From: <Joseph_Hegner@dom.com>
To: <jxc9@nrc.gov>
Date: 9/16/04 3:51PM
Subject: Dominion Response to NRC Question No. 4 Arising from August 2004 ConferenceCalls Pertaining to NRC"s Environmental Review

Jack,

Tony Banks requested that I send this e-mail to you.

On August 17, 2004, NRC published a summary (ADAMS Accession No. ML 042310737) of telephone calls between NRC and Dominion pertaining to the environmental review of the North Anna ESP application. The attachment to the summary listed five NRC questions.

Dominion has provided you with a timely response (e.g., e-mail, overnight mail) to the questions to support your schedule for developing the draft EIS. This e-mail forwards the response to Question No. 4, the last of the five questions to be addressed.

Dominion will also submit a letter under oath transmitting the responses to the five questions. Our goal is to have that letter submitted to you next week.

For convenience, repeated below is Question 4 followed by the response:

NRC Question

Provide a full description and detailed analysis of the environmental effects of the transportation of advanced LWR and gas-cooled reactor spent fuel that meets the intent of 10 CFR 51.52(b). Use an acceptable methodology, such as RADTRAN 5. The transportation risk assessment must describe key input parameters and assumptions and provide justification that the best available information has been used in developing the RADTRAN 5 input values.

Response

Attached are RADTRAN runs for three light-water cooled and two gas-cooled reactors. A discussion of the LWR results is attached as well as a revised response to environmental RAI 3.8-12, originally submitted July 12, 2004 by Dominion (ADAMS Accession No. ML 041970396), which discusses the gas-cooled reactor results.

Three items of note: One, the incident-free RADTRAN results are the same for all reactor designs. Thus, the environmental impacts from incident free transportation of spent fuel are independent of fuel type except for differences related to the number of shipments required. Two, Dominion's response to environmental RAI 3.8-12 has been updated to reflect consistent and reasonable assumptions utilized for all the RADTRAN runs. Three, no revision to the North Anna ESP application is required as a result of either this e-mail or the update to the RAI 3.8-12 response.

If you have any questions, please contact either Tony or me.

Joe H.

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(See attached file: RADTRAN V LWR comparison rev1.doc)(See attached file: ABWR Results Rev1.doc)(See attached file: ACR700 Results Rev1.doc)(See attached file: AP1000 Results Rev1.doc)(See attached file: GTMHR MY to YM Rev4.doc)(See attached file: North Anna RADTRAN Revised3 Response.doc)(See attached file: PBMR MY to YM Rev4.doc)

CC: <Tony_Banks@dom.com>

Mail Envelope Properties (4149EE99.860 : 17 : 51296)

Subject: Dominion Response to NRC Question No. 4 Arising from August 2004 ConferenceCalls Pertaining to NRC"s Environmental Review
Creation Date: 9/16/04 3:49PM
From: <Joseph_Hegner@dom.com>

Created By: Joseph_Hegner@dom.com

Recipients
nrc.gov
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JXC9 (Jack Cushing)

dom.com
Tony_Banks CC

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	dom.com

Files	Size	Date & Time
MESSAGE	2789	09/16/04 03:49PM
RADTRAN V LWR comparison rev1.doc		33792
ABWR Results Rev1.doc	61052	
ACR700 Results Rev1.doc	59863	
AP1000 Results Rev1.doc	59801	
GTMHR MY to YM Rev4.doc	59176	
North Anna RADTRAN Revised3 Response.doc		34304
PBMR MY to YM Rev4.doc	59922	
Mime.822	509368	

Options

Expiration Date:	None
Priority:	Standard
Reply Requested:	No
Return Notification:	None
Concealed Subject:	No
Security:	Standard

RADTRAN V spent fuel highway runs were conducted for three LWR technologies: ABWR, AP-1000, and ACR-700. The spent fuel truck shipments were from Maine Yankee Nuclear Plant to Yucca Mountain. The TRAGIS Routing Engine Version 1.4.15, which uses the 2000 Census data, provided the routing information and the population densities. The input values were taken primarily from the Yucca Mountain Final EIS in particular the *Transportation Health and Safety Calculation/Analysis Documentation in Support of the Final EIS for the Yucca Mountain Repository.* Specifically the values for the BWR and PWR accident severity and release fractions were taken from Tables 5-24 and 5-25 of the aforementioned reference. For the ACR-700, the PWR input values were used. The results of these runs are provided in the output files that echo the input files as well. These files are provided as separate attachments. The comparisons of the incident free results with NUREG-0170 are shown in the following table.

	per shipment person-rem from NUREG-0170 based on 1530 spent fuel truck shipments for the year 1985	RADTRAN V per shipment person-rem results for ABWR Spent Fuel from Maine Yankee to Yucca Mountain	RADTRAN V per shipment person-rem results for AP-1000 Spent Fuel from Maine Yankee to Yucca Mountain	RADTRAN V per shipment person-rem results for ACR-700 Spent Fuel from Maine Yankee to Yucca Mountain	Difference between RADTRAN V results and NUREG-0170
Passengers	0	0	0	0	0
Crew	0.123	0.157	0.157	0.157	0.034
Handlers	0.2	0.188	0.188	0.188	-0.012
Off-Link	0.015	0.012	0.012	0.012	-0.003
On-Link	0.007	0.081	0.081	0.081	0.073
Stops	0.019	0.190	0.190	0.190	0.171
Storage	0.005	0	0	0	-0.005
Total	0.369	0.628	0.628	0.628	0.259

The results are the same for the three reactors since the incident-free dose to a receptor is independent of the isotopic contents of the cask, depending only on the dose rate external to the cask, which was set at the regulatory limits.

The major differences are the dose during stops and to a lesser degree the dose to the crew and the on-link dose. Approximately 42% of the stop dose difference is attributable to the RADTRAN V simulations included inspections at the beginning and the end of the trip. NUREG-0170 did not include these inspections. The remaining difference can be attributed to greater distance traveled, hence more refueling stops, and the different methodologies used to calculate the stop doses. This evaluation used 1996 truck stop data (*Investigation of Radtran Stop Model Input Parameters for Truck Stops,* SAND96-

0714C) and modeled public doses in two concentric rings: 1 m to 14 m and 30m to 800m. The population in the inner ring used the results of the Stop Model study while the population in the outer ring used route specific 2000 Census population data weighted by a 3% urban, 26% suburban and 71% rural distribution. The NUREG-0170 study modeled just one ring, 10 to 2600 feet, and used three fixed population densities.

Factors contributing to the greater crew dose include the greater distance traveled and more refueling stops.

Factors contributing to the increased on-link population dose are NUREG-0170 assumed a 2500 km shipment distance with a 5% urban, 5% suburban and 90% rural population. This evaluation used updated 2000 census information showing a 3% urban, 26% suburban and 71% rural population and a 4,733 km shipment distance.

In addition to the incident free results, the RADTRAN V runs also included accident results. A comparison with NUREG-0170 is shown in the table below.

Accident Risk Analysis Results[1]

	Table 5-10, NUREG-0170, 1985,	RADTRAN V, ABWR	RADTRAN V, AP-1000	RADTRAN V, ACR-700
Person-rem	NA	1.13E-05	2.42E-07	1.21E-07
Latent Cancer Fatalities	0.29	1.78E-02	3.82E-04	1.91E-04

[1] The conversion from the RADTRAN person-rem results to latent cancer fatalities was done using the dose conversion factor 6.3E-4 Rem/LCF in BEIR V "Health Effects of Exposure to Low Levels of Ionizing Radiation"

The RADTRAN V results are 16 times (ABWR) to over 1500 times (ACR-700) lower than the NUREG-0170 results.

```
RUN DATE: [ 09/15/04  AT 16:43:40 ]        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 5.2.5   December 29, 2002   PC-version

INPUT ECHO
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&& Per the NRC request
&& Inventories from the vendor - EDF 3747
&& Only Isotopes > 1 Ci/MTU and in the RADCAT directory used
&& INSPECT is the inspection at the start and end of the trip
&& GASPUBLIC is the exposure to the public in the immediate area during refuelin
&& GASCREW is the exposure to the crew member doing the refueling
&& GASCREW2 is the exposure to the crew member in the cab during refueling
&& GASRESR - Public exposure in a rural area during refueling stops
&& GASRESS - Public exposure in a suburban area during refueling stops
&& GASRESU - Public exposure in an urban area during refueling stops
&& ACCNRR - Public exposure in a rural area during non-release accidents
&& ACCNRS - Public exposure in a suburban area during non-release accidents
&& ACCNRU - Public exposure in an urban area during non-release accidents
&& ACCNREM - Exposure to emergency personnel during non-release accidents
&& LOAD is the loading of the truck; UNLOAD is the unloading of the truck
&& Assumes 7 assemblies per truck shipment, 0.180 MTU/assy
TITLE ABWR
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 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             && 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
```

```
                RUN DATE: [ 09/15/04  AT 16:43:40 ]        PAGE   2

                        ABWR

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             && LCFCON(1), LCFCON(2), GECON
STD: R5INGEST.BIN                   && INGESTION FILE
 FORM UNIT
 DIMEN 6 10 18
 PARM 1 3 3 0
 SEVERITY
   NPOP=1
    NMODE=1
     1.00E+00  6.06E-05  5.86E-06  4.95E-07  7.49E-08  3.00E-10
   NPOP=2
    NMODE=1
     1.00E+00  6.06E-05  5.86E-06  4.95E-07  7.49E-08  3.00E-10
   NPOP=3
    NMODE=1
     1.00E+00  6.06E-05  5.86E-06  4.95E-07  7.49E-08  3.00E-10
 RELEASE
   GROUP=SAMPLE
    RFRAC
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    AERSOL
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    RESP
```

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ABWR

```
  1.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 LOS
  0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 DEPVEL 0.000000
GROUP=GAS
 RFRAC
  0.00E+00 5.65E-03 8.39E-01 1.36E-01 8.38E-01 8.41E-01
 AERSOL
  1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
 RESP
  0.00E+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 0.000000
GROUP=CRUD
 RFRAC
  0.00E+00 4.71E-04 2.52E-03 1.27E-03 3.13E-03 3.20E-03
 AERSOL
  0.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
 RESP
  0.00E+00 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 0.010000
GROUP=PART
 RFRAC
  0.00E+00 4.24E-09 6.71E-08 1.02E-07 4.88E-06 6.55E-06
 AERSOL
  0.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
 RESP
  0.00E+00 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 0.010000
GROUP=RUTH
 RFRAC
  0.00E+00 4.24E-09 6.71E-08 1.02E-07 4.88E-06 2.70E-05
 AERSOL
  0.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
 RESP
  0.00E+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 0.001000
GROUP=VOL
 RFRAC
  0.00E+00 1.71E-10 1.68E-05 4.08E-09 4.13E-05 3.06E-05
 AERSOL
  0.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
 RESP
  0.00E+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

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                RUN DATE: [ 09/15/04  AT 16:43:40 ]        PAGE   4

                        ABWR

    DEPVEL 0.001000
PACKAGE     SFUEL  1.400E+01 0.500 0.500    5.20
     H3GAS      6.730E+02 GAS
     MN54       4.360E+01 CRUD
     FE55       4.221E+03 CRUD
     CO60       3.439E+03 CRUD
     KR85       1.121E+04 GAS
     SR90       1.115E+05 PART
     TC99       2.190E+01 PART
     RU106      2.066E+04 RUTH
     SB125      5.607E+03 PART
     TE125M     1.651E+03 PART
     CS134      6.061E+04 VOL
     CS137      1.562E+05 VOL
     CE144      1.436E+04 PART
     PM147      4.246E+04 PART
     SM151      7.060E+02 PART
     EU154      1.930E+02 PART
     EU155      9.000E+01 PART
     PU238      7.736E+03 PART
     PU239      4.880E+02 PART
     PU240      7.750E+02 PART
     PU241      1.537E+05 PART
     PU242      2.820E+00 PART
     AM241      1.688E+03 PART
     AM243      4.100E+01 PART
     CM242      5.940E+01 PART
     CM244      6.124E+03 PART
     END
VEHICLE  -1 ABWR_TRUCK  1.400E+01 0.500 0.500    5.20    1.00
                2.00    3.10 0.500    0.75
     SFUEL       1.00
MODSTD
  CAMPAIGN 8.229E-02
FLAGS
  REGCHECK 0
  IUOPT 2
EOF
LINK Rural      ABWR_TRUCK 3360.20  88.0  2.0   12.50  470.00 3.53E-07 R 1 0.50
LINK Suburban   ABWR_TRUCK 1111.50  88.0  2.0  317.80  780.00 3.53E-07 S 1 0.00
LINK SubRush    ABWR_TRUCK  123.50  44.0  2.0  318.00 1560.00 3.53E-07 S 1 0.00
LINK Urban      ABWR_TRUCK  124.60  88.0  2.0 2451.70 2800.00 3.53E-07 U 1 0.00
LINK UrbanRush  ABWR_TRUCK   13.90  44.0  2.0 2451.00 5600.00 3.53E-07 U 1 0.00
STOP GASPUBLIC  ABWR_TRUCK 11437.00   1.00   14.00 1.000   1.670
STOP GASCREW    ABWR_TRUCK    1.00   1.00    1.00 1.000   1.670
STOP GASCREW2   ABWR_TRUCK    1.00   3.10    3.10 0.500   1.670
STOP GASRESR    ABWR_TRUCK   12.50  30.00  800.00 1.000   1.190
STOP GASRESS    ABWR_TRUCK  317.80  30.00  800.00 0.870   0.440
STOP GASRESU    ABWR_TRUCK 2451.70  30.00  800.00 0.018   0.050
STOP INSPECT    ABWR_TRUCK    1.00   1.00    1.00 1.000   1.000
STOP ACCNRR     ABWR_TRUCK   12.50  30.00  800.00 1.000   0.009
```

```
STOP ACCNRS     ABWR_TRUCK  317.80  30.00  800.00 0.870   0.003
STOP ACCNRU     ABWR_TRUCK 2451.70  30.00  800.00 0.018   0.000
STOP ACCNREM    ABWR_TRUCK 6430.00   1.00   10.00 1.000   0.013
HANDLING LOAD      ABWR_TRUCK   4.00    1.00   0.50
HANDLING UNLOAD    ABWR_TRUCK   4.00    1.00   0.50
EOF
```

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ABWR

PACKAGE AND MATERIAL CHARACTERISTICS

MATERIAL	DIMENSION (METERS)	EFFECTIVE DIMENSION	K(0) METERS SQ.	FRACTION GAMMA	FRACTION NEUTRON	DOSE RATE (MREM/HR)
SFUEL	5.200E+00	4.677E+00	1.115E+01	5.000E-01	5.000E-01	1.400E+01

K(0) IS DOSE RATE CONVERSION FACTOR

VEHICLE CHARACTERISTICS

VEHICLE NAME	ABWR_TRUCK
MODE TYPE	HIGHWAY
EXCLUSIVE USE	YES
DOSE RATE (MREM/HR)	1.40E+01
K(0) (SQ. METERS)	1.11E+01
VEHICLE SIZE (M)	5.20E+00
EFFECTIVE SIZE (M)	4.68E+00
NUMBER OF SHIPMENTS	1.00E+00
NUMBER OF CREW	2.00E+00
CREW DISTANCE (M)	3.10E+00
CREW DOSE ADJUSTMENT FACT	5.00E-01
CREW EXPOSER WIDTH (M)	7.50E-01
EFFECTIVE EXPOSER WIDTH	7.50E-01
K(0) (SQ M) CREW EXPOSURE	1.89E+00

VEHICLE	MATERIAL	NO.PACKAGES
ABWR_TRUCK		
	SFUEL	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

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ABWR

STOP RELATED DATA

	GASPUBLIC	GASCREW	GASCREW2	GASRESR	GASRESS
VEHICLE	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK
PERSONS	1.14E+04	1.00E+00	1.00E+00	1.25E+01	3.18E+02
MINIMUM DISTANCE(M)	1.00E+00	1.00E+00	3.10E+00	3.00E+01	3.00E+01
MAXIMUM DISTANCE(M)	1.40E+01	1.00E+00	3.10E+00	8.00E+02	8.00E+02
SHIELDING FACTOR	1.00E+00	1.00E+00	5.00E-01	1.00E+00	8.70E-01
TIME (HR)	1.67E+00	1.67E+00	1.67E+00	1.19E+00	4.40E-01

	GASRESU	INSPECT	ACCNRR	ACCNRS	ACCNRU
VEHICLE	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK
PERSONS	2.45E+03	1.00E+00	1.25E+01	3.18E+02	2.45E+03
MINIMUM DISTANCE(M)	3.00E+01	1.00E+00	3.00E+01	3.00E+01	3.00E+01
MAXIMUM DISTANCE(M)	8.00E+02	1.00E+00	8.00E+02	8.00E+02	8.00E+02
SHIELDING FACTOR	1.80E-02	1.00E+00	1.00E+00	8.70E-01	1.80E-02
TIME (HR)	5.00E-02	1.00E+00	9.00E-03	3.00E-03	0.00E+00

	ACCNREM
VEHICLE	ABWR_TRUCK
PERSONS	6.43E+03
MINIMUM DISTANCE(M)	1.00E+00
MAXIMUM DISTANCE(M)	1.00E+01
SHIELDING FACTOR	1.00E+00
TIME (HR)	1.30E-02

HANDLING RELATED DATA

	LOAD	UNLOAD
VEHICLE	ABWR_TRUCK	ABWR_TRUCK
NUMBER OF HANDLERS	4.00E+00	4.00E+00
DISTANCE (M)	1.00E+00	1.00E+00
EXPOSURE TIME (HR)	5.00E-01	5.00E-01

PACKAGE HANDLING THRESHOLD FOR SMALL PACKAGES (SMLPKG) = 5.000E-01 METERS

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LINK RELATED DATA

	Rural	Suburban	SubRush	Urban	UrbanRush
VEHICLE	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK
DISTANCE (KM)	3.36E+03	1.11E+03	1.24E+02	1.25E+02	1.39E+01
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00	2.00E+00	2.00E+00
SPEED (KM/HR)	8.80E+01	8.80E+01	4.40E+01	8.80E+01	4.40E+01
POPULATION DENSITY	1.25E+01	3.18E+02	3.18E+02	2.45E+03	2.45E+03
VEHICLE DENSITY	4.70E+02	7.80E+02	1.56E+03	2.80E+03	5.60E+03
ACCIDENT RATE/KM	3.53E-07	3.53E-07	3.53E-07	3.53E-07	3.53E-07
ZONE	RURAL	SUBURBAN	SUBURBAN	URBAN	URBAN
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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ABWR

ISOTOPE RELATED DATA

NUCLIDE	CURIES PER PKG	RELEASE GROUP	RESUSPENSION FACTOR	50YR INHALATION (REM/CI) EFFECTIVE
SFUEL				
H3GAS	6.73E+02	GAS	1.00E+00	4.40E-03
MN54	4.36E+01	CRUD	3.10E+00	1.00E+04
FE55	4.22E+03	CRUD	4.32E+00	1.60E+03
CO60	3.44E+03	CRUD	4.83E+00	2.80E+05
KR85	1.12E+04	GAS	1.00E+00	0.00E+00
SR90	1.12E+05	PART	5.41E+00	2.40E+06
TC99	2.19E+01	PART	5.57E+00	1.40E+04
RU106	2.07E+04	RUTH	1.23E+00	8.00E+05
SB125	5.61E+03	PART	4.34E+00	1.70E+04
TE125M	1.65E+03	PART	1.62E+00	1.00E+04
CS134	6.06E+04	VOL	1.31E+00	4.60E+04
CS137	1.56E+05	VOL	1.44E+00	3.20E+04
CE144	1.44E+04	PART	2.99E+00	6.30E+05
PM147	4.25E+04	PART	4.30E+00	6.00E+04
SM151	7.06E+02	PART	5.51E+00	3.30E+04
EU154	1.93E+02	PART	5.09E+00	3.10E+05
EU155	9.00E+01	PART	4.79E+00	4.80E+04
PU238	7.74E+03	PART	5.51E+00	5.30E+08
PU239	4.88E+02	PART	5.57E+00	5.70E+08
PU240	7.75E+02	PART	5.56E+00	5.70E+08
PU241	1.54E+05	PART	5.26E+00	9.90E+06
PU242	2.82E+00	PART	5.57E+00	5.30E+08
AM241	1.69E+03	PART	5.55E+00	5.90E+08
AM243	4.10E+01	PART	5.56E+00	5.90E+08
CM242	5.94E+01	PART	2.40E+00	2.30E+07
CM244	6.12E+03	PART	5.32E+00	3.10E+08

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NUCLIDE	HALF LIFE	GAMMA ENERGY	CLOUD FACTOR	GROUND FACTOR	INGESTION NUCLIDE	NEUTRON EMISSION neutrons/sec/Ci
SFUEL						
H3GAS	4.51E+03	0.00E+00	1.22E-06	0.00E+00	NONE	N/A
MN54	3.13E+02	8.35E-01	1.51E-01	2.60E-04	Mn-54	N/A
FE55	9.86E+02	1.69E-03	0.00E+00	0.00E+00	Fe-55	N/A
CO60	1.93E+03	2.50E+00	4.66E-01	7.51E-04	Co-60	N/A
KR85	3.92E+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
TC99	7.78E+07	0.00E+00	5.99E-06	2.49E-08	Tc-99	N/A
RU106	3.68E+02	2.01E-01	0.00E+00	6.78E-05	Ru-106	N/A
SB125	1.01E+03	4.30E-01	7.47E-02	1.36E-04	Sb-125	N/A
TE125M	5.80E+01	3.55E-02	1.68E-03	1.15E-05	Te-125m	N/A
CS134	7.53E+02	1.55E+00	2.80E-01	4.86E-04	Cs-134	N/A
CS137	1.10E+04	5.96E-01	2.86E-05	1.77E-04	Cs-137	N/A
CE144	2.84E+02	5.25E-02	3.16E-03	1.84E-05	Ce-144	N/A
PM147	9.58E+02	4.37E-06	2.56E-06	1.09E-08	Pm-147	N/A
SM151	3.29E+04	1.34E-05	1.34E-07	1.61E-09	Sm-151	N/A
EU154	3.21E+03	1.22E+00	2.27E-01	3.80E-04	Eu-154	N/A
EU155	1.81E+03	6.05E-02	9.21E-03	1.89E-05	Eu-155	N/A
PU238	3.21E+04	1.81E-03	1.81E-05	2.68E-07	Pu-238	N/A
PU239	8.79E+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
PU242	1.37E+08	1.44E-03	1.48E-05	2.13E-07	Pu-242	N/A
AM241	1.58E+05	3.24E-02	3.03E-03	8.79E-06	Am-241	N/A
AM243	2.70E+06	5.59E-02	8.07E-03	1.71E-05	Am-243	N/A
CM242	1.63E+02	1.83E-03	2.11E-05	3.06E-07	Cm-242	N/A
CM244	6.62E+03	1.70E-03	1.82E-05	2.81E-07	Cm-244	N/A

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ABWR

ISOTOPE RELATED DATA

NUCLIDE	1-YR INHALATION (REM/CI)		
	LUNG	MARROW	THYROID
SFUEL			
H3GAS	1.20E+02	1.20E+02	0.00E+00
MN54	4.10E+04	5.30E+03	0.00E+00
FE55	5.80E+03	1.80E+02	0.00E+00
CO60	7.90E+05	3.80E+04	0.00E+00
KR85	0.00E+00	0.00E+00	0.00E+00
SR90	4.50E+06	3.80E+03	0.00E+00
TC99	1.00E+05	1.40E+02	0.00E+00
RU106	4.30E+06	4.50E+03	0.00E+00
SB125	4.40E+04	5.50E+02	0.00E+00
TE125M	0.00E+00	0.00E+00	0.00E+00
CS134	4.10E+04	3.90E+04	0.00E+00
CS137	3.10E+04	2.60E+04	0.00E+00
CE144	3.60E+06	4.20E+03	0.00E+00
PM147	2.20E+05	5.30E+02	0.00E+00
SM151	2.10E+04	2.90E+03	0.00E+00
EU154	0.00E+00	0.00E+00	0.00E+00
EU155	0.00E+00	0.00E+00	0.00E+00
PU238	4.50E+08	1.10E+06	0.00E+00
PU239	4.20E+08	1.10E+06	0.00E+00
PU240	4.20E+08	1.10E+06	0.00E+00
PU241	3.60E+05	1.30E+03	0.00E+00
PU242	4.00E+08	1.00E+06	0.00E+00
AM241	1.20E+08	1.70E+07	0.00E+00
AM243	1.10E+08	1.60E+07	0.00E+00
CM242	9.90E+07	8.80E+06	0.00E+00
CM244	1.20E+08	1.70E+07	0.00E+00

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RELEASE RELATED DATA
****

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	0.00E+00	5.65E-03	8.39E-01	1.36E-01	8.38E-01	8.41E-01
CRUD	0.00E+00	4.71E-04	2.52E-03	1.27E-03	3.13E-03	3.20E-03
PART	0.00E+00	4.24E-09	6.71E-08	1.02E-07	4.88E-06	6.55E-06
RUTH	0.00E+00	4.24E-09	6.71E-08	1.02E-07	4.88E-06	2.70E-05
VOL	0.00E+00	1.71E-10	1.68E-05	4.08E-09	4.13E-05	3.06E-05

DEPOSITION VELOCITIES

GROUP	M/SEC
SAMPLE	0.00E+00
GAS	0.00E+00
CRUD	1.00E-02
PART	1.00E-02
RUTH	1.00E-03
VOL	1.00E-03

ACCIDENT SEVERITY FRACTIONS
FOR HIGHWAY

ZONE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RURAL	1.00E+00	6.06E-05	5.86E-06	4.95E-07	7.49E-08	3.00E-10
SUBURBAN	1.00E+00	6.06E-05	5.86E-06	4.95E-07	7.49E-08	3.00E-10
URBAN	1.00E+00	6.06E-05	5.86E-06	4.95E-07	7.49E-08	3.00E-10

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AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CRUD	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
VOL	0.00E+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
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CRUD	0.00E+00	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
PART	0.00E+00	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
RUTH	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
VOL	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

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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

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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		

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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)

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) = 8.229E-02
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 = 0
BUILDING SHIELDING OPTION (IUOPT) = 2
RURAL SHIELDING FACTOR = 1.000E+00
SUBURBAN SHIELDING FACTOR = 8.700E-01
URBAN SHIELDING FACTOR = 1.800E-02

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ABWR

INGESTION RELATED DATA

COMIDA INGESTION FILE USED: R5INGEST.BIN

COMIDA FILE HEADER
COMIDA2 02/17/03 16:17:38 Ver. 1.11a, 1/28/96: avoiding use of UNIT 6 for HP

DOSE CONVERSION FILE USED IN COMIDA
FGRDCF 05/08/95 16:43:45 beta-test version 1.10, minor FORTRAN fixes 5/4/95
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

ISOTOPE	INGESTION NUCLIDE
H3GAS	NONE
KR85	NONE

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ABWR

BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

NUCLIDE	EFFECTIVE	THYROID
Mn-54	1.716E+03	3.051E+02
Fe-55	2.308E+03	1.548E+03
Co-60	4.308E+04	1.225E+04
Sr-90	2.541E+05	9.964E+03
Tc-99	1.316E+04	5.396E+04
Ru-106	2.107E+04	4.014E+03
Sb-125	3.930E+03	2.392E+02
Te-125m	4.540E+03	1.799E+02
Cs-134	6.012E+05	5.344E+05
Cs-137	4.870E+05	4.545E+05
Ce-144	1.202E+04	1.085E+01
Pm-147	1.438E+03	1.585E-04
Sm-151	6.077E+02	1.893E-04
Eu-154	1.439E+04	3.185E+02
Eu-155	2.232E+03	9.620E+00
Pu-238	3.858E+04	2.301E-01
Pu-239	4.049E+04	2.169E-01
Pu-240	4.049E+04	2.172E-01
Pu-241	3.231E+03	3.837E-02
Pu-242	3.846E+04	2.134E-01
Am-241	2.846E+06	3.818E+01
Am-243	2.834E+06	1.968E+02
Cm-242	6.505E+04	1.851E+01
Cm-244	2.534E+06	3.924E+01

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SOCIETAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

NUCLIDE	GONADS	BREAST	LUNGS	RED MAR	BONE SU	THYROID	REMAIND	EFFECTI
Mn-54	2.6E-01	7.6E-02	6.3E-02	1.3E-01	1.6E-01	3.6E-02	3.3E-01	2.0E-01
Fe-55	2.3E-01	2.2E-01	2.2E-01	2.2E-01	2.2E-01	2.3E-01	6.3E-01	3.5E-01
Co-60	8.2E+00	2.8E+00	2.3E+00	3.4E+00	2.4E+00	2.0E+00	1.3E+01	7.1E+00
Sr-90	1.8E+00	1.8E+00	1.8E+00	2.3E+02	4.9E+02	1.8E+00	7.3E+00	4.5E+01
Tc-99	4.1E-01	4.1E-01	4.1E-01	4.1E-01	4.1E-01	1.1E+01	6.9E+00	2.7E+00
Ru-106	5.5E-01	4.8E-01	4.8E-01	4.9E-01	4.8E-01	4.7E-01	7.1E+00	2.5E+00
Sb-125	3.5E-01	6.6E-02	4.0E-02	1.5E-01	3.9E-01	3.1E-02	1.2E+00	5.0E-01
Te-125m	5.8E-02	2.1E-02	2.0E-02	5.6E-01	5.8E+00	1.8E-02	6.4E-01	4.6E-01
Cs-134	8.9E+01	7.5E+01	7.6E+01	8.1E+01	7.5E+01	7.6E+01	9.6E+01	8.6E+01
Cs-137	8.2E+01	7.4E+01	7.5E+01	7.8E+01	7.5E+01	7.5E+01	8.6E+01	8.0E+01
Ce-144	1.7E-02	2.9E-03	1.6E-03	2.1E-02	3.0E-02	1.2E-03	4.5E+00	1.4E+00
Pm-147	4.8E-06	5.2E-07	1.4E-07	1.5E-02	1.8E-01	2.2E-08	6.4E-01	2.0E-01
Sm-151	1.9E-05	9.3E-07	5.9E-07	2.5E-02	3.1E-01	3.0E-08	2.8E-01	9.5E-02
Eu-154	1.1E+00	2.3E-01	1.8E-01	9.6E-01	3.7E+00	4.8E-02	5.3E+00	2.2E+00
Eu-155	7.7E-02	1.1E-02	7.6E-03	1.2E-01	1.0E+00	1.4E-03	8.6E-01	3.3E-01
Pu-238	8.1E-01	6.2E-05	3.0E-05	4.4E+00	5.5E+01	2.8E-05	7.5E+00	4.6E+00
Pu-239	9.2E-01	4.2E-05	2.7E-05	4.9E+00	6.1E+01	2.6E-05	7.4E+00	4.9E+00
Pu-240	9.2E-01	6.0E-05	2.9E-05	4.9E+00	6.1E+01	2.6E-05	7.4E+00	4.9E+00
Pu-241	1.4E-01	1.3E-05	1.7E-05	7.7E-01	9.6E+00	6.5E-06	3.7E-01	5.3E-01
Pu-242	8.7E-01	8.8E-05	3.2E-05	4.7E+00	5.8E+01	2.6E-05	7.0E+00	4.6E+00
Am-241	9.4E+01	9.1E-03	1.2E-02	5.0E+02	6.3E+03	4.6E-03	2.3E+02	3.4E+02
Am-243	9.4E+01	4.9E-02	6.8E-02	5.0E+02	6.3E+03	2.4E-02	2.3E+02	3.4E+02
Cm-242	1.2E+00	2.0E-03	2.0E-03	8.1E+00	1.0E+02	2.0E-03	9.1E+00	7.0E+00
Cm-244	7.6E+01	5.1E-03	5.1E-03	4.5E+02	5.6E+03	4.8E-03	2.4E+02	3.1E+02

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ABWR

NON-RADIOLOGICAL RISK (FATALITIES)
****

	NORMAL OCCUPATIONAL	NORMAL NON-OCCUPATIONAL	ACCIDENT OCCUPATIONAL	ACCIDENT NON-OCCUPATIONAL
Rural	0.00E+00	0.00E+00	1.01E-04	3.56E-04
Suburban	0.00E+00	0.00E+00	8.23E-06	2.89E-05
SubRush	0.00E+00	0.00E+00	9.14E-07	3.21E-06
Urban	0.00E+00	0.00E+00	5.23E-07	1.87E-06
UrbanRush	0.00E+00	0.00E+00	5.84E-08	2.08E-07
TOTALS:	0.00E+00	0.00E+00	1.11E-04	3.90E-04

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ABWR

REGULATORY CHECKS HAVE BEEN DISABLED
********** ****** **** **** ********

RUN DATE: [09/15/04 AT 16:43:40] PAGE 21

ABWR

CALCULATIONAL INFORMATION

FOR ABWR_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	X
2	-	X	X	X	X	X
3	-	X	X	X	X	X
4	-	X	X	X	X	X
5	-	-	X	X	X	X
6	-	-	X	-	X	X
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
11	-	-	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	-	-	-	-	-	-
15	-	-	-	-	-	-
16	-	-	-	-	-	-
17	-	-	-	-	-	-
18	-	-	-	-	-	-

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ABWR

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

AREA	SAMPLE	GAS	CRUD	PART	RUTH	VOL
4.59E+02	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03
1.53E+03	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03
3.94E+03	8.58E-04	8.58E-04	8.34E-04	8.34E-04	8.55E-04	8.55E-04
1.25E+04	3.42E-04	3.42E-04	3.23E-04	3.23E-04	3.40E-04	3.40E-04
3.04E+04	1.72E-04	1.72E-04	1.55E-04	1.55E-04	1.70E-04	1.70E-04
6.85E+04	8.58E-05	8.58E-05	7.38E-05	7.38E-05	8.45E-05	8.45E-05
1.76E+05	3.42E-05	3.42E-05	2.80E-05	2.80E-05	3.35E-05	3.35E-05
4.45E+05	1.72E-05	1.72E-05	1.33E-05	1.33E-05	1.67E-05	1.67E-05
8.59E+05	8.58E-06	8.58E-06	6.16E-06	6.16E-06	8.30E-06	8.30E-06
2.55E+06	3.42E-06	3.42E-06	2.33E-06	2.33E-06	3.29E-06	3.29E-06
4.45E+06	1.72E-06	1.72E-06	1.06E-06	1.06E-06	1.64E-06	1.64E-06
1.03E+07	8.58E-07	8.58E-07	5.04E-07	5.04E-07	8.14E-07	8.14E-07
2.16E+07	3.42E-07	3.42E-07	1.86E-07	1.86E-07	3.22E-07	3.22E-07
5.52E+07	1.72E-07	1.72E-07	8.77E-08	8.77E-08	1.61E-07	1.61E-07
1.77E+08	8.58E-08	8.58E-08	4.01E-08	4.01E-08	7.97E-08	7.97E-08
4.89E+08	5.42E-08	5.42E-08	2.14E-08	2.14E-08	4.96E-08	4.96E-08
8.12E+08	4.30E-08	4.30E-08	1.31E-08	1.31E-08	3.85E-08	3.85E-08
1.35E+09	3.42E-08	3.42E-08	8.54E-09	8.54E-09	3.02E-08	3.02E-08

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ABWR

VEHICLE ABWR_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	7.52E-02	6.33E-01	2.51E-01	2.93E+00	5.59E+00
6.80E+01	0.00E+00	3.78E-02	3.18E-01	1.26E-01	1.47E+00	2.81E+00
1.05E+02	0.00E+00	1.83E-02	1.56E-01	6.15E-02	7.20E-01	1.38E+00
2.44E+02	0.00E+00	7.10E-03	6.09E-02	2.38E-02	2.81E-01	5.43E-01
3.69E+02	0.00E+00	3.41E-03	2.97E-02	1.15E-02	1.37E-01	2.67E-01
5.61E+02	0.00E+00	1.62E-03	1.44E-02	5.50E-03	6.60E-02	1.30E-01
1.02E+03	0.00E+00	6.17E-04	5.56E-03	2.10E-03	2.54E-02	5.07E-02
1.63E+03	0.00E+00	2.92E-04	2.69E-03	9.99E-04	1.23E-02	2.48E-02
2.31E+03	0.00E+00	1.36E-04	1.29E-03	4.68E-04	5.85E-03	1.20E-02
4.27E+03	0.00E+00	5.15E-05	4.97E-04	1.78E-04	2.25E-03	4.67E-03
5.47E+03	0.00E+00	2.35E-05	2.36E-04	8.21E-05	1.06E-03	2.25E-03
1.11E+04	0.00E+00	1.12E-05	1.14E-04	3.92E-05	5.15E-04	1.10E-03
1.31E+04	0.00E+00	4.13E-06	4.37E-05	1.47E-05	1.96E-04	4.26E-04
2.13E+04	0.00E+00	1.95E-06	2.13E-05	6.97E-06	9.48E-05	2.09E-04
4.05E+04	0.00E+00	8.93E-07	1.01E-05	3.23E-06	4.50E-05	1.01E-04
7.00E+04	0.00E+00	4.79E-07	5.90E-06	1.78E-06	2.59E-05	6.02E-05
8.99E+04	0.00E+00	2.95E-07	4.17E-06	1.14E-06	1.80E-05	4.41E-05
1.21E+05	0.00E+00	1.94E-07	3.08E-06	7.86E-07	1.31E-05	3.33E-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	6.74E-03	2.47E-01	3.20E-02	4.73E-01	4.12E-01
6.80E+01	0.00E+00	3.38E-03	1.24E-01	1.61E-02	2.38E-01	2.07E-01
1.05E+02	0.00E+00	1.65E-03	6.15E-02	7.91E-03	1.18E-01	1.03E-01
2.44E+02	0.00E+00	6.39E-04	2.44E-02	3.10E-03	4.67E-02	4.05E-02
3.69E+02	0.00E+00	3.08E-04	1.22E-02	1.52E-03	2.32E-02	2.01E-02
5.61E+02	0.00E+00	1.47E-04	6.02E-03	7.42E-04	1.15E-02	9.92E-03
1.02E+03	0.00E+00	5.63E-05	2.38E-03	2.89E-04	4.52E-03	3.90E-03
1.63E+03	0.00E+00	2.68E-05	1.19E-03	1.41E-04	2.25E-03	1.93E-03
2.31E+03	0.00E+00	1.26E-05	5.85E-04	6.81E-05	1.11E-03	9.49E-04
4.27E+03	0.00E+00	4.78E-06	2.31E-04	2.65E-05	4.36E-04	3.73E-04
5.47E+03	0.00E+00	2.21E-06	1.15E-04	1.28E-05	2.15E-04	1.84E-04
1.11E+04	0.00E+00	1.06E-06	5.69E-05	6.24E-06	1.07E-04	9.07E-05
1.31E+04	0.00E+00	3.95E-07	2.24E-05	2.41E-06	4.19E-05	3.56E-05
2.13E+04	0.00E+00	1.88E-07	1.12E-05	1.18E-06	2.09E-05	1.77E-05
4.05E+04	0.00E+00	8.72E-08	5.53E-06	5.72E-07	1.03E-05	8.67E-06
7.00E+04	0.00E+00	4.80E-08	3.43E-06	3.41E-07	6.32E-06	5.32E-06
8.99E+04	0.00E+00	3.11E-08	2.65E-06	2.51E-07	4.85E-06	4.05E-06
1.21E+05	0.00E+00	2.14E-08	2.07E-06	1.90E-07	3.77E-06	3.14E-06

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

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ABWR

VEHICLE ABWR_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	1.24E+02	6.77E+02	3.36E+02	9.14E+02	9.45E+02
6.80E+01	0.00E+00	6.23E+01	3.40E+02	1.69E+02	4.59E+02	4.75E+02
1.05E+02	0.00E+00	3.03E+01	1.65E+02	8.19E+01	2.23E+02	2.31E+02
2.44E+02	0.00E+00	1.17E+01	6.40E+01	3.17E+01	8.64E+01	8.93E+01
3.69E+02	0.00E+00	5.62E+00	3.07E+01	1.52E+01	4.15E+01	4.29E+01
5.61E+02	0.00E+00	2.68E+00	1.46E+01	7.24E+00	1.98E+01	2.05E+01
1.02E+03	0.00E+00	1.02E+00	5.56E+00	2.75E+00	7.53E+00	7.78E+00
1.63E+03	0.00E+00	4.81E-01	2.64E+00	1.30E+00	3.57E+00	3.69E+00
2.31E+03	0.00E+00	2.24E-01	1.23E+00	6.05E-01	1.67E+00	1.72E+00
4.27E+03	0.00E+00	8.45E-02	4.65E-01	2.29E-01	6.31E-01	6.51E-01
5.47E+03	0.00E+00	3.85E-02	2.12E-01	1.04E-01	2.89E-01	2.98E-01
1.11E+04	0.00E+00	1.83E-02	1.01E-01	4.95E-02	1.37E-01	1.41E-01
1.31E+04	0.00E+00	6.76E-03	3.74E-02	1.83E-02	5.10E-02	5.24E-02
2.13E+04	0.00E+00	3.19E-03	1.76E-02	8.62E-03	2.41E-02	2.48E-02
4.05E+04	0.00E+00	1.46E-03	8.08E-03	3.94E-03	1.11E-02	1.14E-02
7.00E+04	0.00E+00	7.77E-04	4.34E-03	2.10E-03	5.97E-03	6.12E-03
8.99E+04	0.00E+00	4.74E-04	2.68E-03	1.28E-03	3.72E-03	3.79E-03
1.21E+05	0.00E+00	3.10E-04	1.77E-03	8.39E-04	2.48E-03	2.52E-03

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ABWR

VEHICLE ABWR_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	1.24E-01	1.11E+00	3.96E-01	3.69E+00	6.30E+00
6.80E+01	0.00E+00	6.21E-02	5.56E-01	1.99E-01	1.85E+00	3.16E+00
1.05E+02	0.00E+00	3.02E-02	2.73E-01	9.68E-02	9.07E-01	1.56E+00
2.44E+02	0.00E+00	1.17E-02	1.07E-01	3.76E-02	3.55E-01	6.11E-01
3.69E+02	0.00E+00	5.60E-03	5.21E-02	1.81E-02	1.73E-01	3.00E-01
5.61E+02	0.00E+00	2.67E-03	2.53E-02	8.66E-03	8.37E-02	1.46E-01
1.02E+03	0.00E+00	1.02E-03	9.80E-03	3.31E-03	3.23E-02	5.70E-02
1.63E+03	0.00E+00	4.81E-04	4.76E-03	1.58E-03	1.56E-02	2.78E-02
2.31E+03	0.00E+00	2.24E-04	2.28E-03	7.39E-04	7.48E-03	1.35E-02
4.27E+03	0.00E+00	8.47E-05	8.83E-04	2.81E-04	2.89E-03	5.24E-03
5.47E+03	0.00E+00	3.87E-05	4.22E-04	1.30E-04	1.37E-03	2.53E-03
1.11E+04	0.00E+00	1.84E-05	2.05E-04	6.20E-05	6.64E-04	1.23E-03
1.31E+04	0.00E+00	6.80E-06	7.86E-05	2.32E-05	2.54E-04	4.77E-04
2.13E+04	0.00E+00	3.21E-06	3.83E-05	1.10E-05	1.23E-04	2.34E-04
4.05E+04	0.00E+00	1.47E-06	1.84E-05	5.12E-06	5.87E-05	1.13E-04
7.00E+04	0.00E+00	7.88E-07	1.08E-05	2.82E-06	3.41E-05	6.73E-05
8.99E+04	0.00E+00	4.85E-07	7.71E-06	1.83E-06	2.40E-05	4.93E-05
1.21E+05	0.00E+00	3.20E-07	5.74E-06	1.26E-06	1.77E-05	3.72E-05

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ABWR

VEHICLE ABWR_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	2.55E+00	2.02E+01	7.04E+00	4.11E+01	4.03E+01
6.80E+01	0.00E+00	1.28E+00	1.01E+01	3.53E+00	2.07E+01	2.02E+01
1.05E+02	0.00E+00	6.22E-01	4.96E+00	1.72E+00	1.01E+01	9.89E+00
2.44E+02	0.00E+00	2.41E-01	1.94E+00	6.64E-01	3.96E+00	3.86E+00
3.69E+02	0.00E+00	1.15E-01	9.42E-01	3.18E-01	1.93E+00	1.88E+00
5.61E+02	0.00E+00	5.50E-02	4.56E-01	1.52E-01	9.37E-01	9.06E-01
1.02E+03	0.00E+00	2.09E-02	1.76E-01	5.76E-02	3.62E-01	3.49E-01
1.63E+03	0.00E+00	9.89E-03	8.48E-02	2.73E-02	1.76E-01	1.68E-01
2.31E+03	0.00E+00	4.60E-03	4.04E-02	1.27E-02	8.41E-02	8.00E-02
4.27E+03	0.00E+00	1.74E-03	1.56E-02	4.79E-03	3.25E-02	3.08E-02
5.47E+03	0.00E+00	7.92E-04	7.36E-03	2.18E-03	1.55E-02	1.45E-02
1.11E+04	0.00E+00	3.76E-04	3.56E-03	1.04E-03	7.50E-03	7.00E-03
1.31E+04	0.00E+00	1.39E-04	1.36E-03	3.83E-04	2.87E-03	2.66E-03
2.13E+04	0.00E+00	6.55E-05	6.57E-04	1.81E-04	1.40E-03	1.29E-03
4.05E+04	0.00E+00	2.99E-05	3.12E-04	8.25E-05	6.66E-04	6.09E-04
7.00E+04	0.00E+00	1.60E-05	1.80E-04	4.41E-05	3.89E-04	3.50E-04
8.99E+04	0.00E+00	9.74E-06	1.25E-04	2.69E-05	2.75E-04	2.42E-04
1.21E+05	0.00E+00	6.37E-06	9.13E-05	1.76E-05	2.03E-04	1.75E-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	7.85E-01	1.01E+01	2.12E+00	2.00E+01	1.64E+01
6.80E+01	0.00E+00	3.94E-01	5.09E+00	1.06E+00	1.00E+01	8.24E+00
1.05E+02	0.00E+00	1.91E-01	2.51E+00	5.17E-01	4.97E+00	4.07E+00
2.44E+02	0.00E+00	7.40E-02	9.86E-01	2.00E-01	1.96E+00	1.60E+00
3.69E+02	0.00E+00	3.55E-02	4.85E-01	9.59E-02	9.70E-01	7.90E-01
5.61E+02	0.00E+00	1.69E-02	2.37E-01	4.57E-02	4.77E-01	3.88E-01
1.02E+03	0.00E+00	6.42E-03	9.26E-02	1.74E-02	1.87E-01	1.52E-01
1.63E+03	0.00E+00	3.04E-03	4.53E-02	8.22E-03	9.24E-02	7.46E-02
2.31E+03	0.00E+00	1.41E-03	2.20E-02	3.82E-03	4.52E-02	3.63E-02
4.27E+03	0.00E+00	5.34E-04	8.58E-03	1.44E-03	1.77E-02	1.42E-02
5.47E+03	0.00E+00	2.43E-04	4.15E-03	6.58E-04	8.68E-03	6.92E-03
1.11E+04	0.00E+00	1.16E-04	2.03E-03	3.12E-04	4.27E-03	3.40E-03
1.31E+04	0.00E+00	4.27E-05	7.88E-04	1.15E-04	1.67E-03	1.32E-03
2.13E+04	0.00E+00	2.01E-05	3.88E-04	5.44E-05	8.27E-04	6.53E-04
4.05E+04	0.00E+00	9.20E-06	1.88E-04	2.49E-05	4.04E-04	3.18E-04
7.00E+04	0.00E+00	4.91E-06	1.12E-04	1.33E-05	2.46E-04	1.92E-04
8.99E+04	0.00E+00	3.00E-06	8.29E-05	8.11E-06	1.85E-04	1.43E-04
1.21E+05	0.00E+00	1.96E-06	6.29E-05	5.30E-06	1.42E-04	1.09E-04

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ABWR

INCIDENT-FREE SUMMARY
******** **** *******

IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM

	PASSENGER	CREW	OFF LINK	ON LINK	TOTALS
Rural	0.00E+00	1.08E-01	1.22E-03	3.24E-02	1.42E-01
Suburban	0.00E+00	3.58E-02	8.94E-03	1.78E-02	6.25E-02
SubRush	0.00E+00	7.94E-03	1.99E-03	1.66E-02	2.65E-02
Urban	0.00E+00	4.01E-03	1.60E-04	7.16E-03	1.13E-02
UrbanRush	0.00E+00	8.94E-04	3.57E-05	6.69E-03	7.62E-03
RURAL	0.00E+00	1.08E-01	1.22E-03	3.24E-02	1.42E-01
SUBURB	0.00E+00	4.37E-02	1.09E-02	3.43E-02	8.90E-02
URBAN	0.00E+00	4.90E-03	1.96E-04	1.38E-02	1.89E-02
TOTALS:	0.00E+00	1.57E-01	1.23E-02	8.06E-02	2.50E-01

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

ABWR_TRUCK 5.96E-07 REM

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ABWR

STOP EXPOSURE IN PERSON-REM

ANNULAR AREA	GASPUBLIC	5.09E-02
LINE-SOURCE	GASCREW	7.86E-02
LINE-SOURCE	GASCREW2	1.28E-02
ANNULAR AREA	GASRESR	5.70E-05
ANNULAR AREA	GASRESS	4.66E-04
ANNULAR AREA	GASRESU	8.45E-06
LINE-SOURCE	INSPECT	4.70E-02
ANNULAR AREA	ACCNRR	4.31E-07
ANNULAR AREA	ACCNRS	3.18E-06
ANNULAR AREA	ACCNRU	0.00E+00
ANNULAR AREA	ACCNREM	1.93E-04

TOTAL: 1.90E-01

HANDLING EXPOSURE IN PERSON-REM

HANDLING	VEHICLE	MATERIAL	METHOD	DOSE
LOAD	ABWR_TRUCK	SFUEL	LINE-SOURCE	9.41E-02
UNLOAD	ABWR_TRUCK	SFUEL	LINE-SOURCE	9.41E-02

TOTAL: 1.88E-01

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ABWR

ACCIDENT SUMMARY
******** *******

NUMBER OF EXPECTED ACCIDENTS

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
1	1.19E-03	3.92E-04	4.36E-05	4.40E-05	4.91E-06
2	7.19E-08	2.38E-08	2.64E-09	2.67E-09	2.97E-10
3	6.95E-09	2.30E-09	2.55E-10	2.58E-10	2.88E-11
4	5.87E-10	1.94E-10	2.16E-11	2.18E-11	2.43E-12
5	8.88E-11	2.94E-11	3.27E-12	3.29E-12	3.68E-13
6	3.56E-13	1.18E-13	1.31E-14	1.32E-14	1.47E-15

EARLY FATALITY CONSEQUENCES

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
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

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ABWR

RADIOLOGICAL CONSEQUENCES
50 YEAR POPULATION DOSE IN PERSON-REM

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	6.81E+00	1.73E+02	1.73E+02	8.62E+02	8.62E+02
3	3.25E+01	8.27E+02	8.28E+02	4.12E+03	4.11E+03
4	1.68E+01	4.26E+02	4.26E+02	2.12E+03	2.12E+03
5	4.20E+01	1.07E+03	1.07E+03	5.31E+03	5.31E+03
6	4.19E+01	1.07E+03	1.07E+03	5.31E+03	5.30E+03

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

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	8.89E-09	2.94E-09	3.27E-10	3.30E-10	3.68E-11
3	7.69E-09	2.54E-09	2.83E-10	2.85E-10	3.18E-11
4	2.32E-10	7.69E-11	8.54E-12	8.62E-12	9.62E-13
5	3.28E-10	1.08E-10	1.20E-11	1.21E-11	1.35E-12
6	2.24E-12	7.41E-13	8.23E-14	8.31E-14	9.27E-15

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

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
Rural	0.00E+00	2.40E+00	2.19E+01	6.02E+00	4.53E+01	4.07E+01

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ABWR

EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

	GROUND	INHALED	RESUSPD	CLOUDSH	TOTAL
Rural	7.28E-07	1.37E-09	9.87E-11	1.26E-10	7.29E-07
Suburban	6.12E-06	1.15E-08	8.30E-10	1.06E-09	6.13E-06
SubRush	6.80E-07	1.28E-09	9.23E-11	1.18E-10	6.82E-07
Urban	3.41E-06	6.41E-09	4.63E-10	5.90E-10	3.42E-06
UrbanRush	3.81E-07	7.15E-10	5.16E-11	6.58E-11	3.82E-07
RURAL	7.28E-07	1.37E-09	9.87E-11	1.26E-10	7.29E-07
SUBURB	6.80E-06	1.28E-08	9.22E-10	1.18E-09	6.82E-06
URBAN	3.79E-06	7.13E-09	5.15E-10	6.56E-10	3.80E-06
TOTALS:	1.13E-05	2.13E-08	1.54E-09	1.96E-09	1.13E-05

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ABWR

SOCIETAL INGESTION RISK - PERSON-REM

LINK	GONADS	EFFECTIVE
Rural	3.64E-07	3.32E-07
TOTAL	3.64E-07	3.32E-07

SOCIETAL INGESTION RISK BY ORGAN - PERSON-REM

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
Rural	1.74E-07	1.57E-07	2.05E-07	1.84E-07	1.50E-07	5.38E-07
TOTAL	1.74E-07	1.57E-07	2.05E-07	1.84E-07	1.50E-07	5.38E-07

EXPECTED RISK VALUES - OTHER

LINK	EARLY FATALITY	EARLY MORBIDITY
Rural	0.00E+00	0.00E+00
Suburban	0.00E+00	0.00E+00
SubRush	0.00E+00	0.00E+00
Urban	0.00E+00	0.00E+00
UrbanRush	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

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ABWR

TOTAL EXPOSED POPULATION: INCIDENT-FREE

Rural 7.03E+04 PERSONS
Suburban 5.91E+05 PERSONS
SubRush 6.58E+04 PERSONS
Urban 5.11E+05 PERSONS
UrbanRush 5.70E+04 PERSONS

TOTAL 1.30E+06 PERSONS

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

Rural 1.69E+04 PERSONS
Suburban 4.29E+05 PERSONS
SubRush 4.29E+05 PERSONS
Urban 3.31E+06 PERSONS
UrbanRush 3.31E+06 PERSONS

EOI
END OF RUN
SUCCESSFUL COMPLETION

```
RUN DATE: [ 09/15/04  AT 17:47:26 ]        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 NNN 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 5.2.5   December 29, 2002   PC-version

INPUT ECHO
----------

&& Per the NRC request
&& Inventory provided by vendor, Email
&& Only Isotopes > 1 Ci/MTU and in the RADCAT directory used
&& INSPECT is the inspection at the start and end of the trip
&& GASPUBLIC is the exposure to the public in the immediate refueling area
&& GASCREW is the exposure to the crew member doing the refueling
&& GASCREW2 is the exposure to the crew member in the cab during refueling
&& GASRESR - Public exposure in a rural area during refueling stops
&& GASRESS - Public exposure in a suburban area during refueling stops
&& GASRESU - Public exposure in a urban area during refueling stops
&& ACCNRR - Public exposuure in a rural area during a non-release accident
&& ACCNRS - Public exposure in a suburban area during a non-release accident
&& ACCNRU - Public exposure in an urban area during a non-release accident
&& ACCNREM - Exposure to emergency personnel during non-release accidents
&& LOAD is the loading of the truck; UNLOAD is the unloading of the truck
&& Assume 1 MTU per shipment
&& Assume fuel bhavior characteristics are similar to the AP1000
TITLE ACR700
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 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             && 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
```

```
RUN DATE: [ 09/15/04  AT 17:47:26 ]        PAGE   2

                ACR700

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             && LCFCON(1), LCFCON(2), GECON
STD: R5INGEST.BIN                   && INGESTION FILE
 FORM UNIT
 DIMEN 6 10 18
 PARM 1 3 3 0
 SEVERITY
   NPOP=1
    NMODE=1
     1.00E+00  6.06E-05  5.86E-06  4.95E-07  7.49E-08  3.00E-10
   NPOP=2
    NMODE=1
     1.00E+00  6.06E-05  5.86E-06  4.95E-07  7.49E-08  3.00E-10
   NPOP=3
    NMODE=1
     1.00E+00  6.06E-05  5.86E-06  4.95E-07  7.49E-08  3.00E-10
 RELEASE
   GROUP=SAMPLE
     RFRAC
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
     AERSOL
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
```

```
            RUN DATE: [ 09/15/04  AT 17:47:26 ]        PAGE   3

                    ACR700

  RESP
   1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
  LOS
   0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
  DEPVEL 0.000000
GROUP=GAS
  RFRAC
   0.00E+00  1.36E-01  8.39E-01  4.49E-01  8.35E-01  8.40E-01
  AERSOL
   1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
  RESP
   0.00E+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 0.000000
GROUP=CRUD
  RFRAC
   0.00E+00  1.36E-03  2.52E-03  1.83E-03  3.16E-03  3.17E-03
  AERSOL
   0.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
  RESP
   0.00E+00  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 0.010000
GROUP=PART
  RFRAC
   0.00E+00  1.02E-07  6.71E-08  3.37E-07  3.77E-06  5.01E-06
  AERSOL
   0.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
  RESP
   0.00E+00  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 0.010000
GROUP=RUTH
  RFRAC
   0.00E+00  1.02E-07  6.71E-08  3.37E-07  3.77E-06  2.14E-05
  AERSOL
   0.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
  RESP
   0.00E+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 0.001000
GROUP=VOL
  RFRAC
   0.00E+00  4.09E-09  1.68E-05  1.35E-08  3.60E-05  2.40E-05
  AERSOL
   0.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
  RESP
```

0.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
LOS

```
                RUN DATE: [ 09/15/04  AT 17:47:26 ]        PAGE   4

                        ACR700

    0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    DEPVEL 0.001000
PACKAGE     SFUEL  1.400E+01 0.500 0.500    5.20
     H3GAS      2.360E+02 GAS
     KR85      4.320E+03 GAS
     SR90      4.430E+04 PART
     TC99      9.110E+00 PART
     RU106      1.300E+04 RUTH
     SB125      1.570E+03 PART
     TE125M      3.830E+02 PART
     CS134      1.280E+04 VOL
     CS137      6.200E+04 VOL
     CE144      1.100E+04 PART
     PM147      3.650E+04 PART
     SM151      1.780E+02 PART
     EU154      1.790E+03 PART
     EU155      7.940E+02 PART
     PU238      6.430E+02 PART
     PU239      2.240E+02 PART
     PU240      4.090E+02 PART
     PU241      5.130E+04 PART
     PU242      1.150E+00 PART
     AM241      5.180E+02 PART
     AM243      8.000E+00 PART
     CM242      6.930E+00 PART
     CM244      5.470E+02 PART
     END
VEHICLE  -1 ABWR_TRUCK  1.400E+01 0.500 0.500    5.20    1.00
                2.00    3.10 0.500    0.75
     SFUEL       1.00
MODSTD
  CAMPAIGN 8.229E-02
FLAGS
  REGCHECK 0
  IUOPT 2
EOF
LINK Rural      ABWR_TRUCK 3360.20  88.0  2.0   12.50  470.00 3.53E-07 R 1 0.50
LINK Suburban   ABWR_TRUCK 1111.50  88.0  2.0  317.80  780.00 3.53E-07 S 1 0.00
LINK SubRush    ABWR_TRUCK  123.50  44.0  2.0  318.00 1560.00 3.53E-07 S 1 0.00
LINK Urban      ABWR_TRUCK  124.60  88.0  2.0 2451.70 2800.00 3.53E-07 U 1 0.00
LINK UrbanRush  ABWR_TRUCK   13.90  44.0  2.0 2451.00 5600.00 3.53E-07 U 1 0.00
STOP GASPUBLIC  ABWR_TRUCK 11437.00   1.00   14.00 1.000   1.670
STOP GASCREW    ABWR_TRUCK    1.00   1.00    1.00 1.000   1.670
STOP GASCREW2   ABWR_TRUCK    1.00   3.10    3.10 0.500   1.670
STOP GASRESR    ABWR_TRUCK   12.50  30.00  800.00 1.000   1.190
STOP GASRESS    ABWR_TRUCK  317.80  30.00  800.00 0.870   0.440
STOP GASRESU    ABWR_TRUCK 2451.70  30.00  800.00 0.018   0.050
STOP INSPECT    ABWR_TRUCK    1.00   1.00    1.00 1.000   1.000
STOP ACCNRR     ABWR_TRUCK   12.50  30.00  800.00 1.000   0.009
STOP ACCNRS     ABWR_TRUCK  317.80  30.00  800.00 0.870   0.003
STOP ACCNRU     ABWR_TRUCK 2451.70  30.00  800.00 0.018   0.000
```

```
STOP ACCNREM    ABWR_TRUCK 6430.00  1.00  10.00 1.000  0.013
HANDLING LOAD     ABWR_TRUCK  4.00   1.00  0.50
HANDLING UNLOAD    ABWR_TRUCK  4.00   1.00  0.50
EOF
```

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PACKAGE AND MATERIAL CHARACTERISTICS

MATERIAL	DIMENSION (METERS)	EFFECTIVE DIMENSION	K(0) METERS SQ.	FRACTION GAMMA	FRACTION NEUTRON	DOSE RATE (MREM/HR)
SFUEL	5.200E+00	4.677E+00	1.115E+01	5.000E-01	5.000E-01	1.400E+01

K(0) IS DOSE RATE CONVERSION FACTOR

VEHICLE CHARACTERISTICS

VEHICLE NAME	ABWR_TRUCK
MODE TYPE	HIGHWAY
EXCLUSIVE USE	YES
DOSE RATE (MREM/HR)	1.40E+01
K(0) (SQ. METERS)	1.11E+01
VEHICLE SIZE (M)	5.20E+00
EFFECTIVE SIZE (M)	4.68E+00
NUMBER OF SHIPMENTS	1.00E+00
NUMBER OF CREW	2.00E+00
CREW DISTANCE (M)	3.10E+00
CREW DOSE ADJUSTMENT FACT	5.00E-01
CREW EXPOSER WIDTH (M)	7.50E-01
EFFECTIVE EXPOSER WIDTH	7.50E-01
K(0) (SQ M) CREW EXPOSURE	1.89E+00

VEHICLE	MATERIAL	NO.PACKAGES
ABWR_TRUCK		
	SFUEL	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

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STOP RELATED DATA

	GASPUBLIC	GASCREW	GASCREW2	GASRESR	GASRESS
VEHICLE	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK
PERSONS	1.14E+04	1.00E+00	1.00E+00	1.25E+01	3.18E+02
MINIMUM DISTANCE(M)	1.00E+00	1.00E+00	3.10E+00	3.00E+01	3.00E+01
MAXIMUM DISTANCE(M)	1.40E+01	1.00E+00	3.10E+00	8.00E+02	8.00E+02
SHIELDING FACTOR	1.00E+00	1.00E+00	5.00E-01	1.00E+00	8.70E-01
TIME (HR)	1.67E+00	1.67E+00	1.67E+00	1.19E+00	4.40E-01

	GASRESU	INSPECT	ACCNRR	ACCNRS	ACCNRU
VEHICLE	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK
PERSONS	2.45E+03	1.00E+00	1.25E+01	3.18E+02	2.45E+03
MINIMUM DISTANCE(M)	3.00E+01	1.00E+00	3.00E+01	3.00E+01	3.00E+01
MAXIMUM DISTANCE(M)	8.00E+02	1.00E+00	8.00E+02	8.00E+02	8.00E+02
SHIELDING FACTOR	1.80E-02	1.00E+00	1.00E+00	8.70E-01	1.80E-02
TIME (HR)	5.00E-02	1.00E+00	9.00E-03	3.00E-03	0.00E+00

	ACCNREM
VEHICLE	ABWR_TRUCK
PERSONS	6.43E+03
MINIMUM DISTANCE(M)	1.00E+00
MAXIMUM DISTANCE(M)	1.00E+01
SHIELDING FACTOR	1.00E+00
TIME (HR)	1.30E-02

HANDLING RELATED DATA

	LOAD	UNLOAD
VEHICLE	ABWR_TRUCK	ABWR_TRUCK
NUMBER OF HANDLERS	4.00E+00	4.00E+00
DISTANCE (M)	1.00E+00	1.00E+00
EXPOSURE TIME (HR)	5.00E-01	5.00E-01

PACKAGE HANDLING THRESHOLD FOR SMALL PACKAGES (SMLPKG) = 5.000E-01 METERS

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LINK RELATED DATA

	Rural	Suburban	SubRush	Urban	UrbanRush
VEHICLE	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK
DISTANCE (KM)	3.36E+03	1.11E+03	1.24E+02	1.25E+02	1.39E+01
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00	2.00E+00	2.00E+00
SPEED (KM/HR)	8.80E+01	8.80E+01	4.40E+01	8.80E+01	4.40E+01
POPULATION DENSITY	1.25E+01	3.18E+02	3.18E+02	2.45E+03	2.45E+03
VEHICLE DENSITY	4.70E+02	7.80E+02	1.56E+03	2.80E+03	5.60E+03
ACCIDENT RATE/KM	3.53E-07	3.53E-07	3.53E-07	3.53E-07	3.53E-07
ZONE	RURAL	SUBURBAN	SUBURBAN	URBAN	URBAN
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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ISOTOPE RELATED DATA

NUCLIDE	CURIES PER PKG	RELEASE GROUP	RESUSPENSION FACTOR	50YR INHALATION (REM/CI) EFFECTIVE
SFUEL				
H3GAS	2.36E+02	GAS	1.00E+00	4.40E-03
KR85	4.32E+03	GAS	1.00E+00	0.00E+00
SR90	4.43E+04	PART	5.41E+00	2.40E+06
TC99	9.11E+00	PART	5.57E+00	1.40E+04
RU106	1.30E+04	RUTH	1.23E+00	8.00E+05
SB125	1.57E+03	PART	4.34E+00	1.70E+04
TE125M	3.83E+02	PART	1.62E+00	1.00E+04
CS134	1.28E+04	VOL	1.31E+00	4.60E+04
CS137	6.20E+04	VOL	1.44E+00	3.20E+04
CE144	1.10E+04	PART	2.99E+00	6.30E+05
PM147	3.65E+04	PART	4.30E+00	6.00E+04
SM151	1.78E+02	PART	5.51E+00	3.30E+04
EU154	1.79E+03	PART	5.09E+00	3.10E+05
EU155	7.94E+02	PART	4.79E+00	4.80E+04
PU238	6.43E+02	PART	5.51E+00	5.30E+08
PU239	2.24E+02	PART	5.57E+00	5.70E+08
PU240	4.09E+02	PART	5.56E+00	5.70E+08
PU241	5.13E+04	PART	5.26E+00	9.90E+06
PU242	1.15E+00	PART	5.57E+00	5.30E+08
AM241	5.18E+02	PART	5.55E+00	5.90E+08
AM243	8.00E+00	PART	5.56E+00	5.90E+08
CM242	6.93E+00	PART	2.40E+00	2.30E+07
CM244	5.47E+02	PART	5.32E+00	3.10E+08

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NUCLIDE	HALF LIFE	GAMMA ENERGY	CLOUD FACTOR	GROUND FACTOR	INGESTION NUCLIDE	NEUTRON EMISSION neutrons/sec/Ci
SFUEL						
H3GAS	4.51E+03	0.00E+00	1.22E-06	0.00E+00	NONE	N/A
KR85	3.92E+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
TC99	7.78E+07	0.00E+00	5.99E-06	2.49E-08	Tc-99	N/A
RU106	3.68E+02	2.01E-01	0.00E+00	6.78E-05	Ru-106	N/A
SB125	1.01E+03	4.30E-01	7.47E-02	1.36E-04	Sb-125	N/A
TE125M	5.80E+01	3.55E-02	1.68E-03	1.15E-05	Te-125m	N/A
CS134	7.53E+02	1.55E+00	2.80E-01	4.86E-04	Cs-134	N/A
CS137	1.10E+04	5.96E-01	2.86E-05	1.77E-04	Cs-137	N/A
CE144	2.84E+02	5.25E-02	3.16E-03	1.84E-05	Ce-144	N/A
PM147	9.58E+02	4.37E-06	2.56E-06	1.09E-08	Pm-147	N/A
SM151	3.29E+04	1.34E-05	1.34E-07	1.61E-09	Sm-151	N/A
EU154	3.21E+03	1.22E+00	2.27E-01	3.80E-04	Eu-154	N/A
EU155	1.81E+03	6.05E-02	9.21E-03	1.89E-05	Eu-155	N/A
PU238	3.21E+04	1.81E-03	1.81E-05	2.68E-07	Pu-238	N/A
PU239	8.79E+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
PU242	1.37E+08	1.44E-03	1.48E-05	2.13E-07	Pu-242	N/A
AM241	1.58E+05	3.24E-02	3.03E-03	8.79E-06	Am-241	N/A
AM243	2.70E+06	5.59E-02	8.07E-03	1.71E-05	Am-243	N/A
CM242	1.63E+02	1.83E-03	2.11E-05	3.06E-07	Cm-242	N/A
CM244	6.62E+03	1.70E-03	1.82E-05	2.81E-07	Cm-244	N/A

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ISOTOPE RELATED DATA

NUCLIDE	1-YR INHALATION (REM/CI)		
	LUNG	MARROW	THYROID
SFUEL			
H3GAS	1.20E+02	1.20E+02	0.00E+00
KR85	0.00E+00	0.00E+00	0.00E+00
SR90	4.50E+06	3.80E+03	0.00E+00
TC99	1.00E+05	1.40E+02	0.00E+00
RU106	4.30E+06	4.50E+03	0.00E+00
SB125	4.40E+04	5.50E+02	0.00E+00
TE125M	0.00E+00	0.00E+00	0.00E+00
CS134	4.10E+04	3.90E+04	0.00E+00
CS137	3.10E+04	2.60E+04	0.00E+00
CE144	3.60E+06	4.20E+03	0.00E+00
PM147	2.20E+05	5.30E+02	0.00E+00
SM151	2.10E+04	2.90E+03	0.00E+00
EU154	0.00E+00	0.00E+00	0.00E+00
EU155	0.00E+00	0.00E+00	0.00E+00
PU238	4.50E+08	1.10E+06	0.00E+00
PU239	4.20E+08	1.10E+06	0.00E+00
PU240	4.20E+08	1.10E+06	0.00E+00
PU241	3.60E+05	1.30E+03	0.00E+00
PU242	4.00E+08	1.00E+06	0.00E+00
AM241	1.20E+08	1.70E+07	0.00E+00
AM243	1.10E+08	1.60E+07	0.00E+00
CM242	9.90E+07	8.80E+06	0.00E+00
CM244	1.20E+08	1.70E+07	0.00E+00

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RELEASE RELATED DATA
****

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	0.00E+00	1.36E-01	8.39E-01	4.49E-01	8.35E-01	8.40E-01
CRUD	0.00E+00	1.36E-03	2.52E-03	1.83E-03	3.16E-03	3.17E-03
PART	0.00E+00	1.02E-07	6.71E-08	3.37E-07	3.77E-06	5.01E-06
RUTH	0.00E+00	1.02E-07	6.71E-08	3.37E-07	3.77E-06	2.14E-05
VOL	0.00E+00	4.09E-09	1.68E-05	1.35E-08	3.60E-05	2.40E-05

DEPOSITION VELOCITIES

GROUP	M/SEC
SAMPLE	0.00E+00
GAS	0.00E+00
CRUD	1.00E-02
PART	1.00E-02
RUTH	1.00E-03
VOL	1.00E-03

ACCIDENT SEVERITY FRACTIONS
FOR HIGHWAY

ZONE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RURAL	1.00E+00	6.06E-05	5.86E-06	4.95E-07	7.49E-08	3.00E-10
SUBURBAN	1.00E+00	6.06E-05	5.86E-06	4.95E-07	7.49E-08	3.00E-10
URBAN	1.00E+00	6.06E-05	5.86E-06	4.95E-07	7.49E-08	3.00E-10

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AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CRUD	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
VOL	0.00E+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
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CRUD	0.00E+00	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
PART	0.00E+00	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
RUTH	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
VOL	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

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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

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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		

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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)

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) = 8.229E-02
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 = 0
BUILDING SHIELDING OPTION (IUOPT) = 2
RURAL SHIELDING FACTOR = 1.000E+00
SUBURBAN SHIELDING FACTOR = 8.700E-01
URBAN SHIELDING FACTOR = 1.800E-02

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INGESTION RELATED DATA

COMIDA INGESTION FILE USED: R5INGEST.BIN

COMIDA FILE HEADER
COMIDA2 02/17/03 16:17:38 Ver. 1.11a, 1/28/96: avoiding use of UNIT 6 for HP

DOSE CONVERSION FILE USED IN COMIDA
FGRDCF 05/08/95 16:43:45 beta-test version 1.10, minor FORTRAN fixes 5/4/95
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

ISOTOPE	INGESTION NUCLIDE
H3GAS	NONE
KR85	NONE

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BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

NUCLIDE	EFFECTIVE	THYROID
Sr-90	2.541E+05	9.964E+03
Tc-99	1.316E+04	5.396E+04
Ru-106	2.107E+04	4.014E+03
Sb-125	3.930E+03	2.392E+02
Te-125m	4.540E+03	1.799E+02
Cs-134	6.012E+05	5.344E+05
Cs-137	4.870E+05	4.545E+05
Ce-144	1.202E+04	1.085E+01
Pm-147	1.438E+03	1.585E-04
Sm-151	6.077E+02	1.893E-04
Eu-154	1.439E+04	3.185E+02
Eu-155	2.232E+03	9.620E+00
Pu-238	3.858E+04	2.301E-01
Pu-239	4.049E+04	2.169E-01
Pu-240	4.049E+04	2.172E-01
Pu-241	3.231E+03	3.837E-02
Pu-242	3.846E+04	2.134E-01
Am-241	2.846E+06	3.818E+01
Am-243	2.834E+06	1.968E+02
Cm-242	6.505E+04	1.851E+01
Cm-244	2.534E+06	3.924E+01

SOCIETAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

NUCLIDE	GONADS	BREAST	LUNGS	RED MAR	BONE SU	THYROID	REMAIND	EFFECTI
Sr-90	1.8E+00	1.8E+00	1.8E+00	2.3E+02	4.9E+02	1.8E+00	7.3E+00	4.5E+01
Tc-99	4.1E-01	4.1E-01	4.1E-01	4.1E-01	4.1E-01	1.1E+01	6.9E+00	2.7E+00
Ru-106	5.5E-01	4.8E-01	4.8E-01	4.9E-01	4.8E-01	4.7E-01	7.1E+00	2.5E+00
Sb-125	3.5E-01	6.6E-02	4.0E-02	1.5E-01	3.9E-01	3.1E-02	1.2E+00	5.0E-01
Te-125m	5.8E-02	2.1E-02	2.0E-02	5.6E-01	5.8E+00	1.8E-02	6.4E-01	4.6E-01
Cs-134	8.9E+01	7.5E+01	7.6E+01	8.1E+01	7.5E+01	7.6E+01	9.6E+01	8.6E+01
Cs-137	8.2E+01	7.4E+01	7.5E+01	7.8E+01	7.5E+01	7.5E+01	8.6E+01	8.0E+01
Ce-144	1.7E-02	2.9E-03	1.6E-03	2.1E-02	3.0E-02	1.2E-03	4.5E+00	1.4E+00
Pm-147	4.8E-06	5.2E-07	1.4E-07	1.5E-02	1.8E-01	2.2E-08	6.4E-01	2.0E-01
Sm-151	1.9E-05	9.3E-07	5.9E-07	2.5E-02	3.1E-01	3.0E-08	2.8E-01	9.5E-02
Eu-154	1.1E+00	2.3E-01	1.8E-01	9.6E-01	3.7E+00	4.8E-02	5.3E+00	2.2E+00
Eu-155	7.7E-02	1.1E-02	7.6E-03	1.2E-01	1.0E+00	1.4E-03	8.6E-01	3.3E-01
Pu-238	8.1E-01	6.2E-05	3.0E-05	4.4E+00	5.5E+01	2.8E-05	7.5E+00	4.6E+00
Pu-239	9.2E-01	4.2E-05	2.7E-05	4.9E+00	6.1E+01	2.6E-05	7.4E+00	4.9E+00
Pu-240	9.2E-01	6.0E-05	2.9E-05	4.9E+00	6.1E+01	2.6E-05	7.4E+00	4.9E+00
Pu-241	1.4E-01	1.3E-05	1.7E-05	7.7E-01	9.6E+00	6.5E-06	3.7E-01	5.3E-01
Pu-242	8.7E-01	8.8E-05	3.2E-05	4.7E+00	5.8E+01	2.6E-05	7.0E+00	4.6E+00
Am-241	9.4E+01	9.1E-03	1.2E-02	5.0E+02	6.3E+03	4.6E-03	2.3E+02	3.4E+02
Am-243	9.4E+01	4.9E-02	6.8E-02	5.0E+02	6.3E+03	2.4E-02	2.3E+02	3.4E+02
Cm-242	1.2E+00	2.0E-03	2.0E-03	8.1E+00	1.0E+02	2.0E-03	9.1E+00	7.0E+00
Cm-244	7.6E+01	5.1E-03	5.1E-03	4.5E+02	5.6E+03	4.8E-03	2.4E+02	3.1E+02

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NON-RADIOLOGICAL RISK (FATALITIES)
****

	NORMAL OCCUPATIONAL	NORMAL NON-OCCUPATIONAL	ACCIDENT OCCUPATIONAL	ACCIDENT NON-OCCUPATIONAL
Rural	0.00E+00	0.00E+00	1.01E-04	3.56E-04
Suburban	0.00E+00	0.00E+00	8.23E-06	2.89E-05
SubRush	0.00E+00	0.00E+00	9.14E-07	3.21E-06
Urban	0.00E+00	0.00E+00	5.23E-07	1.87E-06
UrbanRush	0.00E+00	0.00E+00	5.84E-08	2.08E-07
TOTALS:	0.00E+00	0.00E+00	1.11E-04	3.90E-04

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REGULATORY CHECKS HAVE BEEN DISABLED
********** ****** **** **** ********

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CALCULATIONAL INFORMATION

FOR ABWR_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
2	-	-	-	-	X	X
3	-	-	-	-	-	X
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
11	-	-	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	-	-	-	-	-	-
15	-	-	-	-	-	-
16	-	-	-	-	-	-
17	-	-	-	-	-	-
18	-	-	-	-	-	-

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

AREA	SAMPLE	GAS	CRUD	PART	RUTH	VOL
4.59E+02	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03
1.53E+03	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03
3.94E+03	8.58E-04	8.58E-04	8.34E-04	8.34E-04	8.55E-04	8.55E-04
1.25E+04	3.42E-04	3.42E-04	3.23E-04	3.23E-04	3.40E-04	3.40E-04
3.04E+04	1.72E-04	1.72E-04	1.55E-04	1.55E-04	1.70E-04	1.70E-04
6.85E+04	8.58E-05	8.58E-05	7.38E-05	7.38E-05	8.45E-05	8.45E-05
1.76E+05	3.42E-05	3.42E-05	2.80E-05	2.80E-05	3.35E-05	3.35E-05
4.45E+05	1.72E-05	1.72E-05	1.33E-05	1.33E-05	1.67E-05	1.67E-05
8.59E+05	8.58E-06	8.58E-06	6.16E-06	6.16E-06	8.30E-06	8.30E-06
2.55E+06	3.42E-06	3.42E-06	2.33E-06	2.33E-06	3.29E-06	3.29E-06
4.45E+06	1.72E-06	1.72E-06	1.06E-06	1.06E-06	1.64E-06	1.64E-06
1.03E+07	8.58E-07	8.58E-07	5.04E-07	5.04E-07	8.14E-07	8.14E-07
2.16E+07	3.42E-07	3.42E-07	1.86E-07	1.86E-07	3.22E-07	3.22E-07
5.52E+07	1.72E-07	1.72E-07	8.77E-08	8.77E-08	1.61E-07	1.61E-07
1.77E+08	8.58E-08	8.58E-08	4.01E-08	4.01E-08	7.97E-08	7.97E-08
4.89E+08	5.42E-08	5.42E-08	2.14E-08	2.14E-08	4.96E-08	4.96E-08
8.12E+08	4.30E-08	4.30E-08	1.31E-08	1.31E-08	3.85E-08	3.85E-08
1.35E+09	3.42E-08	3.42E-08	8.54E-09	8.54E-09	3.02E-08	3.02E-08

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VEHICLE ABWR_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	1.63E-02	8.10E-02	5.37E-02	5.66E-01	1.71E+00
6.80E+01	0.00E+00	8.17E-03	4.07E-02	2.70E-02	2.84E-01	8.60E-01
1.05E+02	0.00E+00	4.04E-03	2.03E-02	1.33E-02	1.40E-01	4.26E-01
2.44E+02	0.00E+00	1.59E-03	8.05E-03	5.26E-03	5.53E-02	1.69E-01
3.69E+02	0.00E+00	7.87E-04	4.03E-03	2.60E-03	2.73E-02	8.39E-02
5.61E+02	0.00E+00	3.86E-04	2.00E-03	1.28E-03	1.34E-02	4.14E-02
1.02E+03	0.00E+00	1.51E-04	7.93E-04	5.00E-04	5.23E-03	1.63E-02
1.63E+03	0.00E+00	7.46E-05	3.97E-04	2.46E-04	2.57E-03	8.11E-03
2.31E+03	0.00E+00	3.64E-05	1.97E-04	1.20E-04	1.25E-03	3.99E-03
4.27E+03	0.00E+00	1.43E-05	7.80E-05	4.72E-05	4.89E-04	1.57E-03
5.47E+03	0.00E+00	6.98E-06	3.89E-05	2.30E-05	2.38E-04	7.76E-04
1.11E+04	0.00E+00	3.43E-06	1.93E-05	1.13E-05	1.17E-04	3.84E-04
1.31E+04	0.00E+00	1.34E-06	7.65E-06	4.43E-06	4.55E-05	1.51E-04
2.13E+04	0.00E+00	6.63E-07	3.83E-06	2.19E-06	2.24E-05	7.50E-05
4.05E+04	0.00E+00	3.23E-07	1.90E-06	1.07E-06	1.09E-05	3.68E-05
7.00E+04	0.00E+00	1.97E-07	1.18E-06	6.50E-07	6.58E-06	2.27E-05
8.99E+04	0.00E+00	1.48E-07	9.21E-07	4.89E-07	4.90E-06	1.73E-05
1.21E+05	0.00E+00	1.14E-07	7.24E-07	3.77E-07	3.75E-06	1.34E-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	5.36E-03	7.26E-02	1.77E-02	1.23E-01	9.69E-02
6.80E+01	0.00E+00	2.70E-03	3.65E-02	8.90E-03	6.17E-02	4.87E-02
1.05E+02	0.00E+00	1.34E-03	1.82E-02	4.44E-03	3.07E-02	2.42E-02
2.44E+02	0.00E+00	5.36E-04	7.23E-03	1.77E-03	1.22E-02	9.61E-03
3.69E+02	0.00E+00	2.69E-04	3.63E-03	8.89E-04	6.10E-03	4.81E-03
5.61E+02	0.00E+00	1.34E-04	1.81E-03	4.43E-04	3.03E-03	2.39E-03
1.02E+03	0.00E+00	5.34E-05	7.17E-04	1.76E-04	1.20E-03	9.46E-04
1.63E+03	0.00E+00	2.68E-05	3.60E-04	8.86E-05	6.01E-04	4.73E-04
2.31E+03	0.00E+00	1.34E-05	1.79E-04	4.41E-05	2.98E-04	2.34E-04
4.27E+03	0.00E+00	5.33E-06	7.11E-05	1.76E-05	1.18E-04	9.29E-05
5.47E+03	0.00E+00	2.67E-06	3.56E-05	8.83E-06	5.89E-05	4.63E-05
1.11E+04	0.00E+00	1.33E-06	1.77E-05	4.40E-06	2.93E-05	2.30E-05
1.31E+04	0.00E+00	5.31E-07	7.02E-06	1.75E-06	1.16E-05	9.09E-06
2.13E+04	0.00E+00	2.67E-07	3.52E-06	8.81E-07	5.80E-06	4.55E-06
4.05E+04	0.00E+00	1.33E-07	1.75E-06	4.39E-07	2.87E-06	2.25E-06
7.00E+04	0.00E+00	8.39E-08	1.10E-06	2.77E-07	1.79E-06	1.40E-06
8.99E+04	0.00E+00	6.64E-08	8.59E-07	2.19E-07	1.39E-06	1.09E-06
1.21E+05	0.00E+00	5.27E-08	6.78E-07	1.74E-07	1.09E-06	8.57E-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

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VEHICLE ABWR_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	5.29E-01	4.65E+00	1.75E+00	2.87E+01	3.28E+01
6.80E+01	0.00E+00	2.66E-01	2.33E+00	8.78E-01	1.44E+01	1.65E+01
1.05E+02	0.00E+00	1.29E-01	1.16E+00	4.27E-01	7.07E+00	8.05E+00
2.44E+02	0.00E+00	5.00E-02	4.60E-01	1.65E-01	2.76E+00	3.13E+00
3.69E+02	0.00E+00	2.40E-02	2.29E-01	7.92E-02	1.34E+00	1.52E+00
5.61E+02	0.00E+00	1.14E-02	1.14E-01	3.78E-02	6.49E-01	7.30E-01
1.02E+03	0.00E+00	4.34E-03	4.49E-02	1.43E-02	2.50E-01	2.80E-01
1.63E+03	0.00E+00	2.06E-03	2.24E-02	6.80E-03	1.21E-01	1.34E-01
2.31E+03	0.00E+00	9.58E-04	1.11E-02	3.16E-03	5.77E-02	6.36E-02
4.27E+03	0.00E+00	3.62E-04	4.37E-03	1.20E-03	2.22E-02	2.43E-02
5.47E+03	0.00E+00	1.65E-04	2.17E-03	5.46E-04	1.05E-02	1.14E-02
1.11E+04	0.00E+00	7.85E-05	1.07E-03	2.59E-04	5.08E-03	5.48E-03
1.31E+04	0.00E+00	2.90E-05	4.24E-04	9.59E-05	1.94E-03	2.07E-03
2.13E+04	0.00E+00	1.37E-05	2.12E-04	4.53E-05	9.39E-04	9.94E-04
4.05E+04	0.00E+00	6.27E-06	1.04E-04	2.07E-05	4.46E-04	4.67E-04
7.00E+04	0.00E+00	3.36E-06	6.45E-05	1.11E-05	2.57E-04	2.64E-04
8.99E+04	0.00E+00	2.06E-06	4.97E-05	6.82E-06	1.80E-04	1.78E-04
1.21E+05	0.00E+00	1.36E-06	3.88E-05	4.48E-06	1.31E-04	1.27E-04

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VEHICLE ABWR_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	2.16E-02	1.55E-01	7.14E-02	6.91E-01	1.81E+00
6.80E+01	0.00E+00	1.09E-02	7.77E-02	3.59E-02	3.47E-01	9.09E-01
1.05E+02	0.00E+00	5.38E-03	3.87E-02	1.78E-02	1.72E-01	4.51E-01
2.44E+02	0.00E+00	2.13E-03	1.54E-02	7.03E-03	6.77E-02	1.79E-01
3.69E+02	0.00E+00	1.06E-03	7.70E-03	3.49E-03	3.35E-02	8.88E-02
5.61E+02	0.00E+00	5.20E-04	3.83E-03	1.72E-03	1.64E-02	4.39E-02
1.02E+03	0.00E+00	2.05E-04	1.52E-03	6.77E-04	6.45E-03	1.73E-02
1.63E+03	0.00E+00	1.01E-04	7.61E-04	3.35E-04	3.18E-03	8.59E-03
2.31E+03	0.00E+00	4.98E-05	3.78E-04	1.64E-04	1.55E-03	4.23E-03
4.27E+03	0.00E+00	1.96E-05	1.50E-04	6.48E-05	6.09E-04	1.67E-03
5.47E+03	0.00E+00	9.65E-06	7.49E-05	3.19E-05	2.98E-04	8.23E-04
1.11E+04	0.00E+00	4.77E-06	3.72E-05	1.57E-05	1.47E-04	4.07E-04
1.31E+04	0.00E+00	1.87E-06	1.48E-05	6.18E-06	5.72E-05	1.60E-04
2.13E+04	0.00E+00	9.30E-07	7.40E-06	3.07E-06	2.83E-05	7.96E-05
4.05E+04	0.00E+00	4.57E-07	3.67E-06	1.51E-06	1.38E-05	3.91E-05
7.00E+04	0.00E+00	2.81E-07	2.29E-06	9.27E-07	8.40E-06	2.41E-05
8.99E+04	0.00E+00	2.15E-07	1.79E-06	7.09E-07	6.32E-06	1.84E-05
1.21E+05	0.00E+00	1.67E-07	1.41E-06	5.51E-07	4.86E-06	1.43E-05

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VEHICLE ABWR_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	5.15E-02	2.21E+00	1.70E-01	6.55E+00	5.63E+00
6.80E+01	0.00E+00	2.58E-02	1.11E+00	8.54E-02	3.29E+00	2.83E+00
1.05E+02	0.00E+00	1.26E-02	5.52E-01	4.15E-02	1.62E+00	1.39E+00
2.44E+02	0.00E+00	4.86E-03	2.19E-01	1.61E-02	6.41E-01	5.47E-01
3.69E+02	0.00E+00	2.33E-03	1.10E-01	7.70E-03	3.17E-01	2.69E-01
5.61E+02	0.00E+00	1.11E-03	5.45E-02	3.67E-03	1.56E-01	1.31E-01
1.02E+03	0.00E+00	4.22E-04	2.16E-02	1.40E-03	6.11E-02	5.11E-02
1.63E+03	0.00E+00	2.00E-04	1.08E-02	6.61E-04	3.01E-02	2.50E-02
2.31E+03	0.00E+00	9.32E-05	5.35E-03	3.08E-04	1.47E-02	1.21E-02
4.27E+03	0.00E+00	3.52E-05	2.12E-03	1.16E-04	5.77E-03	4.71E-03
5.47E+03	0.00E+00	1.61E-05	1.05E-03	5.31E-05	2.82E-03	2.28E-03
1.11E+04	0.00E+00	7.64E-06	5.23E-04	2.52E-05	1.39E-03	1.11E-03
1.31E+04	0.00E+00	2.83E-06	2.07E-04	9.34E-06	5.42E-04	4.31E-04
2.13E+04	0.00E+00	1.33E-06	1.03E-04	4.41E-06	2.68E-04	2.12E-04
4.05E+04	0.00E+00	6.10E-07	5.11E-05	2.02E-06	1.31E-04	1.02E-04
7.00E+04	0.00E+00	3.27E-07	3.18E-05	1.08E-06	7.95E-05	6.10E-05
8.99E+04	0.00E+00	2.01E-07	2.46E-05	6.65E-07	5.97E-05	4.48E-05
1.21E+05	0.00E+00	1.32E-07	1.93E-05	4.38E-07	4.59E-05	3.38E-05

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	2.05E-03	2.01E+00	6.78E-03	4.37E+00	2.95E+00
6.80E+01	0.00E+00	1.03E-03	1.01E+00	3.41E-03	2.19E+00	1.48E+00
1.05E+02	0.00E+00	5.04E-04	5.03E-01	1.66E-03	1.09E+00	7.38E-01
2.44E+02	0.00E+00	1.96E-04	2.00E-01	6.49E-04	4.34E-01	2.93E-01
3.69E+02	0.00E+00	9.52E-05	1.00E-01	3.14E-04	2.17E-01	1.46E-01
5.61E+02	0.00E+00	4.59E-05	4.97E-02	1.52E-04	1.08E-01	7.27E-02
1.02E+03	0.00E+00	1.76E-05	1.97E-02	5.82E-05	4.27E-02	2.88E-02
1.63E+03	0.00E+00	8.48E-06	9.85E-03	2.80E-05	2.13E-02	1.44E-02
2.31E+03	0.00E+00	4.02E-06	4.89E-03	1.33E-05	1.06E-02	7.13E-03
4.27E+03	0.00E+00	1.54E-06	1.94E-03	5.09E-06	4.19E-03	2.82E-03
5.47E+03	0.00E+00	7.23E-07	9.65E-04	2.39E-06	2.09E-03	1.40E-03
1.11E+04	0.00E+00	3.49E-07	4.79E-04	1.15E-06	1.04E-03	6.97E-04
1.31E+04	0.00E+00	1.32E-07	1.90E-04	4.36E-07	4.09E-04	2.75E-04
2.13E+04	0.00E+00	6.36E-08	9.49E-05	2.10E-07	2.05E-04	1.38E-04
4.05E+04	0.00E+00	3.00E-08	4.69E-05	9.90E-08	1.01E-04	6.80E-05
7.00E+04	0.00E+00	1.70E-08	2.92E-05	5.63E-08	6.29E-05	4.22E-05
8.99E+04	0.00E+00	1.16E-08	2.27E-05	3.84E-08	4.88E-05	3.27E-05
1.21E+05	0.00E+00	8.34E-09	1.78E-05	2.75E-08	3.82E-05	2.56E-05

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INCIDENT-FREE SUMMARY
******** **** *******

IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM

	PASSENGER	CREW	OFF LINK	ON LINK	TOTALS
Rural	0.00E+00	1.08E-01	1.22E-03	3.24E-02	1.42E-01
Suburban	0.00E+00	3.58E-02	8.94E-03	1.78E-02	6.25E-02
SubRush	0.00E+00	7.94E-03	1.99E-03	1.66E-02	2.65E-02
Urban	0.00E+00	4.01E-03	1.60E-04	7.16E-03	1.13E-02
UrbanRush	0.00E+00	8.94E-04	3.57E-05	6.69E-03	7.62E-03
RURAL	0.00E+00	1.08E-01	1.22E-03	3.24E-02	1.42E-01
SUBURB	0.00E+00	4.37E-02	1.09E-02	3.43E-02	8.90E-02
URBAN	0.00E+00	4.90E-03	1.96E-04	1.38E-02	1.89E-02
TOTALS:	0.00E+00	1.57E-01	1.23E-02	8.06E-02	2.50E-01

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

ABWR_TRUCK 5.96E-07 REM

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STOP EXPOSURE IN PERSON-REM

ANNULAR AREA	GASPUBLIC	5.09E-02
LINE-SOURCE	GASCREW	7.86E-02
LINE-SOURCE	GASCREW2	1.28E-02
ANNULAR AREA	GASRESR	5.70E-05
ANNULAR AREA	GASRESS	4.66E-04
ANNULAR AREA	GASRESU	8.45E-06
LINE-SOURCE	INSPECT	4.70E-02
ANNULAR AREA	ACCNRR	4.31E-07
ANNULAR AREA	ACCNRS	3.18E-06
ANNULAR AREA	ACCNRU	0.00E+00
ANNULAR AREA	ACCNREM	1.93E-04

TOTAL: 1.90E-01

HANDLING EXPOSURE IN PERSON-REM

HANDLING	VEHICLE	MATERIAL	METHOD	DOSE
LOAD	ABWR_TRUCK	SFUEL	LINE-SOURCE	9.41E-02
UNLOAD	ABWR_TRUCK	SFUEL	LINE-SOURCE	9.41E-02

TOTAL: 1.88E-01

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ACCIDENT SUMMARY
******** *******

NUMBER OF EXPECTED ACCIDENTS

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
1	1.19E-03	3.92E-04	4.36E-05	4.40E-05	4.91E-06
2	7.19E-08	2.38E-08	2.64E-09	2.67E-09	2.97E-10
3	6.95E-09	2.30E-09	2.55E-10	2.58E-10	2.88E-11
4	5.87E-10	1.94E-10	2.16E-11	2.18E-11	2.43E-12
5	8.88E-11	2.94E-11	3.27E-12	3.29E-12	3.68E-13
6	3.56E-13	1.18E-13	1.31E-14	1.32E-14	1.47E-15

EARLY FATALITY CONSEQUENCES

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
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

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RADIOLOGICAL CONSEQUENCES
50 YEAR POPULATION DOSE IN PERSON-REM

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	1.66E-02	4.21E-01	4.21E-01	2.10E+00	2.09E+00
3	9.14E-01	2.32E+01	2.33E+01	1.16E+02	1.16E+02
4	5.45E-02	1.39E+00	1.39E+00	6.90E+00	6.90E+00
5	2.03E+00	5.17E+01	5.17E+01	2.57E+02	2.57E+02
6	1.52E+00	3.87E+01	3.88E+01	1.93E+02	1.93E+02

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

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	1.55E-09	5.14E-10	5.71E-11	5.77E-11	6.43E-12
3	1.07E-09	3.56E-10	3.95E-11	3.99E-11	4.45E-12
4	4.19E-11	1.39E-11	1.54E-12	1.56E-12	1.74E-13
5	6.14E-11	2.03E-11	2.26E-12	2.28E-12	2.54E-13
6	6.44E-13	2.13E-13	2.37E-14	2.39E-14	2.67E-15

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

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
Rural	0.00E+00	7.04E-02	4.91E+00	2.23E-01	1.17E+01	9.13E+00

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EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

	GROUND	INHALED	RESUSPD	CLOUDSH	TOTAL
Rural	6.31E-09	4.09E-10	9.89E-10	4.88E-11	7.76E-09
Suburban	5.31E-08	3.44E-09	8.31E-09	4.10E-10	6.53E-08
SubRush	5.90E-09	3.82E-10	9.24E-10	4.56E-11	7.26E-09
Urban	2.96E-08	1.92E-09	4.64E-09	2.29E-10	3.64E-08
UrbanRush	3.30E-09	2.14E-10	5.17E-10	2.55E-11	4.06E-09
RURAL	6.31E-09	4.09E-10	9.89E-10	4.88E-11	7.76E-09
SUBURB	5.90E-08	3.82E-09	9.24E-09	4.56E-10	7.25E-08
URBAN	3.29E-08	2.13E-09	5.15E-09	2.54E-10	4.05E-08
TOTALS:	9.82E-08	6.36E-09	1.54E-08	7.59E-10	1.21E-07

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SOCIETAL INGESTION RISK - PERSON-REM

LINK	GONADS	EFFECTIVE
Rural	3.63E-08	4.04E-08
TOTAL	3.63E-08	4.04E-08

SOCIETAL INGESTION RISK BY ORGAN - PERSON-REM

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
Rural	3.18E-08	3.26E-08	5.84E-08	9.83E-08	3.24E-08	3.93E-08
TOTAL	3.18E-08	3.26E-08	5.84E-08	9.83E-08	3.24E-08	3.93E-08

EXPECTED RISK VALUES - OTHER

LINK	EARLY FATALITY	EARLY MORBIDITY
Rural	0.00E+00	0.00E+00
Suburban	0.00E+00	0.00E+00
SubRush	0.00E+00	0.00E+00
Urban	0.00E+00	0.00E+00
UrbanRush	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

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TOTAL EXPOSED POPULATION: INCIDENT-FREE

Rural 7.03E+04 PERSONS
Suburban 5.91E+05 PERSONS
SubRush 6.58E+04 PERSONS
Urban 5.11E+05 PERSONS
UrbanRush 5.70E+04 PERSONS

TOTAL 1.30E+06 PERSONS

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

Rural 1.69E+04 PERSONS
Suburban 4.29E+05 PERSONS
SubRush 4.29E+05 PERSONS
Urban 3.31E+06 PERSONS
UrbanRush 3.31E+06 PERSONS

EOI
END OF RUN
SUCCESSFUL COMPLETION

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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 NNN 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 5.2.5   December 29, 2002   PC-version

INPUT ECHO
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&& Per the NRC request
&& Inventories from the vendor - EDF 3747
&& Only Isotopes > 1 Ci/MTU and in the RADCAT directory used
&& INSPECT is the inspection at the start and end of the trip
&& GASPUBLIC is the exposure to the public in the immediate refueling area
&& GASCREW is the exposure to the crew member doing the refueling
&& GASCREW2 is the exposure to the crew member in the cab during refueling
&& GASRESR - Public exposure in a rural area during refueling stops
&& GASRESS - Public exposure in a suburban area during refueling stops
&& GASRESU - Public exposure in an urban area during refueling stops
&& ACCNRR - Public exposure in a rural area during non-release accidents
&& ACCNRS - Public exposure in a surburban area during non-release accidents
&& ACCNRU - Public exposure in an urban area during non-release accidents
&& ACCNREM - Exposure to emergency personnel during non-release accidents
&& LOAD is the loading of the assy. UNLOAD is the unloading of the assy
&& Assume 1 MTU per truck shipment
TITLE AP1000
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 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 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 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
```

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                RUN DATE: [ 09/15/04  AT 17:38:43 ]        PAGE   2

                        AP1000

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             && LCFCON(1), LCFCON(2), GECON
STD: R5INGEST.BIN                   && INGESTION FILE
 FORM UNIT
 DIMEN 6 10 18
 PARM 1 3 3 0
 SEVERITY
   NPOP=1
    NMODE=1
     1.00E+00  6.06E-05  5.86E-06  4.95E-07  7.49E-08  3.00E-10
   NPOP=2
    NMODE=1
     1.00E+00  6.06E-05  5.86E-06  4.95E-07  7.49E-08  3.00E-10
   NPOP=3
    NMODE=1
     1.00E+00  6.06E-05  5.86E-06  4.95E-07  7.49E-08  3.00E-10
 RELEASE
   GROUP=SAMPLE
     RFRAC
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
     AERSOL
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
     RESP
```

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```
  1.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 LOS
  0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
 DEPVEL 0.000000
GROUP=GAS
 RFRAC
  0.00E+00 1.36E-01 8.39E-01 4.49E-01 8.35E-01 8.40E-01
 AERSOL
  1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
 RESP
  0.00E+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 0.000000
GROUP=CRUD
 RFRAC
  0.00E+00 1.36E-03 2.52E-03 1.83E-03 3.16E-03 3.17E-03
 AERSOL
  0.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
 RESP
  0.00E+00 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 0.010000
GROUP=PART
 RFRAC
  0.00E+00 1.02E-07 6.71E-08 3.37E-07 3.77E-06 5.01E-06
 AERSOL
  0.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
 RESP
  0.00E+00 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 0.010000
GROUP=RUTH
 RFRAC
  0.00E+00 1.02E-07 6.71E-08 3.37E-07 3.77E-06 2.14E-05
 AERSOL
  0.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
 RESP
  0.00E+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 0.001000
GROUP=VOL
 RFRAC
  0.00E+00 4.09E-09 1.68E-05 1.35E-08 3.60E-05 2.40E-05
 AERSOL
  0.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00 1.00E+00
 RESP
  0.00E+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

```
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    DEPVEL 0.001000
PACKAGE     SFUEL  1.400E+01 0.500 0.500    5.20
     H3GAS      4.168E+02 GAS
     KR85      6.380E+03 GAS
     SR90      6.190E+04 PART
     TC99      1.200E+01 PART
     RU106      1.550E+04 RUTH
     SB125      3.830E+03 PART
     TE125M      9.342E+02 PART
     CS134      4.800E+04 VOL
     CS137      9.310E+04 VOL
     CE144      8.870E+03 PART
     PM147      1.760E+04 PART
     SM151      3.230E+02 PART
     EU154      9.130E+03 PART
     EU155      4.620E+03 PART
     PU238      6.070E+03 PART
     PU239      2.550E+02 PART
     PU240      5.430E+02 PART
     PU241      6.960E+04 PART
     PU242      1.820E+00 PART
     AM241      7.273E+02 PART
     AM243      3.340E+01 PART
     CM242      2.830E+01 PART
     CM244      7.754E+03 PART
     END
VEHICLE  -1 ABWR_TRUCK  1.400E+01 0.500 0.500    5.20    1.00
                2.00    3.10 0.500    0.75
     SFUEL       1.00
MODSTD
  CAMPAIGN 8.229E-02
FLAGS
  REGCHECK 0
  IUOPT 2
EOF
LINK Rural      ABWR_TRUCK 3360.20  88.0  2.0   12.50  470.00 3.53E-07 R 1 0.50
LINK Suburban   ABWR_TRUCK 1111.50  88.0  2.0  317.80  780.00 3.53E-07 S 1 0.00
LINK SubRush    ABWR_TRUCK  123.50  44.0  2.0  318.00 1560.00 3.53E-07 S 1 0.00
LINK Urban      ABWR_TRUCK  124.60  88.0  2.0 2451.70 2800.00 3.53E-07 U 1 0.00
LINK UrbanRush  ABWR_TRUCK   13.90  44.0  2.0 2451.00 5600.00 3.53E-07 U 1 0.00
STOP GASPUBLIC  ABWR_TRUCK 11437.00   1.00   14.00 1.000   1.670
STOP GASCREW    ABWR_TRUCK    1.00   1.00    1.00 1.000   1.670
STOP GASCREW2   ABWR_TRUCK    1.00   3.10    3.10 0.500   1.670
STOP GASRESR    ABWR_TRUCK   12.50  30.00  800.00 1.000   1.190
STOP GASRESS    ABWR_TRUCK  317.80  30.00  800.00 0.870   0.440
STOP GASRESU    ABWR_TRUCK 2451.70  30.00  800.00 0.018   0.050
STOP INSPECT    ABWR_TRUCK    1.00   1.00    1.00 1.000   1.000
STOP ACCNRR     ABWR_TRUCK   12.50  30.00  800.00 1.000   0.009
STOP ACCNRS     ABWR_TRUCK  317.80  30.00  800.00 0.870   0.003
STOP ACCNRU     ABWR_TRUCK 2451.70  30.00  800.00 0.018   0.000
STOP ACCNREM    ABWR_TRUCK 6430.00   1.00   10.00 1.000   0.013
```

```
HANDLING LOAD     ABWR_TRUCK  4.00   1.00  0.50
HANDLING UNLOAD   ABWR_TRUCK  4.00   1.00  0.50
EOF
```

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PACKAGE AND MATERIAL CHARACTERISTICS

MATERIAL	DIMENSION (METERS)	EFFECTIVE DIMENSION	K(0) METERS SQ.	FRACTION GAMMA	FRACTION NEUTRON	DOSE RATE (MREM/HR)
SFUEL	5.200E+00	4.677E+00	1.115E+01	5.000E-01	5.000E-01	1.400E+01

K(0) IS DOSE RATE CONVERSION FACTOR

VEHICLE CHARACTERISTICS

VEHICLE NAME	ABWR_TRUCK
MODE TYPE	HIGHWAY
EXCLUSIVE USE	YES
DOSE RATE (MREM/HR)	1.40E+01
K(0) (SQ. METERS)	1.11E+01
VEHICLE SIZE (M)	5.20E+00
EFFECTIVE SIZE (M)	4.68E+00
NUMBER OF SHIPMENTS	1.00E+00
NUMBER OF CREW	2.00E+00
CREW DISTANCE (M)	3.10E+00
CREW DOSE ADJUSTMENT FACT	5.00E-01
CREW EXPOSER WIDTH (M)	7.50E-01
EFFECTIVE EXPOSER WIDTH	7.50E-01
K(0) (SQ M) CREW EXPOSURE	1.89E+00

VEHICLE	MATERIAL	NO.PACKAGES
ABWR_TRUCK		
	SFUEL	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

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STOP RELATED DATA

	GASPUBLIC	GASCREW	GASCREW2	GASRESR	GASRESS
VEHICLE	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK
PERSONS	1.14E+04	1.00E+00	1.00E+00	1.25E+01	3.18E+02
MINIMUM DISTANCE(M)	1.00E+00	1.00E+00	3.10E+00	3.00E+01	3.00E+01
MAXIMUM DISTANCE(M)	1.40E+01	1.00E+00	3.10E+00	8.00E+02	8.00E+02
SHIELDING FACTOR	1.00E+00	1.00E+00	5.00E-01	1.00E+00	8.70E-01
TIME (HR)	1.67E+00	1.67E+00	1.67E+00	1.19E+00	4.40E-01

	GASRESU	INSPECT	ACCNRR	ACCNRS	ACCNRU
VEHICLE	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK
PERSONS	2.45E+03	1.00E+00	1.25E+01	3.18E+02	2.45E+03
MINIMUM DISTANCE(M)	3.00E+01	1.00E+00	3.00E+01	3.00E+01	3.00E+01
MAXIMUM DISTANCE(M)	8.00E+02	1.00E+00	8.00E+02	8.00E+02	8.00E+02
SHIELDING FACTOR	1.80E-02	1.00E+00	1.00E+00	8.70E-01	1.80E-02
TIME (HR)	5.00E-02	1.00E+00	9.00E-03	3.00E-03	0.00E+00

	ACCNREM
VEHICLE	ABWR_TRUCK
PERSONS	6.43E+03
MINIMUM DISTANCE(M)	1.00E+00
MAXIMUM DISTANCE(M)	1.00E+01
SHIELDING FACTOR	1.00E+00
TIME (HR)	1.30E-02

HANDLING RELATED DATA

	LOAD	UNLOAD
VEHICLE	ABWR_TRUCK	ABWR_TRUCK
NUMBER OF HANDLERS	4.00E+00	4.00E+00
DISTANCE (M)	1.00E+00	1.00E+00
EXPOSURE TIME (HR)	5.00E-01	5.00E-01

PACKAGE HANDLING THRESHOLD FOR SMALL PACKAGES (SMLPKG) = 5.000E-01 METERS

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LINK RELATED DATA

	Rural	Suburban	SubRush	Urban	UrbanRush
VEHICLE	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK	ABWR_TRUCK
DISTANCE (KM)	3.36E+03	1.11E+03	1.24E+02	1.25E+02	1.39E+01
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00	2.00E+00	2.00E+00
SPEED (KM/HR)	8.80E+01	8.80E+01	4.40E+01	8.80E+01	4.40E+01
POPULATION DENSITY	1.25E+01	3.18E+02	3.18E+02	2.45E+03	2.45E+03
VEHICLE DENSITY	4.70E+02	7.80E+02	1.56E+03	2.80E+03	5.60E+03
ACCIDENT RATE/KM	3.53E-07	3.53E-07	3.53E-07	3.53E-07	3.53E-07
ZONE	RURAL	SUBURBAN	SUBURBAN	URBAN	URBAN
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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ISOTOPE RELATED DATA

NUCLIDE	CURIES PER PKG	RELEASE GROUP	RESUSPENSION FACTOR	50YR INHALATION (REM/CI) EFFECTIVE
SFUEL				
H3GAS	4.17E+02	GAS	1.00E+00	4.40E-03
KR85	6.38E+03	GAS	1.00E+00	0.00E+00
SR90	6.19E+04	PART	5.41E+00	2.40E+06
TC99	1.20E+01	PART	5.57E+00	1.40E+04
RU106	1.55E+04	RUTH	1.23E+00	8.00E+05
SB125	3.83E+03	PART	4.34E+00	1.70E+04
TE125M	9.34E+02	PART	1.62E+00	1.00E+04
CS134	4.80E+04	VOL	1.31E+00	4.60E+04
CS137	9.31E+04	VOL	1.44E+00	3.20E+04
CE144	8.87E+03	PART	2.99E+00	6.30E+05
PM147	1.76E+04	PART	4.30E+00	6.00E+04
SM151	3.23E+02	PART	5.51E+00	3.30E+04
EU154	9.13E+03	PART	5.09E+00	3.10E+05
EU155	4.62E+03	PART	4.79E+00	4.80E+04
PU238	6.07E+03	PART	5.51E+00	5.30E+08
PU239	2.55E+02	PART	5.57E+00	5.70E+08
PU240	5.43E+02	PART	5.56E+00	5.70E+08
PU241	6.96E+04	PART	5.26E+00	9.90E+06
PU242	1.82E+00	PART	5.57E+00	5.30E+08
AM241	7.27E+02	PART	5.55E+00	5.90E+08
AM243	3.34E+01	PART	5.56E+00	5.90E+08
CM242	2.83E+01	PART	2.40E+00	2.30E+07
CM244	7.75E+03	PART	5.32E+00	3.10E+08

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NUCLIDE	HALF LIFE	GAMMA ENERGY	CLOUD FACTOR	GROUND FACTOR	INGESTION NUCLIDE	NEUTRON EMISSION neutrons/sec/Ci
SFUEL						
H3GAS	4.51E+03	0.00E+00	1.22E-06	0.00E+00	NONE	N/A
KR85	3.92E+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
TC99	7.78E+07	0.00E+00	5.99E-06	2.49E-08	Tc-99	N/A
RU106	3.68E+02	2.01E-01	0.00E+00	6.78E-05	Ru-106	N/A
SB125	1.01E+03	4.30E-01	7.47E-02	1.36E-04	Sb-125	N/A
TE125M	5.80E+01	3.55E-02	1.68E-03	1.15E-05	Te-125m	N/A
CS134	7.53E+02	1.55E+00	2.80E-01	4.86E-04	Cs-134	N/A
CS137	1.10E+04	5.96E-01	2.86E-05	1.77E-04	Cs-137	N/A
CE144	2.84E+02	5.25E-02	3.16E-03	1.84E-05	Ce-144	N/A
PM147	9.58E+02	4.37E-06	2.56E-06	1.09E-08	Pm-147	N/A
SM151	3.29E+04	1.34E-05	1.34E-07	1.61E-09	Sm-151	N/A
EU154	3.21E+03	1.22E+00	2.27E-01	3.80E-04	Eu-154	N/A
EU155	1.81E+03	6.05E-02	9.21E-03	1.89E-05	Eu-155	N/A
PU238	3.21E+04	1.81E-03	1.81E-05	2.68E-07	Pu-238	N/A
PU239	8.79E+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
PU242	1.37E+08	1.44E-03	1.48E-05	2.13E-07	Pu-242	N/A
AM241	1.58E+05	3.24E-02	3.03E-03	8.79E-06	Am-241	N/A
AM243	2.70E+06	5.59E-02	8.07E-03	1.71E-05	Am-243	N/A
CM242	1.63E+02	1.83E-03	2.11E-05	3.06E-07	Cm-242	N/A
CM244	6.62E+03	1.70E-03	1.82E-05	2.81E-07	Cm-244	N/A

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ISOTOPE RELATED DATA

NUCLIDE	1-YR INHALATION (REM/CI)		
	LUNG	MARROW	THYROID
SFUEL			
H3GAS	1.20E+02	1.20E+02	0.00E+00
KR85	0.00E+00	0.00E+00	0.00E+00
SR90	4.50E+06	3.80E+03	0.00E+00
TC99	1.00E+05	1.40E+02	0.00E+00
RU106	4.30E+06	4.50E+03	0.00E+00
SB125	4.40E+04	5.50E+02	0.00E+00
TE125M	0.00E+00	0.00E+00	0.00E+00
CS134	4.10E+04	3.90E+04	0.00E+00
CS137	3.10E+04	2.60E+04	0.00E+00
CE144	3.60E+06	4.20E+03	0.00E+00
PM147	2.20E+05	5.30E+02	0.00E+00
SM151	2.10E+04	2.90E+03	0.00E+00
EU154	0.00E+00	0.00E+00	0.00E+00
EU155	0.00E+00	0.00E+00	0.00E+00
PU238	4.50E+08	1.10E+06	0.00E+00
PU239	4.20E+08	1.10E+06	0.00E+00
PU240	4.20E+08	1.10E+06	0.00E+00
PU241	3.60E+05	1.30E+03	0.00E+00
PU242	4.00E+08	1.00E+06	0.00E+00
AM241	1.20E+08	1.70E+07	0.00E+00
AM243	1.10E+08	1.60E+07	0.00E+00
CM242	9.90E+07	8.80E+06	0.00E+00
CM244	1.20E+08	1.70E+07	0.00E+00

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RELEASE RELATED DATA
****

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	0.00E+00	1.36E-01	8.39E-01	4.49E-01	8.35E-01	8.40E-01
CRUD	0.00E+00	1.36E-03	2.52E-03	1.83E-03	3.16E-03	3.17E-03
PART	0.00E+00	1.02E-07	6.71E-08	3.37E-07	3.77E-06	5.01E-06
RUTH	0.00E+00	1.02E-07	6.71E-08	3.37E-07	3.77E-06	2.14E-05
VOL	0.00E+00	4.09E-09	1.68E-05	1.35E-08	3.60E-05	2.40E-05

DEPOSITION VELOCITIES

GROUP	M/SEC
SAMPLE	0.00E+00
GAS	0.00E+00
CRUD	1.00E-02
PART	1.00E-02
RUTH	1.00E-03
VOL	1.00E-03

ACCIDENT SEVERITY FRACTIONS
FOR HIGHWAY

ZONE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RURAL	1.00E+00	6.06E-05	5.86E-06	4.95E-07	7.49E-08	3.00E-10
SUBURBAN	1.00E+00	6.06E-05	5.86E-06	4.95E-07	7.49E-08	3.00E-10
URBAN	1.00E+00	6.06E-05	5.86E-06	4.95E-07	7.49E-08	3.00E-10

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AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CRUD	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
VOL	0.00E+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
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
CRUD	0.00E+00	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
PART	0.00E+00	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
RUTH	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
VOL	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

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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

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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		

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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)

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) = 8.229E-02
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 = 0
BUILDING SHIELDING OPTION (IUOPT) = 2
RURAL SHIELDING FACTOR = 1.000E+00
SUBURBAN SHIELDING FACTOR = 8.700E-01
URBAN SHIELDING FACTOR = 1.800E-02

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INGESTION RELATED DATA

COMIDA INGESTION FILE USED: R5INGEST.BIN

COMIDA FILE HEADER
COMIDA2 02/17/03 16:17:38 Ver. 1.11a, 1/28/96: avoiding use of UNIT 6 for HP

DOSE CONVERSION FILE USED IN COMIDA
FGRDCF 05/08/95 16:43:45 beta-test version 1.10, minor FORTRAN fixes 5/4/95
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

ISOTOPE	INGESTION NUCLIDE
H3GAS	NONE
KR85	NONE

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BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

NUCLIDE	EFFECTIVE	THYROID
Sr-90	2.541E+05	9.964E+03
Tc-99	1.316E+04	5.396E+04
Ru-106	2.107E+04	4.014E+03
Sb-125	3.930E+03	2.392E+02
Te-125m	4.540E+03	1.799E+02
Cs-134	6.012E+05	5.344E+05
Cs-137	4.870E+05	4.545E+05
Ce-144	1.202E+04	1.085E+01
Pm-147	1.438E+03	1.585E-04
Sm-151	6.077E+02	1.893E-04
Eu-154	1.439E+04	3.185E+02
Eu-155	2.232E+03	9.620E+00
Pu-238	3.858E+04	2.301E-01
Pu-239	4.049E+04	2.169E-01
Pu-240	4.049E+04	2.172E-01
Pu-241	3.231E+03	3.837E-02
Pu-242	3.846E+04	2.134E-01
Am-241	2.846E+06	3.818E+01
Am-243	2.834E+06	1.968E+02
Cm-242	6.505E+04	1.851E+01
Cm-244	2.534E+06	3.924E+01

SOCIETAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

NUCLIDE	GONADS	BREAST	LUNGS	RED MAR	BONE SU	THYROID	REMAIND	EFFECTI
Sr-90	1.8E+00	1.8E+00	1.8E+00	2.3E+02	4.9E+02	1.8E+00	7.3E+00	4.5E+01
Tc-99	4.1E-01	4.1E-01	4.1E-01	4.1E-01	4.1E-01	1.1E+01	6.9E+00	2.7E+00
Ru-106	5.5E-01	4.8E-01	4.8E-01	4.9E-01	4.8E-01	4.7E-01	7.1E+00	2.5E+00
Sb-125	3.5E-01	6.6E-02	4.0E-02	1.5E-01	3.9E-01	3.1E-02	1.2E+00	5.0E-01
Te-125m	5.8E-02	2.1E-02	2.0E-02	5.6E-01	5.8E+00	1.8E-02	6.4E-01	4.6E-01
Cs-134	8.9E+01	7.5E+01	7.6E+01	8.1E+01	7.5E+01	7.6E+01	9.6E+01	8.6E+01
Cs-137	8.2E+01	7.4E+01	7.5E+01	7.8E+01	7.5E+01	7.5E+01	8.6E+01	8.0E+01
Ce-144	1.7E-02	2.9E-03	1.6E-03	2.1E-02	3.0E-02	1.2E-03	4.5E+00	1.4E+00
Pm-147	4.8E-06	5.2E-07	1.4E-07	1.5E-02	1.8E-01	2.2E-08	6.4E-01	2.0E-01
Sm-151	1.9E-05	9.3E-07	5.9E-07	2.5E-02	3.1E-01	3.0E-08	2.8E-01	9.5E-02
Eu-154	1.1E+00	2.3E-01	1.8E-01	9.6E-01	3.7E+00	4.8E-02	5.3E+00	2.2E+00
Eu-155	7.7E-02	1.1E-02	7.6E-03	1.2E-01	1.0E+00	1.4E-03	8.6E-01	3.3E-01
Pu-238	8.1E-01	6.2E-05	3.0E-05	4.4E+00	5.5E+01	2.8E-05	7.5E+00	4.6E+00
Pu-239	9.2E-01	4.2E-05	2.7E-05	4.9E+00	6.1E+01	2.6E-05	7.4E+00	4.9E+00
Pu-240	9.2E-01	6.0E-05	2.9E-05	4.9E+00	6.1E+01	2.6E-05	7.4E+00	4.9E+00
Pu-241	1.4E-01	1.3E-05	1.7E-05	7.7E-01	9.6E+00	6.5E-06	3.7E-01	5.3E-01
Pu-242	8.7E-01	8.8E-05	3.2E-05	4.7E+00	5.8E+01	2.6E-05	7.0E+00	4.6E+00
Am-241	9.4E+01	9.1E-03	1.2E-02	5.0E+02	6.3E+03	4.6E-03	2.3E+02	3.4E+02
Am-243	9.4E+01	4.9E-02	6.8E-02	5.0E+02	6.3E+03	2.4E-02	2.3E+02	3.4E+02
Cm-242	1.2E+00	2.0E-03	2.0E-03	8.1E+00	1.0E+02	2.0E-03	9.1E+00	7.0E+00
Cm-244	7.6E+01	5.1E-03	5.1E-03	4.5E+02	5.6E+03	4.8E-03	2.4E+02	3.1E+02

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NON-RADIOLOGICAL RISK (FATALITIES)
****

	NORMAL OCCUPATIONAL	NORMAL NON-OCCUPATIONAL	ACCIDENT OCCUPATIONAL	ACCIDENT NON-OCCUPATIONAL
Rural	0.00E+00	0.00E+00	1.01E-04	3.56E-04
Suburban	0.00E+00	0.00E+00	8.23E-06	2.89E-05
SubRush	0.00E+00	0.00E+00	9.14E-07	3.21E-06
Urban	0.00E+00	0.00E+00	5.23E-07	1.87E-06
UrbanRush	0.00E+00	0.00E+00	5.84E-08	2.08E-07
TOTALS:	0.00E+00	0.00E+00	1.11E-04	3.90E-04

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REGULATORY CHECKS HAVE BEEN DISABLED
********** ****** **** **** ********

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CALCULATIONAL INFORMATION

FOR ABWR_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
2	-	-	-	-	X	X
3	-	-	-	-	X	X
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
11	-	-	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	-	-	-	-	-	-
15	-	-	-	-	-	-
16	-	-	-	-	-	-
17	-	-	-	-	-	-
18	-	-	-	-	-	-

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

AREA	SAMPLE	GAS	CRUD	PART	RUTH	VOL
4.59E+02	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03
1.53E+03	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03
3.94E+03	8.58E-04	8.58E-04	8.34E-04	8.34E-04	8.55E-04	8.55E-04
1.25E+04	3.42E-04	3.42E-04	3.23E-04	3.23E-04	3.40E-04	3.40E-04
3.04E+04	1.72E-04	1.72E-04	1.55E-04	1.55E-04	1.70E-04	1.70E-04
6.85E+04	8.58E-05	8.58E-05	7.38E-05	7.38E-05	8.45E-05	8.45E-05
1.76E+05	3.42E-05	3.42E-05	2.80E-05	2.80E-05	3.35E-05	3.35E-05
4.45E+05	1.72E-05	1.72E-05	1.33E-05	1.33E-05	1.67E-05	1.67E-05
8.59E+05	8.58E-06	8.58E-06	6.16E-06	6.16E-06	8.30E-06	8.30E-06
2.55E+06	3.42E-06	3.42E-06	2.33E-06	2.33E-06	3.29E-06	3.29E-06
4.45E+06	1.72E-06	1.72E-06	1.06E-06	1.06E-06	1.64E-06	1.64E-06
1.03E+07	8.58E-07	8.58E-07	5.04E-07	5.04E-07	8.14E-07	8.14E-07
2.16E+07	3.42E-07	3.42E-07	1.86E-07	1.86E-07	3.22E-07	3.22E-07
5.52E+07	1.72E-07	1.72E-07	8.77E-08	8.77E-08	1.61E-07	1.61E-07
1.77E+08	8.58E-08	8.58E-08	4.01E-08	4.01E-08	7.97E-08	7.97E-08
4.89E+08	5.42E-08	5.42E-08	2.14E-08	2.14E-08	4.96E-08	4.96E-08
8.12E+08	4.30E-08	4.30E-08	1.31E-08	1.31E-08	3.85E-08	3.85E-08
1.35E+09	3.42E-08	3.42E-08	8.54E-09	8.54E-09	3.02E-08	3.02E-08

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VEHICLE ABWR_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	4.09E-02	1.61E-01	1.35E-01	1.47E+00	3.04E+00
6.80E+01	0.00E+00	2.05E-02	8.10E-02	6.78E-02	7.39E-01	1.53E+00
1.05E+02	0.00E+00	1.01E-02	4.02E-02	3.33E-02	3.62E-01	7.53E-01
2.44E+02	0.00E+00	3.94E-03	1.60E-02	1.30E-02	1.41E-01	2.96E-01
3.69E+02	0.00E+00	1.92E-03	7.97E-03	6.35E-03	6.89E-02	1.46E-01
5.61E+02	0.00E+00	9.33E-04	3.95E-03	3.08E-03	3.34E-02	7.12E-02
1.02E+03	0.00E+00	3.61E-04	1.56E-03	1.19E-03	1.29E-02	2.78E-02
1.63E+03	0.00E+00	1.75E-04	7.78E-04	5.78E-04	6.24E-03	1.36E-02
2.31E+03	0.00E+00	8.39E-05	3.85E-04	2.77E-04	2.98E-03	6.60E-03
4.27E+03	0.00E+00	3.25E-05	1.52E-04	1.07E-04	1.15E-03	2.58E-03
5.47E+03	0.00E+00	1.55E-05	7.56E-05	5.11E-05	5.47E-04	1.25E-03
1.11E+04	0.00E+00	7.51E-06	3.75E-05	2.48E-05	2.65E-04	6.11E-04
1.31E+04	0.00E+00	2.88E-06	1.48E-05	9.52E-06	1.01E-04	2.37E-04
2.13E+04	0.00E+00	1.40E-06	7.39E-06	4.64E-06	4.92E-05	1.17E-04
4.05E+04	0.00E+00	6.71E-07	3.65E-06	2.22E-06	2.34E-05	5.65E-05
7.00E+04	0.00E+00	3.93E-07	2.26E-06	1.30E-06	1.36E-05	3.39E-05
8.99E+04	0.00E+00	2.81E-07	1.75E-06	9.27E-07	9.61E-06	2.50E-05
1.21E+05	0.00E+00	2.08E-07	1.37E-06	6.88E-07	7.07E-06	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	9.89E-03	1.38E-01	3.27E-02	2.64E-01	2.18E-01
6.80E+01	0.00E+00	4.97E-03	6.94E-02	1.64E-02	1.33E-01	1.09E-01
1.05E+02	0.00E+00	2.48E-03	3.46E-02	8.17E-03	6.58E-02	5.42E-02
2.44E+02	0.00E+00	9.84E-04	1.38E-02	3.25E-03	2.61E-02	2.15E-02
3.69E+02	0.00E+00	4.93E-04	6.90E-03	1.63E-03	1.30E-02	1.07E-02
5.61E+02	0.00E+00	2.45E-04	3.43E-03	8.09E-04	6.44E-03	5.27E-03
1.02E+03	0.00E+00	9.73E-05	1.36E-03	3.21E-04	2.55E-03	2.08E-03
1.63E+03	0.00E+00	4.87E-05	6.83E-04	1.61E-04	1.27E-03	1.03E-03
2.31E+03	0.00E+00	2.42E-05	3.40E-04	7.99E-05	6.25E-04	5.06E-04
4.27E+03	0.00E+00	9.61E-06	1.35E-04	3.17E-05	2.47E-04	2.00E-04
5.47E+03	0.00E+00	4.80E-06	6.75E-05	1.59E-05	1.22E-04	9.84E-05
1.11E+04	0.00E+00	2.39E-06	3.36E-05	7.89E-06	6.06E-05	4.86E-05
1.31E+04	0.00E+00	9.49E-07	1.33E-05	3.13E-06	2.39E-05	1.91E-05
2.13E+04	0.00E+00	4.76E-07	6.67E-06	1.57E-06	1.19E-05	9.51E-06
4.05E+04	0.00E+00	2.36E-07	3.31E-06	7.80E-07	5.88E-06	4.67E-06
7.00E+04	0.00E+00	1.48E-07	2.07E-06	4.90E-07	3.64E-06	2.88E-06
8.99E+04	0.00E+00	1.17E-07	1.62E-06	3.85E-07	2.80E-06	2.20E-06
1.21E+05	0.00E+00	9.23E-08	1.28E-06	3.05E-07	2.19E-06	1.71E-06

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

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VEHICLE ABWR_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	6.78E-01	8.55E+00	2.24E+00	4.24E+01	4.57E+01
6.80E+01	0.00E+00	3.40E-01	4.30E+00	1.12E+00	2.13E+01	2.29E+01
1.05E+02	0.00E+00	1.65E-01	2.13E+00	5.47E-01	1.04E+01	1.12E+01
2.44E+02	0.00E+00	6.40E-02	8.47E-01	2.12E-01	4.08E+00	4.37E+00
3.69E+02	0.00E+00	3.07E-02	4.23E-01	1.01E-01	1.99E+00	2.12E+00
5.61E+02	0.00E+00	1.46E-02	2.10E-01	4.84E-02	9.68E-01	1.02E+00
1.02E+03	0.00E+00	5.56E-03	8.31E-02	1.84E-02	3.75E-01	3.94E-01
1.63E+03	0.00E+00	2.63E-03	4.14E-02	8.70E-03	1.82E-01	1.90E-01
2.31E+03	0.00E+00	1.23E-03	2.05E-02	4.05E-03	8.73E-02	9.02E-02
4.27E+03	0.00E+00	4.64E-04	8.11E-03	1.53E-03	3.38E-02	3.47E-02
5.47E+03	0.00E+00	2.12E-04	4.03E-03	6.99E-04	1.61E-02	1.63E-02
1.11E+04	0.00E+00	1.01E-04	2.00E-03	3.32E-04	7.83E-03	7.88E-03
1.31E+04	0.00E+00	3.72E-05	7.88E-04	1.23E-04	3.00E-03	2.99E-03
2.13E+04	0.00E+00	1.76E-05	3.94E-04	5.80E-05	1.46E-03	1.44E-03
4.05E+04	0.00E+00	8.03E-06	1.94E-04	2.65E-05	7.00E-04	6.83E-04
7.00E+04	0.00E+00	4.30E-06	1.20E-04	1.42E-05	4.10E-04	3.91E-04
8.99E+04	0.00E+00	2.64E-06	9.30E-05	8.73E-06	2.92E-04	2.69E-04
1.21E+05	0.00E+00	1.74E-06	7.26E-05	5.75E-06	2.17E-04	1.94E-04

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VEHICLE ABWR_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	5.08E-02	3.02E-01	1.68E-01	1.74E+00	3.26E+00
6.80E+01	0.00E+00	2.55E-02	1.52E-01	8.43E-02	8.74E-01	1.64E+00
1.05E+02	0.00E+00	1.26E-02	7.54E-02	4.15E-02	4.29E-01	8.08E-01
2.44E+02	0.00E+00	4.92E-03	2.99E-02	1.63E-02	1.68E-01	3.18E-01
3.69E+02	0.00E+00	2.42E-03	1.50E-02	7.98E-03	8.22E-02	1.56E-01
5.61E+02	0.00E+00	1.18E-03	7.44E-03	3.89E-03	4.00E-02	7.66E-02
1.02E+03	0.00E+00	4.58E-04	2.95E-03	1.51E-03	1.55E-02	2.99E-02
1.63E+03	0.00E+00	2.24E-04	1.47E-03	7.39E-04	7.54E-03	1.47E-02
2.31E+03	0.00E+00	1.08E-04	7.30E-04	3.57E-04	3.62E-03	7.12E-03
4.27E+03	0.00E+00	4.21E-05	2.89E-04	1.39E-04	1.40E-03	2.78E-03
5.47E+03	0.00E+00	2.03E-05	1.44E-04	6.70E-05	6.72E-04	1.35E-03
1.11E+04	0.00E+00	9.91E-06	7.16E-05	3.27E-05	3.27E-04	6.61E-04
1.31E+04	0.00E+00	3.83E-06	2.83E-05	1.27E-05	1.26E-04	2.56E-04
2.13E+04	0.00E+00	1.88E-06	1.42E-05	6.21E-06	6.14E-05	1.26E-04
4.05E+04	0.00E+00	9.07E-07	7.01E-06	3.00E-06	2.94E-05	6.12E-05
7.00E+04	0.00E+00	5.41E-07	4.37E-06	1.79E-06	1.73E-05	3.68E-05
8.99E+04	0.00E+00	3.97E-07	3.40E-06	1.31E-06	1.25E-05	2.72E-05
1.21E+05	0.00E+00	3.01E-07	2.67E-06	9.93E-07	9.30E-06	2.07E-05

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VEHICLE ABWR_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	1.35E-01	4.35E+00	4.46E-01	1.41E+01	1.27E+01
6.80E+01	0.00E+00	6.77E-02	2.19E+00	2.24E-01	7.07E+00	6.37E+00
1.05E+02	0.00E+00	3.29E-02	1.09E+00	1.09E-01	3.49E+00	3.13E+00
2.44E+02	0.00E+00	1.27E-02	4.32E-01	4.21E-02	1.37E+00	1.23E+00
3.69E+02	0.00E+00	6.11E-03	2.16E-01	2.02E-02	6.78E-01	6.01E-01
5.61E+02	0.00E+00	2.91E-03	1.07E-01	9.62E-03	3.32E-01	2.93E-01
1.02E+03	0.00E+00	1.11E-03	4.25E-02	3.65E-03	1.30E-01	1.14E-01
1.63E+03	0.00E+00	5.24E-04	2.12E-02	1.73E-03	6.39E-02	5.54E-02
2.31E+03	0.00E+00	2.44E-04	1.05E-02	8.05E-04	3.11E-02	2.67E-02
4.27E+03	0.00E+00	9.21E-05	4.16E-03	3.04E-04	1.22E-02	1.04E-02
5.47E+03	0.00E+00	4.20E-05	2.07E-03	1.39E-04	5.92E-03	4.97E-03
1.11E+04	0.00E+00	2.00E-05	1.03E-03	6.60E-05	2.90E-03	2.42E-03
1.31E+04	0.00E+00	7.38E-06	4.06E-04	2.44E-05	1.13E-03	9.33E-04
2.13E+04	0.00E+00	3.48E-06	2.03E-04	1.15E-05	5.58E-04	4.57E-04
4.05E+04	0.00E+00	1.59E-06	1.00E-04	5.27E-06	2.71E-04	2.20E-04
7.00E+04	0.00E+00	8.54E-07	6.24E-05	2.82E-06	1.63E-04	1.30E-04
8.99E+04	0.00E+00	5.23E-07	4.83E-05	1.73E-06	1.22E-04	9.39E-05
1.21E+05	0.00E+00	3.44E-07	3.78E-05	1.14E-06	9.30E-05	7.03E-05

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	3.14E-03	3.91E+00	1.04E-02	8.45E+00	5.69E+00
6.80E+01	0.00E+00	1.58E-03	1.96E+00	5.21E-03	4.24E+00	2.86E+00
1.05E+02	0.00E+00	7.72E-04	9.76E-01	2.55E-03	2.11E+00	1.42E+00
2.44E+02	0.00E+00	3.01E-04	3.88E-01	9.95E-04	8.39E-01	5.65E-01
3.69E+02	0.00E+00	1.46E-04	1.94E-01	4.84E-04	4.19E-01	2.82E-01
5.61E+02	0.00E+00	7.08E-05	9.65E-02	2.34E-04	2.08E-01	1.40E-01
1.02E+03	0.00E+00	2.73E-05	3.83E-02	9.01E-05	8.26E-02	5.56E-02
1.63E+03	0.00E+00	1.32E-05	1.91E-02	4.35E-05	4.13E-02	2.77E-02
2.31E+03	0.00E+00	6.27E-06	9.48E-03	2.07E-05	2.05E-02	1.37E-02
4.27E+03	0.00E+00	2.41E-06	3.76E-03	7.97E-06	8.11E-03	5.45E-03
5.47E+03	0.00E+00	1.14E-06	1.87E-03	3.76E-06	4.04E-03	2.71E-03
1.11E+04	0.00E+00	5.51E-07	9.30E-04	1.82E-06	2.00E-03	1.35E-03
1.31E+04	0.00E+00	2.10E-07	3.68E-04	6.93E-07	7.93E-04	5.32E-04
2.13E+04	0.00E+00	1.01E-07	1.84E-04	3.35E-07	3.97E-04	2.66E-04
4.05E+04	0.00E+00	4.81E-08	9.11E-05	1.59E-07	1.96E-04	1.31E-04
7.00E+04	0.00E+00	2.77E-08	5.67E-05	9.14E-08	1.22E-04	8.17E-05
8.99E+04	0.00E+00	1.92E-08	4.40E-05	6.35E-08	9.45E-05	6.33E-05
1.21E+05	0.00E+00	1.40E-08	3.44E-05	4.62E-08	7.40E-05	4.95E-05

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INCIDENT-FREE SUMMARY
******** **** *******

IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM

	PASSENGER	CREW	OFF LINK	ON LINK	TOTALS
Rural	0.00E+00	1.08E-01	1.22E-03	3.24E-02	1.42E-01
Suburban	0.00E+00	3.58E-02	8.94E-03	1.78E-02	6.25E-02
SubRush	0.00E+00	7.94E-03	1.99E-03	1.66E-02	2.65E-02
Urban	0.00E+00	4.01E-03	1.60E-04	7.16E-03	1.13E-02
UrbanRush	0.00E+00	8.94E-04	3.57E-05	6.69E-03	7.62E-03
RURAL	0.00E+00	1.08E-01	1.22E-03	3.24E-02	1.42E-01
SUBURB	0.00E+00	4.37E-02	1.09E-02	3.43E-02	8.90E-02
URBAN	0.00E+00	4.90E-03	1.96E-04	1.38E-02	1.89E-02
TOTALS:	0.00E+00	1.57E-01	1.23E-02	8.06E-02	2.50E-01

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

ABWR_TRUCK 5.96E-07 REM

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STOP EXPOSURE IN PERSON-REM

ANNULAR AREA	GASPUBLIC	5.09E-02
LINE-SOURCE	GASCREW	7.86E-02
LINE-SOURCE	GASCREW2	1.28E-02
ANNULAR AREA	GASRESR	5.70E-05
ANNULAR AREA	GASRESS	4.66E-04
ANNULAR AREA	GASRESU	8.45E-06
LINE-SOURCE	INSPECT	4.70E-02
ANNULAR AREA	ACCNRR	4.31E-07
ANNULAR AREA	ACCNRS	3.18E-06
ANNULAR AREA	ACCNRU	0.00E+00
ANNULAR AREA	ACCNREM	1.93E-04

TOTAL: 1.90E-01

HANDLING EXPOSURE IN PERSON-REM

HANDLING	VEHICLE	MATERIAL	METHOD	DOSE
LOAD	ABWR_TRUCK	SFUEL	LINE-SOURCE	9.41E-02
UNLOAD	ABWR_TRUCK	SFUEL	LINE-SOURCE	9.41E-02

TOTAL: 1.88E-01

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ACCIDENT SUMMARY
******** *******

NUMBER OF EXPECTED ACCIDENTS

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
1	1.19E-03	3.92E-04	4.36E-05	4.40E-05	4.91E-06
2	7.19E-08	2.38E-08	2.64E-09	2.67E-09	2.97E-10
3	6.95E-09	2.30E-09	2.55E-10	2.58E-10	2.88E-11
4	5.87E-10	1.94E-10	2.16E-11	2.18E-11	2.43E-12
5	8.88E-11	2.94E-11	3.27E-12	3.29E-12	3.68E-13
6	3.56E-13	1.18E-13	1.31E-14	1.32E-14	1.47E-15

EARLY FATALITY CONSEQUENCES

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
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

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RADIOLOGICAL CONSEQUENCES
50 YEAR POPULATION DOSE IN PERSON-REM

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	6.45E-02	1.64E+00	1.64E+00	8.16E+00	8.16E+00
3	1.51E+00	3.83E+01	3.83E+01	1.91E+02	1.91E+02
4	2.12E-01	5.40E+00	5.41E+00	2.69E+01	2.69E+01
5	3.68E+00	9.35E+01	9.36E+01	4.65E+02	4.65E+02
6	3.03E+00	7.71E+01	7.71E+01	3.83E+02	3.83E+02

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

CATEGORY	Rural	Suburban	SubRush	Urban	UrbanRush
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	3.65E-09	1.21E-09	1.34E-10	1.35E-10	1.51E-11
3	2.10E-09	6.94E-10	7.71E-11	7.78E-11	8.67E-12
4	9.85E-11	3.26E-11	3.62E-12	3.65E-12	4.07E-13
5	1.55E-10	5.11E-11	5.68E-12	5.73E-12	6.40E-13
6	1.16E-12	3.84E-13	4.27E-14	4.31E-14	4.80E-15

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

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
Rural	0.00E+00	1.61E-01	9.17E+00	5.08E-01	2.28E+01	1.82E+01

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EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

	GROUND	INHALED	RESUSPD	CLOUDSH	TOTAL
Rural	1.06E-08	1.23E-09	3.69E-09	7.35E-11	1.56E-08
Suburban	8.89E-08	1.04E-08	3.10E-08	6.18E-10	1.31E-07
SubRush	9.88E-09	1.15E-09	3.45E-09	6.87E-11	1.46E-08
Urban	4.96E-08	5.78E-09	1.73E-08	3.45E-10	7.30E-08
UrbanRush	5.53E-09	6.45E-10	1.93E-09	3.84E-11	8.14E-09
RURAL	1.06E-08	1.23E-09	3.69E-09	7.35E-11	1.56E-08
SUBURB	9.88E-08	1.15E-08	3.45E-08	6.87E-10	1.45E-07
URBAN	5.51E-08	6.42E-09	1.92E-08	3.83E-10	8.11E-08
TOTALS:	1.64E-07	1.92E-08	5.74E-08	1.14E-09	2.42E-07

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SOCIETAL INGESTION RISK - PERSON-REM

LINK	GONADS	EFFECTIVE
Rural	6.89E-08	7.76E-08
TOTAL	6.89E-08	7.76E-08

SOCIETAL INGESTION RISK BY ORGAN - PERSON-REM

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
Rural	5.87E-08	6.01E-08	1.04E-07	2.41E-07	5.98E-08	7.68E-08
TOTAL	5.87E-08	6.01E-08	1.04E-07	2.41E-07	5.98E-08	7.68E-08

EXPECTED RISK VALUES - OTHER

LINK	EARLY FATALITY	EARLY MORBIDITY
Rural	0.00E+00	0.00E+00
Suburban	0.00E+00	0.00E+00
SubRush	0.00E+00	0.00E+00
Urban	0.00E+00	0.00E+00
UrbanRush	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

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TOTAL EXPOSED POPULATION: INCIDENT-FREE

Rural 7.03E+04 PERSONS
Suburban 5.91E+05 PERSONS
SubRush 6.58E+04 PERSONS
Urban 5.11E+05 PERSONS
UrbanRush 5.70E+04 PERSONS

TOTAL 1.30E+06 PERSONS

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

Rural 1.69E+04 PERSONS
Suburban 4.29E+05 PERSONS
SubRush 4.29E+05 PERSONS
Urban 3.31E+06 PERSONS
UrbanRush 3.31E+06 PERSONS

EOI
END OF RUN
SUCCESSFUL COMPLETION

```
RUN DATE: [ 09/16/04  AT 08:25:54 ]        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 5.2.5   December 29, 2002   PC-version

INPUT ECHO
----------

&& This is a test run to respond to an NRC RAI
&& GASP is the public at the gas station
&&
&& GASC is the crew member pumping
&& INSPECST is the inspection at the state border
&& Truck travels 845 km between gas stops and a gas stop lasts 20 minutes
&& Inspections take place only at MY and YM lasting 30 minutes each, 1 inspector
&&
&& The nonrelease accident lasts 10 hours
&& The accident rate is 3.52E-07
&& LOAD includes load and unload
&& SUBURBANR  is for suburban route, rush hour
&& URBANR is for urban route, rush hour
&& ACCNRR stands for a non-release accident in a rural area
&& ACCNRU stands for a non-release accident in an urban area
&& ACCNRS stands for a non-release accident in a suburban area
&& ACCNREP stands for a non-release accident, emergency personnel
&& The radionuclide inventories were provided by the reactor vendor.
&& Only FP contributing > 0.01% of the FP activity were included
&& Only actinides contributing > 0.01% of the actinide inventory were included
&& Y90, Rh106, Ba137m, Pr144, Pr144m, and Np239 activities included with parent.
&& A 0.5/0.5 gamma/neutron ratio is the most conservative for SNF
&& Routing and population were provided by TRAGIS Version 1.4.15
&& Severity Indices and Probability Fractions taken from Yucca Mt. FEIS
&& Release, Aerosol and Respirable Fractions taken from Yucca Mt. FEIS
TITLE GTMHR-MYtoYM Rev 4
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 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              && 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
```

```
RUN DATE: [ 09/16/04  AT 08:25:54 ]        PAGE   2

GTMHR-MYtoYM Rev 4

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             && LCFCON(1), LCFCON(2), GECON
STD: R5INGEST.BIN                   && INGESTION FILE
 FORM UNIT
 DIMEN 6 10 18
 PARM 1 3 3 0
 SEVERITY
   NPOP=1
    NMODE=1
     1.00E+00  3.87E-05  4.91E-05  5.77E-07  1.10E-07  8.52E-10
   NPOP=2
    NMODE=1
     1.00E+00  3.87E-05  4.91E-05  5.77E-07  1.10E-07  8.52E-10
   NPOP=3
```

```
                RUN DATE: [ 09/16/04  AT 08:25:54 ]        PAGE   3

                    GTMHR-MYtoYM Rev 4

    NMODE=1
     1.00E+00  3.87E-05  4.91E-05  5.77E-07  1.10E-07  8.52E-10
  RELEASE
   GROUP=SAMPLE
    RFRAC
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    AERSOL
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    RESP
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    LOS
     0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    DEPVEL 0.000000
   GROUP=GAS
    RFRAC
     0.00E+00  1.02E-04  0.00E+00  4.77E-03  0.00E+00  1.70E-03
    AERSOL
     1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
    RESP
     0.00E+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 0.000000
   GROUP=PART
    RFRAC
     0.00E+00  6.12E-11  0.00E+00  7.89E-08  0.00E+00  2.62E-08
    AERSOL
     0.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
    RESP
     0.00E+00  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 0.010000
   GROUP=RUTH
    RFRAC
     0.00E+00  6.12E-11  0.00E+00  7.89E-08  0.00E+00  2.62E-08
    AERSOL
     0.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
    RESP
     0.00E+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 0.010000
   GROUP=VOL
    RFRAC
     0.00E+00  6.12E-11  0.00E+00  7.89E-08  0.00E+00  2.84E-08
    AERSOL
     0.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
    RESP
     0.00E+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 0.010000

```
                RUN DATE: [ 09/16/04  AT 08:25:54 ]        PAGE   4

                    GTMHR-MYtoYM Rev 4

PACKAGE     SFUEL  1.400E+01 0.500 0.500    5.20
     H3GAS      1.600E+02 GAS
     KR85      4.010E+03 GAS
     SR90      3.880E+04 PART
     RU106      6.430E+03 RUTH
     SB125      9.560E+02 PART
     TE125M      1.370E+02 PART
     CS134      9.590E+03 VOL
     CS137      4.700E+04 VOL
     CE144      9.340E+03 PART
     PM147      3.000E+04 PART
     SM151      2.810E+02 PART
     EU154      1.400E+03 PART
     EU155      3.800E+02 PART
     PU238      5.090E+02 PART
     PU239      9.740E+02 PART
     PU240      1.720E+02 PART
     PU241      3.610E+04 PART
     AM241      3.550E+02 PART
     AM243      2.230E+00 PART
     CM242      6.550E+00 PART
     CM244      1.230E+02 PART
     END
VEHICLE  -1 GTMHR_TRUC  1.400E+01 0.500 0.500    5.20    1.00
                2.00    3.10 0.500    0.75
     SFUEL       1.00
MODSTD
  BDF 5.000E-01
  UBF 5.000E-01
  USWF 5.000E-01
  MITDVEL 4.400E+01
  CULVL 1.000E+04
  INTERDICT 1.000E+04
FLAGS
  REGCHECK 0
  IUOPT 2
EOF
LINK RURAL      GTMHR_TRUC 3360.30  88.0  2.0   12.50  470.00 3.52E-07 R 1 0.50
LINK SUBURBAN   GTMHR_TRUC 1111.50  88.0  2.0  317.80  780.00 3.52E-07 S 1 0.00
LINK URBAN      GTMHR_TRUC  124.60  88.0  2.0 2451.70 2800.00 3.52E-07 U 1 0.00
LINK SUBURBANR  GTMHR_TRUC  123.50  44.0  2.0  317.80 1560.00 3.52E-07 S 1 0.00
LINK URBANR     GTMHR_TRUC   13.90  44.0  2.0 2451.70 5600.00 3.52E-07 U 1 0.00
STOP GASP       GTMHR_TRUC 11437.00   1.00   14.00 1.000   1.670
STOP GASC       GTMHR_TRUC    1.00   1.00    1.00 1.000   1.670
STOP INSPC      GTMHR_TRUC    1.00   1.00    1.00 1.000   0.000
STOP INSPECST   GTMHR_TRUC    1.00   1.00    1.00 1.000   1.000
STOP GASRE3R    GTMHR_TRUC   12.50  30.00  800.00 1.000   1.190
STOP GASRESS    GTMHR_TRUC  317.80  30.00  800.00 0.870   0.440
STOP GASRESU    GTMHR_TRUC 2451.70  30.00  800.00 0.180   0.050
STOP GASC2      GTMHR_TRUC    1.00   3.10    3.10 0.500   1.670
STOP ACCNRR     GTMHR_TRUC   12.50  30.00  800.00 1.000   0.012
```

```
STOP ACCNRS     GTMHR_TRUC  317.80  30.00  800.00 0.870   0.003
STOP ACCNRU     GTMHR_TRUC 2451.70  30.00  800.00 0.180   0.000
STOP ACCNRUO    GTMHR_TRUC 14700.00  30.00  800.00 1.000   0.000
STOP ACCNREP    GTMHR_TRUC 6430.00   1.00   10.00 1.000   0.002
HANDLING LOAD1      GTMHR_TRUC   4.00    1.00   0.50
HANDLING LOAD2      GTMHR_TRUC   4.00    1.00   0.50
EOF
```

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GTMHR-MYtoYM Rev 4

PACKAGE AND MATERIAL CHARACTERISTICS

MATERIAL	DIMENSION (METERS)	EFFECTIVE DIMENSION	K(0) METERS SQ.	FRACTION GAMMA	FRACTION NEUTRON	DOSE RATE (MREM/HR)
SFUEL	5.200E+00	4.677E+00	1.115E+01	5.000E-01	5.000E-01	1.400E+01

K(0) IS DOSE RATE CONVERSION FACTOR

VEHICLE CHARACTERISTICS

VEHICLE NAME	GTMHR_TRUC
MODE TYPE	HIGHWAY
EXCLUSIVE USE	YES
DOSE RATE (MREM/HR)	1.40E+01
K(0) (SQ. METERS)	1.11E+01
VEHICLE SIZE (M)	5.20E+00
EFFECTIVE SIZE (M)	4.68E+00
NUMBER OF SHIPMENTS	1.00E+00
NUMBER OF CREW	2.00E+00
CREW DISTANCE (M)	3.10E+00
CREW DOSE ADJUSTMENT FACT	5.00E-01
CREW EXPOSER WIDTH (M)	7.50E-01
EFFECTIVE EXPOSER WIDTH	7.50E-01
K(0) (SQ M) CREW EXPOSURE	1.89E+00

VEHICLE	MATERIAL	NO.PACKAGES
GTMHR_TRUC		
	SFUEL	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

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STOP RELATED DATA

	GASP	GASC	INSPC	INSPECST	GASRE3R
VEHICLE	GTMHR_TRUC	GTMHR_TRUC	GTMHR_TRUC	GTMHR_TRUC	GTMHR_TRUC
PERSONS	1.14E+04	1.00E+00	1.00E+00	1.00E+00	1.25E+01
MINIMUM DISTANCE(M)	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.00E+01
MAXIMUM DISTANCE(M)	1.40E+01	1.00E+00	1.00E+00	1.00E+00	8.00E+02
SHIELDING FACTOR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
TIME (HR)	1.67E+00	1.67E+00	0.00E+00	1.00E+00	1.19E+00

	GASRESS	GASRESU	GASC2	ACCNRR	ACCNRS
VEHICLE	GTMHR_TRUC	GTMHR_TRUC	GTMHR_TRUC	GTMHR_TRUC	GTMHR_TRUC
PERSONS	3.18E+02	2.45E+03	1.00E+00	1.25E+01	3.18E+02
MINIMUM DISTANCE(M)	3.00E+01	3.00E+01	3.10E+00	3.00E+01	3.00E+01
MAXIMUM DISTANCE(M)	8.00E+02	8.00E+02	3.10E+00	8.00E+02	8.00E+02
SHIELDING FACTOR	8.70E-01	1.80E-01	5.00E-01	1.00E+00	8.70E-01
TIME (HR)	4.40E-01	5.00E-02	1.67E+00	1.20E-02	3.00E-03

	ACCNRU	ACCNRUO	ACCNREP
VEHICLE	GTMHR_TRUC	GTMHR_TRUC	GTMHR_TRUC
PERSONS	2.45E+03	1.47E+04	6.43E+03
MINIMUM DISTANCE(M)	3.00E+01	3.00E+01	1.00E+00
MAXIMUM DISTANCE(M)	8.00E+02	8.00E+02	1.00E+01
SHIELDING FACTOR	1.80E-01	1.00E+00	1.00E+00
TIME (HR)	0.00E+00	0.00E+00	2.00E-03

HANDLING RELATED DATA

	LOAD1	LOAD2
VEHICLE	GTMHR_TRUC	GTMHR_TRUC
NUMBER OF HANDLERS	4.00E+00	4.00E+00
DISTANCE (M)	1.00E+00	1.00E+00
EXPOSURE TIME (HR)	5.00E-01	5.00E-01

PACKAGE HANDLING THRESHOLD FOR SMALL PACKAGES (SMLPKG) = 5.000E-01 METERS

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GTMHR-MYtoYM Rev 4

LINK RELATED DATA

	RURAL	SUBURBAN	URBAN	SUBURBANR	URBANR
VEHICLE	GTMHR_TRUC	GTMHR_TRUC	GTMHR_TRUC	GTMHR_TRUC	GTMHR_TRUC
DISTANCE (KM)	3.36E+03	1.11E+03	1.25E+02	1.24E+02	1.39E+01
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00	2.00E+00	2.00E+00
SPEED (KM/HR)	8.80E+01	8.80E+01	8.80E+01	4.40E+01	4.40E+01
POPULATION DENSITY	1.25E+01	3.18E+02	2.45E+03	3.18E+02	2.45E+03
VEHICLE DENSITY	4.70E+02	7.80E+02	2.80E+03	1.56E+03	5.60E+03
ACCIDENT RATE/KM	3.52E-07	3.52E-07	3.52E-07	3.52E-07	3.52E-07
ZONE	RURAL	SUBURBAN	URBAN	SUBURBAN	URBAN
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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GTMHR-MYtoYM Rev 4

ISOTOPE RELATED DATA

NUCLIDE	CURIES PER PKG	RELEASE GROUP	RESUSPENSION FACTOR	50YR INHALATION (REM/CI) EFFECTIVE
SFUEL				
H3GAS	1.60E+02	GAS	1.00E+00	4.40E-03
KR85	4.01E+03	GAS	1.00E+00	0.00E+00
SR90	3.88E+04	PART	5.41E+00	2.40E+06
RU106	6.43E+03	RUTH	3.28E+00	8.00E+05
SB125	9.56E+02	PART	4.34E+00	1.70E+04
TE125M	1.37E+02	PART	1.62E+00	1.00E+04
CS134	9.59E+03	VOL	4.07E+00	4.60E+04
CS137	4.70E+04	VOL	5.41E+00	3.20E+04
CE144	9.34E+03	PART	2.99E+00	6.30E+05
PM147	3.00E+04	PART	4.30E+00	6.00E+04
SM151	2.81E+02	PART	5.51E+00	3.30E+04
EU154	1.40E+03	PART	5.09E+00	3.10E+05
EU155	3.80E+02	PART	4.79E+00	4.80E+04
PU238	5.09E+02	PART	5.51E+00	5.30E+08
PU239	9.74E+02	PART	5.57E+00	5.70E+08
PU240	1.72E+02	PART	5.56E+00	5.70E+08
PU241	3.61E+04	PART	5.26E+00	9.90E+06
AM241	3.55E+02	PART	5.55E+00	5.90E+08
AM243	2.23E+00	PART	5.56E+00	5.90E+08
CM242	6.55E+00	PART	2.40E+00	2.30E+07
CM244	1.23E+02	PART	5.32E+00	3.10E+08

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GTMHR-MYtoYM Rev 4

NUCLIDE	HALF LIFE	GAMMA ENERGY	CLOUD FACTOR	GROUND FACTOR	INGESTION NUCLIDE	NEUTRON EMISSION neutrons/sec/Ci
SFUEL						
H3GAS	4.51E+03	0.00E+00	1.22E-06	0.00E+00	NONE	N/A
KR85	3.92E+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	0.00E+00	6.78E-05	Ru-106	N/A
SB125	1.01E+03	4.30E-01	7.47E-02	1.36E-04	Sb-125	N/A
TE125M	5.80E+01	3.55E-02	1.68E-03	1.15E-05	Te-125m	N/A
CS134	7.53E+02	1.55E+00	2.80E-01	4.86E-04	Cs-134	N/A
CS137	1.10E+04	5.96E-01	2.86E-05	1.77E-04	Cs-137	N/A
CE144	2.84E+02	5.25E-02	3.16E-03	1.84E-05	Ce-144	N/A
PM147	9.58E+02	4.37E-06	2.56E-06	1.09E-08	Pm-147	N/A
SM151	3.29E+04	1.34E-05	1.34E-07	1.61E-09	Sm-151	N/A
EU154	3.21E+03	1.22E+00	2.27E-01	3.80E-04	Eu-154	N/A
EU155	1.81E+03	6.05E-02	9.21E-03	1.89E-05	Eu-155	N/A
PU238	3.21E+04	1.81E-03	1.81E-05	2.68E-07	Pu-238	N/A
PU239	8.79E+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	2.70E+06	5.59E-02	8.07E-03	1.71E-05	Am-243	N/A
CM242	1.63E+02	1.83E-03	2.11E-05	3.06E-07	Cm-242	N/A
CM244	6.62E+03	1.70E-03	1.82E-05	2.81E-07	Cm-244	N/A

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ISOTOPE RELATED DATA

NUCLIDE	1-YR INHALATION (REM/CI)		
	LUNG	MARROW	THYROID
SFUEL			
H3GAS	1.20E+02	1.20E+02	0.00E+00
KR85	0.00E+00	0.00E+00	0.00E+00
SR90	4.50E+06	3.80E+03	0.00E+00
RU106	4.30E+06	4.50E+03	0.00E+00
SB125	4.40E+04	5.50E+02	0.00E+00
TE125M	0.00E+00	0.00E+00	0.00E+00
CS134	4.10E+04	3.90E+04	0.00E+00
CS137	3.10E+04	2.60E+04	0.00E+00
CE144	3.60E+06	4.20E+03	0.00E+00
PM147	2.20E+05	5.30E+02	0.00E+00
SM151	2.10E+04	2.90E+03	0.00E+00
EU154	0.00E+00	0.00E+00	0.00E+00
EU155	0.00E+00	0.00E+00	0.00E+00
PU238	4.50E+08	1.10E+06	0.00E+00
PU239	4.20E+08	1.10E+06	0.00E+00
PU240	4.20E+08	1.10E+06	0.00E+00
PU241	3.60E+05	1.30E+03	0.00E+00
AM241	1.20E+08	1.70E+07	0.00E+00
AM243	1.10E+08	1.60E+07	0.00E+00
CM242	9.90E+07	8.80E+06	0.00E+00
CM244	1.20E+08	1.70E+07	0.00E+00

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RELEASE RELATED DATA
****

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	0.00E+00	1.02E-04	0.00E+00	4.77E-03	0.00E+00	1.70E-03
PART	0.00E+00	6.12E-11	0.00E+00	7.89E-08	0.00E+00	2.62E-08
RUTH	0.00E+00	6.12E-11	0.00E+00	7.89E-08	0.00E+00	2.62E-08
VOL	0.00E+00	6.12E-11	0.00E+00	7.89E-08	0.00E+00	2.84E-08

DEPOSITION VELOCITIES

GROUP	M/SEC
SAMPLE	0.00E+00
GAS	0.00E+00
PART	1.00E-02
RUTH	1.00E-02
VOL	1.00E-02

ACCIDENT SEVERITY FRACTIONS
FOR HIGHWAY

ZONE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RURAL	1.00E+00	3.87E-05	4.91E-05	5.77E-07	1.10E-07	8.52E-10
SUBURBAN	1.00E+00	3.87E-05	4.91E-05	5.77E-07	1.10E-07	8.52E-10
URBAN	1.00E+00	3.87E-05	4.91E-05	5.77E-07	1.10E-07	8.52E-10

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AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
VOL	0.00E+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
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	0.00E+00	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
RUTH	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
VOL	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

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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

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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		

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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)

BUILDING DOSE FACTOR (BDF) = 5.000E-01
CONTAMINATION CLEAN UP LEVEL (UCI/M**2) (CULVL) = 1.000E+04
BREATHING RATE (M**3/SEC) (BRATE) = 3.300E-04
INTERDICTION THRESHOLD (INTERDICT) = 1.000E+04
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) = 5.000E-01
FRACTION OF URBAN AREAS WITH SIDEWALKS (USWF) = 5.000E-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) = 4.400E+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

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INGESTION RELATED DATA

COMIDA INGESTION FILE USED: R5INGEST.BIN

COMIDA FILE HEADER
COMIDA2 02/17/03 16:17:38 Ver. 1.11a, 1/28/96: avoiding use of UNIT 6 for HP

DOSE CONVERSION FILE USED IN COMIDA
FGRDCF 05/08/95 16:43:45 beta-test version 1.10, minor FORTRAN fixes 5/4/95
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

ISOTOPE	INGESTION NUCLIDE
H3GAS	NONE
KR85	NONE

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BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

NUCLIDE	EFFECTIVE	THYROID
Sr-90	2.541E+05	9.964E+03
Ru-106	2.107E+04	4.014E+03
Sb-125	3.930E+03	2.392E+02
Te-125m	4.540E+03	1.799E+02
Cs-134	6.012E+05	5.344E+05
Cs-137	4.870E+05	4.545E+05
Ce-144	1.202E+04	1.085E+01
Pm-147	1.438E+03	1.585E-04
Sm-151	6.077E+02	1.893E-04
Eu-154	1.439E+04	3.185E+02
Eu-155	2.232E+03	9.620E+00
Pu-238	3.858E+04	2.301E-01
Pu-239	4.049E+04	2.169E-01
Pu-240	4.049E+04	2.172E-01
Pu-241	3.231E+03	3.837E-02
Am-241	2.846E+06	3.818E+01
Am-243	2.834E+06	1.968E+02
Cm-242	6.505E+04	1.851E+01
Cm-244	2.534E+06	3.924E+01

SOCIETAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

NUCLIDE	GONADS	BREAST	LUNGS	RED MAR	BONE SU	THYROID	REMAIND	EFFECTI
Sr-90	1.8E+00	1.8E+00	1.8E+00	2.3E+02	4.9E+02	1.8E+00	7.3E+00	4.5E+01
Ru-106	5.5E-01	4.8E-01	4.8E-01	4.9E-01	4.8E-01	4.7E-01	7.1E+00	2.5E+00
Sb-125	3.5E-01	6.6E-02	4.0E-02	1.5E-01	3.9E-01	3.1E-02	1.2E+00	5.0E-01
Te-125m	5.8E-02	2.1E-02	2.0E-02	5.6E-01	5.8E+00	1.8E-02	6.4E-01	4.6E-01
Cs-134	8.9E+01	7.5E+01	7.6E+01	8.1E+01	7.5E+01	7.6E+01	9.6E+01	8.6E+01
Cs-137	8.2E+01	7.4E+01	7.5E+01	7.8E+01	7.5E+01	7.5E+01	8.6E+01	8.0E+01
Ce-144	1.7E-02	2.9E-03	1.6E-03	2.1E-02	3.0E-02	1.2E-03	4.5E+00	1.4E+00
Pm-147	4.8E-06	5.2E-07	1.4E-07	1.5E-02	1.8E-01	2.2E-08	6.4E-01	2.0E-01
Sm-151	1.9E-05	9.3E-07	5.9E-07	2.5E-02	3.1E-01	3.0E-08	2.8E-01	9.5E-02
Eu-154	1.1E+00	2.3E-01	1.8E-01	9.6E-01	3.7E+00	4.8E-02	5.3E+00	2.2E+00
Eu-155	7.7E-02	1.1E-02	7.6E-03	1.2E-01	1.0E+00	1.4E-03	8.6E-01	3.3E-01
Pu-238	8.1E-01	6.2E-05	3.0E-05	4.4E+00	5.5E+01	2.8E-05	7.5E+00	4.6E+00
Pu-239	9.2E-01	4.2E-05	2.7E-05	4.9E+00	6.1E+01	2.6E-05	7.4E+00	4.9E+00
Pu-240	9.2E-01	6.0E-05	2.9E-05	4.9E+00	6.1E+01	2.6E-05	7.4E+00	4.9E+00
Pu-241	1.4E-01	1.3E-05	1.7E-05	7.7E-01	9.6E+00	6.5E-06	3.7E-01	5.3E-01
Am-241	9.4E+01	9.1E-03	1.2E-02	5.0E+02	6.3E+03	4.6E-03	2.3E+02	3.4E+02
Am-243	9.4E+01	4.9E-02	6.8E-02	5.0E+02	6.3E+03	2.4E-02	2.3E+02	3.4E+02
Cm-242	1.2E+00	2.0E-03	2.0E-03	8.1E+00	1.0E+02	2.0E-03	9.1E+00	7.0E+00
Cm-244	7.6E+01	5.1E-03	5.1E-03	4.5E+02	5.6E+03	4.8E-03	2.4E+02	3.1E+02

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NON-RADIOLOGICAL RISK (FATALITIES)
****

	NORMAL OCCUPATIONAL	NORMAL NON-OCCUPATIONAL	ACCIDENT OCCUPATIONAL	ACCIDENT NON-OCCUPATIONAL
RURAL	0.00E+00	0.00E+00	1.01E-04	3.56E-04
SUBURBAN	0.00E+00	0.00E+00	8.23E-06	2.89E-05
URBAN	0.00E+00	0.00E+00	5.23E-07	1.87E-06
SUBURBANR	0.00E+00	0.00E+00	9.14E-07	3.21E-06
URBANR	0.00E+00	0.00E+00	5.84E-08	2.08E-07
TOTALS:	0.00E+00	0.00E+00	1.11E-04	3.90E-04

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REGULATORY CHECKS HAVE BEEN DISABLED
********** ****** **** **** ********

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CALCULATIONAL INFORMATION

FOR GTMHR_TRUC AREAS WITH TOTAL CONTAMINATION RATIO GREATER THAN *******
(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	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
11	-	-	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	-	-	-	-	-	-
15	-	-	-	-	-	-
16	-	-	-	-	-	-
17	-	-	-	-	-	-
18	-	-	-	-	-	-

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

AREA	SAMPLE	GAS	PART	RUTH	VOL
4.59E+02	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03
1.53E+03	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03
3.94E+03	8.58E-04	8.58E-04	8.34E-04	8.34E-04	8.34E-04
1.25E+04	3.42E-04	3.42E-04	3.23E-04	3.23E-04	3.23E-04
3.04E+04	1.72E-04	1.72E-04	1.55E-04	1.55E-04	1.55E-04
6.85E+04	8.58E-05	8.58E-05	7.38E-05	7.38E-05	7.38E-05
1.76E+05	3.42E-05	3.42E-05	2.80E-05	2.80E-05	2.80E-05
4.45E+05	1.72E-05	1.72E-05	1.33E-05	1.33E-05	1.33E-05
8.59E+05	8.58E-06	8.58E-06	6.16E-06	6.16E-06	6.16E-06
2.55E+06	3.42E-06	3.42E-06	2.33E-06	2.33E-06	2.33E-06
4.45E+06	1.72E-06	1.72E-06	1.06E-06	1.06E-06	1.06E-06
1.03E+07	8.58E-07	8.58E-07	5.04E-07	5.04E-07	5.04E-07
2.16E+07	3.42E-07	3.42E-07	1.86E-07	1.86E-07	1.86E-07
5.52E+07	1.72E-07	1.72E-07	8.77E-08	8.77E-08	8.77E-08
1.77E+08	8.58E-08	8.58E-08	4.01E-08	4.01E-08	4.01E-08
4.89E+08	5.42E-08	5.42E-08	2.14E-08	2.14E-08	2.14E-08
8.12E+08	4.30E-08	4.30E-08	1.31E-08	1.31E-08	1.31E-08
1.35E+09	3.42E-08	3.42E-08	8.54E-09	8.54E-09	8.54E-09

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VEHICLE GTMHR_TRUC

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	7.69E-06	0.00E+00	7.17E-03	0.00E+00	2.39E-03
6.80E+01	0.00E+00	3.86E-06	0.00E+00	3.60E-03	0.00E+00	1.20E-03
1.05E+02	0.00E+00	1.89E-06	0.00E+00	1.75E-03	0.00E+00	5.83E-04
2.44E+02	0.00E+00	7.38E-07	0.00E+00	6.77E-04	0.00E+00	2.25E-04
3.69E+02	0.00E+00	3.59E-07	0.00E+00	3.25E-04	0.00E+00	1.08E-04
5.61E+02	0.00E+00	1.74E-07	0.00E+00	1.55E-04	0.00E+00	5.16E-05
1.02E+03	0.00E+00	6.70E-08	0.00E+00	5.89E-05	0.00E+00	1.96E-05
1.63E+03	0.00E+00	3.23E-08	0.00E+00	2.79E-05	0.00E+00	9.29E-06
2.31E+03	0.00E+00	1.54E-08	0.00E+00	1.30E-05	0.00E+00	4.33E-06
4.27E+03	0.00E+00	5.94E-09	0.00E+00	4.91E-06	0.00E+00	1.64E-06
5.47E+03	0.00E+00	2.81E-09	0.00E+00	2.24E-06	0.00E+00	7.48E-07
1.11E+04	0.00E+00	1.36E-09	0.00E+00	1.07E-06	0.00E+00	3.55E-07
1.31E+04	0.00E+00	5.19E-10	0.00E+00	3.95E-07	0.00E+00	1.32E-07
2.13E+04	0.00E+00	2.52E-10	0.00E+00	1.86E-07	0.00E+00	6.22E-08
4.05E+04	0.00E+00	1.20E-10	0.00E+00	8.54E-08	0.00E+00	2.85E-08
7.00E+04	0.00E+00	6.93E-11	0.00E+00	4.59E-08	0.00E+00	1.53E-08
8.99E+04	0.00E+00	4.87E-11	0.00E+00	2.83E-08	0.00E+00	9.44E-09
1.21E+05	0.00E+00	3.58E-11	0.00E+00	1.87E-08	0.00E+00	6.24E-09

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	2.97E-06	0.00E+00	3.24E-04	0.00E+00	1.15E-04
6.80E+01	0.00E+00	1.50E-06	0.00E+00	1.63E-04	0.00E+00	5.76E-05
1.05E+02	0.00E+00	7.45E-07	0.00E+00	7.98E-05	0.00E+00	2.83E-05
2.44E+02	0.00E+00	2.97E-07	0.00E+00	3.13E-05	0.00E+00	1.11E-05
3.69E+02	0.00E+00	1.49E-07	0.00E+00	1.53E-05	0.00E+00	5.42E-06
5.61E+02	0.00E+00	7.41E-08	0.00E+00	7.44E-06	0.00E+00	2.64E-06
1.02E+03	0.00E+00	2.95E-08	0.00E+00	2.89E-06	0.00E+00	1.02E-06
1.63E+03	0.00E+00	1.48E-08	0.00E+00	1.41E-06	0.00E+00	4.98E-07
2.31E+03	0.00E+00	7.36E-09	0.00E+00	6.76E-07	0.00E+00	2.40E-07
4.27E+03	0.00E+00	2.93E-09	0.00E+00	2.62E-07	0.00E+00	9.31E-08
5.47E+03	0.00E+00	1.47E-09	0.00E+00	1.26E-07	0.00E+00	4.46E-08
1.11E+04	0.00E+00	7.31E-10	0.00E+00	6.13E-08	0.00E+00	2.18E-08
1.31E+04	0.00E+00	2.91E-10	0.00E+00	2.36E-08	0.00E+00	8.38E-09
2.13E+04	0.00E+00	1.46E-10	0.00E+00	1.16E-08	0.00E+00	4.10E-09
4.05E+04	0.00E+00	7.26E-11	0.00E+00	5.56E-09	0.00E+00	1.97E-09
7.00E+04	0.00E+00	4.57E-11	0.00E+00	3.29E-09	0.00E+00	1.17E-09
8.99E+04	0.00E+00	3.61E-11	0.00E+00	2.39E-09	0.00E+00	8.50E-10
1.21E+05	0.00E+00	2.86E-11	0.00E+00	1.80E-09	0.00E+00	6.40E-10

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

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VEHICLE GTMHR_TRUC

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	3.82E-04	0.00E+00	4.93E-01	0.00E+00	1.68E-01
6.80E+01	0.00E+00	1.92E-04	0.00E+00	2.47E-01	0.00E+00	8.43E-02
1.05E+02	0.00E+00	9.32E-05	0.00E+00	1.20E-01	0.00E+00	4.09E-02
2.44E+02	0.00E+00	3.61E-05	0.00E+00	4.65E-02	0.00E+00	1.58E-02
3.69E+02	0.00E+00	1.73E-05	0.00E+00	2.23E-02	0.00E+00	7.60E-03
5.61E+02	0.00E+00	8.24E-06	0.00E+00	1.06E-02	0.00E+00	3.62E-03
1.02E+03	0.00E+00	3.13E-06	0.00E+00	4.03E-03	0.00E+00	1.37E-03
1.63E+03	0.00E+00	1.48E-06	0.00E+00	1.91E-03	0.00E+00	6.50E-04
2.31E+03	0.00E+00	6.89E-07	0.00E+00	8.88E-04	0.00E+00	3.03E-04
4.27E+03	0.00E+00	2.60E-07	0.00E+00	3.35E-04	0.00E+00	1.14E-04
5.47E+03	0.00E+00	1.19E-07	0.00E+00	1.53E-04	0.00E+00	5.21E-05
1.11E+04	0.00E+00	5.63E-08	0.00E+00	7.25E-05	0.00E+00	2.47E-05
1.31E+04	0.00E+00	2.08E-08	0.00E+00	2.68E-05	0.00E+00	9.13E-06
2.13E+04	0.00E+00	9.80E-09	0.00E+00	1.26E-05	0.00E+00	4.31E-06
4.05E+04	0.00E+00	4.48E-09	0.00E+00	5.77E-06	0.00E+00	1.97E-06
7.00E+04	0.00E+00	2.39E-09	0.00E+00	3.08E-06	0.00E+00	1.05E-06
8.99E+04	0.00E+00	1.46E-09	0.00E+00	1.88E-06	0.00E+00	6.41E-07
1.21E+05	0.00E+00	9.54E-10	0.00E+00	1.23E-06	0.00E+00	4.19E-07

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VEHICLE GTMHR_TRUC

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	1.07E-05	0.00E+00	7.53E-03	0.00E+00	2.52E-03
6.80E+01	0.00E+00	5.37E-06	0.00E+00	3.78E-03	0.00E+00	1.26E-03
1.05E+02	0.00E+00	2.64E-06	0.00E+00	1.84E-03	0.00E+00	6.14E-04
2.44E+02	0.00E+00	1.04E-06	0.00E+00	7.12E-04	0.00E+00	2.38E-04
3.69E+02	0.00E+00	5.09E-07	0.00E+00	3.42E-04	0.00E+00	1.14E-04
5.61E+02	0.00E+00	2.48E-07	0.00E+00	1.63E-04	0.00E+00	5.45E-05
1.02E+03	0.00E+00	9.67E-08	0.00E+00	6.21E-05	0.00E+00	2.07E-05
1.63E+03	0.00E+00	4.72E-08	0.00E+00	2.94E-05	0.00E+00	9.84E-06
2.31E+03	0.00E+00	2.28E-08	0.00E+00	1.37E-05	0.00E+00	4.59E-06
4.27E+03	0.00E+00	8.89E-09	0.00E+00	5.20E-06	0.00E+00	1.74E-06
5.47E+03	0.00E+00	4.29E-09	0.00E+00	2.38E-06	0.00E+00	7.97E-07
1.11E+04	0.00E+00	2.10E-09	0.00E+00	1.13E-06	0.00E+00	3.79E-07
1.31E+04	0.00E+00	8.11E-10	0.00E+00	4.20E-07	0.00E+00	1.41E-07
2.13E+04	0.00E+00	3.98E-10	0.00E+00	1.99E-07	0.00E+00	6.66E-08
4.05E+04	0.00E+00	1.93E-10	0.00E+00	9.14E-08	0.00E+00	3.06E-08
7.00E+04	0.00E+00	1.15E-10	0.00E+00	4.94E-08	0.00E+00	1.65E-08
8.99E+04	0.00E+00	8.49E-11	0.00E+00	3.08E-08	0.00E+00	1.03E-08
1.21E+05	0.00E+00	6.45E-11	0.00E+00	2.06E-08	0.00E+00	6.91E-09

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GTMHR-MYtoYM Rev 4

VEHICLE GTMHR_TRUC

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	8.44E-05	0.00E+00	1.09E-01	0.00E+00	3.83E-02
6.80E+01	0.00E+00	4.24E-05	0.00E+00	5.47E-02	0.00E+00	1.92E-02
1.05E+02	0.00E+00	2.06E-05	0.00E+00	2.66E-02	0.00E+00	9.34E-03
2.44E+02	0.00E+00	7.97E-06	0.00E+00	1.03E-02	0.00E+00	3.61E-03
3.69E+02	0.00E+00	3.82E-06	0.00E+00	4.93E-03	0.00E+00	1.73E-03
5.61E+02	0.00E+00	1.82E-06	0.00E+00	2.35E-03	0.00E+00	8.26E-04
1.02E+03	0.00E+00	6.91E-07	0.00E+00	8.91E-04	0.00E+00	3.14E-04
1.63E+03	0.00E+00	3.27E-07	0.00E+00	4.22E-04	0.00E+00	1.48E-04
2.31E+03	0.00E+00	1.52E-07	0.00E+00	1.96E-04	0.00E+00	6.90E-05
4.27E+03	0.00E+00	5.75E-08	0.00E+00	7.41E-05	0.00E+00	2.61E-05
5.47E+03	0.00E+00	2.62E-08	0.00E+00	3.38E-05	0.00E+00	1.19E-05
1.11E+04	0.00E+00	1.24E-08	0.00E+00	1.60E-05	0.00E+00	5.64E-06
1.31E+04	0.00E+00	4.60E-09	0.00E+00	5.92E-06	0.00E+00	2.08E-06
2.13E+04	0.00E+00	2.17E-09	0.00E+00	2.79E-06	0.00E+00	9.83E-07
4.05E+04	0.00E+00	9.90E-10	0.00E+00	1.28E-06	0.00E+00	4.49E-07
7.00E+04	0.00E+00	5.28E-10	0.00E+00	6.81E-07	0.00E+00	2.40E-07
8.99E+04	0.00E+00	3.22E-10	0.00E+00	4.16E-07	0.00E+00	1.46E-07
1.21E+05	0.00E+00	2.11E-10	0.00E+00	2.72E-07	0.00E+00	9.56E-08

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	5.63E-05	0.00E+00	7.26E-02	0.00E+00	2.61E-02
6.80E+01	0.00E+00	2.83E-05	0.00E+00	3.64E-02	0.00E+00	1.31E-02
1.05E+02	0.00E+00	1.37E-05	0.00E+00	1.77E-02	0.00E+00	6.37E-03
2.44E+02	0.00E+00	5.31E-06	0.00E+00	6.85E-03	0.00E+00	2.46E-03
3.69E+02	0.00E+00	2.55E-06	0.00E+00	3.28E-03	0.00E+00	1.18E-03
5.61E+02	0.00E+00	1.21E-06	0.00E+00	1.57E-03	0.00E+00	5.63E-04
1.02E+03	0.00E+00	4.61E-07	0.00E+00	5.94E-04	0.00E+00	2.14E-04
1.63E+03	0.00E+00	2.18E-07	0.00E+00	2.81E-04	0.00E+00	1.01E-04
2.31E+03	0.00E+00	1.01E-07	0.00E+00	1.31E-04	0.00E+00	4.70E-05
4.27E+03	0.00E+00	3.83E-08	0.00E+00	4.94E-05	0.00E+00	1.78E-05
5.47E+03	0.00E+00	1.75E-08	0.00E+00	2.25E-05	0.00E+00	8.10E-06
1.11E+04	0.00E+00	8.29E-09	0.00E+00	1.07E-05	0.00E+00	3.84E-06
1.31E+04	0.00E+00	3.06E-09	0.00E+00	3.95E-06	0.00E+00	1.42E-06
2.13E+04	0.00E+00	1.44E-09	0.00E+00	1.86E-06	0.00E+00	6.70E-07
4.05E+04	0.00E+00	6.60E-10	0.00E+00	8.51E-07	0.00E+00	3.06E-07
7.00E+04	0.00E+00	3.52E-10	0.00E+00	4.54E-07	0.00E+00	1.63E-07
8.99E+04	0.00E+00	2.15E-10	0.00E+00	2.77E-07	0.00E+00	9.96E-08
1.21E+05	0.00E+00	1.41E-10	0.00E+00	1.81E-07	0.00E+00	6.52E-08

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INCIDENT-FREE SUMMARY
******** **** *******

IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM

	PASSENGER	CREW	OFF LINK	ON LINK	TOTALS
RURAL	0.00E+00	1.08E-01	1.22E-03	3.24E-02	1.42E-01
SUBURBAN	0.00E+00	3.58E-02	8.94E-03	1.78E-02	6.25E-02
URBAN	0.00E+00	4.01E-03	1.60E-04	7.16E-03	1.13E-02
SUBURBANR	0.00E+00	7.94E-03	1.99E-03	1.66E-02	2.65E-02
URBANR	0.00E+00	8.94E-04	3.57E-05	6.69E-03	7.62E-03

RURAL	0.00E+00	1.08E-01	1.22E-03	3.24E-02	1.42E-01
SUBURB	0.00E+00	4.37E-02	1.09E-02	3.43E-02	8.90E-02
URBAN	0.00E+00	4.90E-03	1.96E-04	1.38E-02	1.89E-02

TOTALS:	0.00E+00	1.57E-01	1.23E-02	8.06E-02	2.50E-01

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

GTMHR_TRUC 3.25E-07 REM

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STOP EXPOSURE IN PERSON-REM

ANNULAR AREA	GASP	5.09E-02
LINE-SOURCE	GASC	7.86E-02
LINE-SOURCE	INSPC	0.00E+00
LINE-SOURCE	INSPECST	4.70E-02
ANNULAR AREA	GASRE3R	5.70E-05
ANNULAR AREA	GASRESS	4.66E-04
ANNULAR AREA	GASRESU	8.45E-05
LINE-SOURCE	GASC2	1.28E-02
ANNULAR AREA	ACCNRR	5.74E-07
ANNULAR AREA	ACCNRS	3.18E-06
ANNULAR AREA	ACCNRU	0.00E+00
ANNULAR AREA	ACCNRUO	0.00E+00
ANNULAR AREA	ACCNREP	2.97E-05

TOTAL: 1.90E-01

HANDLING EXPOSURE IN PERSON-REM

HANDLING	VEHICLE	MATERIAL	METHOD	DOSE
LOAD1	GTMHR_TRUC	SFUEL	LINE-SOURCE	9.41E-02
LOAD2	GTMHR_TRUC	SFUEL	LINE-SOURCE	9.41E-02

TOTAL: 1.88E-01

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ACCIDENT SUMMARY
******** *******

NUMBER OF EXPECTED ACCIDENTS

CATEGORY	RURAL	SUBURBAN	URBAN	SUBURBANR	URBANR
1	1.18E-03	3.91E-04	4.39E-05	4.35E-05	4.89E-06
2	4.58E-08	1.51E-08	1.70E-09	1.68E-09	1.89E-10
3	5.81E-08	1.92E-08	2.15E-09	2.13E-09	2.40E-10
4	6.82E-10	2.26E-10	2.53E-11	2.51E-11	2.82E-12
5	1.30E-10	4.30E-11	4.82E-12	4.78E-12	5.38E-13
6	1.01E-12	3.33E-13	3.74E-14	3.70E-14	4.17E-15

EARLY FATALITY CONSEQUENCES

CATEGORY	RURAL	SUBURBAN	URBAN	SUBURBANR	URBANR
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

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RADIOLOGICAL CONSEQUENCES
50 YEAR POPULATION DOSE IN PERSON-REM

CATEGORY	RURAL	SUBURBAN	URBAN	SUBURBANR	URBANR
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	2.34E-05	5.96E-04	1.49E-02	5.96E-04	1.49E-02
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	2.99E-02	7.59E-01	1.90E+01	7.59E-01	1.90E+01
5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	1.04E-02	2.65E-01	6.66E+00	2.65E-01	6.66E+00

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

CATEGORY	RURAL	SUBURBAN	URBAN	SUBURBANR	URBANR
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	4.89E-13	1.62E-13	1.82E-14	1.80E-14	2.02E-15
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	5.14E-12	1.70E-12	1.91E-13	1.89E-13	2.13E-14
5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	2.53E-15	8.38E-16	9.40E-17	9.32E-17	1.05E-17

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

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RURAL	0.00E+00	1.15E-04	0.00E+00	1.48E-01	0.00E+00	5.22E-02

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EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

	GROUND	INHALED	RESUSPD	CLOUDSH	TOTAL
RURAL	1.38E-11	1.43E-12	6.19E-12	2.24E-14	2.15E-11
SUBURBAN	1.16E-10	1.20E-11	5.21E-11	1.88E-13	1.81E-10
URBAN	3.27E-10	3.38E-11	1.46E-10	5.28E-13	5.07E-10
SUBURBANR	1.29E-11	1.34E-12	5.79E-12	2.09E-14	2.01E-11
URBANR	3.64E-11	3.77E-12	1.63E-11	5.89E-14	5.66E-11

RURAL	1.38E-11	1.43E-12	6.19E-12	2.24E-14	2.15E-11
SUBURB	1.29E-10	1.34E-11	5.79E-11	2.09E-13	2.01E-10
URBAN	3.63E-10	3.76E-11	1.63E-10	5.87E-13	5.64E-10
TOTALS:	5.06E-10	5.24E-11	2.27E-10	8.18E-13	7.86E-10

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GTMHR-MYtoYM Rev 4

SOCIETAL INGESTION RISK - PERSON-REM

LINK	GONADS	EFFECTIVE
RURAL	7.88E-11	1.07E-10
TOTAL	7.88E-11	1.07E-10

SOCIETAL INGESTION RISK BY ORGAN - PERSON-REM

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
RURAL	6.88E-11	7.05E-11	2.21E-10	4.35E-10	7.00E-11	8.91E-11
TOTAL	6.88E-11	7.05E-11	2.21E-10	4.35E-10	7.00E-11	8.91E-11

EXPECTED RISK VALUES - OTHER

LINK	EARLY FATALITY	EARLY MORBIDITY
RURAL	0.00E+00	0.00E+00
SUBURBAN	0.00E+00	0.00E+00
URBAN	0.00E+00	0.00E+00
SUBURBANR	0.00E+00	0.00E+00
URBANR	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

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TOTAL EXPOSED POPULATION: INCIDENT-FREE

RURAL 9.43E+04 PERSONS
SUBURBAN 7.93E+05 PERSONS
URBAN 6.86E+05 PERSONS
SUBURBANR 8.81E+04 PERSONS
URBANR 7.65E+04 PERSONS

TOTAL 1.74E+06 PERSONS

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

RURAL 1.69E+04 PERSONS
SUBURBAN 4.29E+05 PERSONS
URBAN 3.31E+06 PERSONS
SUBURBANR 4.29E+05 PERSONS
URBANR 3.31E+06 PERSONS

EOI
END OF RUN
SUCCESSFUL COMPLETION

Overview of the LRA Application bases for BFN Units 1,2 3

I. TVA submitted a joint application for the renewal of all three units in January 2004. The application for the three units presents some challenges (i.e., policy questions) to the NRR staff due to the Unit 1 evolving licensing basis at the time of the submittal. These policy questions will add several months to the standard license renewal schedule. Concurrent with the LRA request TVA is also requesting a 20 % power uprate for unit 1 and 15 % for units 2 & 3 (see below). The basic TVA principle for unit 1 is that all three BFN units will have identical current licensing basis upon completion of unit 1 restart activities which also includes the EPU. The unit 1 since its voluntary shut down in 1985 has been defueled and is currently maintained in a layup state. The starting point for development of design and programmatic changes required for Unit 1 restart began with the changes required for the restart of Unit 3 and changes implemented or planned for Units 2 and 3 since their restarts. Under an agreed regulatory framework Technological improvements and regulatory changes since implementation of the Unit 3 restart have also been considered in the development of the Unit 1 restart plan. According to DLPM this requires 20 Technical Specification changes (10 CFR 50.91 Changes) and 82 Regulatory Commitments (11 TMI action plans, 15, Bulletins, 24 GLs and 27 Special Programs). All of these activities will impact the LRA reviews and schedules. TVA has already completed an Environmental Impact Statement (EIS) in the spring of 2002 to support the TVA Board restart decision and the extended power uprate, but the NRC staff is still doing their own independent one. There have been two sparsely attended license renewal public meetings this year.

II. Where current licensing basis differences impact the scoping and screening results, the following approach is employed to present these differences:

a. Permanent licensing basis differences are described in the LRA text if they are expected to remain in effect after the restart of Unit 1 from its current extended outage.

b. If a current licensing basis difference is expected to be resolved prior to the restart of Unit 1 from its current outage, such that the licensing basis for Unit 1 will be consistent with the current licensing bases of Units 2 and 3, the Unit 1 current licensing basis is not described in the text. Rather, the Units 2 and 3 current licensing bases (the Unit 1 restart licensing basis) are described in the application text and are annotated with a bold bordered enclosure. For each annotation, there is a reference to an Appendix F section that explains the difference between the current and expected Unit 1 restart licensing basis and presents the plan and schedule for making the Unit 1 current licensing basis consistent with the Units 2 and 3 current licensing bases.

III Description of Information Presented in Appendix F - This Appendix provides TVA's plans and schedules for Unit 1 restart activities affecting the LRA. Whenever text annotated with a bold border box appears in the LRA symbolizing a licensing or design basis that is only applicable to Units 2 and 3, a link is provided to the appropriate Appendix F section. Appendix F (of LRA) summarizes the resolution of the difference as it pertains to Unit 1 and its impact on the application.

IV It is imperative that all three renewed licenses be issued at the completion of the renewal review which is in progress with RLEP, DRIP, NRR and a final inspection of UNIT 1 prior to restart may be needed to verify that actions required as a result of the renewal review have been completed.

V Additional License conditions for unit 1 may become necessary if the LRA review has to finish by the currently established time schedule for May 2006. The applicant recognizes this and the fact review may take longer than standard review.

RAI E3.8-12 (NRC 3/12/04 Letter)

General comment - Provide a transportation risk assessment for gas-cooled reactor spent fuel shipments using an accepted methodology, such as RADTRAN V. Provide justification that the best available information has been used to generate the RADTRAN input values, and that those values are appropriate for gas-cooled fuel shipments. Provide a comparison of the results of that assessment with the spent fuel shipment risk estimates contained in NUREG-0170, *Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes.*

Response

RADTRAN V highway runs were conducted for a GT-MHR and a PBMR spent fuel shipment from Maine Yankee Nuclear Plant to Yucca Mountain. The TRAGIS Routing Engine Version 1.4.15, which uses the 2000 Census data, provided the routing information and the population densities. The analysis was conservative using the 10 CFR 71 regulatory limits of 2 mrem/hr in the cab and 10 mrem/hr at 2 meters from the cask. The input values were taken primarily from the Yucca Mountain Final EIS in particular the *Transportation Health and Safety Calculation/Analysis Documentation in Support of the Final EIS for the Yucca Mountain Repository.* The results of these runs are provided in the output files that echo the input files as well. These files are provided as separate attachments. A comparison of the incident free results with NUREG-0170 is provided in Table 1.

Table 1. Comparison of Incident Free Results

	Per shipment person-rem from NUREG-0170 based on 1530 spent fuel truck shipments for the year 1985	RADTRAN V per shipment person-rem results for GTMHR Spent Fuel from Maine Yankee to Yucca Mountain	RADTRAN V per shipment person-rem results for PBMR Spent Fuel from Maine Yankee to Yucca Mountain	Difference between RADTRAN V results and NUREG-0170
Passengers	0	0.000	0.000	0.000
Crew	0.123	0.157	0.157	0.034
Attendants	0.000	0.000	0.000	0.000
Handlers	0.200	0.188	0.188	-0.012
Off-Link	0.015	0.012	0.012	-0.003
On-Link	0.007	0.081	0.081	0.074
Stops	0.019	0.190	0.190	0.171
Storage	0.005	0.000	0.000	-0.005
Totals	**0.369**	**0.628**	**0.628**	**0.259**

The major difference is the dose during stops. Approximately 25% of this difference is

attributable to the RADTRAN V simulations included inspections at the beginning and the end of the trip. NUREG-0170 did not include these inspections. The remaining difference can be attributed to greater distance traveled, hence more refueling stops, and the different methodologies used to calculate the stop doses. This evaluation used 1996 truck stop data (*Investigation of Radtran Stop Model Input Parameters for Truck Stops,* SAND96-0714C) and modeled public doses in two concentric rings: 1 m to 14 m and 30m to 800m. The population in the inner ring used the results of the Stop Model study while the population in the outer ring used route specific 2000 Census population data weighted by a 3% urban, 26% suburban and 71% rural distribution. The NUREG-0170 study modeled just one ring, 10 to 2600 feet, and used three fixed population densities.

Factors contributing to the increased on-link population dose are NUREG-0170 assumed a 2500 km shipment distance with a 5% urban, 5% suburban and 90% rural population. This evaluation used updated 2000 census information showing a 3% urban, 26% suburban and 71% rural population and a 4,733 km shipment distance.

In addition to the incident free results, the RADTRAN V runs also include accident results. Due to the preliminary nature of the gas-cooled reactor fuel design, it is premature to provide a meaningful comparison with NUREG-0170. The RADTRAN V runs were made with the gas-cooled fuel values in the Yucca Mountain FEIS. Specifically, the values for the high integrity high-temperature gas-cooled reactor spent nuclear fuel referred to a type 8 were used. As such, these runs give the best possible estimate at what the GT-MHR and PBMR results might look like. It is important to remember that the gas-cooled reactor spent fuel shipments are no different from other spent fuel shipments in that all shipments are required to meet NRC and DOT regulations. These regulations address design and performance standards for the casks and specify radiological performance criteria for both normal transport and severe accident conditions. Compliance with these regulations ensures the shipments will be conducted in a manner with minimal environmental impacts.

Application Revision

None.

```
RUN DATE: [ 09/16/04  AT 08:30:26 ]        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 NNN 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 5.2.5   December 29, 2002   PC-version

INPUT ECHO
----------

&& This is a test run to respond to an NRC RAI
&& GASP is the public at the gas station
&& GASC is the crew at the gas station, one pumping
&& INSPECT is the inspection at MY and YM, 1 hour total, 1 person
&&
&& Truck travels 845 km between gas stops and a gas stop lasts 20 minutes
&&
&&
&& The nonrelease accident lasts 10 hours
&& The accident rate is 3.52E-07
&& LOAD includes load and unload
&& SUBURBANR  is for suburban route, rush hour
&& URBANR is for urban route, rush hour
&& ACCNRR stands for a non-release accident in a rural area
&& ACCNRU stands for a non-release accident in an urban area
&& ACCNRS stands for a non-release accident in a suburban area
&& ACCNREP stands for a non-release accident, emergency personnel
&& The radionuclide inventories were provided by the reactor vendor.
&& Only FP contributing > 0.01% of the FP activity were included
&& Only actinides contributing > 0.01% of the actinide inventory were included
&& Y90, Rh106, Ba137m, Pr144, Pr144m, and Np239 activities included with parent.
&& A 0.5/0.5 gamma/neutron ratio is the most conservative for SNF
&& Routing and population were provided by TRAGIS Version 1.4.15
&& Severity Indices and Probability Fractions taken from Yucca Mt. FEIS
&& Release, Aerosol and Respirable Fractions taken from Yucca Mt. FEIS
TITLE PBMR MY to YM Rev 4
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 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 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
```

```
RUN DATE: [ 09/16/04  AT 08:30:26 ]        PAGE   2

PBMR MY to YM Rev 4

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             && LCFCON(1), LCFCON(2), GECON
STD: R5INGEST.BIN                   && INGESTION FILE
 FORM UNIT
 DIMEN 6 10 18
 PARM 1 3 3 0
 SEVERITY
   NPOP=1
    NMODE=1
     1.00E+00  3.87E-05  4.91E-05  5.77E-07  1.10E-07  8.52E-10
   NPOP=2
    NMODE=1
     1.00E+00  3.87E-05  4.91E-05  5.77E-07  1.10E-07  8.52E-10
   NPOP=3
```

```
                RUN DATE: [ 09/16/04  AT 08:30:26 ]        PAGE   3

                  PBMR MY to YM Rev 4

    NMODE=1
     1.00E+00  3.87E-05  4.91E-05  5.77E-07  1.10E-07  8.52E-10
  RELEASE
   GROUP=SAMPLE
    RFRAC
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    AERSOL
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    RESP
     1.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    LOS
     0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    DEPVEL 0.000000
   GROUP=GAS
    RFRAC
     0.00E+00  1.02E-04  0.00E+00  4.77E-03  0.00E+00  1.70E-03
    AERSOL
     1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
    RESP
     0.00E+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 0.000000
   GROUP=PART
    RFRAC
     0.00E+00  6.12E-11  0.00E+00  7.89E-08  0.00E+00  2.62E-08
    AERSOL
     0.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
    RESP
     0.00E+00  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 0.010000
   GROUP=RUTH
    RFRAC
     0.00E+00  6.12E-11  0.00E+00  7.89E-08  0.00E+00  2.62E-08
    AERSOL
     0.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
    RESP
     0.00E+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 0.010000
   GROUP=VOL
    RFRAC
     0.00E+00  6.12E-11  0.00E+00  7.89E-08  0.00E+00  2.84E-08
    AERSOL
     0.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00  1.00E+00
    RESP
     0.00E+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 0.010000

```
                RUN DATE: [ 09/16/04  AT 08:30:26 ]          PAGE   4

                  PBMR MY to YM Rev 4

DEFINE AM242
    5.15E+04  4.90E-02  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    0.00E+00  0.00E+00
    NONE
DEFINE CM243
    1.06E+04  2.78E-01  0.00E+00  0.00E+00  0.00E+00  0.00E+00
    0.00E+00  0.00E+00
    NONE
PACKAGE     SFUEL  1.400E+01 0.500 0.500    5.20
     H3GAS      6.730E+02 GAS
     KR85      1.300E+04 GAS
     SR90      1.450E+05 PART
     RU106      2.240E+04 RUTH
     SB125      3.360E+03 PART
     TE125M      8.220E+02 PART
     CS134      5.400E+04 VOL
     CS137      1.890E+05 VOL
     CE144      1.590E+04 PART
     PM147      6.780E+04 PART
     SM151      5.350E+02 PART
     EU154      5.000E+03 PART
     EU155      1.450E+03 PART
     PU238      6.090E+03 PART
     PU239      1.480E+02 PART
     PU240      4.450E+02 PART
     PU241      9.600E+04 PART
     AM241      1.010E+03 PART
     AM243      6.390E+01 PART
     CM242      3.720E+01 PART
     CM244      7.330E+03 PART
     AM242      1.130E+01 PART
     CM243      2.620E+01 PART
     END
VEHICLE  -1 PBMR_TRUC   1.400E+01 0.500 0.500    5.20    1.00
                2.00    3.10 0.500    0.75
     SFUEL        1.00
MODSTD
  BDF 5.000E-01
  UBF 5.000E-01
  USWF 5.000E-01
  MITDVEL 4.400E+01
  CULVL 1.000E+04
  INTERDICT 1.000E+04
FLAGS
  REGCHECK 0
  IUOPT 2
EOF
LINK RURAL      PBMR_TRUC  3360.20  88.0  2.0   12.50  470.00 3.52E-07 R 1 0.50
LINK SUBURBAN   PBMR_TRUC  1111.50  88.0  2.0  317.80  780.00 3.52E-07 S 1 0.00
LINK URBAN      PBMR_TRUC   124.60  88.0  2.0 2451.70 2800.00 3.52E-07 U 1 0.00
LINK SUBURBANR  PBMR_TRUC   123.50  44.0  2.0  317.80 1560.00 3.52E-07 S 1 0.00
```

```
LINK URBANR    PBMR_TRUC   13.90  44.0  2.0 2451.70 5600.00 3.52E-07 U 1 0.00
STOP GASP      PBMR_TRUC 11437.00  1.00  14.00 1.000  1.670
STOP GASC      PBMR_TRUC    1.00  1.00   1.00 1.000  1.670
STOP INSPC     PBMR_TRUC    1.00  1.00   1.00 1.000  0.000
STOP INSPECST  PBMR_TRUC    1.00  1.00   1.00 1.000  1.000
STOP GASRE3R   PBMR_TRUC   12.50 30.00 800.00 1.000  1.190
STOP GASRESS   PBMR_TRUC  317.80 30.00 800.00 0.870  0.440
STOP GASRESU   PBMR_TRUC 2451.70 30.00 800.00 0.180  0.050
STOP GASC2     PBMR_TRUC    1.00  3.10   3.10 0.500  1.670
STOP ACCNRR    PBMR_TRUC   12.50 30.00 800.00 1.000  0.012
STOP ACCNRS    PBMR_TRUC  317.80 30.00 800.00 0.870  0.003
STOP ACCNRU    PBMR_TRUC 2451.70 30.00 800.00 0.180  0.000
STOP ACCNRUO   PBMR_TRUC 14700.00 30.00 800.00 1.000  0.000
STOP ACCNREM   PBMR_TRUC 6430.00  1.00  10.00 1.000  0.002
HANDLING LOAD1     PBMR_TRUC   4.00   1.00  0.50
HANDLING LOAD2     PBMR_TRUC   4.00   1.00  0.50
EOF
```

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PBMR MY to YM Rev 4

PACKAGE AND MATERIAL CHARACTERISTICS

MATERIAL	DIMENSION (METERS)	EFFECTIVE DIMENSION	K(0) METERS SQ.	FRACTION GAMMA	FRACTION NEUTRON	DOSE RATE (MREM/HR)
SFUEL	5.200E+00	4.677E+00	1.115E+01	5.000E-01	5.000E-01	1.400E+01

K(0) IS DOSE RATE CONVERSION FACTOR

VEHICLE CHARACTERISTICS

VEHICLE NAME	PBMR_TRUC
MODE TYPE	HIGHWAY
EXCLUSIVE USE	YES
DOSE RATE (MREM/HR)	1.40E+01
K(0) (SQ. METERS)	1.11E+01
VEHICLE SIZE (M)	5.20E+00
EFFECTIVE SIZE (M)	4.68E+00
NUMBER OF SHIPMENTS	1.00E+00
NUMBER OF CREW	2.00E+00
CREW DISTANCE (M)	3.10E+00
CREW DOSE ADJUSTMENT FACT	5.00E-01
CREW EXPOSER WIDTH (M)	7.50E-01
EFFECTIVE EXPOSER WIDTH	7.50E-01
K(0) (SQ M) CREW EXPOSURE	1.89E+00

VEHICLE	MATERIAL	NO.PACKAGES
PBMR_TRUC		
	SFUEL	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

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STOP RELATED DATA

	GASP	GASC	INSPC	INSPECST	GASRE3R
VEHICLE	PBMR_TRUC	PBMR_TRUC	PBMR_TRUC	PBMR_TRUC	PBMR_TRUC
PERSONS	1.14E+04	1.00E+00	1.00E+00	1.00E+00	1.25E+01
MINIMUM DISTANCE(M)	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.00E+01
MAXIMUM DISTANCE(M)	1.40E+01	1.00E+00	1.00E+00	1.00E+00	8.00E+02
SHIELDING FACTOR	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
TIME (HR)	1.67E+00	1.67E+00	0.00E+00	1.00E+00	1.19E+00

	GASRESS	GASRESU	GASC2	ACCNRR	ACCNRS
VEHICLE	PBMR_TRUC	PBMR_TRUC	PBMR_TRUC	PBMR_TRUC	PBMR_TRUC
PERSONS	3.18E+02	2.45E+03	1.00E+00	1.25E+01	3.18E+02
MINIMUM DISTANCE(M)	3.00E+01	3.00E+01	3.10E+00	3.00E+01	3.00E+01
MAXIMUM DISTANCE(M)	8.00E+02	8.00E+02	3.10E+00	8.00E+02	8.00E+02
SHIELDING FACTOR	8.70E-01	1.80E-01	5.00E-01	1.00E+00	8.70E-01
TIME (HR)	4.40E-01	5.00E-02	1.67E+00	1.20E-02	3.00E-03

	ACCNRU	ACCNRUO	ACCNREM
VEHICLE	PBMR_TRUC	PBMR_TRUC	PBMR_TRUC
PERSONS	2.45E+03	1.47E+04	6.43E+03
MINIMUM DISTANCE(M)	3.00E+01	3.00E+01	1.00E+00
MAXIMUM DISTANCE(M)	8.00E+02	8.00E+02	1.00E+01
SHIELDING FACTOR	1.80E-01	1.00E+00	1.00E+00
TIME (HR)	0.00E+00	0.00E+00	2.00E-03

HANDLING RELATED DATA

	LOAD1	LOAD2
VEHICLE	PBMR_TRUC	PBMR_TRUC
NUMBER OF HANDLERS	4.00E+00	4.00E+00
DISTANCE (M)	1.00E+00	1.00E+00
EXPOSURE TIME (HR)	5.00E-01	5.00E-01

PACKAGE HANDLING THRESHOLD FOR SMALL PACKAGES (SMLPKG) = 5.000E-01 METERS

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PBMR MY to YM Rev 4

LINK RELATED DATA

	RURAL	SUBURBAN	URBAN	SUBURBANR	URBANR
VEHICLE	PBMR_TRUC	PBMR_TRUC	PBMR_TRUC	PBMR_TRUC	PBMR_TRUC
DISTANCE (KM)	3.36E+03	1.11E+03	1.25E+02	1.24E+02	1.39E+01
PERSONS PER VEHICLE	2.00E+00	2.00E+00	2.00E+00	2.00E+00	2.00E+00
SPEED (KM/HR)	8.80E+01	8.80E+01	8.80E+01	4.40E+01	4.40E+01
POPULATION DENSITY	1.25E+01	3.18E+02	2.45E+03	3.18E+02	2.45E+03
VEHICLE DENSITY	4.70E+02	7.80E+02	2.80E+03	1.56E+03	5.60E+03
ACCIDENT RATE/KM	3.52E-07	3.52E-07	3.52E-07	3.52E-07	3.52E-07
ZONE	RURAL	SUBURBAN	URBAN	SUBURBAN	URBAN
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	5.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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PBMR MY to YM Rev 4

ISOTOPE RELATED DATA

NUCLIDE	CURIES PER PKG	RELEASE GROUP	RESUSPENSION FACTOR	50YR INHALATION (REM/CI) EFFECTIVE
SFUEL				
H3GAS	6.73E+02	GAS	1.00E+00	4.40E-03
KR85	1.30E+04	GAS	1.00E+00	0.00E+00
SR90	1.45E+05	PART	5.41E+00	2.40E+06
RU106	2.24E+04	RUTH	3.28E+00	8.00E+05
SB125	3.36E+03	PART	4.34E+00	1.70E+04
TE125M	8.22E+02	PART	1.62E+00	1.00E+04
CS134	5.40E+04	VOL	4.07E+00	4.60E+04
CS137	1.89E+05	VOL	5.41E+00	3.20E+04
CE144	1.59E+04	PART	2.99E+00	6.30E+05
PM147	6.78E+04	PART	4.30E+00	6.00E+04
SM151	5.35E+02	PART	5.51E+00	3.30E+04
EU154	5.00E+03	PART	5.09E+00	3.10E+05
EU155	1.45E+03	PART	4.79E+00	4.80E+04
PU238	6.09E+03	PART	5.51E+00	5.30E+08
PU239	1.48E+02	PART	5.57E+00	5.70E+08
PU240	4.45E+02	PART	5.56E+00	5.70E+08
PU241	9.60E+04	PART	5.26E+00	9.90E+06
AM241	1.01E+03	PART	5.55E+00	5.90E+08
AM243	6.39E+01	PART	5.56E+00	5.90E+08
CM242	3.72E+01	PART	2.40E+00	2.30E+07
CM244	7.33E+03	PART	5.32E+00	3.10E+08
AM242	1.13E+01	PART	5.53E+00	0.00E+00
CM243	2.62E+01	PART	5.41E+00	0.00E+00

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NUCLIDE	HALF LIFE	GAMMA ENERGY	CLOUD FACTOR	GROUND FACTOR	INGESTION NUCLIDE	NEUTRON EMISSION neutrons/sec/Ci
SFUEL						
H3GAS	4.51E+03	0.00E+00	1.22E-06	0.00E+00	NONE	N/A
KR85	3.92E+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	0.00E+00	6.78E-05	Ru-106	N/A
SB125	1.01E+03	4.30E-01	7.47E-02	1.36E-04	Sb-125	N/A
TE125M	5.80E+01	3.55E-02	1.68E-03	1.15E-05	Te-125m	N/A
CS134	7.53E+02	1.55E+00	2.80E-01	4.86E-04	Cs-134	N/A
CS137	1.10E+04	5.96E-01	2.86E-05	1.77E-04	Cs-137	N/A
CE144	2.84E+02	5.25E-02	3.16E-03	1.84E-05	Ce-144	N/A
PM147	9.58E+02	4.37E-06	2.56E-06	1.09E-08	Pm-147	N/A
SM151	3.29E+04	1.34E-05	1.34E-07	1.61E-09	Sm-151	N/A
EU154	3.21E+03	1.22E+00	2.27E-01	3.80E-04	Eu-154	N/A
EU155	1.81E+03	6.05E-02	9.21E-03	1.89E-05	Eu-155	N/A
PU238	3.21E+04	1.81E-03	1.81E-05	2.68E-07	Pu-238	N/A
PU239	8.79E+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	2.70E+06	5.59E-02	8.07E-03	1.71E-05	Am-243	N/A
CM242	1.63E+02	1.83E-03	2.11E-05	3.06E-07	Cm-242	N/A
CM244	6.62E+03	1.70E-03	1.82E-05	2.81E-07	Cm-244	N/A
AM242	5.15E+04	4.90E-02	0.00E+00	0.00E+00	NONE	N/A
CM243	1.06E+04	2.78E-01	0.00E+00	0.00E+00	NONE	N/A

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ISOTOPE RELATED DATA

NUCLIDE	1-YR INHALATION (REM/CI)		
	LUNG	MARROW	THYROID
SFUEL			
H3GAS	1.20E+02	1.20E+02	0.00E+00
KR85	0.00E+00	0.00E+00	0.00E+00
SR90	4.50E+06	3.80E+03	0.00E+00
RU106	4.30E+06	4.50E+03	0.00E+00
SB125	4.40E+04	5.50E+02	0.00E+00
TE125M	0.00E+00	0.00E+00	0.00E+00
CS134	4.10E+04	3.90E+04	0.00E+00
CS137	3.10E+04	2.60E+04	0.00E+00
CE144	3.60E+06	4.20E+03	0.00E+00
PM147	2.20E+05	5.30E+02	0.00E+00
SM151	2.10E+04	2.90E+03	0.00E+00
EU154	0.00E+00	0.00E+00	0.00E+00
EU155	0.00E+00	0.00E+00	0.00E+00
PU238	4.50E+08	1.10E+06	0.00E+00
PU239	4.20E+08	1.10E+06	0.00E+00
PU240	4.20E+08	1.10E+06	0.00E+00
PU241	3.60E+05	1.30E+03	0.00E+00
AM241	1.20E+08	1.70E+07	0.00E+00
AM243	1.10E+08	1.60E+07	0.00E+00
CM242	9.90E+07	8.80E+06	0.00E+00
CM244	1.20E+08	1.70E+07	0.00E+00
AM242	0.00E+00	0.00E+00	0.00E+00
CM243	0.00E+00	0.00E+00	0.00E+00

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RELEASE RELATED DATA
****

RELEASE FRACTIONS

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	0.00E+00	1.02E-04	0.00E+00	4.77E-03	0.00E+00	1.70E-03
PART	0.00E+00	6.12E-11	0.00E+00	7.89E-08	0.00E+00	2.62E-08
RUTH	0.00E+00	6.12E-11	0.00E+00	7.89E-08	0.00E+00	2.62E-08
VOL	0.00E+00	6.12E-11	0.00E+00	7.89E-08	0.00E+00	2.84E-08

DEPOSITION VELOCITIES

GROUP	M/SEC
SAMPLE	0.00E+00
GAS	0.00E+00
PART	1.00E-02
RUTH	1.00E-02
VOL	1.00E-02

ACCIDENT SEVERITY FRACTIONS
FOR HIGHWAY

ZONE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RURAL	1.00E+00	3.87E-05	4.91E-05	5.77E-07	1.10E-07	8.52E-10
SUBURBAN	1.00E+00	3.87E-05	4.91E-05	5.77E-07	1.10E-07	8.52E-10
URBAN	1.00E+00	3.87E-05	4.91E-05	5.77E-07	1.10E-07	8.52E-10

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AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
RUTH	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
VOL	0.00E+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
SAMPLE	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GAS	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
PART	0.00E+00	5.00E-02	5.00E-02	5.00E-02	5.00E-02	5.00E-02
RUTH	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
VOL	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

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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

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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		

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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)

BUILDING DOSE FACTOR (BDF) = 5.000E-01
CONTAMINATION CLEAN UP LEVEL (UCI/M**2) (CULVL) = 1.000E+04
BREATHING RATE (M**3/SEC) (BRATE) = 3.300E-04
INTERDICTION THRESHOLD (INTERDICT) = 1.000E+04
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) = 5.000E-01
FRACTION OF URBAN AREAS WITH SIDEWALKS (USWF) = 5.000E-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) = 4.400E+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

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PBMR MY to YM Rev 4

INGESTION RELATED DATA

COMIDA INGESTION FILE USED: R5INGEST.BIN

COMIDA FILE HEADER
COMIDA2 02/17/03 16:17:38 Ver. 1.11a, 1/28/96: avoiding use of UNIT 6 for HP

DOSE CONVERSION FILE USED IN COMIDA
FGRDCF 05/08/95 16:43:45 beta-test version 1.10, minor FORTRAN fixes 5/4/95
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

ISOTOPE	INGESTION NUCLIDE
H3GAS	NONE
KR85	NONE
AM242	NONE
CM243	NONE

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PBMR MY to YM Rev 4

BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

NUCLIDE	EFFECTIVE	THYROID
Sr-90	2.541E+05	9.964E+03
Ru-106	2.107E+04	4.014E+03
Sb-125	3.930E+03	2.392E+02
Te-125m	4.540E+03	1.799E+02
Cs-134	6.012E+05	5.344E+05
Cs-137	4.870E+05	4.545E+05
Ce-144	1.202E+04	1.085E+01
Pm-147	1.438E+03	1.585E-04
Sm-151	6.077E+02	1.893E-04
Eu-154	1.439E+04	3.185E+02
Eu-155	2.232E+03	9.620E+00
Pu-238	3.858E+04	2.301E-01
Pu-239	4.049E+04	2.169E-01
Pu-240	4.049E+04	2.172E-01
Pu-241	3.231E+03	3.837E-02
Am-241	2.846E+06	3.818E+01
Am-243	2.834E+06	1.968E+02
Cm-242	6.505E+04	1.851E+01
Cm-244	2.534E+06	3.924E+01

SOCIETAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

NUCLIDE	GONADS	BREAST	LUNGS	RED MAR	BONE SU	THYROID	REMAIND	EFFECTI
Sr-90	1.8E+00	1.8E+00	1.8E+00	2.3E+02	4.9E+02	1.8E+00	7.3E+00	4.5E+01
Ru-106	5.5E-01	4.8E-01	4.8E-01	4.9E-01	4.8E-01	4.7E-01	7.1E+00	2.5E+00
Sb-125	3.5E-01	6.6E-02	4.0E-02	1.5E-01	3.9E-01	3.1E-02	1.2E+00	5.0E-01
Te-125m	5.8E-02	2.1E-02	2.0E-02	5.6E-01	5.8E+00	1.8E-02	6.4E-01	4.6E-01
Cs-134	8.9E+01	7.5E+01	7.6E+01	8.1E+01	7.5E+01	7.6E+01	9.6E+01	8.6E+01
Cs-137	8.2E+01	7.4E+01	7.5E+01	7.8E+01	7.5E+01	7.5E+01	8.6E+01	8.0E+01
Ce-144	1.7E-02	2.9E-03	1.6E-03	2.1E-02	3.0E-02	1.2E-03	4.5E+00	1.4E+00
Pm-147	4.8E-06	5.2E-07	1.4E-07	1.5E-02	1.8E-01	2.2E-08	6.4E-01	2.0E-01
Sm-151	1.9E-05	9.3E-07	5.9E-07	2.5E-02	3.1E-01	3.0E-08	2.8E-01	9.5E-02
Eu-154	1.1E+00	2.3E-01	1.8E-01	9.6E-01	3.7E+00	4.8E-02	5.3E+00	2.2E+00
Eu-155	7.7E-02	1.1E-02	7.6E-03	1.2E-01	1.0E+00	1.4E-03	8.6E-01	3.3E-01
Pu-238	8.1E-01	6.2E-05	3.0E-05	4.4E+00	5.5E+01	2.8E-05	7.5E+00	4.6E+00
Pu-239	9.2E-01	4.2E-05	2.7E-05	4.9E+00	6.1E+01	2.6E-05	7.4E+00	4.9E+00
Pu-240	9.2E-01	6.0E-05	2.9E-05	4.9E+00	6.1E+01	2.6E-05	7.4E+00	4.9E+00
Pu-241	1.4E-01	1.3E-05	1.7E-05	7.7E-01	9.6E+00	6.5E-06	3.7E-01	5.3E-01
Am-241	9.4E+01	9.1E-03	1.2E-02	5.0E+02	6.3E+03	4.6E-03	2.3E+02	3.4E+02
Am-243	9.4E+01	4.9E-02	6.8E-02	5.0E+02	6.3E+03	2.4E-02	2.3E+02	3.4E+02
Cm-242	1.2E+00	2.0E-03	2.0E-03	8.1E+00	1.0E+02	2.0E-03	9.1E+00	7.0E+00
Cm-244	7.6E+01	5.1E-03	5.1E-03	4.5E+02	5.6E+03	4.8E-03	2.4E+02	3.1E+02

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PBMR MY to YM Rev 4

NON-RADIOLOGICAL RISK (FATALITIES)
****

	NORMAL OCCUPATIONAL	NORMAL NON-OCCUPATIONAL	ACCIDENT OCCUPATIONAL	ACCIDENT NON-OCCUPATIONAL
RURAL	0.00E+00	0.00E+00	1.01E-04	3.56E-04
SUBURBAN	0.00E+00	0.00E+00	8.23E-06	2.89E-05
URBAN	0.00E+00	0.00E+00	5.23E-07	1.87E-06
SUBURBANR	0.00E+00	0.00E+00	9.14E-07	3.21E-06
URBANR	0.00E+00	0.00E+00	5.84E-08	2.08E-07
TOTALS:	0.00E+00	0.00E+00	1.11E-04	3.90E-04

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PBMR MY to YM Rev 4

REGULATORY CHECKS HAVE BEEN DISABLED
********** ****** **** **** ********

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PBMR MY to YM Rev 4

CALCULATIONAL INFORMATION

FOR PBMR_TRUC AREAS WITH TOTAL CONTAMINATION RATIO GREATER THAN *******
(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	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
11	-	-	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	-	-	-	-	-	-
15	-	-	-	-	-	-
16	-	-	-	-	-	-
17	-	-	-	-	-	-
18	-	-	-	-	-	-

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PBMR MY to YM Rev 4

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

AREA	SAMPLE	GAS	PART	RUTH	VOL
4.59E+02	3.42E-03	3.42E-03	3.42E-03	3.42E-03	3.42E-03
1.53E+03	1.72E-03	1.72E-03	1.72E-03	1.72E-03	1.72E-03
3.94E+03	8.58E-04	8.58E-04	8.34E-04	8.34E-04	8.34E-04
1.25E+04	3.42E-04	3.42E-04	3.23E-04	3.23E-04	3.23E-04
3.04E+04	1.72E-04	1.72E-04	1.55E-04	1.55E-04	1.55E-04
6.85E+04	8.58E-05	8.58E-05	7.38E-05	7.38E-05	7.38E-05
1.76E+05	3.42E-05	3.42E-05	2.80E-05	2.80E-05	2.80E-05
4.45E+05	1.72E-05	1.72E-05	1.33E-05	1.33E-05	1.33E-05
8.59E+05	8.58E-06	8.58E-06	6.16E-06	6.16E-06	6.16E-06
2.55E+06	3.42E-06	3.42E-06	2.33E-06	2.33E-06	2.33E-06
4.45E+06	1.72E-06	1.72E-06	1.06E-06	1.06E-06	1.06E-06
1.03E+07	8.58E-07	8.58E-07	5.04E-07	5.04E-07	5.04E-07
2.16E+07	3.42E-07	3.42E-07	1.86E-07	1.86E-07	1.86E-07
5.52E+07	1.72E-07	1.72E-07	8.77E-08	8.77E-08	8.77E-08
1.77E+08	8.58E-08	8.58E-08	4.01E-08	4.01E-08	4.01E-08
4.89E+08	5.42E-08	5.42E-08	2.14E-08	2.14E-08	2.14E-08
8.12E+08	4.30E-08	4.30E-08	1.31E-08	1.31E-08	1.31E-08
1.35E+09	3.42E-08	3.42E-08	8.54E-09	8.54E-09	8.54E-09

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PBMR MY to YM Rev 4

VEHICLE PBMR_TRUC

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	3.29E-05	0.00E+00	3.09E-02	0.00E+00	1.03E-02
6.80E+01	0.00E+00	1.66E-05	0.00E+00	1.55E-02	0.00E+00	5.17E-03
1.05E+02	0.00E+00	8.10E-06	0.00E+00	7.55E-03	0.00E+00	2.51E-03
2.44E+02	0.00E+00	3.16E-06	0.00E+00	2.92E-03	0.00E+00	9.73E-04
3.69E+02	0.00E+00	1.54E-06	0.00E+00	1.40E-03	0.00E+00	4.67E-04
5.61E+02	0.00E+00	7.43E-07	0.00E+00	6.68E-04	0.00E+00	2.23E-04
1.02E+03	0.00E+00	2.87E-07	0.00E+00	2.54E-04	0.00E+00	8.46E-05
1.63E+03	0.00E+00	1.38E-07	0.00E+00	1.20E-04	0.00E+00	4.01E-05
2.31E+03	0.00E+00	6.60E-08	0.00E+00	5.61E-05	0.00E+00	1.87E-05
4.27E+03	0.00E+00	2.54E-08	0.00E+00	2.12E-05	0.00E+00	7.06E-06
5.47E+03	0.00E+00	1.20E-08	0.00E+00	9.68E-06	0.00E+00	3.23E-06
1.11E+04	0.00E+00	5.82E-09	0.00E+00	4.60E-06	0.00E+00	1.53E-06
1.31E+04	0.00E+00	2.22E-09	0.00E+00	1.70E-06	0.00E+00	5.68E-07
2.13E+04	0.00E+00	1.07E-09	0.00E+00	8.04E-07	0.00E+00	2.68E-07
4.05E+04	0.00E+00	5.10E-10	0.00E+00	3.68E-07	0.00E+00	1.23E-07
7.00E+04	0.00E+00	2.95E-10	0.00E+00	1.98E-07	0.00E+00	6.60E-08
8.99E+04	0.00E+00	2.07E-10	0.00E+00	1.22E-07	0.00E+00	4.07E-08
1.21E+05	0.00E+00	1.52E-10	0.00E+00	8.05E-08	0.00E+00	2.69E-08

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	1.23E-05	0.00E+00	1.84E-03	0.00E+00	6.41E-04
6.80E+01	0.00E+00	6.19E-06	0.00E+00	9.24E-04	0.00E+00	3.22E-04
1.05E+02	0.00E+00	3.08E-06	0.00E+00	4.53E-04	0.00E+00	1.58E-04
2.44E+02	0.00E+00	1.23E-06	0.00E+00	1.77E-04	0.00E+00	6.16E-05
3.69E+02	0.00E+00	6.14E-07	0.00E+00	8.59E-05	0.00E+00	3.00E-05
5.61E+02	0.00E+00	3.05E-07	0.00E+00	4.15E-05	0.00E+00	1.45E-05
1.02E+03	0.00E+00	1.21E-07	0.00E+00	1.60E-05	0.00E+00	5.59E-06
1.63E+03	0.00E+00	6.07E-08	0.00E+00	7.74E-06	0.00E+00	2.70E-06
2.31E+03	0.00E+00	3.02E-08	0.00E+00	3.69E-06	0.00E+00	1.29E-06
4.27E+03	0.00E+00	1.20E-08	0.00E+00	1.42E-06	0.00E+00	4.97E-07
5.47E+03	0.00E+00	6.00E-09	0.00E+00	6.73E-07	0.00E+00	2.35E-07
1.11E+04	0.00E+00	2.98E-09	0.00E+00	3.26E-07	0.00E+00	1.14E-07
1.31E+04	0.00E+00	1.18E-09	0.00E+00	1.24E-07	0.00E+00	4.35E-08
2.13E+04	0.00E+00	5.94E-10	0.00E+00	6.02E-08	0.00E+00	2.11E-08
4.05E+04	0.00E+00	2.95E-10	0.00E+00	2.86E-08	0.00E+00	1.00E-08
7.00E+04	0.00E+00	1.85E-10	0.00E+00	1.66E-08	0.00E+00	5.82E-09
8.99E+04	0.00E+00	1.46E-10	0.00E+00	1.16E-08	0.00E+00	4.10E-09
1.21E+05	0.00E+00	1.15E-10	0.00E+00	8.56E-09	0.00E+00	3.01E-09

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

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PBMR MY to YM Rev 4

VEHICLE PBMR_TRUC

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	1.29E-03	0.00E+00	1.66E+00	0.00E+00	5.71E-01
6.80E+01	0.00E+00	6.48E-04	0.00E+00	8.35E-01	0.00E+00	2.87E-01
1.05E+02	0.00E+00	3.15E-04	0.00E+00	4.06E-01	0.00E+00	1.39E-01
2.44E+02	0.00E+00	1.22E-04	0.00E+00	1.57E-01	0.00E+00	5.39E-02
3.69E+02	0.00E+00	5.84E-05	0.00E+00	7.53E-02	0.00E+00	2.58E-02
5.61E+02	0.00E+00	2.78E-05	0.00E+00	3.59E-02	0.00E+00	1.23E-02
1.02E+03	0.00E+00	1.06E-05	0.00E+00	1.36E-02	0.00E+00	4.67E-03
1.63E+03	0.00E+00	5.00E-06	0.00E+00	6.44E-03	0.00E+00	2.21E-03
2.31E+03	0.00E+00	2.33E-06	0.00E+00	3.00E-03	0.00E+00	1.03E-03
4.27E+03	0.00E+00	8.79E-07	0.00E+00	1.13E-03	0.00E+00	3.89E-04
5.47E+03	0.00E+00	4.00E-07	0.00E+00	5.16E-04	0.00E+00	1.77E-04
1.11E+04	0.00E+00	1.90E-07	0.00E+00	2.45E-04	0.00E+00	8.40E-05
1.31E+04	0.00E+00	7.02E-08	0.00E+00	9.05E-05	0.00E+00	3.11E-05
2.13E+04	0.00E+00	3.31E-08	0.00E+00	4.27E-05	0.00E+00	1.46E-05
4.05E+04	0.00E+00	1.51E-08	0.00E+00	1.95E-05	0.00E+00	6.69E-06
7.00E+04	0.00E+00	8.08E-09	0.00E+00	1.04E-05	0.00E+00	3.57E-06
8.99E+04	0.00E+00	4.93E-09	0.00E+00	6.35E-06	0.00E+00	2.18E-06
1.21E+05	0.00E+00	3.22E-09	0.00E+00	4.15E-06	0.00E+00	1.42E-06

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PBMR MY to YM Rev 4

VEHICLE PBMR_TRUC

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	4.54E-05	0.00E+00	3.29E-02	0.00E+00	1.10E-02
6.80E+01	0.00E+00	2.28E-05	0.00E+00	1.65E-02	0.00E+00	5.53E-03
1.05E+02	0.00E+00	1.12E-05	0.00E+00	8.04E-03	0.00E+00	2.69E-03
2.44E+02	0.00E+00	4.40E-06	0.00E+00	3.11E-03	0.00E+00	1.04E-03
3.69E+02	0.00E+00	2.16E-06	0.00E+00	1.50E-03	0.00E+00	5.00E-04
5.61E+02	0.00E+00	1.05E-06	0.00E+00	7.14E-04	0.00E+00	2.38E-04
1.02E+03	0.00E+00	4.09E-07	0.00E+00	2.71E-04	0.00E+00	9.07E-05
1.63E+03	0.00E+00	2.00E-07	0.00E+00	1.29E-04	0.00E+00	4.30E-05
2.31E+03	0.00E+00	9.64E-08	0.00E+00	6.01E-05	0.00E+00	2.01E-05
4.27E+03	0.00E+00	3.75E-08	0.00E+00	2.27E-05	0.00E+00	7.60E-06
5.47E+03	0.00E+00	1.81E-08	0.00E+00	1.04E-05	0.00E+00	3.48E-06
1.11E+04	0.00E+00	8.82E-09	0.00E+00	4.95E-06	0.00E+00	1.66E-06
1.31E+04	0.00E+00	3.41E-09	0.00E+00	1.84E-06	0.00E+00	6.14E-07
2.13E+04	0.00E+00	1.67E-09	0.00E+00	8.69E-07	0.00E+00	2.91E-07
4.05E+04	0.00E+00	8.07E-10	0.00E+00	3.99E-07	0.00E+00	1.34E-07
7.00E+04	0.00E+00	4.82E-10	0.00E+00	2.15E-07	0.00E+00	7.22E-08
8.99E+04	0.00E+00	3.54E-10	0.00E+00	1.34E-07	0.00E+00	4.50E-08
1.21E+05	0.00E+00	2.68E-10	0.00E+00	8.95E-08	0.00E+00	3.01E-08

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VEHICLE PBMR_TRUC

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	3.86E-04	0.00E+00	4.98E-01	0.00E+00	1.75E-01
6.80E+01	0.00E+00	1.94E-04	0.00E+00	2.50E-01	0.00E+00	8.77E-02
1.05E+02	0.00E+00	9.41E-05	0.00E+00	1.21E-01	0.00E+00	4.26E-02
2.44E+02	0.00E+00	3.64E-05	0.00E+00	4.70E-02	0.00E+00	1.65E-02
3.69E+02	0.00E+00	1.75E-05	0.00E+00	2.25E-02	0.00E+00	7.90E-03
5.61E+02	0.00E+00	8.32E-06	0.00E+00	1.07E-02	0.00E+00	3.76E-03
1.02E+03	0.00E+00	3.16E-06	0.00E+00	4.07E-03	0.00E+00	1.43E-03
1.63E+03	0.00E+00	1.50E-06	0.00E+00	1.93E-03	0.00E+00	6.76E-04
2.31E+03	0.00E+00	6.96E-07	0.00E+00	8.97E-04	0.00E+00	3.15E-04
4.27E+03	0.00E+00	2.63E-07	0.00E+00	3.39E-04	0.00E+00	1.19E-04
5.47E+03	0.00E+00	1.20E-07	0.00E+00	1.54E-04	0.00E+00	5.42E-05
1.11E+04	0.00E+00	5.68E-08	0.00E+00	7.33E-05	0.00E+00	2.57E-05
1.31E+04	0.00E+00	2.10E-08	0.00E+00	2.71E-05	0.00E+00	9.50E-06
2.13E+04	0.00E+00	9.90E-09	0.00E+00	1.28E-05	0.00E+00	4.48E-06
4.05E+04	0.00E+00	4.52E-09	0.00E+00	5.83E-06	0.00E+00	2.05E-06
7.00E+04	0.00E+00	2.42E-09	0.00E+00	3.11E-06	0.00E+00	1.09E-06
8.99E+04	0.00E+00	1.47E-09	0.00E+00	1.90E-06	0.00E+00	6.67E-07
1.21E+05	0.00E+00	9.64E-10	0.00E+00	1.24E-06	0.00E+00	4.36E-07

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	2.43E-04	0.00E+00	3.14E-01	0.00E+00	1.13E-01
6.80E+01	0.00E+00	1.22E-04	0.00E+00	1.58E-01	0.00E+00	5.67E-02
1.05E+02	0.00E+00	5.94E-05	0.00E+00	7.66E-02	0.00E+00	2.75E-02
2.44E+02	0.00E+00	2.30E-05	0.00E+00	2.96E-02	0.00E+00	1.06E-02
3.69E+02	0.00E+00	1.10E-05	0.00E+00	1.42E-02	0.00E+00	5.11E-03
5.61E+02	0.00E+00	5.25E-06	0.00E+00	6.77E-03	0.00E+00	2.43E-03
1.02E+03	0.00E+00	1.99E-06	0.00E+00	2.57E-03	0.00E+00	9.24E-04
1.63E+03	0.00E+00	9.43E-07	0.00E+00	1.22E-03	0.00E+00	4.37E-04
2.31E+03	0.00E+00	4.39E-07	0.00E+00	5.66E-04	0.00E+00	2.03E-04
4.27E+03	0.00E+00	1.66E-07	0.00E+00	2.14E-04	0.00E+00	7.68E-05
5.47E+03	0.00E+00	7.55E-08	0.00E+00	9.74E-05	0.00E+00	3.50E-05
1.11E+04	0.00E+00	3.58E-08	0.00E+00	4.62E-05	0.00E+00	1.66E-05
1.31E+04	0.00E+00	1.32E-08	0.00E+00	1.71E-05	0.00E+00	6.14E-06
2.13E+04	0.00E+00	6.25E-09	0.00E+00	8.05E-06	0.00E+00	2.90E-06
4.05E+04	0.00E+00	2.85E-09	0.00E+00	3.68E-06	0.00E+00	1.32E-06
7.00E+04	0.00E+00	1.52E-09	0.00E+00	1.96E-06	0.00E+00	7.06E-07
8.99E+04	0.00E+00	9.29E-10	0.00E+00	1.20E-06	0.00E+00	4.31E-07
1.21E+05	0.00E+00	6.08E-10	0.00E+00	7.84E-07	0.00E+00	2.82E-07

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INCIDENT-FREE SUMMARY
******** **** *******

IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM

	PASSENGER	CREW	OFF LINK	ON LINK	TOTALS
RURAL	0.00E+00	1.08E-01	1.22E-03	3.24E-02	1.42E-01
SUBURBAN	0.00E+00	3.58E-02	8.94E-03	1.78E-02	6.25E-02
URBAN	0.00E+00	4.01E-03	1.60E-04	7.16E-03	1.13E-02
SUBURBANR	0.00E+00	7.94E-03	1.99E-03	1.66E-02	2.65E-02
URBANR	0.00E+00	8.94E-04	3.57E-05	6.69E-03	7.62E-03

RURAL	0.00E+00	1.08E-01	1.22E-03	3.24E-02	1.42E-01
SUBURB	0.00E+00	4.37E-02	1.09E-02	3.43E-02	8.90E-02
URBAN	0.00E+00	4.90E-03	1.96E-04	1.38E-02	1.89E-02

TOTALS:	0.00E+00	1.57E-01	1.23E-02	8.06E-02	2.50E-01

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

PBMR_TRUC 3.25E-07 REM

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STOP EXPOSURE IN PERSON-REM

ANNULAR AREA	GASP	5.09E-02
LINE-SOURCE	GASC	7.86E-02
LINE-SOURCE	INSPC	0.00E+00
LINE-SOURCE	INSPECST	4.70E-02
ANNULAR AREA	GASRE3R	5.70E-05
ANNULAR AREA	GASRESS	4.66E-04
ANNULAR AREA	GASRESU	8.45E-05
LINE-SOURCE	GASC2	1.28E-02
ANNULAR AREA	ACCNRR	5.74E-07
ANNULAR AREA	ACCNRS	3.18E-06
ANNULAR AREA	ACCNRU	0.00E+00
ANNULAR AREA	ACCNRUO	0.00E+00
ANNULAR AREA	ACCNREM	2.97E-05

TOTAL: 1.90E-01

HANDLING EXPOSURE IN PERSON-REM

HANDLING	VEHICLE	MATERIAL	METHOD	DOSE
LOAD1	PBMR_TRUC	SFUEL	LINE-SOURCE	9.41E-02
LOAD2	PBMR_TRUC	SFUEL	LINE-SOURCE	9.41E-02

TOTAL: 1.88E-01

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ACCIDENT SUMMARY
******** *******

NUMBER OF EXPECTED ACCIDENTS

CATEGORY	RURAL	SUBURBAN	URBAN	SUBURBANR	URBANR
1	1.18E-03	3.91E-04	4.39E-05	4.35E-05	4.89E-06
2	4.58E-08	1.51E-08	1.70E-09	1.68E-09	1.89E-10
3	5.81E-08	1.92E-08	2.15E-09	2.13E-09	2.40E-10
4	6.82E-10	2.26E-10	2.53E-11	2.51E-11	2.82E-12
5	1.30E-10	4.30E-11	4.82E-12	4.78E-12	5.38E-13
6	1.01E-12	3.33E-13	3.74E-14	3.70E-14	4.17E-15

EARLY FATALITY CONSEQUENCES

CATEGORY	RURAL	SUBURBAN	URBAN	SUBURBANR	URBANR
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

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RADIOLOGICAL CONSEQUENCES
50 YEAR POPULATION DOSE IN PERSON-REM

CATEGORY	RURAL	SUBURBAN	URBAN	SUBURBANR	URBANR
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	1.01E-04	2.57E-03	6.44E-02	2.57E-03	6.44E-02
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	1.29E-01	3.28E+00	8.23E+01	3.28E+00	8.23E+01
5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	4.50E-02	1.14E+00	2.87E+01	1.14E+00	2.87E+01

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

CATEGORY	RURAL	SUBURBAN	URBAN	SUBURBANR	URBANR
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	2.08E-12	6.87E-13	7.70E-14	7.64E-14	8.59E-15
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	2.25E-11	7.44E-12	8.34E-13	8.26E-13	9.30E-14
5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	1.11E-14	3.67E-15	4.11E-16	4.08E-16	4.59E-17

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

LINK	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
RURAL	0.00E+00	5.11E-04	0.00E+00	6.59E-01	0.00E+00	2.31E-01

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EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

	GROUND	INHALED	RESUSPD	CLOUDSH	TOTAL
RURAL	5.70E-11	6.71E-12	2.90E-11	7.28E-14	9.27E-11
SUBURBAN	4.79E-10	5.64E-11	2.44E-10	6.12E-13	7.80E-10
URBAN	1.35E-09	1.59E-10	6.85E-10	1.72E-12	2.19E-09
SUBURBANR	5.32E-11	6.27E-12	2.71E-11	6.80E-14	8.67E-11
URBANR	1.50E-10	1.77E-11	7.65E-11	1.92E-13	2.45E-10

RURAL	5.70E-11	6.71E-12	2.90E-11	7.28E-14	9.27E-11
SUBURB	5.32E-10	6.27E-11	2.71E-10	6.80E-13	8.67E-10
URBAN	1.50E-09	1.76E-10	7.62E-10	1.91E-12	2.44E-09
TOTALS:	2.09E-09	2.46E-10	1.06E-09	2.66E-12	3.40E-09

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SOCIETAL INGESTION RISK - PERSON-REM

LINK	GONADS	EFFECTIVE
RURAL	3.46E-10	4.74E-10
TOTAL	3.46E-10	4.74E-10

SOCIETAL INGESTION RISK BY ORGAN - PERSON-REM

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
RURAL	2.95E-10	3.02E-10	9.14E-10	2.26E-09	3.00E-10	4.03E-10
TOTAL	2.95E-10	3.02E-10	9.14E-10	2.26E-09	3.00E-10	4.03E-10

EXPECTED RISK VALUES - OTHER

LINK	EARLY FATALITY	EARLY MORBIDITY
RURAL	0.00E+00	0.00E+00
SUBURBAN	0.00E+00	0.00E+00
URBAN	0.00E+00	0.00E+00
SUBURBANR	0.00E+00	0.00E+00
URBANR	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

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TOTAL EXPOSED POPULATION: INCIDENT-FREE

RURAL 9.43E+04 PERSONS
SUBURBAN 7.93E+05 PERSONS
URBAN 6.86E+05 PERSONS
SUBURBANR 8.81E+04 PERSONS
URBANR 7.65E+04 PERSONS

TOTAL 1.74E+06 PERSONS

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

RURAL 1.69E+04 PERSONS
SUBURBAN 4.29E+05 PERSONS
URBAN 3.31E+06 PERSONS
SUBURBANR 4.29E+05 PERSONS
URBANR 3.31E+06 PERSONS

EOI
END OF RUN
SUCCESSFUL COMPLETION