.00E+00
0.00E+00							
4.27E+03		0.00E+00	0.00E+00	6.60E-08	0.00E+00	6.60E-08	0.00E+00
0.00E+00							
5.47E+03		0.00E+00	0.00E+00	3.32E-08	0.00E+00	3.32E-08	0.00E+00
0.00E+00							
1.11E+04		0.00E+00	0.00E+00	1.66E-08	0.00E+00	1.66E-08	0.00E+00
0.00E+00							
1.31E+04		0.00E+00	0.00E+00	6.60E-09	0.00E+00	6.60E-09	0.00E+00
0.00E+00							
2.13E+04		0.00E+00	0.00E+00	3.32E-09	0.00E+00	3.32E-09	0.00E+00
0.00E+00							
4.05E+04		0.00E+00	0.00E+00	1.66E-09	0.00E+00	1.66E-09	0.00E+00
0.00E+00							
7.00E+04		0.00E+00	0.00E+00	1.05E-09	0.00E+00	1.05E-09	0.00E+00
0.00E+00							
8.99E+04		0.00E+00	0.00E+00	8.30E-10	0.00E+00	8.30E-10	0.00E+00
0.00E+00							
1.21E+05		0.00E+00	0.00E+00	6.60E-10	0.00E+00	6.60E-10	0.00E+00
0.00E+00							

LOS HISTORICAL TO SI CHECK

MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=19

CONTAMINATION CLEANUP CNTR LINE CI/M**2)	INHALATION PATHWAY ORGAN DOSE			AIR CONCENTRATION AFTER DEPOSITION (CI-S/M**3)	GROUND BEFORE (MICRO
	LUNG	BONE MARROW	THYROID		
3.30E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
6.80E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.05E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.44E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
3.69E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
5.61E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.02E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.63E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.31E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
4.27E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
5.47E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.11E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.31E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
2.13E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
4.05E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
7.00E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
8.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					
1.21E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0.00E+00					

PASQUILL CATEGORY A
VEHICLE VEHICLE_1
MAXIMUM INDIVIDUAL CONSEQUENCE (DOSE IN SV)
FROM EXPOSURE DURING EVACUATION
SEVERITY=19

		INHALED		SHINE		BACKYARD
FARMER						
CNTR LINE	EFFECTIVE	RESUSPEND	CLOUD	GROUND	TOTAL	EFFECTIVE
THYROID						
ALL VALUES WERE 0.0						

RUN DATE: [05-14-2008 AT 21:18]

PAGE 44

LOS HISTORICAL TO SI CHECK

INCIDENT-FREE SUMMARY

IN-TRANSIT POPULATION EXPOSURE IN PERSON-SV

	CREW	OFF LINK	ON LINK
LINK_R	1.08E-03	3.66E-06	1.47E-04
LINK_S	4.02E-04	1.42E-04	1.14E-04
LINK_U	4.68E-05	1.81E-06	8.95E-05

ZONE

RURAL	1.08E-03	3.66E-06	1.47E-04
SUBURB	4.02E-04	1.42E-04	1.14E-04
URBAN	4.68E-05	1.81E-06	8.95E-05

TOTALS: 1.53E-03 1.48E-04 3.50E-04

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

VEHICLE_1 5.55E-09 SV

LOS HISTORICAL TO SI CHECK

ACCIDENT SUMMARY

NUMBER OF EXPECTED ACCIDENTS

CATEGORY	LINK_R	LINK_S	LINK_U
1	1.20E-12	3.64E-13	2.36E-14
2	4.60E-09	1.40E-09	9.06E-11
3	9.23E-11	2.81E-11	1.82E-12
4	5.86E-12	1.78E-12	1.15E-13
5	3.64E-11	1.11E-11	7.16E-13
6	2.59E-13	7.88E-14	5.10E-15
7	0.00E+00	0.00E+00	0.00E+00
8	8.84E-13	2.69E-13	1.74E-14
9	6.28E-15	1.91E-15	1.24E-16
10	0.00E+00	0.00E+00	0.00E+00
11	1.13E-14	3.43E-15	2.22E-16
12	7.98E-17	2.43E-17	1.57E-18
13	0.00E+00	0.00E+00	0.00E+00
14	5.86E-15	1.78E-15	1.15E-16
15	0.00E+00	0.00E+00	0.00E+00
16	0.00E+00	0.00E+00	0.00E+00
17	0.00E+00	0.00E+00	0.00E+00
18	4.58E-10	1.39E-10	9.02E-12
19	7.82E-05	2.38E-05	1.54E-06

NUMBER OF EARLY FATALITIES FROM INHALATION

ALL VALUES ARE 0.0

RADIOLOGICAL CONSEQUENCES
50 YEAR POPULATION DOSE IN PERSON-SV

CATEGORY	LINK_R	LINK_S	LINK_U
1	7.22E-04	8.67E-02	1.33E+00
2	1.28E-04	1.54E-02	2.36E-01
3	1.66E-04	2.00E-02	3.06E-01
4	4.77E-03	5.72E-01	8.78E+00
5	3.91E-04	4.69E-02	7.19E-01
6	4.52E-04	5.42E-02	8.31E-01
7	2.72E-03	3.26E-01	5.01E+00
8	7.34E-04	8.81E-02	1.35E+00
9	8.06E-04	9.68E-02	1.48E+00
10	8.77E-04	1.05E-01	1.61E+00
11	7.34E-04	8.81E-02	1.35E+00

12	8.06E-04	9.68E-02	1.48E+00
13	8.77E-04	1.05E-01	1.61E+00
14	2.20E-02	2.64E+00	4.04E+01
15	1.11E-02	1.33E+00	2.04E+01
16	9.01E-04	1.08E-01	1.66E+00
17	9.01E-04	1.08E-01	1.66E+00
18	2.75E-04	3.30E-02	5.05E-01
19	0.00E+00	0.00E+00	0.00E+00

NUMBER OF EARLY MORBIDITY CASES FROM INHALATION

ALL VALUES ARE 0.0

MAXIMUM RISK FOR INDIVIDUAL IN NEAREST ISOPLETH (DOSE IN SV) FROM INHALATION, CLOUDSHINE, AND GROUNDSHINE EXPOSURE DURING EVACUATION

CATEGORY	LINK_R	LINK_S	LINK_U
1	4.57E-14	1.39E-14	9.00E-16
2	3.33E-11	1.01E-11	6.55E-13
3	8.66E-13	2.64E-13	1.71E-14
4	1.69E-12	5.15E-13	3.33E-14
5	7.62E-13	2.32E-13	1.50E-14
6	6.28E-15	1.91E-15	1.24E-16
7	0.00E+00	0.00E+00	0.00E+00
8	3.43E-14	1.04E-14	6.75E-16
9	2.68E-16	8.14E-17	5.27E-18
10	0.00E+00	0.00E+00	0.00E+00
11	4.37E-16	1.33E-16	8.60E-18
12	3.40E-18	1.03E-18	6.69E-20
13	0.00E+00	0.00E+00	0.00E+00
14	7.72E-15	2.35E-15	1.52E-16
15	0.00E+00	0.00E+00	0.00E+00
16	0.00E+00	0.00E+00	0.00E+00
17	0.00E+00	0.00E+00	0.00E+00
18	1.48E-11	4.52E-12	2.92E-13
19	0.00E+00	0.00E+00	0.00E+00

LOS HISTORICAL TO SI CHECK

LOSS OF SHIELDING STOP = PUBLICLOS R FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-03	4.43E-03	2.77E-03	1.98E-03	1.53E-03	1.60E-05	
3.77E-06							
3.30E-02	1.15E-02	5.14E-03	3.21E-03	2.30E-03	1.78E-03	1.95E-05	
4.57E-06							
5.20E-02	1.94E-02	8.67E-03	5.42E-03	3.88E-03	3.00E-03	4.32E-05	
9.98E-06							
9.60E-02	3.94E-02	1.76E-02	1.10E-02	7.89E-03	6.09E-03	1.46E-04	
3.35E-05							
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04	
9.44E-05							
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04	
9.44E-05							
2.55E-01	1.22E-01	5.46E-02	3.41E-02	2.44E-02	1.89E-02	1.13E-03	
2.59E-04							
2.64E-01	1.27E-01	5.69E-02	3.55E-02	2.54E-02	1.96E-02	1.22E-03	
2.79E-04							
3.68E-01	1.87E-01	8.36E-02	5.22E-02	3.74E-02	2.89E-02	2.47E-03	
5.65E-04							
5.00E-01	2.66E-01	1.19E-01	7.45E-02	5.34E-02	4.12E-02	4.75E-03	
1.08E-03							
	50.0	100.0					
SLMP FRAC	m TO CASK	m TO CASK					
2.90E-02	5.58E-07	1.32E-07					
3.30E-02	6.71E-07	1.58E-07					
5.20E-02	1.44E-06	3.33E-07					
9.60E-02	4.78E-06	1.10E-06					
1.58E-01	1.34E-05	3.07E-06					
1.58E-01	1.34E-05	3.07E-06					
2.55E-01	3.69E-05	8.43E-06					
2.64E-01	3.97E-05	9.07E-06					
3.68E-01	8.03E-05	1.83E-05					
5.00E-01	1.54E-04	3.52E-05					

LOSS OF SHIELDING STOP = PUBLICLOS R FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-03	4.43E-03	2.77E-03	1.98E-03	1.53E-03	1.60E-05	
3.77E-06							

3.30E-02	1.15E-02	5.14E-03	3.21E-03	2.30E-03	1.78E-03	1.95E-05
4.57E-06						
5.20E-02	1.94E-02	8.67E-03	5.42E-03	3.88E-03	3.00E-03	4.32E-05
9.98E-06						
9.60E-02	3.94E-02	1.76E-02	1.10E-02	7.89E-03	6.09E-03	1.46E-04
3.35E-05						
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04
9.44E-05						
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04
9.44E-05						
2.55E-01	1.22E-01	5.46E-02	3.41E-02	2.44E-02	1.89E-02	1.13E-03
2.59E-04						
2.64E-01	1.27E-01	5.69E-02	3.55E-02	2.54E-02	1.96E-02	1.22E-03
2.79E-04						
3.68E-01	1.87E-01	8.36E-02	5.22E-02	3.74E-02	2.89E-02	2.47E-03
5.65E-04						
5.00E-01	2.66E-01	1.19E-01	7.45E-02	5.34E-02	4.12E-02	4.75E-03
1.08E-03						

	50.0	100.0
SLMP FRAC	m TO CASK	m TO CASK
2.90E-02	5.58E-07	1.32E-07
3.30E-02	6.71E-07	1.58E-07
5.20E-02	1.44E-06	3.33E-07
9.60E-02	4.78E-06	1.10E-06
1.58E-01	1.34E-05	3.07E-06
1.58E-01	1.34E-05	3.07E-06
2.55E-01	3.69E-05	8.43E-06
2.64E-01	3.97E-05	9.07E-06
3.68E-01	8.03E-05	1.83E-05
5.00E-01	1.54E-04	3.52E-05

LOSS OF SHIELDING STOP = PUBLICLOS FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK
2.90E-02	9.88E-03	4.43E-03	2.77E-03	1.98E-03	1.53E-03	1.60E-05	
3.77E-06							
3.30E-02	1.15E-02	5.14E-03	3.21E-03	2.30E-03	1.78E-03	1.95E-05	
4.57E-06							
5.20E-02	1.94E-02	8.67E-03	5.42E-03	3.88E-03	3.00E-03	4.32E-05	
9.98E-06							
9.60E-02	3.94E-02	1.76E-02	1.10E-02	7.89E-03	6.09E-03	1.46E-04	
3.35E-05							
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04	
9.44E-05							
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04	
9.44E-05							
2.55E-01	1.22E-01	5.46E-02	3.41E-02	2.44E-02	1.89E-02	1.13E-03	
2.59E-04							
2.64E-01	1.27E-01	5.69E-02	3.55E-02	2.54E-02	1.96E-02	1.22E-03	
2.79E-04							
3.68E-01	1.87E-01	8.36E-02	5.22E-02	3.74E-02	2.89E-02	2.47E-03	
5.65E-04							

5.00E-01	2.66E-01	1.19E-01	7.45E-02	5.34E-02	4.12E-02	4.75E-03
1.08E-03						

	50.0	100.0
SLMP FRAC	m TO CASK	m TO CASK
2.90E-02	5.58E-07	1.32E-07
3.30E-02	6.71E-07	1.58E-07
5.20E-02	1.44E-06	3.33E-07
9.60E-02	4.78E-06	1.10E-06
1.58E-01	1.34E-05	3.07E-06
1.58E-01	1.34E-05	3.07E-06
2.55E-01	3.69E-05	8.43E-06
2.64E-01	3.97E-05	9.07E-06
3.68E-01	8.03E-05	1.83E-05
5.00E-01	1.54E-04	3.52E-05

LOSS OF SHIELDING STOP = PUBLICLOSS FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-03	4.43E-03	2.77E-03	1.98E-03	1.53E-03	1.60E-05	
3.77E-06							
3.30E-02	1.15E-02	5.14E-03	3.21E-03	2.30E-03	1.78E-03	1.95E-05	
4.57E-06							
5.20E-02	1.94E-02	8.67E-03	5.42E-03	3.88E-03	3.00E-03	4.32E-05	
9.98E-06							
9.60E-02	3.94E-02	1.76E-02	1.10E-02	7.89E-03	6.09E-03	1.46E-04	
3.35E-05							
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04	
9.44E-05							
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04	
9.44E-05							
2.55E-01	1.22E-01	5.46E-02	3.41E-02	2.44E-02	1.89E-02	1.13E-03	
2.59E-04							
2.64E-01	1.27E-01	5.69E-02	3.55E-02	2.54E-02	1.96E-02	1.22E-03	
2.79E-04							
3.68E-01	1.87E-01	8.36E-02	5.22E-02	3.74E-02	2.89E-02	2.47E-03	
5.65E-04							
5.00E-01	2.66E-01	1.19E-01	7.45E-02	5.34E-02	4.12E-02	4.75E-03	
1.08E-03							

	50.0
SLMP FRAC	m TO CASK
2.90E-02	5.58E-07
3.30E-02	6.71E-07
5.20E-02	1.44E-06
9.60E-02	4.78E-06
1.58E-01	1.34E-05
1.58E-01	1.34E-05
2.55E-01	3.69E-05
2.64E-01	3.97E-05
3.68E-01	8.03E-05
5.00E-01	1.54E-04

LOSS OF SHIELDING STOP = PUBLICLOSS FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-03	4.43E-03	2.77E-03	1.98E-03	1.53E-03	1.60E-05	
3.77E-06							
3.30E-02	1.15E-02	5.14E-03	3.21E-03	2.30E-03	1.78E-03	1.95E-05	
4.57E-06							
5.20E-02	1.94E-02	8.67E-03	5.42E-03	3.88E-03	3.00E-03	4.32E-05	
9.98E-06							
9.60E-02	3.94E-02	1.76E-02	1.10E-02	7.89E-03	6.09E-03	1.46E-04	
3.35E-05							
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04	
9.44E-05							
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04	
9.44E-05							
2.55E-01	1.22E-01	5.46E-02	3.41E-02	2.44E-02	1.89E-02	1.13E-03	
2.59E-04							
2.64E-01	1.27E-01	5.69E-02	3.55E-02	2.54E-02	1.96E-02	1.22E-03	
2.79E-04							
3.68E-01	1.87E-01	8.36E-02	5.22E-02	3.74E-02	2.89E-02	2.47E-03	
5.65E-04							
5.00E-01	2.66E-01	1.19E-01	7.45E-02	5.34E-02	4.12E-02	4.75E-03	
1.08E-03							

	50.0
SLMP FRAC	m TO CASK
2.90E-02	5.58E-07
3.30E-02	6.71E-07
5.20E-02	1.44E-06
9.60E-02	4.78E-06
1.58E-01	1.34E-05
1.58E-01	1.34E-05
2.55E-01	3.69E-05
2.64E-01	3.97E-05
3.68E-01	8.03E-05
5.00E-01	1.54E-04

LOSS OF SHIELDING STOP = PUBLICLOSS FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	9.88E-03	4.43E-03	2.77E-03	1.98E-03	1.53E-03	1.60E-05	
3.77E-06							
3.30E-02	1.15E-02	5.14E-03	3.21E-03	2.30E-03	1.78E-03	1.95E-05	
4.57E-06							
5.20E-02	1.94E-02	8.67E-03	5.42E-03	3.88E-03	3.00E-03	4.32E-05	
9.98E-06							
9.60E-02	3.94E-02	1.76E-02	1.10E-02	7.89E-03	6.09E-03	1.46E-04	
3.35E-05							

1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04
9.44E-05						
1.58E-01	7.01E-02	3.14E-02	1.96E-02	1.40E-02	1.08E-02	4.13E-04
9.44E-05						
2.55E-01	1.22E-01	5.46E-02	3.41E-02	2.44E-02	1.89E-02	1.13E-03
2.59E-04						
2.64E-01	1.27E-01	5.69E-02	3.55E-02	2.54E-02	1.96E-02	1.22E-03
2.79E-04						
3.68E-01	1.87E-01	8.36E-02	5.22E-02	3.74E-02	2.89E-02	2.47E-03
5.65E-04						
5.00E-01	2.66E-01	1.19E-01	7.45E-02	5.34E-02	4.12E-02	4.75E-03
1.08E-03						

	50.0
SLMP FRAC	m TO CASK
2.90E-02	5.58E-07
3.30E-02	6.71E-07
5.20E-02	1.44E-06
9.60E-02	4.78E-06
1.58E-01	1.34E-05
1.58E-01	1.34E-05
2.55E-01	3.69E-05
2.64E-01	3.97E-05
3.68E-01	8.03E-05
5.00E-01	1.54E-04

LOS HISTORICAL TO SI CHECK

LOSS OF SHIELDING STOP = PUBLICLOSU FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	6.78E-03	3.04E-03	1.90E-03	1.36E-03	1.05E-03	1.10E-05	
2.59E-06							
3.30E-02	7.87E-03	3.53E-03	2.20E-03	1.58E-03	1.22E-03	1.34E-05	
3.14E-06							
5.20E-02	1.33E-02	5.95E-03	3.72E-03	2.67E-03	2.06E-03	2.97E-05	
6.85E-06							
9.60E-02	2.70E-02	1.21E-02	7.56E-03	5.41E-03	4.18E-03	1.00E-04	
2.30E-05							
1.58E-01	4.81E-02	2.15E-02	1.35E-02	9.64E-03	7.44E-03	2.83E-04	
6.48E-05							
1.58E-01	4.81E-02	2.15E-02	1.35E-02	9.64E-03	7.44E-03	2.83E-04	
6.48E-05							
2.55E-01	8.38E-02	3.75E-02	2.34E-02	1.68E-02	1.30E-02	7.79E-04	
1.78E-04							
2.64E-01	8.72E-02	3.90E-02	2.44E-02	1.75E-02	1.35E-02	8.39E-04	
1.92E-04							
3.68E-01	1.28E-01	5.74E-02	3.58E-02	2.57E-02	1.98E-02	1.70E-03	
3.88E-04							
5.00E-01	1.83E-01	8.19E-02	5.11E-02	3.66E-02	2.83E-02	3.26E-03	
7.44E-04							

SLMP FRAC
2.90E-02
3.30E-02
5.20E-02
9.60E-02
1.58E-01
1.58E-01
2.55E-01
2.64E-01
3.68E-01
5.00E-01

LOSS OF SHIELDING STOP = PUBLICLOSU FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	6.78E-03	3.04E-03	1.90E-03	1.36E-03	1.05E-03	1.10E-05	
2.59E-06							

3.30E-02	7.87E-03	3.53E-03	2.20E-03	1.58E-03	1.22E-03	1.34E-05
3.14E-06						
5.20E-02	1.33E-02	5.95E-03	3.72E-03	2.67E-03	2.06E-03	2.97E-05
6.85E-06						
9.60E-02	2.70E-02	1.21E-02	7.56E-03	5.41E-03	4.18E-03	1.00E-04
2.30E-05						
1.58E-01	4.81E-02	2.15E-02	1.35E-02	9.64E-03	7.44E-03	2.83E-04
6.48E-05						
1.58E-01	4.81E-02	2.15E-02	1.35E-02	9.64E-03	7.44E-03	2.83E-04
6.48E-05						
2.55E-01	8.38E-02	3.75E-02	2.34E-02	1.68E-02	1.30E-02	7.79E-04
1.78E-04						
2.64E-01	8.72E-02	3.90E-02	2.44E-02	1.75E-02	1.35E-02	8.39E-04
1.92E-04						
3.68E-01	1.28E-01	5.74E-02	3.58E-02	2.57E-02	1.98E-02	1.70E-03
3.88E-04						
5.00E-01	1.83E-01	8.19E-02	5.11E-02	3.66E-02	2.83E-02	3.26E-03
7.44E-04						

SLMP FRAC

2.90E-02
3.30E-02
5.20E-02
9.60E-02
1.58E-01
1.58E-01
2.55E-01
2.64E-01
3.68E-01
5.00E-01

LOSS OF SHIELDING STOP = PUBLICLOSU FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	6.78E-03	3.04E-03	1.90E-03	1.36E-03	1.05E-03	1.10E-05	
2.59E-06							
3.30E-02	7.87E-03	3.53E-03	2.20E-03	1.58E-03	1.22E-03	1.34E-05	
3.14E-06							
5.20E-02	1.33E-02	5.95E-03	3.72E-03	2.67E-03	2.06E-03	2.97E-05	
6.85E-06							
9.60E-02	2.70E-02	1.21E-02	7.56E-03	5.41E-03	4.18E-03	1.00E-04	
2.30E-05							
1.58E-01	4.81E-02	2.15E-02	1.35E-02	9.64E-03	7.44E-03	2.83E-04	
6.48E-05							
1.58E-01	4.81E-02	2.15E-02	1.35E-02	9.64E-03	7.44E-03	2.83E-04	
6.48E-05							
2.55E-01	8.38E-02	3.75E-02	2.34E-02	1.68E-02	1.30E-02	7.79E-04	
1.78E-04							
2.64E-01	8.72E-02	3.90E-02	2.44E-02	1.75E-02	1.35E-02	8.39E-04	
1.92E-04							
3.68E-01	1.28E-01	5.74E-02	3.58E-02	2.57E-02	1.98E-02	1.70E-03	
3.88E-04							

5.00E-01 1.83E-01 8.19E-02 5.11E-02 3.66E-02 2.83E-02 3.26E-03
7.44E-04

SLMP FRAC

2.90E-02
3.30E-02
5.20E-02
9.60E-02
1.58E-01
1.58E-01
2.55E-01
2.64E-01
3.68E-01
5.00E-01

LOSS OF SHIELDING STOP = FIRSTLOSR FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E-02	6.61E-03	4.13E-03	2.96E-03	2.29E-03	2.39E-05	
5.63E-06							
3.30E-02	1.71E-02	7.67E-03	4.79E-03	3.43E-03	2.65E-03	2.91E-05	
6.82E-06							
5.20E-02	2.89E-02	1.29E-02	8.09E-03	5.80E-03	4.48E-03	6.45E-05	
1.49E-05							
9.60E-02	5.87E-02	2.63E-02	1.64E-02	1.18E-02	9.09E-03	2.18E-04	
5.00E-05							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
2.55E-01	1.82E-01	8.15E-02	5.09E-02	3.65E-02	2.82E-02	1.69E-03	
3.87E-04							
2.64E-01	1.90E-01	8.49E-02	5.30E-02	3.80E-02	2.93E-02	1.82E-03	
4.17E-04							
3.68E-01	2.79E-01	1.25E-01	7.79E-02	5.58E-02	4.31E-02	3.69E-03	
8.43E-04							
5.00E-01	3.98E-01	1.78E-01	1.11E-01	7.96E-02	6.15E-02	7.08E-03	
1.62E-03							

	50.0	100.0
SLMP FRAC	m TO CASK	m TO CASK
2.90E-02	8.33E-07	1.97E-07
3.30E-02	1.00E-06	2.35E-07
5.20E-02	2.15E-06	4.98E-07
9.60E-02	7.13E-06	1.64E-06
1.58E-01	2.00E-05	4.58E-06
1.58E-01	2.00E-05	4.58E-06
2.55E-01	5.50E-05	1.26E-05
2.64E-01	5.92E-05	1.35E-05
3.68E-01	1.20E-04	2.74E-05
5.00E-01	2.30E-04	5.25E-05

LOSS OF SHIELDING STOP = FIRSTLOSR FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E-02	6.61E-03	4.13E-03	2.96E-03	2.29E-03	2.39E-05	
5.63E-06							
3.30E-02	1.71E-02	7.67E-03	4.79E-03	3.43E-03	2.65E-03	2.91E-05	
6.82E-06							
5.20E-02	2.89E-02	1.29E-02	8.09E-03	5.80E-03	4.48E-03	6.45E-05	
1.49E-05							
9.60E-02	5.87E-02	2.63E-02	1.64E-02	1.18E-02	9.09E-03	2.18E-04	
5.00E-05							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
2.55E-01	1.82E-01	8.15E-02	5.09E-02	3.65E-02	2.82E-02	1.69E-03	
3.87E-04							
2.64E-01	1.90E-01	8.49E-02	5.30E-02	3.80E-02	2.93E-02	1.82E-03	
4.17E-04							
3.68E-01	2.79E-01	1.25E-01	7.79E-02	5.58E-02	4.31E-02	3.69E-03	
8.43E-04							
5.00E-01	3.98E-01	1.78E-01	1.11E-01	7.96E-02	6.15E-02	7.08E-03	
1.62E-03							
	50.0	100.0					
SLMP FRAC	m TO CASK	m TO CASK					
2.90E-02	8.33E-07	1.97E-07					
3.30E-02	1.00E-06	2.35E-07					
5.20E-02	2.15E-06	4.98E-07					
9.60E-02	7.13E-06	1.64E-06					
1.58E-01	2.00E-05	4.58E-06					
1.58E-01	2.00E-05	4.58E-06					
2.55E-01	5.50E-05	1.26E-05					
2.64E-01	5.92E-05	1.35E-05					
3.68E-01	1.20E-04	2.74E-05					
5.00E-01	2.30E-04	5.25E-05					

LOSS OF SHIELDING STOP = FIRSTLOSR FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E-02	6.61E-03	4.13E-03	2.96E-03	2.29E-03	2.39E-05	
5.63E-06							
3.30E-02	1.71E-02	7.67E-03	4.79E-03	3.43E-03	2.65E-03	2.91E-05	
6.82E-06							
5.20E-02	2.89E-02	1.29E-02	8.09E-03	5.80E-03	4.48E-03	6.45E-05	
1.49E-05							
9.60E-02	5.87E-02	2.63E-02	1.64E-02	1.18E-02	9.09E-03	2.18E-04	
5.00E-05							

1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04
1.41E-04						
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04
1.41E-04						
2.55E-01	1.82E-01	8.15E-02	5.09E-02	3.65E-02	2.82E-02	1.69E-03
3.87E-04						
2.64E-01	1.90E-01	8.49E-02	5.30E-02	3.80E-02	2.93E-02	1.82E-03
4.17E-04						
3.68E-01	2.79E-01	1.25E-01	7.79E-02	5.58E-02	4.31E-02	3.69E-03
8.43E-04						
5.00E-01	3.98E-01	1.78E-01	1.11E-01	7.96E-02	6.15E-02	7.08E-03
1.62E-03						

	50.0	100.0
SLMP FRAC	m TO CASK	m TO CASK
2.90E-02	8.33E-07	1.97E-07
3.30E-02	1.00E-06	2.35E-07
5.20E-02	2.15E-06	4.98E-07
9.60E-02	7.13E-06	1.64E-06
1.58E-01	2.00E-05	4.58E-06
1.58E-01	2.00E-05	4.58E-06
2.55E-01	5.50E-05	1.26E-05
2.64E-01	5.92E-05	1.35E-05
3.68E-01	1.20E-04	2.74E-05
5.00E-01	2.30E-04	5.25E-05

LOS HISTORICAL TO SI CHECK

LOSS OF SHIELDING STOP = FIRSTLOSS FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E-02	6.61E-03	4.13E-03	2.96E-03	2.29E-03	2.39E-05	
5.63E-06							
3.30E-02	1.71E-02	7.67E-03	4.79E-03	3.43E-03	2.65E-03	2.91E-05	
6.82E-06							
5.20E-02	2.89E-02	1.29E-02	8.09E-03	5.80E-03	4.48E-03	6.45E-05	
1.49E-05							
9.60E-02	5.87E-02	2.63E-02	1.64E-02	1.18E-02	9.09E-03	2.18E-04	
5.00E-05							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
2.55E-01	1.82E-01	8.15E-02	5.09E-02	3.65E-02	2.82E-02	1.69E-03	
3.87E-04							
2.64E-01	1.90E-01	8.49E-02	5.30E-02	3.80E-02	2.93E-02	1.82E-03	
4.17E-04							
3.68E-01	2.79E-01	1.25E-01	7.79E-02	5.58E-02	4.31E-02	3.69E-03	
8.43E-04							
5.00E-01	3.98E-01	1.78E-01	1.11E-01	7.96E-02	6.15E-02	7.08E-03	
1.62E-03							
	50.0						
SLMP FRAC	m TO CASK						
2.90E-02	8.33E-07						
3.30E-02	1.00E-06						
5.20E-02	2.15E-06						
9.60E-02	7.13E-06						
1.58E-01	2.00E-05						
1.58E-01	2.00E-05						
2.55E-01	5.50E-05						
2.64E-01	5.92E-05						
3.68E-01	1.20E-04						
5.00E-01	2.30E-04						

LOSS OF SHIELDING STOP = FIRSTLOSS FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E-02	6.61E-03	4.13E-03	2.96E-03	2.29E-03	2.39E-05	
5.63E-06							

3.30E-02	1.71E-02	7.67E-03	4.79E-03	3.43E-03	2.65E-03	2.91E-05
6.82E-06						
5.20E-02	2.89E-02	1.29E-02	8.09E-03	5.80E-03	4.48E-03	6.45E-05
1.49E-05						
9.60E-02	5.87E-02	2.63E-02	1.64E-02	1.18E-02	9.09E-03	2.18E-04
5.00E-05						
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04
1.41E-04						
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04
1.41E-04						
2.55E-01	1.82E-01	8.15E-02	5.09E-02	3.65E-02	2.82E-02	1.69E-03
3.87E-04						
2.64E-01	1.90E-01	8.49E-02	5.30E-02	3.80E-02	2.93E-02	1.82E-03
4.17E-04						
3.68E-01	2.79E-01	1.25E-01	7.79E-02	5.58E-02	4.31E-02	3.69E-03
8.43E-04						
5.00E-01	3.98E-01	1.78E-01	1.11E-01	7.96E-02	6.15E-02	7.08E-03
1.62E-03						

	50.0
SLMP FRAC	m TO CASK
2.90E-02	8.33E-07
3.30E-02	1.00E-06
5.20E-02	2.15E-06
9.60E-02	7.13E-06
1.58E-01	2.00E-05
1.58E-01	2.00E-05
2.55E-01	5.50E-05
2.64E-01	5.92E-05
3.68E-01	1.20E-04
5.00E-01	2.30E-04

LOSS OF SHIELDING STOP = FIRSTLOSS FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E-02	6.61E-03	4.13E-03	2.96E-03	2.29E-03	2.39E-05	
5.63E-06							
3.30E-02	1.71E-02	7.67E-03	4.79E-03	3.43E-03	2.65E-03	2.91E-05	
6.82E-06							
5.20E-02	2.89E-02	1.29E-02	8.09E-03	5.80E-03	4.48E-03	6.45E-05	
1.49E-05							
9.60E-02	5.87E-02	2.63E-02	1.64E-02	1.18E-02	9.09E-03	2.18E-04	
5.00E-05							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
2.55E-01	1.82E-01	8.15E-02	5.09E-02	3.65E-02	2.82E-02	1.69E-03	
3.87E-04							
2.64E-01	1.90E-01	8.49E-02	5.30E-02	3.80E-02	2.93E-02	1.82E-03	
4.17E-04							
3.68E-01	2.79E-01	1.25E-01	7.79E-02	5.58E-02	4.31E-02	3.69E-03	
8.43E-04							

5.00E-01	3.98E-01	1.78E-01	1.11E-01	7.96E-02	6.15E-02	7.08E-03
1.62E-03						

	50.0
SLMP FRAC	m TO CASK
2.90E-02	8.33E-07
3.30E-02	1.00E-06
5.20E-02	2.15E-06
9.60E-02	7.13E-06
1.58E-01	2.00E-05
1.58E-01	2.00E-05
2.55E-01	5.50E-05
2.64E-01	5.92E-05
3.68E-01	1.20E-04
5.00E-01	2.30E-04

LOSS OF SHIELDING STOP = FIRSTLOSU FOR LINK = LINK_R
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
CASK							
2.90E-02	1.47E-02	6.61E-03	4.13E-03	2.96E-03	2.29E-03	2.39E-05	
5.63E-06							
3.30E-02	1.71E-02	7.67E-03	4.79E-03	3.43E-03	2.65E-03	2.91E-05	
6.82E-06							
5.20E-02	2.89E-02	1.29E-02	8.09E-03	5.80E-03	4.48E-03	6.45E-05	
1.49E-05							
9.60E-02	5.87E-02	2.63E-02	1.64E-02	1.18E-02	9.09E-03	2.18E-04	
5.00E-05							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
2.55E-01	1.82E-01	8.15E-02	5.09E-02	3.65E-02	2.82E-02	1.69E-03	
3.87E-04							
2.64E-01	1.90E-01	8.49E-02	5.30E-02	3.80E-02	2.93E-02	1.82E-03	
4.17E-04							
3.68E-01	2.79E-01	1.25E-01	7.79E-02	5.58E-02	4.31E-02	3.69E-03	
8.43E-04							
5.00E-01	3.98E-01	1.78E-01	1.11E-01	7.96E-02	6.15E-02	7.08E-03	
1.62E-03							

SLMP FRAC
2.90E-02
3.30E-02
5.20E-02
9.60E-02
1.58E-01
1.58E-01
2.55E-01
2.64E-01
3.68E-01
5.00E-01

LOSS OF SHIELDING STOP = FIRSTLOSU FOR LINK = LINK_S
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
2.90E-02	1.47E-02	6.61E-03	4.13E-03	2.96E-03	2.29E-03	2.39E-05	
5.63E-06							
3.30E-02	1.71E-02	7.67E-03	4.79E-03	3.43E-03	2.65E-03	2.91E-05	
6.82E-06							
5.20E-02	2.89E-02	1.29E-02	8.09E-03	5.80E-03	4.48E-03	6.45E-05	
1.49E-05							
9.60E-02	5.87E-02	2.63E-02	1.64E-02	1.18E-02	9.09E-03	2.18E-04	
5.00E-05							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04	
1.41E-04							
2.55E-01	1.82E-01	8.15E-02	5.09E-02	3.65E-02	2.82E-02	1.69E-03	
3.87E-04							
2.64E-01	1.90E-01	8.49E-02	5.30E-02	3.80E-02	2.93E-02	1.82E-03	
4.17E-04							
3.68E-01	2.79E-01	1.25E-01	7.79E-02	5.58E-02	4.31E-02	3.69E-03	
8.43E-04							
5.00E-01	3.98E-01	1.78E-01	1.11E-01	7.96E-02	6.15E-02	7.08E-03	
1.62E-03							

SLMP FRAC
2.90E-02
3.30E-02
5.20E-02
9.60E-02
1.58E-01
1.58E-01
2.55E-01
2.64E-01
3.68E-01
5.00E-01

LOSS OF SHIELDING STOP = FIRSTLOSU FOR LINK = LINK_U
AVERAGE RADIOLOGICAL DOSE (P_SV)

	1.0	2.0	3.0	4.0	5.0	10.0	20.0
SLMP FRAC CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO CASK	m TO
2.90E-02	1.47E-02	6.61E-03	4.13E-03	2.96E-03	2.29E-03	2.39E-05	
5.63E-06							
3.30E-02	1.71E-02	7.67E-03	4.79E-03	3.43E-03	2.65E-03	2.91E-05	
6.82E-06							
5.20E-02	2.89E-02	1.29E-02	8.09E-03	5.80E-03	4.48E-03	6.45E-05	
1.49E-05							
9.60E-02	5.87E-02	2.63E-02	1.64E-02	1.18E-02	9.09E-03	2.18E-04	
5.00E-05							

1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04
1.41E-04						
1.58E-01	1.05E-01	4.68E-02	2.93E-02	2.10E-02	1.62E-02	6.16E-04
1.41E-04						
2.55E-01	1.82E-01	8.15E-02	5.09E-02	3.65E-02	2.82E-02	1.69E-03
3.87E-04						
2.64E-01	1.90E-01	8.49E-02	5.30E-02	3.80E-02	2.93E-02	1.82E-03
4.17E-04						
3.68E-01	2.79E-01	1.25E-01	7.79E-02	5.58E-02	4.31E-02	3.69E-03
8.43E-04						
5.00E-01	3.98E-01	1.78E-01	1.11E-01	7.96E-02	6.15E-02	7.08E-03
1.62E-03						

SLMP FRAC

2.90E-02
 3.30E-02
 5.20E-02
 9.60E-02
 1.58E-01
 1.58E-01
 2.55E-01
 2.64E-01
 3.68E-01
 5.00E-01

LOS HISTORICAL TO SI CHECK

LOSS OF SHIELDING STOP ON LINK = LINK_R
 MAXIMUM RADIOLOGICAL DOSE (P_SV) AT 2 M FROM CASK

	STOP	STOP	STOP	STOP	STOP	STOP
SLMP FRACPUBLICLOS	RPUBLICLOSS	SPUBLICLOS	USU	FIRSTLOS	R	FIRSTLOSS
2.90E-02	1.93E-02	1.93E-02	1.32E-02	2.87E-02	2.87E-02	2.87E-02
3.30E-02	2.19E-02	2.19E-02	1.50E-02	3.27E-02	3.27E-02	3.27E-02
5.20E-02	3.45E-02	3.45E-02	2.37E-02	5.15E-02	5.15E-02	5.15E-02
9.60E-02	6.36E-02	6.36E-02	4.37E-02	9.49E-02	9.49E-02	9.49E-02
1.58E-01	9.76E-02	9.76E-02	6.70E-02	1.46E-01	1.46E-01	1.46E-01
1.58E-01	9.76E-02	9.76E-02	6.70E-02	1.46E-01	1.46E-01	1.46E-01
2.55E-01	1.46E-01	1.46E-01	1.00E-01	2.18E-01	2.18E-01	2.18E-01
2.64E-01	1.50E-01	1.50E-01	1.03E-01	2.24E-01	2.24E-01	2.24E-01
3.68E-01	1.99E-01	1.99E-01	1.36E-01	2.96E-01	2.96E-01	2.96E-01
5.00E-01	2.57E-01	2.57E-01	1.76E-01	3.83E-01	3.83E-01	3.83E-01

LOSS OF SHIELDING STOP ON LINK = LINK_S
 MAXIMUM RADIOLOGICAL DOSE (P_SV) AT 2 M FROM CASK

	STOP	STOP	STOP	STOP	STOP	STOP
SLMP FRACPUBLICLOS	RPUBLICLOSS	SPUBLICLOS	USU	FIRSTLOS	R	FIRSTLOSS
2.90E-02	1.93E-02	1.93E-02	1.32E-02	2.87E-02	2.87E-02	2.87E-02
3.30E-02	2.19E-02	2.19E-02	1.50E-02	3.27E-02	3.27E-02	3.27E-02
5.20E-02	3.45E-02	3.45E-02	2.37E-02	5.15E-02	5.15E-02	5.15E-02
9.60E-02	6.36E-02	6.36E-02	4.37E-02	9.49E-02	9.49E-02	9.49E-02
1.58E-01	9.76E-02	9.76E-02	6.70E-02	1.46E-01	1.46E-01	1.46E-01
1.58E-01	9.76E-02	9.76E-02	6.70E-02	1.46E-01	1.46E-01	1.46E-01
2.55E-01	1.46E-01	1.46E-01	1.00E-01	2.18E-01	2.18E-01	2.18E-01
2.64E-01	1.50E-01	1.50E-01	1.03E-01	2.24E-01	2.24E-01	2.24E-01
3.68E-01	1.99E-01	1.99E-01	1.36E-01	2.96E-01	2.96E-01	2.96E-01
5.00E-01	2.57E-01	2.57E-01	1.76E-01	3.83E-01	3.83E-01	3.83E-01

LOSS OF SHIELDING STOP ON LINK = LINK_U
 MAXIMUM RADIOLOGICAL DOSE (P_SV) AT 2 M FROM CASK

	STOP	STOP	STOP	STOP	STOP	STOP
SLMP FRACPUBLICLOS	RPUBLICLOSS	SPUBLICLOS	USU	FIRSTLOS	R	FIRSTLOSS
2.90E-02	1.93E-02	1.93E-02	1.32E-02	2.87E-02	2.87E-02	2.87E-02
3.30E-02	2.19E-02	2.19E-02	1.50E-02	3.27E-02	3.27E-02	3.27E-02
5.20E-02	3.45E-02	3.45E-02	2.37E-02	5.15E-02	5.15E-02	5.15E-02
9.60E-02	6.36E-02	6.36E-02	4.37E-02	9.49E-02	9.49E-02	9.49E-02
1.58E-01	9.76E-02	9.76E-02	6.70E-02	1.46E-01	1.46E-01	1.46E-01
1.58E-01	9.76E-02	9.76E-02	6.70E-02	1.46E-01	1.46E-01	1.46E-01
2.55E-01	1.46E-01	1.46E-01	1.00E-01	2.18E-01	2.18E-01	2.18E-01
2.64E-01	1.50E-01	1.50E-01	1.03E-01	2.24E-01	2.24E-01	2.24E-01
3.68E-01	1.99E-01	1.99E-01	1.36E-01	2.96E-01	2.96E-01	2.96E-01
5.00E-01	2.57E-01	2.57E-01	1.76E-01	3.83E-01	3.83E-01	3.83E-01

RADIOLOGICAL CONSEQUENCES IN PERSON SV
 50 YEAR SOCIETAL INGESTION DOSE - EFFECTIVE

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SEVER: 7						
LINK_R	6.32E-04	3.91E-04	3.93E-04	2.60E-03	5.41E-04	5.39E-04
2.66E-03						
LINK	SEVER: 8	SEVER: 9	SEVER:10	SEVER:11	SEVER:12	SEVER:13
SEVER:14						
LINK_R	6.34E-04	6.35E-04	2.35E-03	6.34E-04	6.35E-04	2.35E-03
2.11E-03						
LINK	SEVER:15	SEVER:16	SEVER:17	SEVER:18	SEVER:19	
LINK_R	2.11E-03	1.91E-03	1.91E-03	2.88E-03	0.00E+00	

LOS HISTORICAL TO SI CHECK

EXPECTED VALUES OF POPULATION RISK IN PERSON-SV

LINK	INHALED	RESUSPD	CLOUDSH	GROUNDSH	TOTAL
LINK_R	6.06E-13	5.06E-14	2.19E-14	9.49E-14	7.74E-13
LINK_S	2.22E-11	1.85E-12	8.02E-13	3.47E-12	2.83E-11
LINK_U	2.20E-11	1.84E-12	7.96E-13	3.44E-12	2.81E-11
ZONE					
RURAL	6.06E-13	5.06E-14	2.19E-14	9.49E-14	7.74E-13
SUBURB	2.22E-11	1.85E-12	8.02E-13	3.47E-12	2.83E-11
URBAN	2.20E-11	1.84E-12	7.96E-13	3.44E-12	2.81E-11
TOTALS:	4.47E-11	3.74E-12	1.62E-12	7.00E-12	5.71E-11

LOS HISTORICAL TO SI CHECK

SOCIETAL INGESTION RISK - PERSON-SV

LINK	GONADS	EFFECTIVE
LINK_R	2.43E-12	3.19E-12
TOTAL	2.43E-12	3.19E-12

SOCIETAL INGESTION RISK BY ORGAN - PERSON-SV

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
LINK_R	1.54E-12	1.52E-12	4.73E-12	1.82E-11	1.49E-12	3.38E-12
TOTAL	1.54E-12	1.52E-12	4.73E-12	1.82E-11	1.49E-12	3.38E-12

EXPECTED RISK VALUES - OTHER

LINK	EARLY	EARLY
	FATALITY	MORBIDITY
LINK_R	0.00E+00	0.00E+00
LINK_S	0.00E+00	0.00E+00
LINK_U	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

LOS HISTORICAL TO SI CHECK

LOSS OF SHIELDING RISK VALUES (PER-REM) BY CASE

LOSS OF SHIELDING STOP PUBLICLOS

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-09	LINK =LINK_R	1.07E-06	4.80E-07	3.00E-07	2.15E-07	1.66E-07
	5.97E-10					
	DISTANCE	50.0	100.0			
	LINK =LINK_R	8.65E-11	2.01E-11			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-09	LINK =LINK_S	1.07E-06	4.80E-07	3.00E-07	2.15E-07	1.66E-07
	5.97E-10					
	DISTANCE	50.0	100.0			
	LINK =LINK_S	8.65E-11	2.01E-11			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-09	LINK =LINK_U	1.07E-06	4.80E-07	3.00E-07	2.15E-07	1.66E-07
	5.97E-10					
	DISTANCE	50.0	100.0			
	LINK =LINK_U	8.65E-11	2.01E-11			

LOSS OF SHIELDING STOP PUBLICLOSS

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-09	LINK =LINK_R	1.07E-06	4.80E-07	3.00E-07	2.15E-07	1.66E-07
	5.97E-10					
	DISTANCE	50.0	100.0			
	LINK =LINK_R	8.65E-11	2.01E-11			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-09	LINK =LINK_S	1.07E-06	4.80E-07	3.00E-07	2.15E-07	1.66E-07
	5.97E-10					
	DISTANCE	50.0	100.0			
	LINK =LINK_S	8.65E-11	2.01E-11			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
2.57E-09	LINK =LINK_U	1.07E-06	4.80E-07	3.00E-07	2.15E-07	1.66E-07
	5.97E-10					
	DISTANCE	50.0	100.0			
	LINK =LINK_U	8.65E-11	2.01E-11			

LOSS OF SHIELDING STOP PUBLICLOSU

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_R	7.35E-07	3.29E-07	2.06E-07	1.47E-07	1.14E-07
1.77E-09	4.10E-10					
	DISTANCE					
	LINK					
	=LINK_R					
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_S	7.35E-07	3.29E-07	2.06E-07	1.47E-07	1.14E-07
1.77E-09	4.10E-10					
	DISTANCE					
	LINK					
	=LINK_S					
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_U	7.35E-07	3.29E-07	2.06E-07	1.47E-07	1.14E-07
1.77E-09	4.10E-10					
	DISTANCE					
	LINK					
	=LINK_U					

LOSS OF SHIELDING STOP FIRSTLOSR

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_R	1.60E-06	7.16E-07	4.48E-07	3.21E-07	2.48E-07
3.84E-09	8.91E-10					
	DISTANCE	50.0	100.0			
	LINK					
	=LINK_R	1.29E-10	3.00E-11			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_S	1.60E-06	7.16E-07	4.48E-07	3.21E-07	2.48E-07
3.84E-09	8.91E-10					
	DISTANCE	50.0	100.0			
	LINK					
	=LINK_S	1.29E-10	3.00E-11			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_U	1.60E-06	7.16E-07	4.48E-07	3.21E-07	2.48E-07
3.84E-09	8.91E-10					
	DISTANCE	50.0	100.0			
	LINK					
	=LINK_U	1.29E-10	3.00E-11			

LOSS OF SHIELDING STOP FIRSTLOSS

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_R	1.60E-06	7.16E-07	4.48E-07	3.21E-07	2.48E-07
3.84E-09	8.91E-10					
	DISTANCE	50.0	100.0			
	LINK					
	=LINK_R	1.29E-10	3.00E-11			
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
LINK	=LINK_S	1.60E-06	7.16E-07	4.48E-07	3.21E-07	2.48E-07
3.84E-09	8.91E-10					
	DISTANCE	50.0	100.0			
	LINK					
	=LINK_S	1.29E-10	3.00E-11			

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
	LINK =LINK_U	1.60E-06	7.16E-07	4.48E-07	3.21E-07	2.48E-07
3.84E-09	8.91E-10					
	DISTANCE	50.0	100.0			
	LINK =LINK_U	1.29E-10	3.00E-11			

LOSS OF SHIELDING STOP FIRSTLOSU

	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
	LINK =LINK_R	1.60E-06	7.16E-07	4.48E-07	3.21E-07	2.48E-07
3.84E-09	8.91E-10					
	DISTANCE					
	LINK =LINK_R					
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
	LINK =LINK_S	1.60E-06	7.16E-07	4.48E-07	3.21E-07	2.48E-07
3.84E-09	8.91E-10					
	DISTANCE					
	LINK =LINK_S					
	DISTANCE	1.0	2.0	3.0	4.0	5.0
10.0	20.0					
	LINK =LINK_U	1.60E-06	7.16E-07	4.48E-07	3.21E-07	2.48E-07
3.84E-09	8.91E-10					
	DISTANCE					
	LINK =LINK_U					

LOSS OF SHIELDING TOTAL RISK VALUES

	LINK =LINK_U					
	DISTANCE FROM CASK (M) =	1.00	2.00	3.00	4.00	
5.00	10.00					
	RISK (PR-REM) =	6.00E-10	2.69E-10	1.68E-10	1.20E-10	9.29E-
11	1.44E-12					
	LINK =LINK_U					
	DISTANCE FROM CASK (M) =	1.00	2.00	3.00	4.00	
5.00	10.00					
	RISK (PR-REM) =	1.83E-10	8.18E-11	5.11E-11	3.66E-11	2.83E-
11	4.39E-13					
	LINK =LINK_U					
	DISTANCE FROM CASK (M) =	1.00	2.00	3.00	4.00	
5.00	10.00					
	RISK (PR-REM) =	1.18E-11	5.29E-12	3.31E-12	2.37E-12	1.83E-
12	2.84E-14					

LOS HISTORICAL TO SI CHECK

TOTAL EXPOSED POPULATION: INCIDENT-FREE

LINK_R 1.79E+04 PERSONS
 LINK_S 6.52E+05 PERSONS
 LINK_U 2.23E+05 PERSONS

TOTAL 8.93E+05 PERSONS

TOTAL EXPOSED POPULATION: ACCIDENT
 (PERSONS UNDER PLUME FOOTPRINT FOR A SINGLE ACCIDENT)

LINK_R 8.10E+03 PERSONS
 LINK_S 9.72E+05 PERSONS
 LINK_U 5.13E+06 PERSONS

LOS HISTORICAL TO SI CHECK

LINK: LINK_R		EXPECTED VALUES OF POPULATION RISK IN PERSON-SV				
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
PACKAGE_1	C060	1.86E-13	1.56E-14	3.74E-14	4.43E-12	4.67E-12
PACKAGE_1	KR85	0.00E+00	0.00E+00	2.12E-12	0.00E+00	2.12E-12
PACKAGE_1	SR90	1.75E-15	1.47E-16	1.43E-19	3.41E-17	1.94E-15
PACKAGE_1	Y90	2.24E-17	1.87E-18	3.59E-18	5.62E-16	5.90E-16
PACKAGE_1	RU106	1.34E-14	1.12E-15	1.63E-16	2.10E-14	3.57E-14
PACKAGE_1	CS134	2.43E-13	2.03E-14	2.78E-14	3.55E-12	3.84E-12
PACKAGE_1	CS137	2.06E-13	1.72E-14	1.13E-14	1.46E-12	1.70E-12
PACKAGE_1	CE144	7.66E-15	6.40E-16	3.84E-17	5.09E-15	1.34E-14
PACKAGE_1	PM147	1.20E-18	1.00E-19	6.30E-21	1.97E-18	3.28E-18
PACKAGE_1	EU154	3.23E-15	2.70E-16	1.82E-16	2.24E-14	2.61E-14
PACKAGE_1	PU238	1.06E-11	8.89E-13	8.30E-21	9.03E-18	1.15E-11
PACKAGE_1	PU239	5.23E-13	4.37E-14	3.20E-22	1.75E-19	5.67E-13
PACKAGE_1	PU240	1.05E-12	8.74E-14	7.18E-22	7.71E-19	1.13E-12
PACKAGE_1	PU241	3.18E-12	2.66E-13	1.67E-21	2.82E-19	3.45E-12
PACKAGE_1	AM241	1.67E-12	1.40E-13	1.26E-19	2.69E-17	1.81E-12
PACKAGE_1	AM242M	4.94E-14	4.12E-15	1.48E-22	8.99E-20	5.35E-14
PACKAGE_1	AM243	9.64E-14	8.05E-15	1.93E-20	3.01E-18	1.04E-13
PACKAGE_1	CM242	2.11E-14	1.76E-15	7.57E-22	8.05E-19	2.28E-14
PACKAGE_1	CM243	7.71E-14	6.44E-15	5.99E-20	8.07E-18	8.36E-14
PACKAGE_1	CM244	1.18E-11	9.84E-13	9.76E-21	1.11E-17	1.28E-11
TOTAL:						7.74E-13

LINK: LINK_S		EXPECTED VALUES OF POPULATION RISK IN PERSON-SV				
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
PACKAGE_1	C060	6.81E-12	5.69E-13	1.37E-12	1.62E-10	1.71E-10
PACKAGE_1	KR85	0.00E+00	0.00E+00	7.74E-11	0.00E+00	7.74E-11
PACKAGE_1	SR90	6.41E-14	5.35E-15	5.21E-18	1.25E-15	7.07E-14
PACKAGE_1	Y90	8.20E-16	6.84E-17	1.31E-16	2.05E-14	2.16E-14
PACKAGE_1	RU106	4.90E-13	4.09E-14	5.95E-15	7.69E-13	1.31E-12
PACKAGE_1	CS134	8.87E-12	7.41E-13	1.02E-12	1.30E-10	1.40E-10

PACKAGE_1	CS137	7.52E-12	6.28E-13	4.15E-13	5.34E-11	6.19E-11
PACKAGE_1	CE144	2.80E-13	2.34E-14	1.40E-15	1.86E-13	4.91E-13
PACKAGE_1	PM147	4.39E-17	3.67E-18	2.30E-19	7.20E-17	1.20E-16
PACKAGE_1	EU154	1.18E-13	9.86E-15	6.66E-15	8.19E-13	9.54E-13
PACKAGE_1	PU238	3.89E-10	3.25E-11	3.03E-19	3.30E-16	4.21E-10
PACKAGE_1	PU239	1.91E-11	1.60E-12	1.17E-20	6.41E-18	2.07E-11
PACKAGE_1	PU240	3.82E-11	3.19E-12	2.62E-20	2.82E-17	4.14E-11
PACKAGE_1	PU241	1.16E-10	9.70E-12	6.09E-20	1.03E-17	1.26E-10
PACKAGE_1	AM241	6.12E-11	5.11E-12	4.60E-18	9.81E-16	6.63E-11
PACKAGE_1	AM242M	1.80E-12	1.51E-13	5.42E-21	3.29E-18	1.96E-12
PACKAGE_1	AM243	3.52E-12	2.94E-13	7.06E-19	1.10E-16	3.82E-12
PACKAGE_1	CM242	7.70E-13	6.43E-14	2.76E-20	2.94E-17	8.34E-13
PACKAGE_1	CM243	2.82E-12	2.35E-13	2.19E-18	2.95E-16	3.05E-12
PACKAGE_1	CM244	4.30E-10	3.59E-11	3.56E-19	4.04E-16	4.66E-10
					TOTAL:	2.83E-11

LINK: LINK_U		EXPECTED	VALUES OF	POPULATION	RISK IN PERSON-SV	
MATERIAL	ISOTOPE	INHALATN	RESUSP	CLOUDSH	GROUND	TOTAL
PACKAGE_1	C060	6.76E-12	5.64E-13	1.36E-12	1.61E-10	1.69E-10
PACKAGE_1	KR85	0.00E+00	0.00E+00	7.68E-11	0.00E+00	7.68E-11
PACKAGE_1	SR90	6.36E-14	5.31E-15	5.17E-18	1.24E-15	7.02E-14
PACKAGE_1	Y90	8.13E-16	6.79E-17	1.30E-16	2.04E-14	2.14E-14
PACKAGE_1	RU106	4.87E-13	4.06E-14	5.90E-15	7.63E-13	1.30E-12
PACKAGE_1	CS134	8.80E-12	7.35E-13	1.01E-12	1.29E-10	1.39E-10
PACKAGE_1	CS137	7.46E-12	6.23E-13	4.11E-13	5.30E-11	6.15E-11
PACKAGE_1	CE144	2.78E-13	2.32E-14	1.39E-15	1.85E-13	4.87E-13
PACKAGE_1	PM147	4.36E-17	3.64E-18	2.28E-19	7.14E-17	1.19E-16
PACKAGE_1	EU154	1.17E-13	9.79E-15	6.61E-15	8.13E-13	9.46E-13
PACKAGE_1	PU238	3.86E-10	3.22E-11	3.01E-19	3.27E-16	4.18E-10
PACKAGE_1	PU239	1.90E-11	1.58E-12	1.16E-20	6.36E-18	2.06E-11
PACKAGE_1	PU240	3.79E-11	3.17E-12	2.60E-20	2.79E-17	4.11E-11
PACKAGE_1	PU241	1.15E-10	9.63E-12	6.04E-20	1.02E-17	1.25E-10
PACKAGE_1	AM241	6.07E-11	5.07E-12	4.57E-18	9.74E-16	6.58E-11
PACKAGE_1	AM242M	1.79E-12	1.50E-13	5.38E-21	3.26E-18	1.94E-12
PACKAGE_1	AM243	3.49E-12	2.92E-13	7.00E-19	1.09E-16	3.79E-12
PACKAGE_1	CM242	7.64E-13	6.38E-14	2.74E-20	2.92E-17	8.27E-13
PACKAGE_1	CM243	2.80E-12	2.34E-13	2.17E-18	2.93E-16	3.03E-12
PACKAGE_1	CM244	4.27E-10	3.57E-11	3.54E-19	4.01E-16	4.63E-10
					TOTAL:	2.81E-11

EOI
END OF RUN
SUCCESSFUL COMPLETION

Distribution

Ruth F. Weiner 6765
Matthew L. Dennis 6765
Terence J. Heames 6765
Douglas M. Osborn 6761
David R. Miller 6765
Technica; Library (2 copies)