

## **Additional Transportation Modeling Results for the Complex Transformation SPEIS**

This document describes the transportation modeling conducted to assess the deinventory of Class I/II facility inventories at LLNL. Table 1 provides a summary of the inventories of plutonium and uranium materials in Building 332, which represents the sole Class I/II facility at LLNL. As provided in the 2005 LLNL SWEIS (Table A.4-1), Building 332 has/had the following material inventory:

- Plutonium 700 kg/1,400 kg
- Enriched uranium 500 kg
- DU or natural uranium 3,000 kg

The Pu and enriched uranium values are administrative limits for the facility. The two values for Pu are the No Action and Preferred Alternative values respectively.

The table below provides the information used to assess the Pu inventory of 700 kg.

**Table 1. Plutonium and Uranium Inventories of Materials Transported – LLNL Deinventory**

DMT	Material Description	Type	% DMT	Form	% Form From Type	Mass (lb)	Destination
51	Pu-239 (<4% Pu-240)	Program	97.02	Metal	99.66	15.71	LANL
				Oxide	0.32	0.05	
				Process Residue	0.01	0.002	
		Excess	1.64	Metal	100.00	0.27	SRS
		Waste	1.34	N/A	100.00	0.22	
52	Pu-239 <sup>4</sup> <x< 7% Pu-240	Program	54.28	Metal	79.04	561.09	LANL
				Oxide	15.86	112.59	
				Process Residue	5.07	35.99	
		Excess	44.65	Metal	24.87	145.23	SRS
				Oxide	57.38	335.06	
				Process Residue	17.75	103.65	
		Waste	0.87	N/A	100.00	11.38	
53	Pu-239 7<x<10% Pu-240	Program	0.49	Oxide	100.00	0.37	LANL
		Excess	97.22	Metal	11.69	8.60	SRS
				Oxide	46.44	34.15	
				Process Residue	41.88	30.79	
		Waste	2.30	N/A	100.00	1.74	
54	Pu-239 10<x<13% Pu-240	Program	6.36	Oxide	100.00	5.43	LANL
		Excess	93.14	Metal	3.42	2.72	SRS
				Oxide	81.79	64.99	
				Process Residue	14.80	11.76	
Waste	0.50	N/A	100.00	0.43			
55	Pu-239 13<x<16% Pu-240	Program	0.15	Oxide	100.00	0.05	LANL
		Excess	99.72	Metal	2.69	0.92	SRS
				Oxide	97.15	33.31	
				Process Residue	0.16	0.05	
Waste	0.14	N/A	100.00	0.05			
56	Pu-239 16<x<19% Pu-240	Program	0.72	Oxide	100.00	0.02	LANL
57	Pu-239 16<x<19% Pu-240	Excess	90.86	Metal	50.77	1.01	SRS
		Excess Waste	90.86 8.41	Oxide	43.11	0.86	SRS
				Process Residue	6.11	0.12	
				N/A	100.00	0.18	
Program	99.52	Metal	94.76	19.75	LANL		
83	Pu-238, total	Excess	0.48	Oxide	0.21	0.04	SRS
				Process Residue	5.03	1.05	

				Metal	13.92	0.01	
		Excess Program	0.48 35.19	Oxide	86.08	0.09	SRS LANL
				Metal	10.60	0.04	
		Excess	29.79	Oxide	71.91	0.24	SRS
				Process Residue	17.49	0.06	
				Metal	21.22	0.06	
		Excess Waste	29.79 35.01	Oxide	34.80	0.10	SRS
				Process Residue	43.98	0.12	
				N/A	100.00	0.33	
<b>Total (lb)</b>						1540.65	
<b>Total (kg)</b>						698.80	

The table below provides the enriched uranium (> 1% U-235) inventory for LLNL.

To complete the transportation assessment of the LLNL deinventory, impacts due to the transportation of TRU wastes from LLNL were analyzed. TRU wastes from Building 332 will be packaged and transported to INL. At INL, the material will be characterized and certified to meet waste acceptance criteria (WAC) for transuranic waste disposal specified by the Waste Isolation Pilot Project (WIPP), located in southern New Mexico. Table 2 provides the estimated radiological impacts associated with the transportation of these materials. As a point of reference, LLNL is authorized to transport approximately 300 shipments annually of hazardous and radioactive waste, based on the analysis in the LLNL SWEIS (DOE 2005a).

**Table 2. Risks of Transporting TRU Wastes from LLNL to INL and INL to WIPP**

Material Movement	Number of Shipments	Incident-Free				Accident	
		Crew		Population		Dose	LCFs
		Dose	LCFs	Dose	LCFs		
LLNL-INL	3	0.279	1.68 x 10 <sup>-4</sup>	0.195	1.17 x 10 <sup>-4</sup>	2.70 x 10 <sup>-10</sup>	1.62 x 10 <sup>-13</sup>
INL-WIPP	3	0.366	2.20 x 10 <sup>-4</sup>	0.161	9.67 x 10 <sup>-5</sup>	3.12 x 10 <sup>-10</sup>	1.87 x 10 <sup>-13</sup>
<b>Total for LLNL-WIPP</b>	<b>6</b>	<b>0.645</b>	<b>3.88 x 10<sup>-4</sup></b>	<b>0.356</b>	<b>2.14 x 10<sup>-4</sup></b>	<b>5.82 x 10<sup>-10</sup></b>	<b>3.49 x 10<sup>-13</sup></b>

a – Dose presented in person-rem. b – Latent cancer fatalities calculated using conversion factor of 0.0006 LCF per person-rem.

Attachment 1 provides the TRAGIS files used to assess the routing parameters for the two routes (LLNL-INL and INL-WIPP) analyzed. Attachment 2 provides the RADTRAN outputs for the six shipments assessed.

[TRAGIS]  
TRAGIS Version=1.5.4  
Mode=H  
Network Version=4.0  
Census Data=2000  
Buffer Zone=800  
[ROUTEINFO]  
From CITY=LIVERMORE LB  
From STATE=CA  
From SUBNET=  
To CITY=INEEL  
To STATE=ID  
To SUBNET=  
[CA]  
Rural - KM= 184.5  
Suburban - KM= 101.6  
Urban - KM= 44.9  
Total - KM= 331.1  
Rural Pop Density= 12.4  
Suburban Pop Density= 393.4  
Urban Pop Density=2662.0  
[ID]  
Rural - KM= 183.0  
Suburban - KM= 27.2  
Urban - KM= 2.0  
Total - KM= 212.3  
Rural Pop Density= 9.9  
Suburban Pop Density= 325.3  
Urban Pop Density=2070.7  
[NV]  
Rural - KM= 599.7  
Suburban - KM= 48.8  
Urban - KM= 12.4  
Total - KM= 660.8  
Rural Pop Density= 7.3  
Suburban Pop Density= 330.3  
Urban Pop Density=2520.7  
[UT]  
Rural - KM= 252.5  
Suburban - KM= 68.9  
Urban - KM= 17.6  
Total - KM= 339.0  
Rural Pop Density= 7.5  
Suburban Pop Density= 360.8  
Urban Pop Density=2410.0  
[Total]  
Rural - KM=1219.7  
Suburban - KM= 246.6  
Urban - KM= 76.8  
Total - KM=1543.2  
Rural Pop Density= 8.5  
Suburban Pop Density= 364.3  
Urban Pop Density=2566.5

[TRAGIS]  
 TRAGIS Version=1.5.4  
 Mode=H  
 Network Version=4.0  
 Census Data=2000  
 Buffer Zone=800  
 [ROUTEINFO]  
 From CITY=INEEL  
 From STATE=ID  
 From SUBNET=  
 To CITY=WIPP  
 To STATE=NM  
 To SUBNET=  
 [CO]  
 Rural - KM= 320.9  
 Suburban - KM= 132.3  
 Urban - KM= 31.7  
 Total - KM= 484.9  
 Rural Pop Density= 11.7  
 Suburban Pop Density= 402.1  
 Urban Pop Density=2411.4  
 [ID]  
 Rural - KM= 183.0  
 Suburban - KM= 27.2  
 Urban - KM= 2.0  
 Total - KM= 212.3  
 Rural Pop Density= 9.9  
 Suburban Pop Density= 325.3  
 Urban Pop Density=2070.7  
 [NM]  
 Rural - KM= 736.8  
 Suburban - KM= 23.8  
 Urban - KM= 2.5  
 Total - KM= 763.1  
 Rural Pop Density= 4.7  
 Suburban Pop Density= 318.1  
 Urban Pop Density=1823.2  
 [UT]  
 Rural - KM= 151.5  
 Suburban - KM= 53.4  
 Urban - KM= 1.5  
 Total - KM= 206.5  
 Rural Pop Density= 12.5  
 Suburban Pop Density= 260.1  
 Urban Pop Density=2112.2  
 [WY]  
 Rural - KM= 561.5  
 Suburban - KM= 26.0  
 Urban - KM= 2.4  
 Total - KM= 589.8  
 Rural Pop Density= 4.6  
 Suburban Pop Density= 360.0  
 Urban Pop Density=1968.3  
 [Total]  
 Rural - KM=1953.6  
 Suburban - KM= 262.8  
 Urban - KM= 40.0  
 Total - KM=2256.7  
 Rural Pop Density= 6.9  
 Suburban Pop Density= 353.5  
 Urban Pop Density=2320.3

RRRR	AAA	DDDD	TTTT	RRRR	AAA	N	N	5555		6
R R	A A	D D	T	R R	A A	NN	N	5		6
R R	A A	D D	T	R R	A A	N N	N	5		6
RRRR	A A	D D	T	RRRR	A A	N NN		5555		6666
R R	AAAA	D D	T	R R	AAAA	N N		5		6 6
R R	A A	D D	T	R R	A A	N N		5 5		6 6
R R	A A	DDDD	T	R R	A A	N N		5555	*	666

RADTRAN 5.6 February 20, 2006

INPUT ECHO

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&& Shipment of LLNL TRU waste from INL to WIPP
&& 3 TRUPACT containers per shipment
&& 14 55-gal drums per TP (42 drums/shipment)
&& Remark
TITLE INL-WIPP_TRUPACT_I
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 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 && 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 && 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 && DFLEV
STD: 3 6 9 12 15 30 61 91 152 305 0 0 0 0
  
```

INL-WIPP\_tru\_Sept22

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 INTERDI CT  
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 && EVACUATI ON SURVEY CAMPAIGN

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INL-WIPP\_TRUPACT\_I I

STD: 0.0 0.0 1.5E-8 5.3E-8 && HI GHWAY - RURAL - NONRAD  
STD: 0.0 0.0 3.7E-9 1.3E-8 && HI GHWAY - SUBURBAN - NONRAD  
STD: 0.0 0.0 2.1E-9 7.5E-9 && HI GHWAY - URBAN - NONRAD  
STD: 0.0 0.0 1.81E-9 2.64E-8 && GENERAL FREI GHT - R - NONRAD  
STD: 0.0 0.0 1.81E-9 2.64E-8 && GENERAL FREI GHT - S - NONRAD  
STD: 0.0 0.0 1.81E-9 2.64E-8 && GENERAL FREI GHT - U - NONRAD  
STD: 0.0 0.0 1.27E-7 1.85E-6 && DEDI CATED RAI L - R - NONRAD  
STD: 0.0 0.0 1.27E-7 1.85E-6 && DEDI CATED RAI L - S - NONRAD  
STD: 0.0 0.0 1.27E-7 1.85E-6 && DEDI CATED RAI L - U - NONRAD  
STD: 0.0 0.0 0.0 0.0 0.0 0.0 0.0 && PSPROB  
STD: 0.67 0.67 0.42 && TI MENDE NON-DI SPERSAL EVAC TIME (LCF&EARLY)  
STD: 2 2 1 && FLAGS=IUOPT IACC REGCHECK  
STD: 5E-4, 4E-4, 1.0E-4 && LCFCO N(1), LCFCO N(2), GECON  
STD: R5I NGEST. BI N && I NGESTI ON FI LE

OUTPUT CI\_REM  
FORM UNIT

DIMEN 6 10 18  
 PARM 1 3 4 0  
 SEVERITY  
 NPOP=1  
 NMODE=1  
 0.99993  
 6.2E-5 5.6E-6 5.2E-7 7.0E-8 2.2E-10  
 NPOP=2  
 NMODE=1  
 0.99993  
 6.2E-5 5.6E-6 5.2E-7 7.0E-8 2.2E-10  
 NPOP=3  
 NMODE=1  
 0.99993  
 6.2E-5 5.6E-6 5.2E-7 7.0E-8 2.2E-10

RELEASE  
 GROUP=GROUP\_1  
 RFRAC  
 0.0  
 2.6E-5 2.4E-5 2.6E-5 6.2E-5 6.7E-5  
 AERSOL  
 0.0  
 1.0E-4 0.0010 0.0010 0.0010 0.0010  
 RESP  
 0.0

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INL-WI PP\_TRUPACT\_I I

1.0 1.0 1.0 1.0 1.0  
 LOS  
 0.0  
 0.0 0.0 0.0 0.0 0.0  
 DEPVEL 0.01  
 PACKAGE 55\_gal\_drum 3.0 1.0 0.0 1.1  
 U238 0.0010 GROUP\_1  
 U235 0.0010 GROUP\_1  
 PU240 10.0 GROUP\_1  
 END  
 VEHICLE -1 SST 4.00E00 1.0 0.0 7.62 1.0 2.0 3.0 1.0 3.9  
 55\_gal\_drum 42.0  
 FLAGS  
 IACC 2  
 IUOPT 2  
 REGCHECK 1  
 MODSTD  
 DISTOFF FREEWAY 3.00E01 3.00E01 8.00E02  
 DISTOFF SECONDARY 2.70E01 3.00E01 8.00E02  
 DISTOFF STREET 5.00E00 8.00E00 8.00E02  
 DISTON  
 FREEWAY 1.50E01  
 SECONDARY 3.00E00  
 STREET 3.00E00  
 ADJACENT 4.00E00  
 BDF 5.00E-02

I NL-WI PP\_tru\_Sept22

BRATE 3. 30E-04  
CULVL 2. 00E-01  
EVACUATION 1. 00E00  
GECON 1. 00E-04  
INTERDI CT 4. 00E01  
LCFCO N 5. 00E-04 4. 00E-04  
SURVEY 1. 00E01  
UBF 5. 20E-01  
USWF 4. 80E-01  
CAMPAIGN 8. 33E-02  
MITDDI ST 3. 00E01  
MITDVEL 2. 40E01  
RPD 6. 00E00  
RR 1. 00E00  
RU 1. 80E-02  
RS 8. 70E-01  
SMALLPKG 5. 00E-01  
RPCTHYROI D  
I 131 1. 27E06

EOF

LINK RURAL\_CO SST 320.9 88.49 1.5 11.7 1160.0 4.46E-7 0.0256 R 1 0.512  
LINK SUBURBN\_CO SST 132.3 40.25 1.5 402.1 2410.0 4.46E-7 0.0256 S 1 1.0  
LINK URBAN\_CO SST 31.7 24.16 1.5 2411.4 5490.0 4.46E-7 0.0256 U 1 1.0  
LINK RURAL\_ID SST 183.0 88.49 1.5 9.9 1160.0 2.95E-7 0.0129 R 1 0.254  
LINK SUBURBN\_ID SST 27.2 40.25 1.5 325.3 2410.0 2.95E-7 0.0129 S 1 1.0  
LINK URBAN\_ID SST 2.0 24.16 1.5 2070.7 5490.0 2.95E-7 0.0129 U 1 1.0  
LINK RURAL\_NM SST 736.8 88.49 1.5 4.7 1160.0 1.13E-7 0.104 R 1 0.603  
LINK SUBURBN\_NM SST 23.8 40.25 1.5 318.1 2410.0 1.13E-7 0.104 S 1 1.0  
LINK URBAN\_NM SST 2.5 24.16 1.5 1823.2 5490.0 1.13E-7 0.104 U 1 1.0  
LINK RURAL\_UT SST 151.5 88.49 1.5 12.5 1160.0 2.9E-7 0.041 R 1 0.183  
LINK SUBURBN\_UT SST 53.4 40.25 1.5 260.1 2410.0 2.9E-7 0.041 S 1 1.0  
LINK URBAN\_UT SST 1.5 24.16 1.5 2112.2 5490.0 2.9E-7 0.041 U 1 1.0  
LINK RURAL\_WY SST 561.5 88.49 1.5 4.6 1160.0 6.74E-7 0.016 R 1 0.529  
LINK SUBURBN\_WY SST 26.0 40.25 1.5 360.0 2410.0 6.74E-7 0.016 S 1 1.0  
LINK URBAN\_WY SST 2.4 24.16 1.5 1968.3 5490.0 6.74E-7 0.016 U 1 1.0

STOP AreaRes SST 1.0 30.0 800.0 1.0 3.5  
STOP truckStop SST 0.00883 1.0 15.8 1.0 3.5

HANDLING loadi ng SST 5.0 2.0 4.0  
HANDLING inspect SST 1.0 2.0 1.0

EOF

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I NL-WI PP\_TRUPACT\_I I

PACKAGE AND MATERIAL CHARACTERI STI CS

MATERIAL	DI MENSIO N (METERS)	EFFECTI VE DI MENSIO N	K(0) METERS SQ.	FRACTI ON GAMMA	FRACTI ON NEUTRON	DOSE RATE (MREM/HR)
55_gal_dru	1.100E+00	1.100E+00	2.403E+00	1.000E+00	0.000E+00	3.000E+00

K(0) IS DOSE RATE CONVERSI ON FACTOR

VEHI CLE CHARACTERI STI CS

INL-WIPP\_tru\_Sept22

VEHICLE NAME	SST
MODE TYPE	HI GHWAY
EXCLUSIVE USE	YES
DOSE RATE (MREM/HR)	4.00E+00
K(O) (SQ. METERS)	1.58E+01
VEHICLE SIZE (M)	7.62E+00
EFFECTIVE SIZE (M)	5.95E+00
NUMBER OF SHIPMENTS	1.00E+00
NUMBER OF CREW	2.00E+00
CREW DISTANCE (M)	3.00E+00
CREW DOSE ADJUSTMENT FACT	1.00E+00
CREW EXPOSER WIDTH (M)	3.90E+00
EFFECTIVE EXPOSER WIDTH	3.90E+00
K(O) (SQ M) CREW EXPOSURE	8.70E+00

VEHICLE	MATERIAL	NO. PACKAGES
SST	55_gal_dru	4.20E+01

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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INL-WIPP\_TRUPACT\_II

STOP RELATED DATA

VEHICLE	AreaRes	truckStop
PERSONS	SST	SST
MINIMUM DISTANCE(M)	1.00E+00	8.83E-03
MAXIMUM DISTANCE(M)	3.00E+01	1.00E+00
SHIELDING FACTOR	8.00E+02	1.58E+01
TIME (HR)	1.00E+00	1.00E+00
	3.50E+00	3.50E+00

HANDLING RELATED DATA

VEHICLE	loading	inspect
NUMBER OF HANDLERS	SST	SST
DISTANCE (M)	5.00E+00	1.00E+00
EXPOSURE TIME (HR)	2.00E+00	2.00E+00
	4.00E+00	1.00E+00

I NL-WI PP\_tru\_Sept22

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

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I NL-WI PP\_TRUPACT\_I I

LINK RELATED DATA

	RURAL_CO	SUBURBN_CO	URBAN_CO	RURAL_ID	SUBURBN_ID
VEHICLE	SST	SST	SST	SST	SST
DISTANCE (KM)	3.21E+02	1.32E+02	3.17E+01	1.83E+02	2.72E+01
PERSONS PER VEHICLE	1.50E+00	1.50E+00	1.50E+00	1.50E+00	1.50E+00
SPEED (KM/HR)	8.85E+01	4.02E+01	2.42E+01	8.85E+01	4.02E+01
POPULATION DENSITY	1.17E+01	4.02E+02	2.41E+03	9.90E+00	3.25E+02
VEHICLE DENSITY	1.16E+03	2.41E+03	5.49E+03	1.16E+03	2.41E+03
ACCIDENT RATE/KM	4.46E-07	4.46E-07	4.46E-07	2.95E-07	2.95E-07
FATALITIES/ACCIDENT	2.56E-02	2.56E-02	2.56E-02	1.29E-02	1.29E-02
ZONE	RURAL	SUBURBAN	URBAN	RURAL	SUBURBAN
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	5.12E-01	0.00E+00	0.00E+00	2.54E-01	0.00E+00

	URBAN_ID	RURAL_NM	SUBURBN_NM	URBAN_NM	RURAL_UT
VEHICLE	SST	SST	SST	SST	SST
DISTANCE (KM)	2.00E+00	7.37E+02	2.38E+01	2.50E+00	1.52E+02
PERSONS PER VEHICLE	1.50E+00	1.50E+00	1.50E+00	1.50E+00	1.50E+00
SPEED (KM/HR)	2.42E+01	8.85E+01	4.02E+01	2.42E+01	8.85E+01
POPULATION DENSITY	2.07E+03	4.70E+00	3.18E+02	1.82E+03	1.25E+01
VEHICLE DENSITY	5.49E+03	1.16E+03	2.41E+03	5.49E+03	1.16E+03
ACCIDENT RATE/KM	2.95E-07	1.13E-07	1.13E-07	1.13E-07	2.90E-07
FATALITIES/ACCIDENT	1.29E-02	1.04E-01	1.04E-01	1.04E-01	4.10E-02
ZONE	URBAN	RURAL	SUBURBAN	URBAN	RURAL
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	0.00E+00	6.03E-01	0.00E+00	0.00E+00	1.83E-01

	SUBURBN_UT	URBAN_UT	RURAL_WY	SUBURBN_WY	URBAN_WY
VEHICLE	SST	SST	SST	SST	SST
DISTANCE (KM)	5.34E+01	1.50E+00	5.62E+02	2.60E+01	2.40E+00
PERSONS PER VEHICLE	1.50E+00	1.50E+00	1.50E+00	1.50E+00	1.50E+00
SPEED (KM/HR)	4.02E+01	2.42E+01	8.85E+01	4.02E+01	2.42E+01
POPULATION DENSITY	2.60E+02	2.11E+03	4.60E+00	3.60E+02	1.97E+03
VEHICLE DENSITY	2.41E+03	5.49E+03	1.16E+03	2.41E+03	5.49E+03
ACCIDENT RATE/KM	2.90E-07	2.90E-07	6.74E-07	6.74E-07	6.74E-07
FATALITIES/ACCIDENT	4.10E-02	4.10E-02	1.60E-02	1.60E-02	1.60E-02
ZONE	SUBURBAN	URBAN	RURAL	SUBURBAN	URBAN
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	0.00E+00	0.00E+00	5.29E-01	0.00E+00	0.00E+00

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I SOTOPE RELATED DATA

NUCLIDE	CURIES PER PKG	RELEASE GROUP	SETTLING ONLY RESUSPENSION FACTOR	50YR INHALATION (REM/CI) EFFECTIVE
55_gal_dru				
U238	1.00E-03	GROUP_1	1.01E+00	1.07E+07
U235	1.00E-03	GROUP_1	1.01E+00	1.15E+07
PU240	1.00E+01	GROUP_1	1.01E+00	1.85E+08

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NUCLIDE	HALF LIFE	GAMMA ENERGY	CLOUD FACTOR	GROUND FACTOR	INGESTION NUCLIDE	NEUTRON EMISSION neutrons/sec/Ci
55_gal_dru						
U238	1.63E+12	1.36E-03	1.26E-05	1.76E-07	U-238	0.00E+00
U235	2.57E+11	1.54E-01	2.66E-02	4.73E-05	U-235	0.00E+00
PU240	2.39E+06	1.73E-03	1.76E-05	2.57E-07	Pu-240	0.00E+00

NUCLIDE	1-YR INHALATION (REM/CI)		
	LUNG	MARROW	THYROID
55_gal_dru			
U238	8.14E+07	2.92E+05	0.00E+00
U235	8.51E+07	2.92E+05	0.00E+00
PU240	1.11E+08	1.30E+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
GROUP_1	0.00E+00	2.60E-05	2.40E-05	2.60E-05	6.20E-05	6.70E-05

DEPOSITION VELOCITIES  
GROUP M/SEC  
GROUP\_1 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	6.20E-05	5.60E-06	5.20E-07	7.00E-08	2.20E-10
SUBURBAN	1.00E+00	6.20E-05	5.60E-06	5.20E-07	7.00E-08	2.20E-10
URBAN	1.00E+00	6.20E-05	5.60E-06	5.20E-07	7.00E-08	2.20E-10

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AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
GROUP_1	0.00E+00	1.00E-04	1.00E-03	1.00E-03	1.00E-03	1.00E-03

RESPIRABLE FRACTION OF AEROSOLS (BELOW 10 MICRONS AED)

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
GROUP_1	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

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HEALTH RELATED DATA  
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EARLY MORBI DITY THRESHOLD VALUE FOR LUNG 5. 000E+02 REM  
 EARLY MORBI DITY THRESHOLD VALUE FOR MARROW/WHOLE BODY 5. 000E+01 REM  
 EARLY MORBI DITY THRESHOLD VALUE FOR THYROID 2. 000E+02 REM

EARLY FATALI TY PROBABI LI TIES (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				

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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)

OTHER DISPERSAL ACCIDENT INPUT PARAMETERS

\*\*\*\*\*

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 (Ci/micro-Ci) (INTERDICT) = 4.000E+01  
 EVACUATION TIME (DAYS) (EVACUATION) = 1.000E+00  
 SURVEY INTERVAL (DAYS) (SURVEY) = 1.000E+01  
 CAMPAIGN LENGTH (YEARS) (CAMPAIGN) = 8.330E-02  
 FRACTION OF URBAN AREAS WITH BUILDINGS (UBF) = 5.200E-01  
 FRACTION OF URBAN AREAS WITH SIDEWALKS (USWF) = 4.800E-01  
 RATIO OF SIDEWALK PEDESTRIAN DENSITY (RPD) = 6.000E+00  
 MAXIMUM IN-TRANSIT DOSE DISTANCE (M) (MITDDIST) = 3.000E+01  
 MAXIMUM IN-TRANSIT DOSE VELOCITY (KM/H) (MITDVEL) = 2.400E+01  
 IACC VALUE: 1=NON-DISPERSAL, 2=DISPERSAL = 2  
 REGULATORY CHECK, 1=DO CHECKS, 0=NO CHECKS = 1  
 BUILDING SHIELDING OPTION (IUOPT) = 2  
 RURAL SHIELDING FACTOR = 1.000E+00  
 SUBURBAN SHIELDING FACTOR = 8.700E-01  
 URBAN SHIELDING FACTOR = 1.800E-02

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INGESTION RELATED DATA

COMIDA INGESTION FILE USED: R5INGEST.BIN

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

COMIDA FILE HEADER

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

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BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

NUCLIDE	EFFECTIVE	THYROID
U-238	1.457E+04	2.088E+02
U-235	1.639E+04	2.229E+02
Pu-240	8.228E+05	6.464E+00

SOCIAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

NUCLIDE	GONADS	BREAST	LUNGS	RED MAR	BONE SU	THYROID	REMAIND	EFFECTI
U-238	2.7E-02	2.5E-02	2.5E-02	7.3E-01	1.1E+01	2.5E-02	4.3E+00	1.7E+00
U-235	9.0E-02	3.2E-02	2.7E-02	7.5E-01	1.1E+01	2.6E-02	4.9E+00	1.9E+00
Pu-240	2.5E+01	7.6E-04	7.7E-04	1.3E+02	1.7E+03	7.1E-04	6.1E+01	9.1E+01

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NON-RADIOLOGICAL DATA (ACCIDENTS and FATALITIES)

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HIGHWAY

	ACCIDENT RATE	ACCIDENTS	FATALITIES
RURAL_CO	4.46E-07	1.43E-04	3.66E-06
SUBURBN_CO	4.46E-07	5.90E-05	1.51E-06
URBAN_CO	4.46E-07	1.41E-05	3.62E-07
RURAL_ID	2.95E-07	5.40E-05	6.96E-07
SUBURBN_ID	2.95E-07	8.02E-06	1.04E-07
URBAN_ID	2.95E-07	5.90E-07	7.61E-09
RURAL_NM	1.13E-07	8.33E-05	8.66E-06
SUBURBN_NM	1.13E-07	2.69E-06	2.80E-07
URBAN_NM	1.13E-07	2.83E-07	2.94E-08
RURAL_UT	2.90E-07	4.39E-05	1.80E-06
SUBURBN_UT	2.90E-07	1.55E-05	6.35E-07

		I NL-WI PP_tru_Sept22	
URBAN_UT	2. 90E-07	4. 35E-07	1. 78E-08
RURAL_WY	6. 74E-07	3. 78E-04	6. 06E-06
SUBURBN_WY	6. 74E-07	1. 75E-05	2. 80E-07
URBAN_WY	6. 74E-07	1. 62E-06	2. 59E-08

TOTALS: 5. 45E-06            8. 23E-04            2. 41E-05

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I NL-WI PP\_TRUPACT\_I I  
REGULATORY CHECKS

FOR THE SHIPMENT BY SST  
THE DOSE RATE IN THE CREW COMPARTMENT COULD EXCEED 2 MREM/HR  
THE DOSE RATE HAS BEEN RESET FROM 3. 87 TO 2 FOR CREW CALCULATIONS

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I NL-WI PP\_TRUPACT\_I I  
CALCULATIONAL INFORMATION

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

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INL-WIPP\_tru\_Sept22  
RELEASE FRACTIONS

GROUP SEVER: 1 SEVER: 2 SEVER: 3 SEVER: 4 SEVER: 5 SEVER: 6  
GROUP\_1 0. 00E+00 2. 60E-05 2. 40E-05 2. 60E-05 6. 20E-05 6. 70E-05

DEPOSITION VELOCITIES

GROUP M/SEC  
GROUP\_1 1. 00E-02

DEPLETION FACTORS

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

DI STANCE	GROUP_1
3. 30E+01	3. 42E-03
6. 80E+01	1. 72E-03
1. 05E+02	8. 34E-04
2. 44E+02	3. 23E-04
3. 69E+02	1. 55E-04
5. 61E+02	7. 38E-05
1. 02E+03	2. 80E-05
1. 63E+03	1. 33E-05
2. 31E+03	6. 16E-06
4. 27E+03	2. 33E-06
5. 47E+03	1. 06E-06
1. 11E+04	5. 04E-07
1. 31E+04	1. 86E-07
2. 13E+04	8. 77E-08
4. 05E+04	4. 01E-08
7. 00E+04	2. 14E-08
8. 99E+04	1. 31E-08
1. 21E+05	8. 54E-09

DEPOSITION FACTORS

CHI DEPOSITED (CI /M\*\*2/CI -RELEASED)

DI STANCE	GROUP_1
3. 30E+01	3. 42E-05
6. 80E+01	1. 72E-05
1. 05E+02	8. 34E-06
2. 44E+02	3. 23E-06
3. 69E+02	1. 55E-06
5. 61E+02	7. 38E-07
1. 02E+03	2. 80E-07
1. 63E+03	1. 33E-07
2. 31E+03	6. 16E-08
4. 27E+03	2. 33E-08
5. 47E+03	1. 06E-08
1. 11E+04	5. 04E-09
1. 31E+04	1. 86E-09
2. 13E+04	8. 77E-10
4. 05E+04	4. 01E-10
7. 00E+04	2. 14E-10
8. 99E+04	1. 31E-10
1. 21E+05	8. 54E-11

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INL-WIPP\_TRUPACT\_11

VEHICLE SST

1-YEAR DOSE TO

LUNG, INHALATION PATHWAY  
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INL-WIPP\_tru\_Sept22  
BDF = 1 (REM)

CNTR LINE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
3. 30E+01	0. 00E+00	1. 37E-04	1. 26E-03	1. 37E-03	3. 26E-03	3. 53E-03
6. 80E+01	0. 00E+00	6. 87E-05	6. 34E-04	6. 87E-04	1. 64E-03	1. 77E-03
1. 05E+02	0. 00E+00	3. 34E-05	3. 08E-04	3. 34E-04	7. 96E-04	8. 60E-04
2. 44E+02	0. 00E+00	1. 29E-05	1. 19E-04	1. 29E-04	3. 08E-04	3. 33E-04
3. 69E+02	0. 00E+00	6. 19E-06	5. 72E-05	6. 19E-05	1. 48E-04	1. 60E-04
5. 61E+02	0. 00E+00	2. 95E-06	2. 72E-05	2. 95E-05	7. 04E-05	7. 60E-05
1. 02E+03	0. 00E+00	1. 12E-06	1. 03E-05	1. 12E-05	2. 67E-05	2. 89E-05
1. 63E+03	0. 00E+00	5. 30E-07	4. 89E-06	5. 30E-06	1. 26E-05	1. 37E-05
2. 31E+03	0. 00E+00	2. 47E-07	2. 28E-06	2. 47E-06	5. 88E-06	6. 36E-06
4. 27E+03	0. 00E+00	9. 32E-08	8. 60E-07	9. 32E-07	2. 22E-06	2. 40E-06
5. 47E+03	0. 00E+00	4. 25E-08	3. 92E-07	4. 25E-07	1. 01E-06	1. 09E-06
1. 11E+04	0. 00E+00	2. 01E-08	1. 86E-07	2. 01E-07	4. 80E-07	5. 19E-07
1. 31E+04	0. 00E+00	7. 45E-09	6. 87E-08	7. 45E-08	1. 78E-07	1. 92E-07
2. 13E+04	0. 00E+00	3. 51E-09	3. 24E-08	3. 51E-08	8. 37E-08	9. 05E-08
4. 05E+04	0. 00E+00	1. 60E-09	1. 48E-08	1. 60E-08	3. 82E-08	4. 13E-08
7. 00E+04	0. 00E+00	8. 56E-10	7. 91E-09	8. 56E-09	2. 04E-08	2. 21E-08
8. 99E+04	0. 00E+00	5. 22E-10	4. 82E-09	5. 22E-09	1. 25E-08	1. 35E-08
1. 21E+05	0. 00E+00	3. 42E-10	3. 15E-09	3. 42E-09	8. 15E-09	8. 80E-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	1. 60E-05	1. 48E-04	1. 60E-04	3. 82E-04	4. 13E-04
6. 80E+01	0. 00E+00	8. 04E-06	7. 43E-05	8. 04E-05	1. 92E-04	2. 07E-04
1. 05E+02	0. 00E+00	3. 91E-06	3. 61E-05	3. 91E-05	9. 32E-05	1. 01E-04
2. 44E+02	0. 00E+00	1. 51E-06	1. 40E-05	1. 51E-05	3. 61E-05	3. 90E-05
3. 69E+02	0. 00E+00	7. 25E-07	6. 69E-06	7. 25E-06	1. 73E-05	1. 87E-05
5. 61E+02	0. 00E+00	3. 45E-07	3. 19E-06	3. 45E-06	8. 24E-06	8. 90E-06
1. 02E+03	0. 00E+00	1. 31E-07	1. 21E-06	1. 31E-06	3. 13E-06	3. 38E-06
1. 63E+03	0. 00E+00	6. 21E-08	5. 73E-07	6. 21E-07	1. 48E-06	1. 60E-06
2. 31E+03	0. 00E+00	2. 89E-08	2. 67E-07	2. 89E-07	6. 89E-07	7. 44E-07
4. 27E+03	0. 00E+00	1. 09E-08	1. 01E-07	1. 09E-07	2. 60E-07	2. 81E-07
5. 47E+03	0. 00E+00	4. 97E-09	4. 59E-08	4. 97E-08	1. 19E-07	1. 28E-07
1. 11E+04	0. 00E+00	2. 36E-09	2. 18E-08	2. 36E-08	5. 63E-08	6. 08E-08
1. 31E+04	0. 00E+00	8. 72E-10	8. 05E-09	8. 72E-09	2. 08E-08	2. 25E-08
2. 13E+04	0. 00E+00	4. 11E-10	3. 79E-09	4. 11E-09	9. 80E-09	1. 06E-08
4. 05E+04	0. 00E+00	1. 88E-10	1. 73E-09	1. 88E-09	4. 48E-09	4. 84E-09
7. 00E+04	0. 00E+00	1. 00E-10	9. 26E-10	1. 00E-09	2. 39E-09	2. 58E-09
8. 99E+04	0. 00E+00	6. 12E-11	5. 65E-10	6. 12E-10	1. 46E-09	1. 58E-09
1. 21E+05	0. 00E+00	4. 00E-11	3. 69E-10	4. 00E-10	9. 54E-10	1. 03E-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

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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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I NL-WI PP\_TRUPACT\_I I

VEHI CLE SST

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. 74E-05	3. 45E-04	3. 74E-04	8. 91E-04	9. 63E-04
6. 80E+01	0. 00E+00	1. 88E-05	1. 73E-04	1. 88E-04	4. 47E-04	4. 83E-04
1. 05E+02	0. 00E+00	9. 11E-06	8. 41E-05	9. 11E-05	2. 17E-04	2. 35E-04
2. 44E+02	0. 00E+00	3. 53E-06	3. 25E-05	3. 53E-05	8. 41E-05	9. 08E-05
3. 69E+02	0. 00E+00	1. 69E-06	1. 56E-05	1. 69E-05	4. 03E-05	4. 36E-05
5. 61E+02	0. 00E+00	8. 06E-07	7. 44E-06	8. 06E-06	1. 92E-05	2. 08E-05
1. 02E+03	0. 00E+00	3. 06E-07	2. 82E-06	3. 06E-06	7. 29E-06	7. 88E-06
1. 63E+03	0. 00E+00	1. 45E-07	1. 34E-06	1. 45E-06	3. 45E-06	3. 73E-06
2. 31E+03	0. 00E+00	6. 73E-08	6. 22E-07	6. 73E-07	1. 61E-06	1. 74E-06
4. 27E+03	0. 00E+00	2. 54E-08	2. 35E-07	2. 54E-07	6. 07E-07	6. 55E-07
5. 47E+03	0. 00E+00	1. 16E-08	1. 07E-07	1. 16E-07	2. 76E-07	2. 99E-07
1. 11E+04	0. 00E+00	5. 50E-09	5. 08E-08	5. 50E-08	1. 31E-07	1. 42E-07
1. 31E+04	0. 00E+00	2. 03E-09	1. 88E-08	2. 03E-08	4. 85E-08	5. 24E-08
2. 13E+04	0. 00E+00	9. 58E-10	8. 85E-09	9. 58E-09	2. 29E-08	2. 47E-08
4. 05E+04	0. 00E+00	4. 38E-10	4. 04E-09	4. 38E-09	1. 04E-08	1. 13E-08
7. 00E+04	0. 00E+00	2. 34E-10	2. 16E-09	2. 34E-09	5. 58E-09	6. 03E-09
8. 99E+04	0. 00E+00	1. 43E-10	1. 32E-09	1. 43E-09	3. 40E-09	3. 68E-09
1. 21E+05	0. 00E+00	9. 33E-11	8. 61E-10	9. 33E-10	2. 22E-09	2. 40E-09

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I NL-WI PP\_TRUPACT\_I I

VEHI CLE SST

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. 53E-04	1. 41E-03	1. 53E-03	3. 64E-03	3. 94E-03
6. 80E+01	0. 00E+00	7. 67E-05	7. 08E-04	7. 67E-04	1. 83E-03	1. 98E-03
1. 05E+02	0. 00E+00	3. 73E-05	3. 44E-04	3. 73E-04	8. 89E-04	9. 61E-04
2. 44E+02	0. 00E+00	1. 44E-05	1. 33E-04	1. 44E-04	3. 44E-04	3. 72E-04
3. 69E+02	0. 00E+00	6. 92E-06	6. 38E-05	6. 92E-05	1. 65E-04	1. 78E-04
5. 61E+02	0. 00E+00	3. 30E-06	3. 04E-05	3. 30E-05	7. 86E-05	8. 49E-05
1. 02E+03	0. 00E+00	1. 25E-06	1. 15E-05	1. 25E-05	2. 98E-05	3. 22E-05
1. 63E+03	0. 00E+00	5. 92E-07	5. 47E-06	5. 92E-06	1. 41E-05	1. 53E-05
2. 31E+03	0. 00E+00	2. 76E-07	2. 54E-06	2. 76E-06	6. 57E-06	7. 10E-06
4. 27E+03	0. 00E+00	1. 04E-07	9. 61E-07	1. 04E-06	2. 48E-06	2. 68E-06
5. 47E+03	0. 00E+00	4. 74E-08	4. 38E-07	4. 74E-07	1. 13E-06	1. 22E-06
1. 11E+04	0. 00E+00	2. 25E-08	2. 08E-07	2. 25E-07	5. 37E-07	5. 80E-07
1. 31E+04	0. 00E+00	8. 32E-09	7. 68E-08	8. 32E-08	1. 98E-07	2. 14E-07
2. 13E+04	0. 00E+00	3. 92E-09	3. 62E-08	3. 92E-08	9. 35E-08	1. 01E-07
4. 05E+04	0. 00E+00	1. 79E-09	1. 65E-08	1. 79E-08	4. 27E-08	4. 62E-08
7. 00E+04	0. 00E+00	9. 57E-10	8. 83E-09	9. 57E-09	2. 28E-08	2. 47E-08
8. 99E+04	0. 00E+00	5. 84E-10	5. 39E-09	5. 84E-09	1. 39E-08	1. 50E-08
1. 21E+05	0. 00E+00	3. 82E-10	3. 52E-09	3. 82E-09	9. 10E-09	9. 84E-09

INL-WIPP\_TRUPACT\_I I

VEHICLE SST

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. 07E-05	2. 84E-04	3. 07E-04	7. 33E-04	7. 92E-04
6. 80E+01	0. 00E+00	1. 54E-05	1. 42E-04	1. 54E-04	3. 68E-04	3. 98E-04
1. 05E+02	0. 00E+00	7. 50E-06	6. 92E-05	7. 50E-05	1. 79E-04	1. 93E-04
2. 44E+02	0. 00E+00	2. 90E-06	2. 68E-05	2. 90E-05	6. 92E-05	7. 47E-05
3. 69E+02	0. 00E+00	1. 39E-06	1. 28E-05	1. 39E-05	3. 32E-05	3. 58E-05
5. 61E+02	0. 00E+00	6. 63E-07	6. 12E-06	6. 63E-06	1. 58E-05	1. 71E-05
1. 02E+03	0. 00E+00	2. 52E-07	2. 32E-06	2. 52E-06	6. 00E-06	6. 48E-06
1. 63E+03	0. 00E+00	1. 19E-07	1. 10E-06	1. 19E-06	2. 84E-06	3. 07E-06
2. 31E+03	0. 00E+00	5. 54E-08	5. 11E-07	5. 54E-07	1. 32E-06	1. 43E-06
4. 27E+03	0. 00E+00	2. 09E-08	1. 93E-07	2. 09E-07	4. 99E-07	5. 39E-07
5. 47E+03	0. 00E+00	9. 53E-09	8. 80E-08	9. 53E-08	2. 27E-07	2. 46E-07
1. 11E+04	0. 00E+00	4. 53E-09	4. 18E-08	4. 53E-08	1. 08E-07	1. 17E-07
1. 31E+04	0. 00E+00	1. 67E-09	1. 54E-08	1. 67E-08	3. 99E-08	4. 31E-08
2. 13E+04	0. 00E+00	7. 88E-10	7. 28E-09	7. 88E-09	1. 88E-08	2. 03E-08
4. 05E+04	0. 00E+00	3. 60E-10	3. 32E-09	3. 60E-09	8. 59E-09	9. 28E-09
7. 00E+04	0. 00E+00	1. 92E-10	1. 78E-09	1. 92E-09	4. 59E-09	4. 96E-09
8. 99E+04	0. 00E+00	1. 17E-10	1. 08E-09	1. 17E-09	2. 80E-09	3. 02E-09
1. 21E+05	0. 00E+00	7. 67E-11	7. 08E-10	7. 67E-10	1. 83E-09	1. 98E-09

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-10	2. 24E-09	2. 43E-09	5. 79E-09	6. 26E-09
6. 80E+01	0. 00E+00	1. 22E-10	1. 13E-09	1. 22E-09	2. 91E-09	3. 14E-09
1. 05E+02	0. 00E+00	5. 93E-11	5. 47E-10	5. 93E-10	1. 41E-09	1. 53E-09
2. 44E+02	0. 00E+00	2. 29E-11	2. 12E-10	2. 29E-10	5. 47E-10	5. 91E-10
3. 69E+02	0. 00E+00	1. 10E-11	1. 02E-10	1. 10E-10	2. 62E-10	2. 83E-10
5. 61E+02	0. 00E+00	5. 24E-12	4. 84E-11	5. 24E-11	1. 25E-10	1. 35E-10
1. 02E+03	0. 00E+00	1. 99E-12	1. 84E-11	1. 99E-11	4. 74E-11	5. 13E-11
1. 63E+03	0. 00E+00	9. 42E-13	8. 69E-12	9. 42E-12	2. 25E-11	2. 43E-11
2. 31E+03	0. 00E+00	4. 38E-13	4. 04E-12	4. 38E-12	1. 04E-11	1. 13E-11
4. 27E+03	0. 00E+00	1. 65E-13	1. 53E-12	1. 65E-12	3. 95E-12	4. 26E-12
5. 47E+03	0. 00E+00	7. 54E-14	6. 96E-13	7. 54E-13	1. 80E-12	1. 94E-12
1. 11E+04	0. 00E+00	3. 58E-14	3. 30E-13	3. 58E-13	8. 53E-13	9. 22E-13
1. 31E+04	0. 00E+00	1. 32E-14	1. 22E-13	1. 32E-13	3. 15E-13	3. 41E-13
2. 13E+04	0. 00E+00	6. 24E-15	5. 76E-14	6. 24E-14	1. 49E-13	1. 61E-13
4. 05E+04	0. 00E+00	2. 85E-15	2. 63E-14	2. 85E-14	6. 79E-14	7. 34E-14
7. 00E+04	0. 00E+00	1. 52E-15	1. 40E-14	1. 52E-14	3. 63E-14	3. 92E-14
8. 99E+04	0. 00E+00	9. 28E-16	8. 56E-15	9. 28E-15	2. 21E-14	2. 39E-14
1. 21E+05	0. 00E+00	6. 07E-16	5. 60E-15	6. 07E-15	1. 45E-14	1. 56E-14

INL-WIPP\_TRUPACT\_I I

INCIDENT-FREE SUMMARY  
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IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM  
\*INPUT DATA WERE ALTERED WITH REGULATORY CHECKS

INL-WIPP_tru_Sept22					
	PASSENGER	CREW	OFF LINK	ON LINK	TOTALS
RURAL_CO	0.00E+00	1.46E-02	5.57E-05	2.16E-03	1.68E-02
SUBURBN_CO	0.00E+00	1.33E-02	1.51E-03	9.38E-03	2.41E-02
URBAN_CO	0.00E+00	5.29E-03	7.48E-05	1.50E-02	2.04E-02
RURAL_ID	0.00E+00	8.34E-03	2.69E-05	1.23E-03	9.59E-03
SUBURBN_ID	0.00E+00	2.72E-03	2.51E-04	1.93E-03	4.90E-03
URBAN_ID	0.00E+00	3.34E-04	4.05E-06	9.49E-04	1.29E-03
RURAL_NM	0.00E+00	3.36E-02	5.14E-05	4.95E-03	3.86E-02
SUBURBN_NM	0.00E+00	2.38E-03	2.15E-04	1.69E-03	4.29E-03
URBAN_NM	0.00E+00	4.17E-04	4.46E-06	1.19E-03	1.61E-03
RURAL_UT	0.00E+00	6.90E-03	2.81E-05	1.02E-03	7.95E-03
SUBURBN_UT	0.00E+00	5.35E-03	3.94E-04	3.79E-03	9.53E-03
URBAN_UT	0.00E+00	2.50E-04	3.10E-06	7.12E-04	9.65E-04
RURAL_WY	0.00E+00	2.56E-02	3.83E-05	3.77E-03	2.94E-02
SUBURBN_WY	0.00E+00	2.60E-03	2.66E-04	1.84E-03	4.71E-03
URBAN_WY	0.00E+00	4.01E-04	4.62E-06	1.14E-03	1.54E-03
RURAL	0.00E+00	8.90E-02	2.00E-04	1.31E-02	1.02E-01
SUBURB	0.00E+00	2.63E-02	2.64E-03	1.86E-02	4.76E-02
URBAN	0.00E+00	6.69E-03	9.10E-05	1.90E-02	2.58E-02
TOTALS:	0.00E+00	1.22E-01	2.93E-03	5.08E-02	1.76E-01

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

SST 2.41E-07 REM

STOP EXPOSURE IN PERSON-REM

ANNULAR AREA	AreaRes	4.56E-06
ANNULAR AREA	truckStop	3.38E-08
TOTAL:		4.59E-06

HANDLING EXPOSURE IN PERSON-REM

HANDLING	VEHICLE	MATERIAL	METHOD	DOSE
loading	SST	55_gal_dru	LINE-SOURCE	1.95E+00
inspect	SST	55_gal_dru	LINE-SOURCE	9.77E-02
TOTAL:				2.05E+00

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INL-WIPP\_TRUPACT\_I I

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

LINK	PARAMETER	IMPORTANCE	CHANGE
RURAL_CO	DI STANCE TRAVELED	1.683E-04	1.0000 %
	NUMBER OF SHIPMENTS	1.683E-04	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	1.683E-04	1.0000 %
	NUMBER OF CREW MEMBERS	1.462E-04	0.8686 %
	K ZERO FOR CREW DOSE	1.462E-04	0.8686 %

INL-WIPP\_tru\_Sept22

CREW DOSE ADJUSTMENT FACTOR	1.462E-04	0.8686 %
K ZERO FOR VEHICLE	2.211E-05	0.1314 %
NUMBER OF PEOPLE PER VEHICLE	2.156E-05	0.1281 %
TRAFFIC COUNT	2.156E-05	0.1281 %
SHIELDING FACTOR (RR, RS, RU)	5.571E-07	0.0033 %
POPULATION DENSITY	5.571E-07	0.0033 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSURE FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-3.249E-05	-0.1930 %
VELOCITY	-1.899E-04	-1.1281 %

SUBURBN\_CO

DOSE RATE FOR VEHICLE (TI)	2.414E-04	1.0000 %
NUMBER OF SHIPMENTS	2.414E-04	1.0000 %
DISTANCE TRAVELED	2.414E-04	1.0000 %
NUMBER OF CREW MEMBERS	1.325E-04	0.5490 %
K ZERO FOR CREW DOSE	1.325E-04	0.5490 %
CREW DOSE ADJUSTMENT FACTOR	1.325E-04	0.5490 %
K ZERO FOR VEHICLE	1.089E-04	0.4510 %
NUMBER OF PEOPLE PER VEHICLE	9.377E-05	0.3885 %
TRAFFIC COUNT	9.377E-05	0.3885 %
POPULATION DENSITY	1.510E-05	0.0625 %
SHIELDING FACTOR (RR, RS, RU)	1.510E-05	0.0625 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSURE FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-2.945E-05	-0.1220 %
VELOCITY	-3.352E-04	-1.3885 %

URBAN\_CO

DOSE RATE FOR VEHICLE (TI)	2.041E-04	1.0000 %
NUMBER OF SHIPMENTS	2.041E-04	1.0000 %
DISTANCE TRAVELED	2.041E-04	1.0000 %
K ZERO FOR VEHICLE	1.512E-04	0.7408 %
NUMBER OF PEOPLE PER VEHICLE	1.505E-04	0.7371 %
TRAFFIC COUNT	1.505E-04	0.7371 %
CREW DOSE ADJUSTMENT FACTOR	5.290E-05	0.2592 %
K ZERO FOR CREW DOSE	5.290E-05	0.2592 %
NUMBER OF CREW MEMBERS	5.290E-05	0.2592 %
POPULATION DENSITY	7.477E-07	0.0037 %
SHIELDING FACTOR (RR, RS, RU)	7.477E-07	0.0037 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSURE FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-1.176E-05	-0.0576 %
VELOCITY	-3.546E-04	-1.7371 %

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INL-WIPP\_TRUPACT\_I I

INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY

ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE PARAMETER

LINK	PARAMETER	IMPORTANCE	CHANGE
RURAL_ID	DISTANCE TRAVELED	9.594E-05	1.0000 %
	NUMBER OF SHIPMENTS	9.594E-05	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	9.594E-05	1.0000 %
	NUMBER OF CREW MEMBERS	8.338E-05	0.8691 %
	K ZERO FOR CREW DOSE	8.338E-05	0.8691 %
	CREW DOSE ADJUSTMENT FACTOR	8.338E-05	0.8691 %

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K ZERO FOR VEHICLE	1.256E-05	0.1309 %
NUMBER OF PEOPLE PER VEHICLE	1.229E-05	0.1281 %
TRAFFIC COUNT	1.229E-05	0.1281 %
SHIELDING FACTOR (RR, RS, RU)	2.688E-07	0.0028 %
POPULATION DENSITY	2.688E-07	0.0028 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-1.853E-05	-0.1931 %
VELOCITY	-1.082E-04	-1.1281 %

SUBURBN\_ID

DISTANCE TRAVELED	4.904E-05	1.0000 %
NUMBER OF SHIPMENTS	4.904E-05	1.0000 %
DOSE RATE FOR VEHICLE (TI)	4.904E-05	1.0000 %
NUMBER OF CREW MEMBERS	2.725E-05	0.5556 %
K ZERO FOR CREW DOSE	2.725E-05	0.5556 %
CREW DOSE ADJUSTMENT FACTOR	2.725E-05	0.5556 %
K ZERO FOR VEHICLE	2.179E-05	0.4444 %
NUMBER OF PEOPLE PER VEHICLE	1.928E-05	0.3932 %
TRAFFIC COUNT	1.928E-05	0.3932 %
SHIELDING FACTOR (RR, RS, RU)	2.511E-06	0.0512 %
POPULATION DENSITY	2.511E-06	0.0512 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-6.055E-06	-0.1235 %
VELOCITY	-6.832E-05	-1.3932 %

URBAN\_ID

DISTANCE TRAVELED	1.287E-05	1.0000 %
DOSE RATE FOR VEHICLE (TI)	1.287E-05	1.0000 %
NUMBER OF SHIPMENTS	1.287E-05	1.0000 %
K ZERO FOR VEHICLE	9.533E-06	0.7407 %
TRAFFIC COUNT	9.492E-06	0.7375 %
NUMBER OF PEOPLE PER VEHICLE	9.492E-06	0.7375 %
CREW DOSE ADJUSTMENT FACTOR	3.338E-06	0.2593 %
K ZERO FOR CREW DOSE	3.338E-06	0.2593 %
NUMBER OF CREW MEMBERS	3.338E-06	0.2593 %
POPULATION DENSITY	4.051E-08	0.0031 %
SHIELDING FACTOR (RR, RS, RU)	4.051E-08	0.0031 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-7.417E-07	-0.0576 %
VELOCITY	-2.236E-05	-1.7375 %

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INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY

ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE PARAMETER

LINK RURAL_NM	PARAMETER	IMPORTANCE	CHANGE
	DISTANCE TRAVELED	3.857E-04	1.0000 %
	NUMBER OF SHIPMENTS	3.857E-04	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	3.857E-04	1.0000 %
	NUMBER OF CREW MEMBERS	3.357E-04	0.8704 %
	K ZERO FOR CREW DOSE	3.357E-04	0.8704 %
	CREW DOSE ADJUSTMENT FACTOR	3.357E-04	0.8704 %
	K ZERO FOR VEHICLE	5.001E-05	0.1296 %

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NUMBER OF PEOPLE PER VEHICLE	4.949E-05	0.1283 %
TRAFFIC COUNT	4.949E-05	0.1283 %
SHIELDING FACTOR (RR, RS, RU)	5.138E-07	0.0013 %
POPULATION DENSITY	5.138E-07	0.0013 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSURE FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-7.460E-05	-0.1934 %
VELOCITY	-4.352E-04	-1.1283 %

SUBURBN\_NM

DOSE RATE FOR VEHICLE (TI)	4.286E-05	1.0000 %
NUMBER OF SHIPMENTS	4.286E-05	1.0000 %
DISTANCE TRAVELED	4.286E-05	1.0000 %
NUMBER OF CREW MEMBERS	2.384E-05	0.5563 %
K ZERO FOR CREW DOSE	2.384E-05	0.5563 %
CREW DOSE ADJUSTMENT FACTOR	2.384E-05	0.5563 %
K ZERO FOR VEHICLE	1.902E-05	0.4437 %
NUMBER OF PEOPLE PER VEHICLE	1.687E-05	0.3936 %
TRAFFIC COUNT	1.687E-05	0.3936 %
POPULATION DENSITY	2.149E-06	0.0501 %
SHIELDING FACTOR (RR, RS, RU)	2.149E-06	0.0501 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSURE FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-5.298E-06	-0.1236 %
VELOCITY	-5.973E-05	-1.3936 %

URBAN\_NM

DISTANCE TRAVELED	1.608E-05	1.0000 %
NUMBER OF SHIPMENTS	1.608E-05	1.0000 %
DOSE RATE FOR VEHICLE (TI)	1.608E-05	1.0000 %
K ZERO FOR VEHICLE	1.191E-05	0.7406 %
NUMBER OF PEOPLE PER VEHICLE	1.187E-05	0.7378 %
TRAFFIC COUNT	1.187E-05	0.7378 %
CREW DOSE ADJUSTMENT FACTOR	4.172E-06	0.2594 %
K ZERO FOR CREW DOSE	4.172E-06	0.2594 %
NUMBER OF CREW MEMBERS	4.172E-06	0.2594 %
POPULATION DENSITY	4.459E-08	0.0028 %
SHIELDING FACTOR (RR, RS, RU)	4.459E-08	0.0028 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSURE FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-9.272E-07	-0.0577 %
VELOCITY	-2.795E-05	-1.7378 %

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INL-WIPP\_TRUPACT\_I I

INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY

ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE PARAMETER

LINK	PARAMETER	IMPORTANCE	CHANGE
RURAL_UT	DISTANCE TRAVELED	7.949E-05	1.0000 %
	NUMBER OF SHIPMENTS	7.949E-05	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	7.949E-05	1.0000 %
	NUMBER OF CREW MEMBERS	6.903E-05	0.8684 %
	K ZERO FOR CREW DOSE	6.903E-05	0.8684 %
	CREW DOSE ADJUSTMENT FACTOR	6.903E-05	0.8684 %
	K ZERO FOR VEHICLE	1.046E-05	0.1316 %
	NUMBER OF PEOPLE PER VEHICLE	1.018E-05	0.1280 %

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TRAFFIC COUNT	1.018E-05	0.1280 %
SHIELDING FACTOR (RR, RS, RU)	2.810E-07	0.0035 %
POPULATION DENSITY	2.810E-07	0.0035 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-1.534E-05	-0.1930 %
VELOCITY	-8.966E-05	-1.1280 %

SUBURBN\_UT

DOSE RATE FOR VEHICLE (TI)	9.528E-05	1.0000 %
NUMBER OF SHIPMENTS	9.528E-05	1.0000 %
DISTANCE TRAVELED	9.528E-05	1.0000 %
NUMBER OF CREW MEMBERS	5.349E-05	0.5614 %
K ZERO FOR CREW DOSE	5.349E-05	0.5614 %
CREW DOSE ADJUSTMENT FACTOR	5.349E-05	0.5614 %
K ZERO FOR VEHICLE	4.179E-05	0.4386 %
NUMBER OF PEOPLE PER VEHICLE	3.785E-05	0.3972 %
TRAFFIC COUNT	3.785E-05	0.3972 %
POPULATION DENSITY	3.942E-06	0.0414 %
SHIELDING FACTOR (RR, RS, RU)	3.942E-06	0.0414 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-1.189E-05	-0.1248 %
VELOCITY	-1.331E-04	-1.3972 %

URBAN\_UT

DISTANCE TRAVELED	9.654E-06	1.0000 %
NUMBER OF SHIPMENTS	9.654E-06	1.0000 %
DOSE RATE FOR VEHICLE (TI)	9.654E-06	1.0000 %
K ZERO FOR VEHICLE	7.150E-06	0.7407 %
NUMBER OF PEOPLE PER VEHICLE	7.119E-06	0.7375 %
TRAFFIC COUNT	7.119E-06	0.7375 %
CREW DOSE ADJUSTMENT FACTOR	2.503E-06	0.2593 %
K ZERO FOR CREW DOSE	2.503E-06	0.2593 %
NUMBER OF CREW MEMBERS	2.503E-06	0.2593 %
POPULATION DENSITY	3.099E-08	0.0032 %
SHIELDING FACTOR (RR, RS, RU)	3.099E-08	0.0032 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-5.563E-07	-0.0576 %
VELOCITY	-1.677E-05	-1.7375 %

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INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY

ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE PARAMETER

LINK RURAL_WY	PARAMETER	IMPORTANCE	CHANGE
	DISTANCE TRAVELED	2.939E-04	1.0000 %
	NUMBER OF SHIPMENTS	2.939E-04	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	2.939E-04	1.0000 %
	NUMBER OF CREW MEMBERS	2.558E-04	0.8704 %
	K ZERO FOR CREW DOSE	2.558E-04	0.8704 %
	CREW DOSE ADJUSTMENT FACTOR	2.558E-04	0.8704 %
	K ZERO FOR VEHICLE	3.810E-05	0.1296 %
	NUMBER OF PEOPLE PER VEHICLE	3.772E-05	0.1283 %
	TRAFFIC COUNT	3.772E-05	0.1283 %

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SHIELDING FACTOR (RR, RS, RU)	3.832E-07	0.0013 %
POPULATION DENSITY	3.832E-07	0.0013 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-5.685E-05	-0.1934 %
VELOCITY	-3.317E-04	-1.1283 %

SUBURBN\_WY

DOSE RATE FOR VEHICLE (TI)	4.713E-05	1.0000 %
NUMBER OF SHIPMENTS	4.713E-05	1.0000 %
DISTANCE TRAVELED	4.713E-05	1.0000 %
NUMBER OF CREW MEMBERS	2.605E-05	0.5526 %
K ZERO FOR CREW DOSE	2.605E-05	0.5526 %
CREW DOSE ADJUSTMENT FACTOR	2.605E-05	0.5526 %
K ZERO FOR VEHICLE	2.109E-05	0.4474 %
NUMBER OF PEOPLE PER VEHICLE	1.843E-05	0.3910 %
TRAFFIC COUNT	1.843E-05	0.3910 %
SHIELDING FACTOR (RR, RS, RU)	2.656E-06	0.0564 %
POPULATION DENSITY	2.656E-06	0.0564 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-5.788E-06	-0.1228 %
VELOCITY	-6.556E-05	-1.3910 %

URBAN\_WY

DISTANCE TRAVELED	1.544E-05	1.0000 %
NUMBER OF SHIPMENTS	1.544E-05	1.0000 %
DOSE RATE FOR VEHICLE (TI)	1.544E-05	1.0000 %
K ZERO FOR VEHICLE	1.144E-05	0.7406 %
NUMBER OF PEOPLE PER VEHICLE	1.139E-05	0.7376 %
TRAFFIC COUNT	1.139E-05	0.7376 %
CREW DOSE ADJUSTMENT FACTOR	4.005E-06	0.2594 %
K ZERO FOR CREW DOSE	4.005E-06	0.2594 %
NUMBER OF CREW MEMBERS	4.005E-06	0.2594 %
POPULATION DENSITY	4.621E-08	0.0030 %
SHIELDING FACTOR (RR, RS, RU)	4.621E-08	0.0030 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-8.901E-07	-0.0576 %
VELOCITY	-2.683E-05	-1.7376 %

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INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY

ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE PARAMETER

STOP	PARAMETER	IMPORTANCE	CHANGE
AreaRes	K ZERO FOR VEHICLE	4.559E-08	1.0000 %
	STOP TIME	4.559E-08	1.0000 %
	POPULATION/POPULATION DENSITY	4.559E-08	1.0000 %
	NUMBER OF SHIPMENTS	4.559E-08	1.0000 %
	DOSE RATE FOR VEHICLE	4.559E-08	1.0000 %
	MINIMUM DISTANCE AT STOP	1.284E-10	0.0028 %
	MAXIMUM DISTANCE AT STOP	-9.131E-08	-2.0028 %
truckStop	K ZERO FOR VEHICLE	3.384E-10	1.0000 %

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STOP TIME	3.384E-10	1.0000 %
POPULATION/POPULATION DENSITY	3.384E-10	1.0000 %
NUMBER OF SHIPMENTS	3.384E-10	1.0000 %
DOSE RATE FOR VEHICLE	3.384E-10	1.0000 %
MINIMUM DISTANCE AT STOP	2.722E-12	0.0080 %
MAXIMUM DISTANCE AT STOP	-6.795E-10	-2.0080 %

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INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY

ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE PARAMETER

HANDLING	MATERIAL	PARAMETER	IMPORTANCE	CHANGE
loading	55_gal_dru	DOSE RATE FOR PACKAGE	1.953E-02	1.0000 %
		HANDLING TIME	1.953E-02	1.0000 %
		NUMBER OF SHIPMENTS	1.953E-02	1.0000 %
		NUMBER OF PACKAGES	1.953E-02	1.0000 %
		NUMBER OF HANDLERS	1.953E-02	1.0000 %
		K ZERO FOR PACKAGE	9.765E-03	0.5000 %
		PACKAGE SIZE	0.000E+00	0.0000 %
		DISTANCE OF HANDLERS	-9.765E-03	-0.5000 %

inspect

55_gal_dru	DOSE RATE FOR PACKAGE	9.765E-04	1.0000 %
	NUMBER OF HANDLERS	9.765E-04	1.0000 %
	HANDLING TIME	9.765E-04	1.0000 %
	NUMBER OF SHIPMENTS	9.765E-04	1.0000 %
	NUMBER OF PACKAGES	9.765E-04	1.0000 %
	K ZERO FOR PACKAGE	4.882E-04	0.5000 %
	PACKAGE SIZE	0.000E+00	0.0000 %
	DISTANCE OF HANDLERS	-4.883E-04	-0.5000 %

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ACCIDENT SUMMARY  
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NUMBER OF EXPECTED ACCIDENTS

CATEGORY	RURAL_COSUBURBN_CO	URBAN_CO	RURAL_IDSUBURBN_ID	URBAN_ID	RURAL_NM
1	1.43E-04	5.90E-05	1.41E-05	5.40E-05	8.02E-06
2	8.87E-09	3.66E-09	8.77E-10	3.35E-09	4.97E-10
3	8.01E-10	3.30E-10	7.92E-11	3.02E-10	4.49E-11
4	7.44E-11	3.07E-11	7.35E-12	2.81E-11	4.17E-12
5	1.00E-11	4.13E-12	9.90E-13	3.78E-12	5.62E-13
6	3.15E-14	1.30E-14	3.11E-15	1.19E-14	1.77E-15

CATEGORY	SUBURBN_NM	URBAN_NM	RURAL_UTSUBURBN_UT	URBAN_UT	RURAL_WYSUBURBN_WY
1	2.69E-06	2.82E-07	4.39E-05	1.55E-05	4.35E-07
2	1.67E-10	1.75E-11	2.72E-09	9.60E-10	2.70E-11
3	1.51E-11	1.58E-12	2.46E-10	8.67E-11	2.44E-12
4	1.40E-12	1.47E-13	2.28E-11	8.05E-12	2.26E-13
5	1.88E-13	1.98E-14	3.08E-12	1.08E-12	3.05E-14
6	5.92E-16	6.22E-17	9.67E-15	3.41E-15	9.57E-17

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CATEGORY	URBAN_WY
1	1.62E-06
2	1.00E-10
3	9.06E-12
4	8.41E-13
5	1.13E-13
6	3.56E-16

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NUMBER OF EARLY FATALITIES FROM INHALATION

CATEGORY	RURAL_COSUBURBN_CO	URBAN_CO	RURAL_IDSUBURBN_ID	URBAN_ID	RURAL_NM
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

CATEGORY	SUBURBN_NM	URBAN_NM	RURAL_UTSUBURBN_UT	URBAN_UT	RURAL_WYSUBURBN_WY
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

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

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RADIOLOGICAL CONSEQUENCES  
50 YEAR POPULATION DOSE IN PERSON-REM

CATEGORY	RURAL_COSUBURBN_CO	URBAN_CO	RURAL_IDSUBURBN_ID	URBAN_ID	RURAL_NM
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	6.35E-05	2.18E-03	3.80E-02	5.37E-05	1.76E-03
3	5.86E-04	2.01E-02	3.51E-01	4.96E-04	1.63E-02
4	6.35E-04	2.18E-02	3.80E-01	5.37E-04	1.76E-02
5	1.51E-03	5.20E-02	9.06E-01	1.28E-03	4.21E-02
6	1.64E-03	5.62E-02	9.79E-01	1.38E-03	4.55E-02

CATEGORY	SUBURBN_NM	URBAN_NM	RURAL_UTSUBURBN_UT	URBAN_UT	RURAL_WYSUBURBN_WY
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	1.73E-03	2.87E-02	6.78E-05	1.41E-03	3.33E-02

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3	1. 59E-02	2. 65E-01	6. 26E-04	1. 30E-02	3. 07E-01	2. 30E-04	1. 80E-02
4	1. 73E-02	2. 87E-01	6. 78E-04	1. 41E-02	3. 33E-01	2. 50E-04	1. 95E-02
5	4. 11E-02	6. 85E-01	1. 62E-03	3. 36E-02	7. 94E-01	5. 95E-04	4. 66E-02
6	4. 45E-02	7. 41E-01	1. 75E-03	3. 64E-02	8. 58E-01	6. 43E-04	5. 03E-02

CATEGORY	URBAN_WY
1	0. 00E+00
2	3. 10E-02
3	2. 86E-01
4	3. 10E-01
5	7. 40E-01
6	7. 99E-01

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NUMBER OF EARLY MORBIDITY CASES FROM INHALATION

CATEGORY	RURAL_COSUBURBN_CO	URBAN_CO	RURAL_IDSUBURBN_ID	URBAN_ID	RURAL_NM
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

CATEGORY	SUBURBN_NM	URBAN_NM	RURAL_UTSUBURBN_UT	URBAN_UT	RURAL_WYSUBURBN_WY
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

CATEGORY	URBAN_WY
1	0. 00E+00
2	0. 00E+00
3	0. 00E+00
4	0. 00E+00
5	0. 00E+00
6	0. 00E+00

RUN DATE: [ 22-SEP-08 AT 12: 40: 50 ]

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INL-WIPP\_TRUPACT\_I I

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

CATEGORY	RURAL_COSUBURBN_CO	URBAN_CO	RURAL_IDSUBURBN_ID	URBAN_ID	RURAL_NM
1	0. 00E+00	0. 00E+00	0. 00E+00	0. 00E+00	0. 00E+00
2	1. 36E-12	5. 59E-13	1. 34E-13	5. 12E-13	7. 60E-14
3	1. 13E-12	4. 66E-13	1. 12E-13	4. 27E-13	6. 34E-14
4	1. 14E-13	4. 69E-14	1. 12E-14	4. 29E-14	6. 38E-15
5	3. 65E-14	1. 51E-14	3. 61E-15	1. 38E-14	2. 05E-15

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6	1. 24E-16	5. 11E-17	1. 23E-17	4. 68E-17	6. 95E-18	5. 11E-19	7. 21E-17
CATEGORY	SUBURBN_NM	URBAN_NM	RURAL_UT	SUBURBN_UT	URBAN_UT	RURAL_WY	SUBURBN_WY
1	0. 00E+00	0. 00E+00	0. 00E+00	0. 00E+00	0. 00E+00	0. 00E+00	0. 00E+00
2	2. 55E-14	2. 68E-15	4. 16E-13	1. 47E-13	4. 12E-15	3. 59E-12	1. 66E-13
3	2. 12E-14	2. 23E-15	3. 47E-13	1. 22E-13	3. 44E-15	2. 99E-12	1. 38E-13
4	2. 14E-15	2. 25E-16	3. 49E-14	1. 23E-14	3. 46E-16	3. 01E-13	1. 39E-14
5	6. 86E-16	7. 21E-17	1. 12E-14	3. 95E-15	1. 11E-16	9. 66E-14	4. 47E-15
6	2. 33E-18	2. 45E-19	3. 81E-17	1. 34E-17	3. 77E-19	3. 28E-16	1. 52E-17
CATEGORY	URBAN_WY						
1	0. 00E+00						
2	1. 53E-14						
3	1. 28E-14						
4	1. 29E-15						
5	4. 13E-16						
6	1. 40E-18						

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_CO	0. 00E+00	2. 91E-05	2. 68E-04	2. 91E-04	6. 93E-04	7. 49E-04
RURAL_ID	0. 00E+00	1. 44E-05	1. 33E-04	1. 44E-04	3. 44E-04	3. 71E-04
RURAL_NM	0. 00E+00	3. 42E-05	3. 16E-04	3. 42E-04	8. 16E-04	8. 82E-04
RURAL_UT	0. 00E+00	1. 04E-05	9. 59E-05	1. 04E-04	2. 48E-04	2. 68E-04
RURAL_WY	0. 00E+00	3. 00E-05	2. 77E-04	3. 00E-04	7. 16E-04	7. 74E-04

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I NL-WI PP\_TRUPACT\_I I

EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

	GROUND	I NHALED	RESUSPD	CLOUDSH	TOTAL
RURAL_CO	1. 92E-16	1. 09E-12	9. 07E-15	3. 60E-22	1. 10E-12
SUBURBN_CO	2. 71E-15	1. 54E-11	1. 28E-13	5. 11E-21	1. 55E-11
URBAN_CO	1. 13E-14	6. 42E-11	5. 36E-13	2. 13E-20	6. 48E-11
RURAL_ID	6. 11E-17	3. 47E-13	2. 89E-15	1. 15E-22	3. 50E-13
SUBURBN_ID	2. 99E-16	1. 69E-12	1. 41E-14	5. 62E-22	1. 71E-12
URBAN_ID	4. 06E-16	2. 30E-12	1. 92E-14	7. 64E-22	2. 32E-12
RURAL_NM	4. 48E-17	2. 54E-13	2. 12E-15	8. 42E-23	2. 56E-13
SUBURBN_NM	9. 79E-17	5. 55E-13	4. 63E-15	1. 84E-22	5. 59E-13
URBAN_NM	1. 71E-16	9. 71E-13	8. 10E-15	3. 22E-22	9. 79E-13
RURAL_UT	6. 28E-17	3. 56E-13	2. 97E-15	1. 18E-22	3. 59E-13
SUBURBN_UT	4. 61E-16	2. 61E-12	2. 18E-14	8. 67E-22	2. 63E-12
URBAN_UT	3. 05E-16	1. 73E-12	1. 45E-14	5. 75E-22	1. 75E-12
RURAL_WY	1. 99E-16	1. 13E-12	9. 43E-15	3. 75E-22	1. 14E-12
SUBURBN_WY	7. 22E-16	4. 09E-12	3. 42E-14	1. 36E-21	4. 13E-12
URBAN_WY	1. 06E-15	6. 00E-12	5. 01E-14	1. 99E-21	6. 05E-12
RURAL	5. 59E-16	3. 17E-12	2. 65E-14	1. 05E-21	3. 20E-12
SUBURB	4. 29E-15	2. 43E-11	2. 03E-13	8. 08E-21	2. 45E-11
URBAN	1. 33E-14	7. 52E-11	6. 28E-13	2. 50E-20	7. 59E-11
TOTALS:	1. 81E-14	1. 03E-10	8. 58E-13	3. 41E-20	1. 04E-10

RUN DATE: [ 22-SEP-08 AT 12: 40: 50 ]

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INL-WIPP\_tru\_Sept22

INL-WIPP\_TRUPACT\_I I

SOCI ETAL I NGESTI ON R I SK - PERSON-REM

LI NK	GONADS	EFFECTI VE
RURAL_CO	1. 38E-13	5. 01E-13
RURAL_I D	2. 59E-14	9. 38E-14
RURAL_NM	9. 49E-14	3. 44E-13
RURAL_UT	1. 52E-14	5. 50E-14
RURAL_WY	3. 78E-13	1. 37E-12
TOTAL	6. 53E-13	2. 36E-12

SOCI ETAL I NGESTI ON R I SK BY ORG AN - PERSON-REM

LI NK	BREAST	LUNGS	RED MARR	BONE SUR	THYROI D	REMAI NDER
RURAL_CO	4. 21E-18	4. 26E-18	7. 40E-13	9. 23E-12	3. 97E-18	3. 37E-13
RURAL_I D	7. 88E-19	7. 97E-19	1. 38E-13	1. 73E-12	7. 42E-19	6. 31E-14
RURAL_NM	2. 89E-18	2. 92E-18	5. 07E-13	6. 32E-12	2. 72E-18	2. 31E-13
RURAL_UT	4. 62E-19	4. 68E-19	8. 11E-14	1. 01E-12	4. 35E-19	3. 70E-14
RURAL_WY	1. 15E-17	1. 16E-17	2. 02E-12	2. 52E-11	1. 08E-17	9. 21E-13
TOTAL	1. 99E-17	2. 01E-17	3. 49E-12	4. 35E-11	1. 87E-17	1. 59E-12

RUN DATE: [ 22-SEP-08 AT 12: 40: 50 ]

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INL-WIPP\_TRUPACT\_I I

EXPECTED R I SK VALU ES - OTHER

LI NK	EARLY FATALI TY	EARLY MORBI DI TY
RURAL_CO	0. 00E+00	0. 00E+00
SUBURBN_CO	0. 00E+00	0. 00E+00
URBAN_CO	0. 00E+00	0. 00E+00
RURAL_I D	0. 00E+00	0. 00E+00
SUBURBN_I D	0. 00E+00	0. 00E+00
URBAN_I D	0. 00E+00	0. 00E+00
RURAL_NM	0. 00E+00	0. 00E+00
SUBURBN_NM	0. 00E+00	0. 00E+00
URBAN_NM	0. 00E+00	0. 00E+00
RURAL_UT	0. 00E+00	0. 00E+00
SUBURBN_UT	0. 00E+00	0. 00E+00
URBAN_UT	0. 00E+00	0. 00E+00
RURAL_WY	0. 00E+00	0. 00E+00
SUBURBN_WY	0. 00E+00	0. 00E+00
URBAN_WY	0. 00E+00	0. 00E+00
TOTAL	0. 00E+00	0. 00E+00

RUN DATE: [ 22-SEP-08 AT 12: 40: 50 ]

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INL-WIPP\_TRUPACT\_I I

TOTAL EXPOSED POPULATI ON: I NCI DENT-FREE

INL-WIPP\_tru\_Sept22

RURAL\_CO 6.29E+03 PERSONS  
 SUBURBN\_CO 8.91E+04 PERSONS  
 URBAN\_CO 1.28E+05 PERSONS  
 RURAL\_ID 3.03E+03 PERSONS  
 SUBURBN\_ID 1.48E+04 PERSONS  
 URBAN\_ID 6.94E+03 PERSONS  
 RURAL\_NM 5.80E+03 PERSONS  
 SUBURBN\_NM 1.27E+04 PERSONS  
 URBAN\_NM 7.64E+03 PERSONS  
 RURAL\_UT 3.17E+03 PERSONS  
 SUBURBN\_UT 2.33E+04 PERSONS  
 URBAN\_UT 5.31E+03 PERSONS  
 RURAL\_WY 4.33E+03 PERSONS  
 SUBURBN\_WY 1.57E+04 PERSONS  
 URBAN\_WY 7.91E+03 PERSONS

TOTAL 3.34E+05 PERSONS

RUN DATE: [ 22-SEP-08 AT 12:40:50 ]

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INL-WIPP\_TRUPACT\_I I

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

RURAL\_CO 1.58E+04 PERSONS  
 SUBURBN\_CO 5.43E+05 PERSONS  
 URBAN\_CO 3.26E+06 PERSONS  
 RURAL\_ID 1.34E+04 PERSONS  
 SUBURBN\_ID 4.39E+05 PERSONS  
 URBAN\_ID 2.80E+06 PERSONS  
 RURAL\_NM 6.35E+03 PERSONS  
 SUBURBN\_NM 4.29E+05 PERSONS  
 URBAN\_NM 2.46E+06 PERSONS  
 RURAL\_UT 1.69E+04 PERSONS  
 SUBURBN\_UT 3.51E+05 PERSONS  
 URBAN\_UT 2.85E+06 PERSONS  
 RURAL\_WY 6.21E+03 PERSONS  
 SUBURBN\_WY 4.86E+05 PERSONS  
 URBAN\_WY 2.66E+06 PERSONS

INL-WIPP\_TRUPACT\_I I

LINK:	RURAL_CO	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	1.29E-20	6.28E-18	5.24E-20	2.24E-26	6.35E-18
55_gal_dru	U235	3.47E-18	6.75E-18	5.64E-20	4.73E-23	1.03E-17
55_gal_dru	PU240	1.88E-16	1.09E-12	9.07E-15	3.13E-22	1.10E-12
					TOTAL:	1.10E-12

LINK:	SUBURBN_CO	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	1.83E-19	8.90E-17	7.43E-19	3.18E-25	8.99E-17
55_gal_dru	U235	4.92E-17	9.56E-17	7.99E-19	6.70E-22	1.46E-16
55_gal_dru	PU240	2.67E-15	1.54E-11	1.28E-13	4.44E-21	1.55E-11
					TOTAL:	1.55E-11

LINK:	URBAN_CO	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
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INL-WIPP\_tru\_Sept22

MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	7.64E-19	3.72E-16	3.10E-18	1.33E-24	3.75E-16
55_gal_dru	U235	2.05E-16	3.99E-16	3.33E-18	2.80E-21	6.08E-16
55_gal_dru	PU240	1.11E-14	6.42E-11	5.36E-13	1.85E-20	6.48E-11
					TOTAL:	6.48E-11

LINK:	RURAL_ID	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	4.12E-21	2.00E-18	1.67E-20	7.15E-27	2.03E-18
55_gal_dru	U235	1.11E-18	2.15E-18	1.80E-20	1.51E-23	3.28E-18
55_gal_dru	PU240	6.00E-17	3.47E-13	2.89E-15	9.99E-23	3.49E-13
					TOTAL:	3.50E-13

LINK:	SUBURBN_ID	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	2.01E-20	9.79E-18	8.17E-20	3.49E-26	9.89E-18
55_gal_dru	U235	5.41E-18	1.05E-17	8.79E-20	7.37E-23	1.60E-17
55_gal_dru	PU240	2.93E-16	1.69E-12	1.41E-14	4.88E-22	1.71E-12
					TOTAL:	1.71E-12

LINK:	URBAN_ID	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	2.74E-20	1.33E-17	1.11E-19	4.75E-26	1.35E-17
55_gal_dru	U235	7.36E-18	1.43E-17	1.19E-19	1.00E-22	2.18E-17
55_gal_dru	PU240	3.99E-16	2.30E-12	1.92E-14	6.64E-22	2.32E-12
					TOTAL:	2.32E-12

LINK:	RURAL_NM	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	3.02E-21	1.47E-18	1.23E-20	5.24E-27	1.48E-18
55_gal_dru	U235	8.11E-19	1.58E-18	1.32E-20	1.11E-23	2.40E-18
55_gal_dru	PU240	4.40E-17	2.54E-13	2.12E-15	7.31E-23	2.56E-13
					TOTAL:	2.56E-13

LINK:	SUBURBN_NM	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	6.60E-21	3.21E-18	2.68E-20	1.14E-26	3.24E-18
55_gal_dru	U235	1.77E-18	3.45E-18	2.88E-20	2.42E-23	5.25E-18
55_gal_dru	PU240	9.61E-17	5.55E-13	4.63E-15	1.60E-22	5.59E-13
					TOTAL:	5.59E-13

LINK:	URBAN_NM	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	1.15E-20	5.61E-18	4.69E-20	2.00E-26	5.67E-18
55_gal_dru	U235	3.10E-18	6.03E-18	5.04E-20	4.23E-23	9.19E-18
55_gal_dru	PU240	1.68E-16	9.71E-13	8.10E-15	2.80E-22	9.79E-13
					TOTAL:	9.79E-13

LINK:	RURAL_UT	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	4.23E-21	2.06E-18	1.72E-20	7.35E-27	2.08E-18
55_gal_dru	U235	1.14E-18	2.21E-18	1.85E-20	1.55E-23	3.37E-18
55_gal_dru	PU240	6.17E-17	3.56E-13	2.97E-15	1.03E-22	3.59E-13
					TOTAL:	3.59E-13

LINK:	SUBURBN_UT	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	3.11E-20	1.51E-17	1.26E-19	5.39E-26	1.53E-17
55_gal_dru	U235	8.35E-18	1.62E-17	1.36E-19	1.14E-22	2.47E-17
55_gal_dru	PU240	4.52E-16	2.61E-12	2.18E-14	7.53E-22	2.63E-12
					TOTAL:	2.63E-12

LINK:	URBAN_UT	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM
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INL-WIPP_tru_Sept22						
MATERIAL	ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL
55_gal_dru	U238	2.06E-20	1.00E-17	8.36E-20	3.57E-26	1.01E-17
55_gal_dru	U235	5.53E-18	1.08E-17	8.99E-20	7.54E-23	1.64E-17
55_gal_dru	PU240	3.00E-16	1.73E-12	1.45E-14	4.99E-22	1.75E-12
					TOTAL:	1.75E-12

LINK: RURAL_WY						
MATERIAL	ISOTOPE	GROUND	INHALATN	POPULATION	RISK IN PERSON-REM	TOTAL
55_gal_dru	U238	1.34E-20	6.53E-18	5.45E-20	2.33E-26	6.60E-18
55_gal_dru	U235	3.61E-18	7.02E-18	5.86E-20	4.92E-23	1.07E-17
55_gal_dru	PU240	1.96E-16	1.13E-12	9.43E-15	3.25E-22	1.14E-12
					TOTAL:	1.14E-12

LINK: SUBURBN_WY						
MATERIAL	ISOTOPE	GROUND	INHALATN	POPULATION	RISK IN PERSON-REM	TOTAL
55_gal_dru	U238	4.86E-20	2.37E-17	1.98E-19	8.44E-26	2.39E-17
55_gal_dru	U235	1.31E-17	2.54E-17	2.12E-19	1.78E-22	3.87E-17
55_gal_dru	PU240	7.09E-16	4.09E-12	3.42E-14	1.18E-21	4.13E-12
					TOTAL:	4.13E-12

LINK: URBAN_WY						
MATERIAL	ISOTOPE	GROUND	INHALATN	POPULATION	RISK IN PERSON-REM	TOTAL
55_gal_dru	U238	7.13E-20	3.47E-17	2.90E-19	1.24E-25	3.51E-17
55_gal_dru	U235	1.92E-17	3.73E-17	3.11E-19	2.61E-22	5.68E-17
55_gal_dru	PU240	1.04E-15	6.00E-12	5.01E-14	1.73E-21	6.05E-12
					TOTAL:	6.05E-12

EOI  
 END OF RUN  
 SUCCESSFUL COMPLETION

RRRR	AAA	DDDD	TTTTT	RRRR	AAA	N	N	55555	6
R R	A A	D D	T	R R	A A	NN	N	5	6
R R	A A	D D	T	R R	A A	N N	N	5	6
RRRR	A A	D D	T	RRRR	A A	N NN	5555	6666	
R R	AAAAA	D D	T	R R	AAAAA	N N	5	6 6	
R R	A A	D D	T	R R	A A	N N	5 5	6 6	
R R	A A	DDDD	T	R R	A A	N N	5555	* 666	

RADTRAN 5.6 February 20, 2006

INPUT ECHO

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&& Shipment of LLNL TRU waste from INL to WIPP  
&& 3 TRUPACT containers per shipment  
&& 14 55-gal drums per TP (42 drums/shipment)  
&& Remark  
TITLE LLNL-INL\_TRU  
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 && MITDDI ST 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

LLNL-INL\_tru\_Sept22

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 INTERDI CT  
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 && EVACUATI ON SURVEY CAMPAIGN

RUN DATE: [ 22-SEP-08 AT 12:20:55 ]

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LLNL-INL\_TRU

STD: 0.0 0.0 1.5E-8 5.3E-8 && HI GHWAY - RURAL - NONRAD  
STD: 0.0 0.0 3.7E-9 1.3E-8 && HI GHWAY - SUBURBAN - NONRAD  
STD: 0.0 0.0 2.1E-9 7.5E-9 && HI GHWAY - URBAN - NONRAD  
STD: 0.0 0.0 1.81E-9 2.64E-8 && GENERAL FREI GHT - R - NONRAD  
STD: 0.0 0.0 1.81E-9 2.64E-8 && GENERAL FREI GHT - S - NONRAD  
STD: 0.0 0.0 1.81E-9 2.64E-8 && GENERAL FREI GHT - U - NONRAD  
STD: 0.0 0.0 1.27E-7 1.85E-6 && DEDI CATED RAI L - R - NONRAD  
STD: 0.0 0.0 1.27E-7 1.85E-6 && DEDI CATED RAI L - S - NONRAD  
STD: 0.0 0.0 1.27E-7 1.85E-6 && DEDI CATED RAI L - U - NONRAD  
STD: 0.0 0.0 0.0 0.0 0.0 0.0 0.0 && PSPROB  
STD: 0.67 0.67 0.42 && TIME NDE NON-DI SPERSAL EVAC TIME (LCF&EARLY)  
STD: 2 2 1 && FLAGS=IUOPT IACC REGCHECK  
STD: 5E-4, 4E-4, 1.0E-4 && LCFCO N(1), LCFCO N(2), GECON  
STD: R5I NGEST. BI N && I NGESTI ON FI LE

OUTPUT CI\_REM  
FORM UNIT

DIMEN 6 10 18  
 PARM 1 3 4 0  
 SEVERITY  
 NPOP=1  
 NMODE=1  
 0.99993  
 6.2E-5 5.6E-6 5.2E-7 7.0E-8 2.2E-10  
 NPOP=2  
 NMODE=1  
 0.99993  
 6.2E-5 5.6E-6 5.2E-7 7.0E-8 2.2E-10  
 NPOP=3  
 NMODE=1  
 0.99993  
 6.2E-5 5.6E-6 5.2E-7 7.0E-8 2.2E-10

RELEASE  
 GROUP=GROUP\_1  
 RFRAC  
 0.0  
 2.6E-5 2.4E-5 2.6E-5 6.2E-5 6.7E-5  
 AERSOL  
 0.0  
 1.0E-4 0.0010 0.0010 0.0010 0.0010  
 RESP  
 0.0

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1.0 1.0 1.0 1.0 1.0  
 LOS  
 0.0  
 0.0 0.0 0.0 0.0 0.0  
 DEPVEL 0.01  
 PACKAGE 55\_gal\_drum 3.0 1.0 0.0 1.1  
 U238 0.0010 GROUP\_1  
 U235 0.0010 GROUP\_1  
 PU240 10.0 GROUP\_1  
 END  
 VEHICLE -1 SST 4.00E00 1.0 0.0 7.62 1.0 2.0 3.0 1.0 3.9  
 55\_gal\_drum 42.0  
 FLAGS  
 IACC 2  
 IUOPT 2  
 REGCHECK 1  
 MODSTD  
 DISTOFF FREEWAY 3.00E01 3.00E01 8.00E02  
 DISTOFF SECONDARY 2.70E01 3.00E01 8.00E02  
 DISTOFF STREET 5.00E00 8.00E00 8.00E02  
 DISTON  
 FREEWAY 1.50E01  
 SECONDARY 3.00E00  
 STREET 3.00E00  
 ADJACENT 4.00E00  
 BDF 5.00E-02

BRATE 3.30E-04  
 CULVL 2.00E-01  
 EVACUATION 1.00E00  
 GECON 1.00E-04  
 INTERDICT 4.00E01  
 LCFCON 5.00E-04 4.00E-04  
 SURVEY 1.00E01  
 UBF 5.20E-01  
 USWF 4.80E-01  
 CAMPAIGN 8.33E-02  
 MITDDIST 3.00E01  
 MITDVEL 2.40E01  
 RPD 6.00E00  
 RR 1.00E00  
 RU 1.80E-02  
 RS 8.70E-01  
 SMALLPKG 5.00E-01  
 RPCTHYROID  
 I131 1.27E06

EOF

LINK RURAL\_CA SST 184.5 88.49 1.5 12.4 1160.0 1.6E-7 0.0438 R 1 0.29  
 LINK SUBURBN\_CA SST 101.6 40.25 1.5 393.4 2410.0 1.6E-7 0.0438 S 1 1.0  
 LINK URBAN\_CA SST 44.9 24.15 1.5 2662.0 5490.0 1.6E-7 0.0438 U 1 1.0  
 LINK RURAL\_ID SST 183.0 88.49 1.5 9.9 1160.0 2.95E-7 0.0129 R 1 0.254  
 LINK SUBURBN\_ID SST 27.2 40.25 1.5 325.3 2410.0 2.95E-7 0.0129 S 1 1.0  
 LINK URBAN\_ID SST 2.0 24.15 1.5 2070.7 5490.0 2.95E-7 0.0129 U 1 1.0  
 LINK RURAL\_NV SST 599.7 88.49 1.5 7.3 1160.0 2.25E-7 0.0293 R 1 0.132  
 LINK SUBURBN\_NV SST 48.8 40.25 1.5 330.3 2410.0 2.25E-7 0.0293 S 1 1.0  
 LINK URBAN\_NV SST 12.4 24.15 1.5 2520.7 5490.0 2.25E-7 0.0239 U 1 1.0  
 LINK RURAL\_UT SST 252.5 88.49 1.5 7.5 1160.0 2.9E-7 0.041 R 1 0.183  
 LINK SUBURBN\_UT SST 68.9 40.25 1.5 360.8 2410.0 2.9E-7 0.041 S 1 1.0  
 LINK URBAN\_UT SST 17.6 24.15 1.5 2410.0 5490.0 2.9E-7 0.041 U 1 1.0

STOP AreaRes SST 1.0 30.0 800.0 1.0 3.0  
 STOP truckStop SST 0.00883 1.0 15.8 1.0 3.0

HANDLING loading SST 5.0 2.0 4.0  
 HANDLING inspect SST 1.0 2.0 1.0

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)
55_gal_dru	1.100E+00	1.100E+00	2.403E+00	1.000E+00	0.000E+00	3.000E+00

K(0) IS DOSE RATE CONVERSION FACTOR

VEHICLE CHARACTERISTICS

VEHICLE NAME  
 MODE TYPE

SST  
 HIGHWAY

EXCLUSIVE USE YES  
 DOSE RATE (MREM/HR) 4.00E+00  
 K(O) (SQ. METERS) 1.58E+01  
 VEHICLE SIZE (M) 7.62E+00  
 EFFECTIVE SIZE (M) 5.95E+00  
 NUMBER OF SHIPMENTS 1.00E+00  
 NUMBER OF CREW 2.00E+00  
 CREW DISTANCE (M) 3.00E+00  
 CREW DOSE ADJUSTMENT FACT 1.00E+00  
 CREW EXPOSER WIDTH (M) 3.90E+00  
 EFFECTIVE EXPOSER WIDTH 3.90E+00  
 K(O) (SQ M) CREW EXPOSURE 8.70E+00

VEHICLE MATERIAL NO. PACKAGES  
 SST 55\_gal\_dru 4.20E+01

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

VEHICLE	AreaRes	truckStop
PERSONS	SST 1.00E+00	SST 8.83E-03
MINIMUM DISTANCE(M)	3.00E+01	1.00E+00
MAXIMUM DISTANCE(M)	8.00E+02	1.58E+01
SHIELDING FACTOR	1.00E+00	1.00E+00
TIME (HR)	3.00E+00	3.00E+00

HANDLING RELATED DATA

VEHICLE	loadi ng	i nspect
NUMBER OF HANDLERS	SST 5.00E+00	SST 1.00E+00
DISTANCE (M)	2.00E+00	2.00E+00
EXPOSURE TIME (HR)	4.00E+00	1.00E+00

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

LLNL-INL\_TRU  
 LINK RELATED DATA

	RURAL_CA	SUBURBN_CA	URBAN_CA	RURAL_ID	SUBURBN_ID
VEHICLE	SST	SST	SST	SST	SST
DISTANCE (KM)	1.84E+02	1.02E+02	4.49E+01	1.83E+02	2.72E+01
PERSONS PER VEHICLE	1.50E+00	1.50E+00	1.50E+00	1.50E+00	1.50E+00
SPEED (KM/HR)	8.85E+01	4.02E+01	2.42E+01	8.85E+01	4.02E+01
POPULATION DENSITY	1.24E+01	3.93E+02	2.66E+03	9.90E+00	3.25E+02
VEHICLE DENSITY	1.16E+03	2.41E+03	5.49E+03	1.16E+03	2.41E+03
ACCIDENT RATE/KM	1.60E-07	1.60E-07	1.60E-07	2.95E-07	2.95E-07
FATALITIES/ACCIDENT	4.38E-02	4.38E-02	4.38E-02	1.29E-02	1.29E-02
ZONE	RURAL	SUBURBAN	URBAN	RURAL	SUBURBAN
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	2.90E-01	0.00E+00	0.00E+00	2.54E-01	0.00E+00

	URBAN_ID	RURAL_NV	SUBURBN_NV	URBAN_NV	RURAL_UT
VEHICLE	SST	SST	SST	SST	SST
DISTANCE (KM)	2.00E+00	6.00E+02	4.88E+01	1.24E+01	2.52E+02
PERSONS PER VEHICLE	1.50E+00	1.50E+00	1.50E+00	1.50E+00	1.50E+00
SPEED (KM/HR)	2.42E+01	8.85E+01	4.02E+01	2.42E+01	8.85E+01
POPULATION DENSITY	2.07E+03	7.30E+00	3.30E+02	2.52E+03	7.50E+00
VEHICLE DENSITY	5.49E+03	1.16E+03	2.41E+03	5.49E+03	1.16E+03
ACCIDENT RATE/KM	2.95E-07	2.25E-07	2.25E-07	2.25E-07	2.90E-07
FATALITIES/ACCIDENT	1.29E-02	2.93E-02	2.93E-02	2.39E-02	4.10E-02
ZONE	URBAN	RURAL	SUBURBAN	URBAN	RURAL
ROAD TYPE	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY
FARMING FRACTION	0.00E+00	1.32E-01	0.00E+00	0.00E+00	1.83E-01

	SUBURBN_UT	URBAN_UT
VEHICLE	SST	SST
DISTANCE (KM)	6.89E+01	1.76E+01
PERSONS PER VEHICLE	1.50E+00	1.50E+00
SPEED (KM/HR)	4.02E+01	2.42E+01
POPULATION DENSITY	3.61E+02	2.41E+03
VEHICLE DENSITY	2.41E+03	5.49E+03
ACCIDENT RATE/KM	2.90E-07	2.90E-07
FATALITIES/ACCIDENT	4.10E-02	4.10E-02
ZONE	SUBURBAN	URBAN
ROAD TYPE	FREEWAY	FREEWAY
FARMING FRACTION	0.00E+00	0.00E+00

LLNL-INL\_TRU  
 ISOTOPE RELATED DATA

NUCLIDE	CURIES PER PKG	RELEASE GROUP	SETTLING ONLY RESUSPENSION FACTOR	50YR INHALATION (REM/CI) EFFECTIVE
55_gal_dru				
U238	1.00E-03	GROUP_1	1.01E+00	1.07E+07
U235	1.00E-03	GROUP_1	1.01E+00	1.15E+07
PU240	1.00E+01	GROUP_1	1.01E+00	1.85E+08

NUCLIDE	HALF LIFE	GAMMA ENERGY	CLOUD FACTOR	GROUND FACTOR	INGESTION NEUTRON EMISSIONS
					neutrons/sec/Ci

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55_gal_dru							
U238	1.63E+12	1.36E-03	1.26E-05	1.76E-07	U-238	0.00E+00	
U235	2.57E+11	1.54E-01	2.66E-02	4.73E-05	U-235	0.00E+00	
PU240	2.39E+06	1.73E-03	1.76E-05	2.57E-07	Pu-240	0.00E+00	

NUCLIDE	1-YR INHALATION (REM/CI)		
	LUNG	MARROW	THYROID
55_gal_dru			
U238	8.14E+07	2.92E+05	0.00E+00
U235	8.51E+07	2.92E+05	0.00E+00
PU240	1.11E+08	1.30E+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
GROUP_1	0.00E+00	2.60E-05	2.40E-05	2.60E-05	6.20E-05	6.70E-05

DEPOSITION VELOCITIES

GROUP	M/SEC
GROUP_1	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	6.20E-05	5.60E-06	5.20E-07	7.00E-08	2.20E-10
SUBURBAN	1.00E+00	6.20E-05	5.60E-06	5.20E-07	7.00E-08	2.20E-10
URBAN	1.00E+00	6.20E-05	5.60E-06	5.20E-07	7.00E-08	2.20E-10

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AEROSOLIZED FRACTION OF RELEASED MATERIAL

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
GROUP_1	0.00E+00	1.00E-04	1.00E-03	1.00E-03	1.00E-03	1.00E-03

RESPIRABLE FRACTION OF AEROSOLS (BELOW 10 MICRONS AED)

GROUP	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
GROUP_1	0.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00

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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)

OTHER DISPERSAL ACCIDENT INPUT PARAMETERS

\*\*\*\*\*

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 (Ci/micro-Ci) (INTERDICT) = 4.000E+01  
 EVACUATION TIME (DAYS) (EVACUATION) = 1.000E+00  
 SURVEY INTERVAL (DAYS) (SURVEY) = 1.000E+01  
 CAMPAIGN LENGTH (YEARS) (CAMPAIGN) = 8.330E-02  
 FRACTION OF URBAN AREAS WITH BUILDINGS (UBF) = 5.200E-01  
 FRACTION OF URBAN AREAS WITH SIDEWALKS (USWF) = 4.800E-01  
 RATIO OF SIDEWALK PEDESTRIAN DENSITY (RPD) = 6.000E+00  
 MAXIMUM IN-TRANSIT DOSE DISTANCE (M) (MITDDIST) = 3.000E+01  
 MAXIMUM IN-TRANSIT DOSE VELOCITY (KM/H) (MITDVEL) = 2.400E+01  
 IACC VALUE: 1=NON-DISPERSAL, 2=DISPERSAL = 2  
 REGULATORY CHECK, 1=DO CHECKS, 0=NO CHECKS = 1  
 BUILDING SHIELDING OPTION (IUOPT) = 2  
 RURAL SHIELDING FACTOR = 1.000E+00  
 SUBURBAN SHIELDING FACTOR = 8.700E-01  
 URBAN SHIELDING FACTOR = 1.800E-02

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LLNL-INL\_tru\_Sept22

INGESTION RELATED DATA

COMIDA INGESTION FILE USED: R5INGEST.BIN

COMIDA FILE HEADER

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

DOSE CONVERSION FILE USED IN COMIDA

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

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BACKYARD FARMER INGESTION DOSE (REM/CI DEPOSITED)

NUCLIDE	EFFECTIVE	THYROID
U-238	1.457E+04	2.088E+02
U-235	1.639E+04	2.229E+02
Pu-240	8.228E+05	6.464E+00

SOCIETAL INGESTION DOSE (PERSON-REM/CI DEPOSITED)

NUCLIDE	GONADS	BREAST	LUNGS	RED MAR	BONE SU	THYROID	REMAIND	EFFECTI
U-238	2.7E-02	2.5E-02	2.5E-02	7.3E-01	1.1E+01	2.5E-02	4.3E+00	1.7E+00
U-235	9.0E-02	3.2E-02	2.7E-02	7.5E-01	1.1E+01	2.6E-02	4.9E+00	1.9E+00
Pu-240	2.5E+01	7.6E-04	7.7E-04	1.3E+02	1.7E+03	7.1E-04	6.1E+01	9.1E+01

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NON-RADIOLOGICAL DATA (ACCIDENTS and FATALITIES)

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HI GHWAY

	ACCIDENT RATE	ACCIDENTS	FATALITIES
RURAL_CA	1.60E-07	2.95E-05	1.29E-06
SUBURBN_CA	1.60E-07	1.63E-05	7.12E-07
URBAN_CA	1.60E-07	7.18E-06	3.15E-07
RURAL_ID	2.95E-07	5.40E-05	6.96E-07
SUBURBN_ID	2.95E-07	8.02E-06	1.04E-07
URBAN_ID	2.95E-07	5.90E-07	7.61E-09
RURAL_NV	2.25E-07	1.35E-04	3.95E-06
SUBURBN_NV	2.25E-07	1.10E-05	3.22E-07
URBAN_NV	2.25E-07	2.79E-06	6.67E-08
RURAL_UT	2.90E-07	7.32E-05	3.00E-06
SUBURBN_UT	2.90E-07	2.00E-05	8.19E-07
URBAN_UT	2.90E-07	5.10E-06	2.09E-07
TOTALS:	2.91E-06	3.63E-04	1.15E-05

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REGULATORY CHECKS

FOR THE SHIPMENT BY SST  
THE DOSE RATE IN THE CREW COMPARTMENT COULD EXCEED 2 MREM/HR  
THE DOSE RATE HAS BEEN RESET FROM 3.87 TO 2 FOR CREW CALCULATIONS

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CALCULATIONAL INFORMATION

FOR SST AREAS WITH TOTAL CONTAMINATION RATIO GREATER THAN 40.000  
(THE AREAS MARKED WITH AN 'X' ARE INTERDICTED AND HAVE  
NO 50 YEAR GROUND SHINE 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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RELEASE FRACTIONS

GROUP SEVER: 1 SEVER: 2 SEVER: 3 SEVER: 4 SEVER: 5 SEVER: 6  
GROUP\_1 0.00E+00 2.60E-05 2.40E-05 2.60E-05 6.20E-05 6.70E-05

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 DEPOSITION VELOCITIES  
 GROUP M/SEC  
 GROUP\_1 1.00E-02

DI LUTION FACTORS  
 CHI VALUES AFTER DEPLETION (CI -SEC/M\*\*3/CI -RELEASED)

DI STANCE	GROUP_1
3. 30E+01	3. 42E-03
6. 80E+01	1. 72E-03
1. 05E+02	8. 34E-04
2. 44E+02	3. 23E-04
3. 69E+02	1. 55E-04
5. 61E+02	7. 38E-05
1. 02E+03	2. 80E-05
1. 63E+03	1. 33E-05
2. 31E+03	6. 16E-06
4. 27E+03	2. 33E-06
5. 47E+03	1. 06E-06
1. 11E+04	5. 04E-07
1. 31E+04	1. 86E-07
2. 13E+04	8. 77E-08
4. 05E+04	4. 01E-08
7. 00E+04	2. 14E-08
8. 99E+04	1. 31E-08
1. 21E+05	8. 54E-09

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

DI STANCE	GROUP_1
3. 30E+01	3. 42E-05
6. 80E+01	1. 72E-05
1. 05E+02	8. 34E-06
2. 44E+02	3. 23E-06
3. 69E+02	1. 55E-06
5. 61E+02	7. 38E-07
1. 02E+03	2. 80E-07
1. 63E+03	1. 33E-07
2. 31E+03	6. 16E-08
4. 27E+03	2. 33E-08
5. 47E+03	1. 06E-08
1. 11E+04	5. 04E-09
1. 31E+04	1. 86E-09
2. 13E+04	8. 77E-10
4. 05E+04	4. 01E-10
7. 00E+04	2. 14E-10
8. 99E+04	1. 31E-10
1. 21E+05	8. 54E-11

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VEHICLE SST

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. 37E-04	1. 26E-03	1. 37E-03	3. 26E-03	3. 53E-03
6. 80E+01	0. 00E+00	6. 87E-05	6. 34E-04	6. 87E-04	1. 64E-03	1. 77E-03
1. 05E+02	0. 00E+00	3. 34E-05	3. 08E-04	3. 34E-04	7. 96E-04	8. 60E-04

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2. 44E+02	0. 00E+00	1. 29E-05	1. 19E-04	1. 29E-04	3. 08E-04	3. 33E-04
3. 69E+02	0. 00E+00	6. 19E-06	5. 72E-05	6. 19E-05	1. 48E-04	1. 60E-04
5. 61E+02	0. 00E+00	2. 95E-06	2. 72E-05	2. 95E-05	7. 04E-05	7. 60E-05
1. 02E+03	0. 00E+00	1. 12E-06	1. 03E-05	1. 12E-05	2. 67E-05	2. 89E-05
1. 63E+03	0. 00E+00	5. 30E-07	4. 89E-06	5. 30E-06	1. 26E-05	1. 37E-05
2. 31E+03	0. 00E+00	2. 47E-07	2. 28E-06	2. 47E-06	5. 88E-06	6. 36E-06
4. 27E+03	0. 00E+00	9. 32E-08	8. 60E-07	9. 32E-07	2. 22E-06	2. 40E-06
5. 47E+03	0. 00E+00	4. 25E-08	3. 92E-07	4. 25E-07	1. 01E-06	1. 09E-06
1. 11E+04	0. 00E+00	2. 01E-08	1. 86E-07	2. 01E-07	4. 80E-07	5. 19E-07
1. 31E+04	0. 00E+00	7. 45E-09	6. 87E-08	7. 45E-08	1. 78E-07	1. 92E-07
2. 13E+04	0. 00E+00	3. 51E-09	3. 24E-08	3. 51E-08	8. 37E-08	9. 05E-08
4. 05E+04	0. 00E+00	1. 60E-09	1. 48E-08	1. 60E-08	3. 82E-08	4. 13E-08
7. 00E+04	0. 00E+00	8. 56E-10	7. 91E-09	8. 56E-09	2. 04E-08	2. 21E-08
8. 99E+04	0. 00E+00	5. 22E-10	4. 82E-09	5. 22E-09	1. 25E-08	1. 35E-08
1. 21E+05	0. 00E+00	3. 42E-10	3. 15E-09	3. 42E-09	8. 15E-09	8. 80E-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	1. 60E-05	1. 48E-04	1. 60E-04	3. 82E-04	4. 13E-04
6. 80E+01	0. 00E+00	8. 04E-06	7. 43E-05	8. 04E-05	1. 92E-04	2. 07E-04
1. 05E+02	0. 00E+00	3. 91E-06	3. 61E-05	3. 91E-05	9. 32E-05	1. 01E-04
2. 44E+02	0. 00E+00	1. 51E-06	1. 40E-05	1. 51E-05	3. 61E-05	3. 90E-05
3. 69E+02	0. 00E+00	7. 25E-07	6. 69E-06	7. 25E-06	1. 73E-05	1. 87E-05
5. 61E+02	0. 00E+00	3. 45E-07	3. 19E-06	3. 45E-06	8. 24E-06	8. 90E-06
1. 02E+03	0. 00E+00	1. 31E-07	1. 21E-06	1. 31E-06	3. 13E-06	3. 38E-06
1. 63E+03	0. 00E+00	6. 21E-08	5. 73E-07	6. 21E-07	1. 48E-06	1. 60E-06
2. 31E+03	0. 00E+00	2. 89E-08	2. 67E-07	2. 89E-07	6. 89E-07	7. 44E-07
4. 27E+03	0. 00E+00	1. 09E-08	1. 01E-07	1. 09E-07	2. 60E-07	2. 81E-07
5. 47E+03	0. 00E+00	4. 97E-09	4. 59E-08	4. 97E-08	1. 19E-07	1. 28E-07
1. 11E+04	0. 00E+00	2. 36E-09	2. 18E-08	2. 36E-08	5. 63E-08	6. 08E-08
1. 31E+04	0. 00E+00	8. 72E-10	8. 05E-09	8. 72E-09	2. 08E-08	2. 25E-08
2. 13E+04	0. 00E+00	4. 11E-10	3. 79E-09	4. 11E-09	9. 80E-09	1. 06E-08
4. 05E+04	0. 00E+00	1. 88E-10	1. 73E-09	1. 88E-09	4. 48E-09	4. 84E-09
7. 00E+04	0. 00E+00	1. 00E-10	9. 26E-10	1. 00E-09	2. 39E-09	2. 58E-09
8. 99E+04	0. 00E+00	6. 12E-11	5. 65E-10	6. 12E-10	1. 46E-09	1. 58E-09
1. 21E+05	0. 00E+00	4. 00E-11	3. 69E-10	4. 00E-10	9. 54E-10	1. 03E-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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VEHICLE SST

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. 74E-05	3. 45E-04	3. 74E-04	8. 91E-04	9. 63E-04
6. 80E+01	0. 00E+00	1. 88E-05	1. 73E-04	1. 88E-04	4. 47E-04	4. 83E-04
1. 05E+02	0. 00E+00	9. 11E-06	8. 41E-05	9. 11E-05	2. 17E-04	2. 35E-04
2. 44E+02	0. 00E+00	3. 53E-06	3. 25E-05	3. 53E-05	8. 41E-05	9. 08E-05
3. 69E+02	0. 00E+00	1. 69E-06	1. 56E-05	1. 69E-05	4. 03E-05	4. 36E-05
5. 61E+02	0. 00E+00	8. 06E-07	7. 44E-06	8. 06E-06	1. 92E-05	2. 08E-05
1. 02E+03	0. 00E+00	3. 06E-07	2. 82E-06	3. 06E-06	7. 29E-06	7. 88E-06
1. 63E+03	0. 00E+00	1. 45E-07	1. 34E-06	1. 45E-06	3. 45E-06	3. 73E-06
2. 31E+03	0. 00E+00	6. 73E-08	6. 22E-07	6. 73E-07	1. 61E-06	1. 74E-06
4. 27E+03	0. 00E+00	2. 54E-08	2. 35E-07	2. 54E-07	6. 07E-07	6. 55E-07
5. 47E+03	0. 00E+00	1. 16E-08	1. 07E-07	1. 16E-07	2. 76E-07	2. 99E-07
1. 11E+04	0. 00E+00	5. 50E-09	5. 08E-08	5. 50E-08	1. 31E-07	1. 42E-07
1. 31E+04	0. 00E+00	2. 03E-09	1. 88E-08	2. 03E-08	4. 85E-08	5. 24E-08
2. 13E+04	0. 00E+00	9. 58E-10	8. 85E-09	9. 58E-09	2. 29E-08	2. 47E-08
4. 05E+04	0. 00E+00	4. 38E-10	4. 04E-09	4. 38E-09	1. 04E-08	1. 13E-08
7. 00E+04	0. 00E+00	2. 34E-10	2. 16E-09	2. 34E-09	5. 58E-09	6. 03E-09
8. 99E+04	0. 00E+00	1. 43E-10	1. 32E-09	1. 43E-09	3. 40E-09	3. 68E-09
1. 21E+05	0. 00E+00	9. 33E-11	8. 61E-10	9. 33E-10	2. 22E-09	2. 40E-09

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VEHICLE SST

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

CNTR LINE	SEVER: 1	SEVER: 2	SEVER: 3	SEVER: 4	SEVER: 5	SEVER: 6
3. 30E+01	0. 00E+00	1. 53E-04	1. 41E-03	1. 53E-03	3. 64E-03	3. 94E-03
6. 80E+01	0. 00E+00	7. 67E-05	7. 08E-04	7. 67E-04	1. 83E-03	1. 98E-03
1. 05E+02	0. 00E+00	3. 73E-05	3. 44E-04	3. 73E-04	8. 89E-04	9. 61E-04
2. 44E+02	0. 00E+00	1. 44E-05	1. 33E-04	1. 44E-04	3. 44E-04	3. 72E-04
3. 69E+02	0. 00E+00	6. 92E-06	6. 38E-05	6. 92E-05	1. 65E-04	1. 78E-04
5. 61E+02	0. 00E+00	3. 30E-06	3. 04E-05	3. 30E-05	7. 86E-05	8. 49E-05
1. 02E+03	0. 00E+00	1. 25E-06	1. 15E-05	1. 25E-05	2. 98E-05	3. 22E-05
1. 63E+03	0. 00E+00	5. 92E-07	5. 47E-06	5. 92E-06	1. 41E-05	1. 53E-05
2. 31E+03	0. 00E+00	2. 76E-07	2. 54E-06	2. 76E-06	6. 57E-06	7. 10E-06
4. 27E+03	0. 00E+00	1. 04E-07	9. 61E-07	1. 04E-06	2. 48E-06	2. 68E-06
5. 47E+03	0. 00E+00	4. 74E-08	4. 38E-07	4. 74E-07	1. 13E-06	1. 22E-06
1. 11E+04	0. 00E+00	2. 25E-08	2. 08E-07	2. 25E-07	5. 37E-07	5. 80E-07
1. 31E+04	0. 00E+00	8. 32E-09	7. 68E-08	8. 32E-08	1. 98E-07	2. 14E-07
2. 13E+04	0. 00E+00	3. 92E-09	3. 62E-08	3. 92E-08	9. 35E-08	1. 01E-07
4. 05E+04	0. 00E+00	1. 79E-09	1. 65E-08	1. 79E-08	4. 27E-08	4. 62E-08
7. 00E+04	0. 00E+00	9. 57E-10	8. 83E-09	9. 57E-09	2. 28E-08	2. 47E-08
8. 99E+04	0. 00E+00	5. 84E-10	5. 39E-09	5. 84E-09	1. 39E-08	1. 50E-08
1. 21E+05	0. 00E+00	3. 82E-10	3. 52E-09	3. 82E-09	9. 10E-09	9. 84E-09

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VEHICLE SST

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 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. 07E-05	2. 84E-04	3. 07E-04	7. 33E-04	7. 92E-04
6. 80E+01	0. 00E+00	1. 54E-05	1. 42E-04	1. 54E-04	3. 68E-04	3. 98E-04
1. 05E+02	0. 00E+00	7. 50E-06	6. 92E-05	7. 50E-05	1. 79E-04	1. 93E-04
2. 44E+02	0. 00E+00	2. 90E-06	2. 68E-05	2. 90E-05	6. 92E-05	7. 47E-05
3. 69E+02	0. 00E+00	1. 39E-06	1. 28E-05	1. 39E-05	3. 32E-05	3. 58E-05
5. 61E+02	0. 00E+00	6. 63E-07	6. 12E-06	6. 63E-06	1. 58E-05	1. 71E-05
1. 02E+03	0. 00E+00	2. 52E-07	2. 32E-06	2. 52E-06	6. 00E-06	6. 48E-06
1. 63E+03	0. 00E+00	1. 19E-07	1. 10E-06	1. 19E-06	2. 84E-06	3. 07E-06
2. 31E+03	0. 00E+00	5. 54E-08	5. 11E-07	5. 54E-07	1. 32E-06	1. 43E-06
4. 27E+03	0. 00E+00	2. 09E-08	1. 93E-07	2. 09E-07	4. 99E-07	5. 39E-07
5. 47E+03	0. 00E+00	9. 53E-09	8. 80E-08	9. 53E-08	2. 27E-07	2. 46E-07
1. 11E+04	0. 00E+00	4. 53E-09	4. 18E-08	4. 53E-08	1. 08E-07	1. 17E-07
1. 31E+04	0. 00E+00	1. 67E-09	1. 54E-08	1. 67E-08	3. 99E-08	4. 31E-08
2. 13E+04	0. 00E+00	7. 88E-10	7. 28E-09	7. 88E-09	1. 88E-08	2. 03E-08
4. 05E+04	0. 00E+00	3. 60E-10	3. 32E-09	3. 60E-09	8. 59E-09	9. 28E-09
7. 00E+04	0. 00E+00	1. 92E-10	1. 78E-09	1. 92E-09	4. 59E-09	4. 96E-09
8. 99E+04	0. 00E+00	1. 17E-10	1. 08E-09	1. 17E-09	2. 80E-09	3. 02E-09
1. 21E+05	0. 00E+00	7. 67E-11	7. 08E-10	7. 67E-10	1. 83E-09	1. 98E-09

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-10	2. 24E-09	2. 43E-09	5. 79E-09	6. 26E-09
6. 80E+01	0. 00E+00	1. 22E-10	1. 13E-09	1. 22E-09	2. 91E-09	3. 14E-09
1. 05E+02	0. 00E+00	5. 93E-11	5. 47E-10	5. 93E-10	1. 41E-09	1. 53E-09
2. 44E+02	0. 00E+00	2. 29E-11	2. 12E-10	2. 29E-10	5. 47E-10	5. 91E-10
3. 69E+02	0. 00E+00	1. 10E-11	1. 02E-10	1. 10E-10	2. 62E-10	2. 83E-10
5. 61E+02	0. 00E+00	5. 24E-12	4. 84E-11	5. 24E-11	1. 25E-10	1. 35E-10
1. 02E+03	0. 00E+00	1. 99E-12	1. 84E-11	1. 99E-11	4. 74E-11	5. 13E-11
1. 63E+03	0. 00E+00	9. 42E-13	8. 69E-12	9. 42E-12	2. 25E-11	2. 43E-11
2. 31E+03	0. 00E+00	4. 38E-13	4. 04E-12	4. 38E-12	1. 04E-11	1. 13E-11
4. 27E+03	0. 00E+00	1. 65E-13	1. 53E-12	1. 65E-12	3. 95E-12	4. 26E-12
5. 47E+03	0. 00E+00	7. 54E-14	6. 96E-13	7. 54E-13	1. 80E-12	1. 94E-12
1. 11E+04	0. 00E+00	3. 58E-14	3. 30E-13	3. 58E-13	8. 53E-13	9. 22E-13
1. 31E+04	0. 00E+00	1. 32E-14	1. 22E-13	1. 32E-13	3. 15E-13	3. 41E-13
2. 13E+04	0. 00E+00	6. 24E-15	5. 76E-14	6. 24E-14	1. 49E-13	1. 61E-13
4. 05E+04	0. 00E+00	2. 85E-15	2. 63E-14	2. 85E-14	6. 79E-14	7. 34E-14
7. 00E+04	0. 00E+00	1. 52E-15	1. 40E-14	1. 52E-14	3. 63E-14	3. 92E-14
8. 99E+04	0. 00E+00	9. 28E-16	8. 56E-15	9. 28E-15	2. 21E-14	2. 39E-14
1. 21E+05	0. 00E+00	6. 07E-16	5. 60E-15	6. 07E-15	1. 45E-14	1. 56E-14

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INCIDENT-FREE SUMMARY  
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IN-TRANSIT POPULATION EXPOSURE IN PERSON-REM  
 \*INPUT DATA WERE ALTERED WITH REGULATORY CHECKS

	PASSENGER	CREW	OFF LINK	ON LINK	TOTALS
RURAL_CA	0. 00E+00	8. 41E-03	3. 39E-05	1. 24E-03	9. 68E-03
SUBURBN_CA	0. 00E+00	1. 02E-02	1. 13E-03	7. 20E-03	1. 85E-02
URBAN_CA	0. 00E+00	7. 50E-03	1. 17E-04	2. 13E-02	2. 89E-02
RURAL_ID	0. 00E+00	8. 34E-03	2. 69E-05	1. 23E-03	9. 59E-03
SUBURBN_ID	0. 00E+00	2. 72E-03	2. 51E-04	1. 93E-03	4. 90E-03

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URBAN_ID	0.00E+00	3.34E-04	4.05E-06	9.50E-04	1.29E-03
RURAL_NV	0.00E+00	2.73E-02	6.50E-05	4.03E-03	3.14E-02
SUBURBN_NV	0.00E+00	4.89E-03	4.57E-04	3.46E-03	8.80E-03
URBAN_NV	0.00E+00	2.07E-03	3.06E-05	5.89E-03	7.99E-03
RURAL_UT	0.00E+00	1.15E-02	2.81E-05	1.70E-03	1.32E-02
SUBURBN_UT	0.00E+00	6.90E-03	7.05E-04	4.88E-03	1.25E-02
URBAN_UT	0.00E+00	2.94E-03	4.15E-05	8.36E-03	1.13E-02
RURAL	0.00E+00	5.56E-02	1.54E-04	8.19E-03	6.39E-02
SUBURB	0.00E+00	2.47E-02	2.55E-03	1.75E-02	4.47E-02
URBAN	0.00E+00	1.28E-02	1.93E-04	3.65E-02	4.96E-02
TOTALS:	0.00E+00	9.31E-02	2.90E-03	6.22E-02	1.58E-01

MAXIMUM INDIVIDUAL IN-TRANSIT DOSE

SST                    2.41E-07 REM

STOP EXPOSURE IN PERSON-REM

ANNULAR AREA	AreaRes	3.91E-06
ANNULAR AREA	truckStop	2.90E-08
TOTAL:		3.94E-06

HANDLING EXPOSURE IN PERSON-REM

HANDLING	VEHICLE	MATERIAL	METHOD	DOSE
loading	SST	55_gal_dru	LINE-SOURCE	1.95E+00
inspect	SST	55_gal_dru	LINE-SOURCE	9.77E-02
TOTAL:				2.05E+00

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

LINK	PARAMETER	IMPORTANCE	CHANGE
RURAL_CA	DI STANCE TRAVELED	9.680E-05	1.0000 %
	NUMBER OF SHIPMENTS	9.680E-05	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	9.680E-05	1.0000 %
	NUMBER OF CREW MEMBERS	8.407E-05	0.8685 %
	K ZERO FOR CREW DOSE	8.407E-05	0.8685 %
	CREW DOSE ADJUSTMENT FACTOR	8.407E-05	0.8685 %
	K ZERO FOR VEHICLE	1.273E-05	0.1315 %
	NUMBER OF PEOPLE PER VEHICLE	1.239E-05	0.1280 %
	TRAFFIC COUNT	1.239E-05	0.1280 %
	SHIELDING FACTOR (RR, RS, RU)	3.394E-07	0.0035 %
	POPULATION DENSITY	3.394E-07	0.0035 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %

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DISTANCE FROM PACKAGE TO CREW	-1.868E-05	-0.1930 %
VELOCITY	-1.092E-04	-1.1280 %

SUBURBN\_CA

DISTANCE TRAVELED	1.851E-04	1.0000 %
NUMBER OF SHIPMENTS	1.851E-04	1.0000 %
DOSE RATE FOR VEHICLE (TI)	1.851E-04	1.0000 %
NUMBER OF CREW MEMBERS	1.018E-04	0.5497 %
K ZERO FOR CREW DOSE	1.018E-04	0.5497 %
CREW DOSE ADJUSTMENT FACTOR	1.018E-04	0.5497 %
K ZERO FOR VEHICLE	8.336E-05	0.4503 %
NUMBER OF PEOPLE PER VEHICLE	7.201E-05	0.3890 %
TRAFFIC COUNT	7.201E-05	0.3890 %
SHIELDING FACTOR (RR, RS, RU)	1.134E-05	0.0613 %
POPULATION DENSITY	1.134E-05	0.0613 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-2.262E-05	-0.1222 %
VELOCITY	-2.571E-04	-1.3890 %

URBAN\_CA

DISTANCE TRAVELED	2.894E-04	1.0000 %
NUMBER OF SHIPMENTS	2.894E-04	1.0000 %
DOSE RATE FOR VEHICLE (TI)	2.894E-04	1.0000 %
K ZERO FOR VEHICLE	2.145E-04	0.7410 %
NUMBER OF PEOPLE PER VEHICLE	2.133E-04	0.7370 %
TRAFFIC COUNT	2.133E-04	0.7370 %
CREW DOSE ADJUSTMENT FACTOR	7.496E-05	0.2590 %
K ZERO FOR CREW DOSE	7.496E-05	0.2590 %
NUMBER OF CREW MEMBERS	7.496E-05	0.2590 %
POPULATION DENSITY	1.170E-06	0.0040 %
SHIELDING FACTOR (RR, RS, RU)	1.170E-06	0.0040 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-1.666E-05	-0.0576 %
VELOCITY	-5.027E-04	-1.7370 %

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INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY

ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE PARAMETER

LINK	PARAMETER	IMPORTANCE	CHANGE
RURAL_ID	DISTANCE TRAVELED	9.594E-05	1.0000 %
	NUMBER OF SHIPMENTS	9.594E-05	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	9.594E-05	1.0000 %
	NUMBER OF CREW MEMBERS	8.338E-05	0.8691 %
	K ZERO FOR CREW DOSE	8.338E-05	0.8691 %
	CREW DOSE ADJUSTMENT FACTOR	8.338E-05	0.8691 %
	K ZERO FOR VEHICLE	1.256E-05	0.1309 %
	NUMBER OF PEOPLE PER VEHICLE	1.229E-05	0.1281 %
	TRAFFIC COUNT	1.229E-05	0.1281 %
	SHIELDING FACTOR (RR, RS, RU)	2.688E-07	0.0028 %
	POPULATION DENSITY	2.688E-07	0.0028 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
	DISTANCE FROM PACKAGE TO CREW	-1.853E-05	-0.1931 %

VELOCITY -1.082E-04 -1.1281 %

SUBURBN\_ID -----

DISTANCE TRAVELED	4.904E-05	1.0000 %
NUMBER OF SHIPMENTS	4.904E-05	1.0000 %
DOSE RATE FOR VEHICLE (TI)	4.904E-05	1.0000 %
NUMBER OF CREW MEMBERS	2.725E-05	0.5556 %
K ZERO FOR CREW DOSE	2.725E-05	0.5556 %
CREW DOSE ADJUSTMENT FACTOR	2.725E-05	0.5556 %
K ZERO FOR VEHICLE	2.179E-05	0.4444 %
NUMBER OF PEOPLE PER VEHICLE	1.928E-05	0.3932 %
TRAFFIC COUNT	1.928E-05	0.3932 %
SHIELDING FACTOR (RR, RS, RU)	2.511E-06	0.0512 %
POPULATION DENSITY	2.511E-06	0.0512 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-6.055E-06	-0.1235 %
VELOCITY	-6.832E-05	-1.3932 %

URBAN\_ID -----

DISTANCE TRAVELED	1.288E-05	1.0000 %
NUMBER OF SHIPMENTS	1.288E-05	1.0000 %
DOSE RATE FOR VEHICLE (TI)	1.288E-05	1.0000 %
K ZERO FOR VEHICLE	9.541E-06	0.7408 %
NUMBER OF PEOPLE PER VEHICLE	9.501E-06	0.7376 %
TRAFFIC COUNT	9.501E-06	0.7376 %
CREW DOSE ADJUSTMENT FACTOR	3.339E-06	0.2592 %
K ZERO FOR CREW DOSE	3.339E-06	0.2592 %
NUMBER OF CREW MEMBERS	3.339E-06	0.2592 %
POPULATION DENSITY	4.053E-08	0.0031 %
SHIELDING FACTOR (RR, RS, RU)	4.053E-08	0.0031 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-7.420E-07	-0.0576 %
VELOCITY	-2.238E-05	-1.7376 %

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

LINK	PARAMETER	IMPORTANCE	CHANGE
RURAL_NV	DISTANCE TRAVELED	3.142E-04	1.0000 %
	NUMBER OF SHIPMENTS	3.142E-04	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	3.142E-04	1.0000 %
	NUMBER OF CREW MEMBERS	2.733E-04	0.8697 %
	K ZERO FOR CREW DOSE	2.733E-04	0.8697 %
	CREW DOSE ADJUSTMENT FACTOR	2.733E-04	0.8697 %
	K ZERO FOR VEHICLE	4.093E-05	0.1303 %
	NUMBER OF PEOPLE PER VEHICLE	4.028E-05	0.1282 %
	TRAFFIC COUNT	4.028E-05	0.1282 %
	SHIELDING FACTOR (RR, RS, RU)	6.496E-07	0.0021 %
	POPULATION DENSITY	6.496E-07	0.0021 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
	DISTANCE FROM PACKAGE TO CREW	-6.072E-05	-0.1933 %
	VELOCITY	-3.545E-04	-1.1282 %

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SUBURBN\_NV -----

DOSE RATE FOR VEHICLE (TI)	8.805E-05	1.0000 %
NUMBER OF SHIPMENTS	8.805E-05	1.0000 %
DISTANCE TRAVELED	8.805E-05	1.0000 %
NUMBER OF CREW MEMBERS	4.888E-05	0.5552 %
K ZERO FOR CREW DOSE	4.888E-05	0.5552 %
CREW DOSE ADJUSTMENT FACTOR	4.888E-05	0.5552 %
K ZERO FOR VEHICLE	3.916E-05	0.4448 %
NUMBER OF PEOPLE PER VEHICLE	3.459E-05	0.3928 %
TRAFFIC COUNT	3.459E-05	0.3928 %
POPULATION DENSITY	4.574E-06	0.0520 %
SHIELDING FACTOR (RR, RS, RU)	4.574E-06	0.0520 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-1.086E-05	-0.1234 %
VELOCITY	-1.226E-04	-1.3928 %

URBAN\_NV -----

DISTANCE TRAVELED	7.991E-05	1.0000 %
NUMBER OF SHIPMENTS	7.991E-05	1.0000 %
DOSE RATE FOR VEHICLE (TI)	7.991E-05	1.0000 %
K ZERO FOR VEHICLE	5.921E-05	0.7409 %
NUMBER OF PEOPLE PER VEHICLE	5.890E-05	0.7371 %
TRAFFIC COUNT	5.890E-05	0.7371 %
CREW DOSE ADJUSTMENT FACTOR	2.070E-05	0.2591 %
K ZERO FOR CREW DOSE	2.070E-05	0.2591 %
NUMBER OF CREW MEMBERS	2.070E-05	0.2591 %
POPULATION DENSITY	3.059E-07	0.0038 %
SHIELDING FACTOR (RR, RS, RU)	3.059E-07	0.0038 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-4.601E-06	-0.0576 %
VELOCITY	-1.388E-04	-1.7371 %

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INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY

ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE PARAMETER

LINK	PARAMETER	IMPORTANCE	CHANGE
RURAL_UT	DISTANCE TRAVELED	1.323E-04	1.0000 %
	NUMBER OF SHIPMENTS	1.323E-04	1.0000 %
	DOSE RATE FOR VEHICLE (TI)	1.323E-04	1.0000 %
	NUMBER OF CREW MEMBERS	1.151E-04	0.8697 %
	K ZERO FOR CREW DOSE	1.151E-04	0.8697 %
	CREW DOSE ADJUSTMENT FACTOR	1.151E-04	0.8697 %
	K ZERO FOR VEHICLE	1.724E-05	0.1303 %
	NUMBER OF PEOPLE PER VEHICLE	1.696E-05	0.1282 %
	TRAFFIC COUNT	1.696E-05	0.1282 %
	SHIELDING FACTOR (RR, RS, RU)	2.810E-07	0.0021 %
	POPULATION DENSITY	2.810E-07	0.0021 %
	NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
	RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
	DIST DEP RAIL WORKR EXPOSR FACTR	0.000E+00	0.0000 %
	DISTANCE FROM PACKAGE TO CREW	-2.557E-05	-0.1933 %
	VELOCITY	-1.493E-04	-1.1282 %

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SUBURBN\_UT

DISTANCE TRAVELED	1.249E-04	1.0000 %
NUMBER OF SHIPMENTS	1.249E-04	1.0000 %
DOSE RATE FOR VEHICLE (TI)	1.249E-04	1.0000 %
NUMBER OF CREW MEMBERS	6.902E-05	0.5526 %
K ZERO FOR CREW DOSE	6.902E-05	0.5526 %
CREW DOSE ADJUSTMENT FACTOR	6.902E-05	0.5526 %
K ZERO FOR VEHICLE	5.589E-05	0.4474 %
NUMBER OF PEOPLE PER VEHICLE	4.884E-05	0.3910 %
TRAFFIC COUNT	4.884E-05	0.3910 %
SHIELDING FACTOR (RR, RS, RU)	7.055E-06	0.0565 %
POPULATION DENSITY	7.055E-06	0.0565 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSURE FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-1.534E-05	-0.1228 %
VELOCITY	-1.737E-04	-1.3910 %

URBAN\_UT

DISTANCE TRAVELED	1.134E-04	1.0000 %
NUMBER OF SHIPMENTS	1.134E-04	1.0000 %
DOSE RATE FOR VEHICLE (TI)	1.134E-04	1.0000 %
K ZERO FOR VEHICLE	8.402E-05	0.7409 %
NUMBER OF PEOPLE PER VEHICLE	8.361E-05	0.7372 %
TRAFFIC COUNT	8.361E-05	0.7372 %
CREW DOSE ADJUSTMENT FACTOR	2.938E-05	0.2591 %
K ZERO FOR CREW DOSE	2.938E-05	0.2591 %
NUMBER OF CREW MEMBERS	2.938E-05	0.2591 %
POPULATION DENSITY	4.151E-07	0.0037 %
SHIELDING FACTOR (RR, RS, RU)	4.151E-07	0.0037 %
NUMBER OF FLIGHT ATTENDANTS	0.000E+00	0.0000 %
RATIO OF PEDESTRIAN DENSITY (RPD)	0.000E+00	0.0000 %
DIST DEP RAIL WORKR EXPOSURE FACTR	0.000E+00	0.0000 %
DISTANCE FROM PACKAGE TO CREW	-6.530E-06	-0.0576 %
VELOCITY	-1.970E-04	-1.7372 %

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INCIDENT-FREE IMPORTANCE ANALYSIS SUMMARY

ESTIMATES THE PERSON-REM INFLUENCE OF A ONE PERCENT INCREASE IN THE PARAMETER

STOP AreaRes	PARAMETER	IMPORTANCE	CHANGE
	K ZERO FOR VEHICLE	3.908E-08	1.0000 %
	STOP TIME	3.908E-08	1.0000 %
	POPULATION/POPULATION DENSITY	3.908E-08	1.0000 %
	NUMBER OF SHIPMENTS	3.908E-08	1.0000 %
	DOSE RATE FOR VEHICLE	3.908E-08	1.0000 %
	MINIMUM DISTANCE AT STOP	1.101E-10	0.0028 %
	MAXIMUM DISTANCE AT STOP	-7.826E-08	-2.0028 %
truckStop	K ZERO FOR VEHICLE	2.900E-10	1.0000 %
	POPULATION/POPULATION DENSITY	2.900E-10	1.0000 %
	NUMBER OF SHIPMENTS	2.900E-10	1.0000 %
	DOSE RATE FOR VEHICLE	2.900E-10	1.0000 %
	STOP TIME	2.900E-10	1.0000 %
	MINIMUM DISTANCE AT STOP	2.333E-12	0.0080 %
	MAXIMUM DISTANCE AT STOP	-5.824E-10	-2.0080 %

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

HANDLING	MATERIAL	PARAMETER	IMPORTANCE	CHANGE
Loading	55_gal_dru	DOSE RATE FOR PACKAGE	1.953E-02	1.0000 %
		HANDLING TIME	1.953E-02	1.0000 %
		NUMBER OF SHIPMENTS	1.953E-02	1.0000 %
		NUMBER OF PACKAGES	1.953E-02	1.0000 %
		NUMBER OF HANDLERS	1.953E-02	1.0000 %
		K ZERO FOR PACKAGE	9.765E-03	0.5000 %
		PACKAGE SIZE	0.000E+00	0.0000 %
		DISTANCE OF HANDLERS	-9.765E-03	-0.5000 %
inspect	55_gal_dru	DOSE RATE FOR PACKAGE	9.765E-04	1.0000 %
		NUMBER OF HANDLERS	9.765E-04	1.0000 %
		HANDLING TIME	9.765E-04	1.0000 %
		NUMBER OF SHIPMENTS	9.765E-04	1.0000 %
		NUMBER OF PACKAGES	9.765E-04	1.0000 %
		K ZERO FOR PACKAGE	4.882E-04	0.5000 %
		PACKAGE SIZE	0.000E+00	0.0000 %
		DISTANCE OF HANDLERS	-4.883E-04	-0.5000 %

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ACCIDENT SUMMARY

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NUMBER OF EXPECTED ACCIDENTS

CATEGORY	RURAL_CASUBURBN_CA	URBAN_CA	RURAL_IDSUBURBN_ID	URBAN_ID	RURAL_NV		
1	2.95E-05	1.63E-05	7.18E-06	5.40E-05	8.02E-06	5.90E-07	1.35E-04
2	1.83E-09	1.01E-09	4.45E-10	3.35E-09	4.97E-10	3.66E-11	8.37E-09
3	1.65E-10	9.10E-11	4.02E-11	3.02E-10	4.49E-11	3.30E-12	7.56E-10
4	1.54E-11	8.45E-12	3.74E-12	2.81E-11	4.17E-12	3.07E-13	7.02E-11
5	2.07E-12	1.14E-12	5.03E-13	3.78E-12	5.62E-13	4.13E-14	9.45E-12
6	6.49E-15	3.58E-15	1.58E-15	1.19E-14	1.77E-15	1.30E-16	2.97E-14

CATEGORY	SUBURBN_NV	URBAN_NV	RURAL_UTSUBURBN_UT	URBAN_UT	
1	1.10E-05	2.79E-06	7.32E-05	2.00E-05	5.10E-06
2	6.81E-10	1.73E-10	4.54E-09	1.24E-09	3.16E-10
3	6.15E-11	1.56E-11	4.10E-10	1.12E-10	2.86E-11
4	5.71E-12	1.45E-12	3.81E-11	1.04E-11	2.65E-12
5	7.69E-13	1.95E-13	5.13E-12	1.40E-12	3.57E-13
6	2.42E-15	6.14E-16	1.61E-14	4.40E-15	1.12E-15

NUMBER OF EARLY FATALITIES FROM INHALATION

CATEGORY	RURAL_CASUBURBN_CA	URBAN_CA	RURAL_IDSUBURBN_ID	URBAN_ID	RURAL_NV		
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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

CATEGORY	SUBURBN_NV	URBAN_NV	RURAL_UT	SUBURBN_UT	URBAN_UT
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_CA	SUBURBN_CA	URBAN_CA	RURAL_ID	SUBURBN_ID	URBAN_ID	RURAL_NV
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	6.73E-05	2.13E-03	4.20E-02	5.37E-05	1.76E-03	3.26E-02	3.96E-05
3	6.21E-04	1.97E-02	3.87E-01	4.96E-04	1.63E-02	3.01E-01	3.65E-04
4	6.73E-04	2.13E-02	4.20E-01	5.37E-04	1.76E-02	3.26E-01	3.96E-04
5	1.60E-03	5.09E-02	1.00E+00	1.28E-03	4.21E-02	7.78E-01	9.44E-04
6	1.73E-03	5.50E-02	1.08E+00	1.38E-03	4.55E-02	8.41E-01	1.02E-03

CATEGORY	SUBURBN_NV	URBAN_NV	RURAL_UT	SUBURBN_UT	URBAN_UT
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	1.79E-03	3.97E-02	4.07E-05	1.96E-03	3.80E-02
3	1.65E-02	3.67E-01	3.76E-04	1.81E-02	3.51E-01
4	1.79E-02	3.97E-01	4.07E-04	1.96E-02	3.80E-01
5	4.27E-02	9.47E-01	9.70E-04	4.67E-02	9.06E-01
6	4.62E-02	1.02E+00	1.05E-03	5.04E-02	9.79E-01

NUMBER OF EARLY MORBIDITY CASES FROM INHALATION

CATEGORY	RURAL_CA	SUBURBN_CA	URBAN_CA	RURAL_ID	SUBURBN_ID	URBAN_ID	RURAL_NV
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CATEGORY	SUBURBN_NV	URBAN_NV	RURAL_UT	SUBURBN_UT	URBAN_UT
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

MAXIMUM RISK FOR INDIVIDUAL IN NEAREST ISOPLETH (DOSE IN REM)

LLNL-INL\_tru\_Sept22

FROM INHALATION, CLOUDSHINE, AND GROUNDSHINE EXPOSURE DURING EVACUATION

CATEGORY	RURAL_CASUBURBN_CA	URBAN_CA	RURAL_IDSUBURBN_ID	URBAN_ID	RURAL_NV
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	2.80E-13	1.54E-13	6.81E-14	5.12E-13	7.60E-14
3	2.33E-13	1.28E-13	5.68E-14	4.27E-13	6.34E-14
4	2.35E-14	1.29E-14	5.71E-15	4.29E-14	6.38E-15
5	7.53E-15	4.15E-15	1.83E-15	1.38E-14	2.05E-15
6	2.56E-17	1.41E-17	6.22E-18	4.68E-17	6.95E-18

CATEGORY	SUBURBN_NV	URBAN_NV	RURAL_UTSUBURBN_UT	URBAN_UT
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	1.04E-13	2.64E-14	6.94E-13	1.89E-13
3	8.68E-14	2.20E-14	5.79E-13	1.58E-13
4	8.73E-15	2.22E-15	5.82E-14	1.59E-14
5	2.80E-15	7.12E-16	1.87E-14	5.10E-15
6	9.51E-18	2.42E-18	6.34E-17	1.73E-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_CA	0.00E+00	1.65E-05	1.52E-04	1.65E-04	3.92E-04	4.24E-04
RURAL_ID	0.00E+00	1.44E-05	1.33E-04	1.44E-04	3.44E-04	3.71E-04
RURAL_NV	0.00E+00	7.49E-06	6.91E-05	7.49E-05	1.79E-04	1.93E-04
RURAL_UT	0.00E+00	1.04E-05	9.59E-05	1.04E-04	2.48E-04	2.68E-04

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EXPECTED VALUES OF POPULATION RISK IN PERSON-REM

	GROUND	INHALED	RESUSPD	CLOUDSH	TOTAL
RURAL_CA	4.19E-17	2.37E-13	1.98E-15	7.88E-23	2.39E-13
SUBURBN_CA	7.32E-16	4.15E-12	3.46E-14	1.38E-21	4.18E-12
URBAN_CA	6.36E-15	3.60E-11	3.01E-13	1.20E-20	3.63E-11
RURAL_ID	6.11E-17	3.47E-13	2.89E-15	1.15E-22	3.50E-13
SUBURBN_ID	2.99E-16	1.69E-12	1.41E-14	5.62E-22	1.71E-12
URBAN_ID	4.06E-16	2.30E-12	1.92E-14	7.64E-22	2.32E-12
RURAL_NV	1.13E-16	6.39E-13	5.33E-15	2.12E-22	6.44E-13
SUBURBN_NV	4.15E-16	2.35E-12	1.96E-14	7.80E-22	2.37E-12
URBAN_NV	2.34E-15	1.33E-11	1.11E-13	4.40E-21	1.34E-11
RURAL_UT	6.28E-17	3.56E-13	2.97E-15	1.18E-22	3.59E-13
SUBURBN_UT	8.25E-16	4.67E-12	3.90E-14	1.55E-21	4.71E-12
URBAN_UT	4.09E-15	2.32E-11	1.94E-13	7.69E-21	2.34E-11
RURAL	2.79E-16	1.58E-12	1.32E-14	5.24E-22	1.59E-12
SUBURB	2.27E-15	1.29E-11	1.07E-13	4.27E-21	1.30E-11
URBAN	1.32E-14	7.48E-11	6.24E-13	2.48E-20	7.54E-11
TOTALS:	1.57E-14	8.92E-11	7.45E-13	2.96E-20	9.00E-11

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LLNL-INL\_TRU

SOCIETAL INGESTION RISK - PERSON-REM

LLNL-INL\_tru\_Sept22

LINK	GONADS	EFFECTIVE
RURAL_CA	1.62E-14	5.86E-14
RURAL_ID	2.59E-14	9.38E-14
RURAL_NV	3.37E-14	1.22E-13
RURAL_UT	2.53E-14	9.17E-14
TOTAL	1.01E-13	3.66E-13

SOCIETAL INGESTION RISK BY ORGAN - PERSON-REM

LINK	BREAST	LUNGS	RED MARR	BONE SUR	THYROID	REMAINDER
RURAL_CA	4.92E-19	4.98E-19	8.64E-14	1.08E-12	4.63E-19	3.94E-14
RURAL_ID	7.88E-19	7.97E-19	1.38E-13	1.73E-12	7.42E-19	6.31E-14
RURAL_NV	1.02E-18	1.04E-18	1.80E-13	2.24E-12	9.64E-19	8.20E-14
RURAL_UT	7.70E-19	7.79E-19	1.35E-13	1.69E-12	7.25E-19	6.17E-14
TOTAL	3.07E-18	3.11E-18	5.40E-13	6.74E-12	2.90E-18	2.46E-13

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EXPECTED RISK VALUES - OTHER

LINK	EARLY FATALITY	EARLY MORBIDITY
RURAL_CA	0.00E+00	0.00E+00
SUBURBN_CA	0.00E+00	0.00E+00
URBAN_CA	0.00E+00	0.00E+00
RURAL_ID	0.00E+00	0.00E+00
SUBURBN_ID	0.00E+00	0.00E+00
URBAN_ID	0.00E+00	0.00E+00
RURAL_NV	0.00E+00	0.00E+00
SUBURBN_NV	0.00E+00	0.00E+00
URBAN_NV	0.00E+00	0.00E+00
RURAL_UT	0.00E+00	0.00E+00
SUBURBN_UT	0.00E+00	0.00E+00
URBAN_UT	0.00E+00	0.00E+00
TOTAL	0.00E+00	0.00E+00

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LLNL-INL\_TRU

TOTAL EXPOSED POPULATION: INCIDENT-FREE

RURAL_CA	3.83E+03 PERSONS
SUBURBN_CA	6.70E+04 PERSONS
URBAN_CA	2.00E+05 PERSONS
RURAL_ID	3.03E+03 PERSONS
SUBURBN_ID	1.48E+04 PERSONS
URBAN_ID	6.94E+03 PERSONS
RURAL_NV	7.33E+03 PERSONS
SUBURBN_NV	2.70E+04 PERSONS

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 URBAN\_NV 5.24E+04 PERSONS  
 RURAL\_UT 3.17E+03 PERSONS  
 SUBURBN\_UT 4.16E+04 PERSONS  
 URBAN\_UT 7.11E+04 PERSONS

TOTAL 4.98E+05 PERSONS

RUN DATE: [ 22-SEP-08 AT 12:20:55 ]

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LLNL-INL\_TRU

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

RURAL\_CA 1.67E+04 PERSONS  
 SUBURBN\_CA 5.31E+05 PERSONS  
 URBAN\_CA 3.59E+06 PERSONS  
 RURAL\_ID 1.34E+04 PERSONS  
 SUBURBN\_ID 4.39E+05 PERSONS  
 URBAN\_ID 2.80E+06 PERSONS  
 RURAL\_NV 9.86E+03 PERSONS  
 SUBURBN\_NV 4.46E+05 PERSONS  
 URBAN\_NV 3.40E+06 PERSONS  
 RURAL\_UT 1.01E+04 PERSONS  
 SUBURBN\_UT 4.87E+05 PERSONS  
 URBAN\_UT 3.25E+06 PERSONS

LLNL-INL\_TRU

LINK:	MATERIAL	ISOTOPE	EXPECTED GROUND	VALUES OF INHALATN	POPULATION RESUSP	RISK IN CLOUDSH	PERSON-REM TOTAL
LINK: RURAL_CA							
	55_gal_dru	U238	2.82E-21	1.37E-18	1.15E-20	4.90E-27	1.39E-18
	55_gal_dru	U235	7.59E-19	1.48E-18	1.23E-20	1.03E-23	2.25E-18
	55_gal_dru	PU240	4.11E-17	2.37E-13	1.98E-15	6.84E-23	2.39E-13
						TOTAL:	2.39E-13

LINK:	MATERIAL	ISOTOPE	EXPECTED GROUND	VALUES OF INHALATN	POPULATION RESUSP	RISK IN CLOUDSH	PERSON-REM TOTAL
LINK: SUBURBN_CA							
	55_gal_dru	U238	4.93E-20	2.40E-17	2.00E-19	8.56E-26	2.42E-17
	55_gal_dru	U235	1.33E-17	2.58E-17	2.15E-19	1.81E-22	3.92E-17
	55_gal_dru	PU240	7.18E-16	4.15E-12	3.46E-14	1.20E-21	4.18E-12
						TOTAL:	4.18E-12

LINK:	MATERIAL	ISOTOPE	EXPECTED GROUND	VALUES OF INHALATN	POPULATION RESUSP	RISK IN CLOUDSH	PERSON-REM TOTAL
LINK: URBAN_CA							
	55_gal_dru	U238	4.29E-19	2.08E-16	1.74E-18	7.44E-25	2.11E-16
	55_gal_dru	U235	1.15E-16	2.24E-16	1.87E-18	1.57E-21	3.41E-16
	55_gal_dru	PU240	6.24E-15	3.60E-11	3.01E-13	1.04E-20	3.63E-11
						TOTAL:	3.63E-11

LINK:	MATERIAL	ISOTOPE	EXPECTED GROUND	VALUES OF INHALATN	POPULATION RESUSP	RISK IN CLOUDSH	PERSON-REM TOTAL
LINK: RURAL_ID							
	55_gal_dru	U238	4.12E-21	2.00E-18	1.67E-20	7.15E-27	2.03E-18
	55_gal_dru	U235	1.11E-18	2.15E-18	1.80E-20	1.51E-23	3.28E-18
	55_gal_dru	PU240	6.00E-17	3.47E-13	2.89E-15	9.99E-23	3.49E-13
						TOTAL:	3.50E-13

LINK:	MATERIAL	ISOTOPE	EXPECTED GROUND	VALUES OF INHALATN	POPULATION RESUSP	RISK IN CLOUDSH	PERSON-REM TOTAL
LINK: SUBURBN_ID							

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55_gal_dru	U238	2.01E-20	9.79E-18	8.17E-20	3.49E-26	9.89E-18
55_gal_dru	U235	5.41E-18	1.05E-17	8.79E-20	7.37E-23	1.60E-17
55_gal_dru	PU240	2.93E-16	1.69E-12	1.41E-14	4.88E-22	1.71E-12
					TOTAL:	1.71E-12

LINK: URBAN_ID	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM	
MATERIAL ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL	
55_gal_dru U238	2.74E-20	1.33E-17	1.11E-19	4.75E-26	1.35E-17	
55_gal_dru U235	7.36E-18	1.43E-17	1.19E-19	1.00E-22	2.18E-17	
55_gal_dru PU240	3.99E-16	2.30E-12	1.92E-14	6.64E-22	2.32E-12	
				TOTAL:	2.32E-12	

LINK: RURAL_NV	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM	
MATERIAL ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL	
55_gal_dru U238	7.60E-21	3.69E-18	3.08E-20	1.32E-26	3.73E-18	
55_gal_dru U235	2.04E-18	3.97E-18	3.32E-20	2.78E-23	6.04E-18	
55_gal_dru PU240	1.11E-16	6.39E-13	5.33E-15	1.84E-22	6.44E-13	
				TOTAL:	6.44E-13	

LINK: SUBURBN_NV	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM	
MATERIAL ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL	
55_gal_dru U238	2.80E-20	1.36E-17	1.14E-19	4.85E-26	1.37E-17	
55_gal_dru U235	7.52E-18	1.46E-17	1.22E-19	1.02E-22	2.23E-17	
55_gal_dru PU240	4.07E-16	2.35E-12	1.96E-14	6.78E-22	2.37E-12	
				TOTAL:	2.37E-12	

LINK: URBAN_NV	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM	
MATERIAL ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL	
55_gal_dru U238	1.58E-19	7.66E-17	6.40E-19	2.74E-25	7.74E-17	
55_gal_dru U235	4.24E-17	8.24E-17	6.88E-19	5.77E-22	1.25E-16	
55_gal_dru PU240	2.30E-15	1.33E-11	1.11E-13	3.82E-21	1.34E-11	
				TOTAL:	1.34E-11	

LINK: RURAL_UT	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM	
MATERIAL ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL	
55_gal_dru U238	4.23E-21	2.06E-18	1.72E-20	7.35E-27	2.08E-18	
55_gal_dru U235	1.14E-18	2.21E-18	1.85E-20	1.55E-23	3.37E-18	
55_gal_dru PU240	6.17E-17	3.56E-13	2.97E-15	1.03E-22	3.59E-13	
				TOTAL:	3.59E-13	

LINK: SUBURBN_UT	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM	
MATERIAL ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL	
55_gal_dru U238	5.56E-20	2.70E-17	2.26E-19	9.65E-26	2.73E-17	
55_gal_dru U235	1.49E-17	2.91E-17	2.43E-19	2.04E-22	4.42E-17	
55_gal_dru PU240	8.10E-16	4.67E-12	3.90E-14	1.35E-21	4.71E-12	
				TOTAL:	4.71E-12	

LINK: URBAN_UT	EXPECTED	VALUES OF	POPULATION	RISK IN	PERSON-REM	
MATERIAL ISOTOPE	GROUND	INHALATN	RESUSP	CLOUDSH	TOTAL	
55_gal_dru U238	2.76E-19	1.34E-16	1.12E-18	4.78E-25	1.35E-16	
55_gal_dru U235	7.41E-17	1.44E-16	1.20E-18	1.01E-21	2.19E-16	
55_gal_dru PU240	4.02E-15	2.32E-11	1.94E-13	6.68E-21	2.34E-11	
				TOTAL:	2.34E-11	

EOI  
 END OF RUN  
 SUCCESSFUL COMPLETION

LLNL - INL

	crew	off	on	total	acc	load	inspect
PR	9.31E-02	2.90E-03	6.22E-02	6.51E-02	9.00E-11	1.95E+00	9.77E-02
LCF	5.59E-05	1.74E-06	3.73E-05	3.91E-05	5.40E-14	1.17E-03	5.86E-05
3 PR	2.79E-01			1.95E-01	2.70E-10	5.85E+00	2.93E-01
3 LCF	1.68E-04			1.17E-04	1.62E-13	3.51E-03	1.76E-04

INL - WIPP

	crew	off	on	total	acc	load	inspect
PR	1.22E-01	2.93E-03	5.08E-02	5.37E-02	1.04E-10	1.95E+00	9.77E-02
LCF	7.32E-05	1.76E-06	3.05E-05	3.22E-05	6.24E-14	1.17E-03	5.86E-05
3 PR	3.66E-01			1.61E-01	3.12E-10	5.85E+00	2.93E-01
3 LCF	2.20E-04			9.67E-05	1.87E-13	3.51E-03	1.76E-04

3 shipments