


**Source Term 1 - No Containment Failure - F = 1.19E-5
Mean, Long-Term, Centerline, Groundshine Dose (5-yr exposure)**

Radius (km)		Radius (mi)		(Sv)	Groundshine Dose		
Inner	Outer	Inner	Outer		(rem)	(mrem)	
0.00	0.32	0.0	0.2	0.0188	1.88	1880	
0.32	1.61	0.2	1.0	0.0045	0.45	454	
1.61	3.22	1.0	2.0	0.0016	0.16	163	
3.22	4.83	2.0	3.0	0.0008	0.08	85	
4.83	6.44	3.0	4.0	0.0005	0.05	48	
6.44	8.05	4.0	5.0	0.0003	0.03	32	
8.05	9.66	5.0	6.0	0.0002	0.02	22	
9.66	11.27	6.0	7.0	0.0002	0.02	16	
11.27	12.87	7.0	8.0	0.0001	0.01	11	
12.87	14.48	8.0	9.0	0.0001	0.01	9	
14.48	16.09	9.0	10.0	0.0001	0.01	7	
16.09	32.19	10.0	20.0	0.0000	0.00	3	
32.19	48.28	20.0	30.0	0.0000	0.00	1	
48.28	64.37	30.0	40.0	0.0000	0.00	0	
64.37	80.47	40.0	50.0	0.0000	0.00	0	

Areas Requiring Decontamination

Radius (km)		Radius (mi)		Area Decontaminated	
Inner	Outer	Inner	Outer	(hectare)	(sq km)
0.00	16.09	0.0	10.0	0.46	0.005
16.09	32.19	10.0	20.0	0.00	0.000
32.19	48.28	20.0	30.0	0.00	0.000
48.28	64.37	30.0	40.0	0.00	0.000
64.37	80.47	40.0	50.0	0.00	0.000

United States Nuclear Regulatory Commission Official Hearing Exhibit	
In the Matter of:	Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3)
	ASLBP #: 07-858-03-LR-BD01 Docket #: 05000247 05000286 Exhibit #: NRC0000060-00-BD01 Admitted: 10/15/2012 Rejected: Other:
	Identified: 10/15/2012 Withdrawn: Stricken:

Farm	Nonfarm
1.67E-02	4.48E-01
0	0
0	0
0	0
0	0

reaction of and Requiring Decontamination for 1 requery 1.1 E-5

Radius (km)		Radius (mi)		Ring Area (sq mi)		Decontaminated Area (sq mi)		reaction of Ring Decontaminated	
Inner	Outer	Inner	Outer	Inner	Outer	total	D	total	D
0.00	16.09	0.0	10.0	314	0	0	0	0.00	0.00
16.09	32.19	10.0	20.0	942	0	0	0	0.00	0.00
32.19	48.28	20.0	30.0	1570	0	0	0	0.00	0.00
48.28	64.37	30.0	40.0	2198	0	0	0	0.00	0.00
64.37	80.47	40.0	50.0	2826	0	0	0	0.00	0.00

Source Term 2 - Early High - F = 6.50E-7
Mean, Long-Term, Centerline, Groundshine Dose (5-yr exposure)

Radius (km)		Radius (mi)		Groundshine Dose		
Inner	Outer	Inner	Outer	(Sv)	(rem)	(mrem)
0.00	0.32	0.0	0.2	0.0000	0.00	0
0.32	1.61	0.2	1.0	0.0000	0.00	0
1.61	3.22	1.0	2.0	0.0004	0.04	42
3.22	4.83	2.0	3.0	0.0010	0.10	104
4.83	6.44	3.0	4.0	0.0012	0.12	115
6.44	8.05	4.0	5.0	0.0028	0.28	283
8.05	9.66	5.0	6.0	0.0029	0.29	293
9.66	11.27	6.0	7.0	0.0030	0.30	304
11.27	12.87	7.0	8.0	0.0049	0.49	490
12.87	14.48	8.0	9.0	0.0069	0.69	685
14.48	16.09	9.0	10.0	0.0091	0.91	913
16.09	32.19	10.0	20.0	0.0273	2.73	2730
32.19	48.28	20.0	30.0	0.0361	3.61	3610
48.28	64.37	30.0	40.0	0.0294	2.94	2940
64.37	80.47	40.0	50.0	0.0246	2.46	2460

Areas Requiring Decontamination

Radius (km)		Radius (mi)		Area Decontaminated		
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)
0.00	16.09	0.0	10.0	7084	71	27
16.09	32.19	10.0	20.0	36220	362	140
32.19	48.28	20.0	30.0	63710	637	246
48.28	64.37	30.0	40.0	68190	682	263
64.37	80.47	40.0	50.0	72500	725	280

5-yr Groundshine Doses from Cs-137

Radius (km)		Radius (mi)		Area Exceeding 0.1 mrem			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.92E+04	192	74	1.92E+04
16.09	32.19	10.0	20.0	3.40E+04	340	131	5.32E+04
32.19	48.28	20.0	30.0	6.58E+04	658	254	1.19E+05
48.28	64.37	30.0	40.0	8.80E+04	880	340	
64.37	80.47	40.0	50.0	1.08E+05	1080	417	2.07E+05

Radius (km)		Radius (mi)		Area Exceeding Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.21E+04	121	47	3.15E+05
16.09	32.19	10.0	20.0	4.05E+04	405	156	1.21E+04
32.19	48.28	20.0	30.0	6.34E+04	634	245	5.26E+04
48.28	64.37	30.0	40.0	6.80E+04	680	263	1.16E+05
64.37	80.47	40.0	50.0	7.30E+04	730	282	1.84E+05

Radius (km)		Radius (mi)		Area Exceeding 3*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.21E+04	121	47	2.57E+05
16.09	32.19	10.0	20.0	3.94E+04	394	152	1.21E+04
32.19	48.28	20.0	30.0	5.05E+04	505	195	5.15E+04
48.28	64.37	30.0	40.0	4.20E+04	420	162	1.02E+05
64.37	80.47	40.0	50.0	4.00E+04	400	154	1.44E+05

Radius (km)		Radius (mi)		Area Exceeding 15*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.15E+04	115	44	1.84E+05
16.09	32.19	10.0	20.0	1.79E+04	179	69	1.15E+04
32.19	48.28	20.0	30.0	2.16E+04	216	83	2.94E+04
48.28	64.37	30.0	40.0	1.94E+04	194	75	5.10E+04
64.37	80.47	40.0	50.0	1.46E+04	146	56	7.04E+04

8.50E+04

Farm	Nonfarm
4.24E+02	6.66E+03
2.72E+03	3.35E+04
5.31E+03	5.84E+04
5.69E+03	6.25E+04
6.30E+03	6.62E+04

Fraction of Land Requiring Decontamination for ST 2, Frequency = 6.50E-7

Radius (km)		Radius (mi)		Ring Area (sq mi)	Decontaminated Area (sq mi)			
Inner	Outer	Inner	Outer		Total	DF = 3	DF = 15	DF = >15
0.00	16.09	0.0	10.0	314	27	0	2	25
16.09	32.19	10.0	20.0	942	140	4	83	53
32.19	48.28	20.0	30.0	1570	246	50	112	85
48.28	64.37	30.0	40.0	2198	263	100	87	76
64.37	80.47	40.0	50.0	2826	280	127	98	54

Fraction of Ring Decontaminated			
Total	DF = 3	DF = 15	DF = >15
0.09	0.00	0.01	0.08
0.15	0.00	0.09	0.06
0.16	0.03	0.07	0.05
0.12	0.05	0.04	0.03
0.10	0.05	0.03	0.02

**Source Term 3 - Early Medium - 3E-7
 Mean Long-Term Centerline Groundshine Dose (5-yr exposure)**

Radius (km)		Radius (mi)		Groundshine Dose		
Inner	Outer	Inner	Outer	()	(rem)	(mrem)
0.00	0.32	0.0	0.2	0.0005	0.05	48
0.32	1.61	0.2	1.0	0.0016	0.16	155
1.61	3.22	1.0	2.0	0.0051	0.51	508
3.22	4.83	2.0	3.0	0.0101	1.01	1010
4.83	6.44	3.0	4.0	0.0215	2.15	2150
6.44	8.05	4.0	5.0	0.0257	2.57	2570
8.05	9.66	5.0	6.0	0.0316	3.16	3160
9.66	11.27	6.0	7.0	0.0332	3.32	3320
11.27	12.87	7.0	8.0	0.0325	3.25	3250
12.87	14.48	8.0	9.0	0.0317	3.17	3170
14.48	16.09	9.0	10.0	0.0304	3.04	3040
16.09	32.19	10.0	20.0	0.0211	2.11	2110
32.19	48.28	20.0	30.0	0.0143	1.43	1430
48.28	64.37	30.0	40.0	0.0169	1.69	1690
64.37	80.47	40.0	50.0	0.0166	1.66	1660

Areas Requiring Decontamination

Radius (km)		Radius (mi)		Area Decontaminated		
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)
0.00	16.09	0.0	10.0	10793	108	42
16.09	32.19	10.0	20.0	27220	272	105
32.19	48.28	20.0	30.0	25130	251	97
48.28	64.37	30.0	40.0	26210	262	101
64.37	80.47	40.0	50.0	26370	264	102

5-yr Groundshine Doses from Cs-137

Radius (km)		Radius (mi)		Area Exceeding 0.1 mrem			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.91E+04	191	74	1.91E+04
16.09	32.19	10.0	20.0	3.40E+04	340	131	5.31E+04
32.19	48.28	20.0	30.0	6.59E+04	659	254	1.19E+05
48.28	64.37	30.0	40.0	8.80E+04	880	340	
64.37	80.47	40.0	50.0	1.08E+05	1080	417	2.07E+05

Radius (km)		Radius (mi)		Area Exceeding Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.11E+04	111	43	3.15E+05
16.09	32.19	10.0	20.0	2.16E+04	216	83	1.11E+04
32.19	48.28	20.0	30.0	2.40E+04	240	93	3.27E+04
48.28	64.37	30.0	40.0	2.21E+04	221	85	5.67E+04
64.37	80.47	40.0	50.0	1.64E+04	164	63	7.88E+04

Radius (km)		Radius (mi)		Area Exceeding 3*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	8.64E+03	86	33	9.52E+04
16.09	32.19	10.0	20.0	1.15E+04	115	44	8.64E+03
32.19	48.28	20.0	30.0	1.32E+04	132	51	2.01E+04
48.28	64.37	30.0	40.0	4.60E+03	46	18	3.33E+04
64.37	80.47	40.0	50.0	1.80E+03	18	7	3.79E+04

Radius (km)		Radius (mi)		Area Exceeding 15*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	4.25E+03	43	16	3.97E+04
16.09	32.19	10.0	20.0	1.80E+03	18	7	4.25E+03
32.19	48.28	20.0	30.0	0.00E+00	0	0	6.05E+03
48.28	64.37	30.0	40.0	0.00E+00	0	0	6.05E+03
64.37	80.47	40.0	50.0	0.00E+00	0	0	6.05E+03

6.05E+03

Farm	Nonfarm
5.93E+02	1.02E+04
2.02E+03	2.52E+04
2.03E+03	2.31E+04
2.21E+03	2.40E+04
2.27E+03	2.41E+04

fraction of and Requiring Decontamination for 3 frequency . 3E-7

Radius (km)		Radius (mi)		Ring Area (sq mi)	Decontaminated Area (sq mi)						
Inner	Outer	Inner	Outer		total	D	3	D	15	D	15
0.00	16.09	0.0	10.0	314	42		9		17		15
16.09	32.19	10.0	20.0	942	105		39		37		29
32.19	48.28	20.0	30.0	1570	97		42		51		4
48.28	64.37	30.0	40.0	2198	101		68		18		16
64.37	80.47	40.0	50.0	2826	102		56		7		38

fraction of Ring Decontaminated

total	D	3	D	15	D	15
0.13		0.03		0.05		0.05
0.11		0.04		0.04		0.03
0.06		0.03		0.03		0.00
0.05		0.03		0.01		0.01
0.04		0.02		0.00		0.01

**Source Term - Early - 1.11E-7
 Mean Long-Term Centerline Groundshine Dose (5-yr exposure)**

Radius (km)		Radius (mi)		Groundshine Dose		
Inner	Outer	Inner	Outer	()	(rem)	(mrem)
0.00	0.32	0.0	0.2	0.0009	0.09	94
0.32	1.61	0.2	1.0	0.0056	0.56	564
1.61	3.22	1.0	2.0	0.0259	2.59	2590
3.22	4.83	2.0	3.0	0.0339	3.39	3390
4.83	6.44	3.0	4.0	0.0307	3.07	3070
6.44	8.05	4.0	5.0	0.0267	2.67	2670
8.05	9.66	5.0	6.0	0.0229	2.29	2290
9.66	11.27	6.0	7.0	0.0213	2.13	2130
11.27	12.87	7.0	8.0	0.0174	1.74	1740
12.87	14.48	8.0	9.0	0.0171	1.71	1710
14.48	16.09	9.0	10.0	0.0175	1.75	1750
16.09	32.19	10.0	20.0	0.0220	2.20	2200
32.19	48.28	20.0	30.0	0.0196	1.96	1960
48.28	64.37	30.0	40.0	0.0156	1.56	1560
64.37	80.47	40.0	50.0	0.0105	1.05	1050

Areas Requiring Decontamination

Radius (km)		Radius (mi)		Area Decontaminated		
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)
0.00	16.09	0.0	10.0	7306	73	28
16.09	32.19	10.0	20.0	9760	98	38
32.19	48.28	20.0	30.0	6348	63	25
48.28	64.37	30.0	40.0	500	5	2
64.37	80.47	40.0	50.0	0	0	0

5-yr Groundshine Doses from Cs-137

Radius (km)		Radius (mi)		Area Exceeding 0.1 mrem			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.90E+04	190	73	1.90E+04
16.09	32.19	10.0	20.0	3.41E+04	341	132	5.31E+04
32.19	48.28	20.0	30.0	6.59E+04	659	254	1.19E+05
48.28	64.37	30.0	40.0	8.80E+04	880	340	
64.37	80.47	40.0	50.0	1.08E+05	1080	417	2.07E+05

Radius (km)		Radius (mi)		Area Exceeding Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	7.20E+03	72	28	3.15E+05
16.09	32.19	10.0	20.0	9.80E+03	98	38	7.20E+03
32.19	48.28	20.0	30.0	3.70E+03	37	14	1.70E+04
48.28	64.37	30.0	40.0	5.00E+02	5	2	2.07E+04
64.37	80.47	40.0	50.0	0.00E+00	0	0	2.12E+04

Radius (km)		Radius (mi)		Area Exceeding 3*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	4.42E+03	44	17	2.12E+04
16.09	32.19	10.0	20.0	3.48E+03	35	13	4.42E+03
32.19	48.28	20.0	30.0	0.00E+00	0	0	7.90E+03
48.28	64.37	30.0	40.0	0.00E+00	0	0	7.90E+03
64.37	80.47	40.0	50.0	0.00E+00	0	0	7.90E+03

Radius (km)		Radius (mi)		Area Exceeding 15*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.37E+03	14	5	7.90E+03
16.09	32.19	10.0	20.0	0.00E+00	0	0	1.37E+03
32.19	48.28	20.0	30.0	0.00E+00	0	0	1.37E+03
48.28	64.37	30.0	40.0	0.00E+00	0	0	1.37E+03
64.37	80.47	40.0	50.0	0.00E+00	0	0	1.37E+03

1.37E+03

Farm	Nonfarm
3.66E+02	6.94E+03
7.40E+02	9.02E+03
5.18E+02	5.83E+03
5.12E+01	4.49E+02
0.00E+00	0.00E+00

raction of and Requiring Decontamination for frequency 1.11E-7

Radius (km)		Radius (mi)		Ring Area (sq mi)		Decontaminated Area (sq mi)			raction of Ring Decontaminated			
Inner	Outer	Inner	Outer	Inner	Outer	total	D	3	D	15	D	15
0.00	16.09	0.0	10.0	314		28	11	12	6	0.09	0.03	0.04
16.09	32.19	10.0	20.0	942		38	24	13	0	0.04	0.03	0.01
32.19	48.28	20.0	30.0	1570		25	14	10	0	0.02	0.01	0.01
48.28	64.37	30.0	40.0	2198		2	2	0	0	0.00	0.00	0.00
64.37	80.47	40.0	50.0	2826		0	0	0	0	0.00	0.00	0.00

**Source Term 5 - Late High - E-7
 Mean Long-Term Centerline Groundshine Dose (5-yr exposure)**

Radius (km)		Radius (mi)		Groundshine Dose		
Inner	Outer	Inner	Outer	()	(rem)	(mrem)
0.00	0.32	0.0	0.2	0.0000	0.00	0
0.32	1.61	0.2	1.0	0.0006	0.06	59
1.61	3.22	1.0	2.0	0.0043	0.43	425
3.22	4.83	2.0	3.0	0.0054	0.54	544
4.83	6.44	3.0	4.0	0.0102	1.02	1020
6.44	8.05	4.0	5.0	0.0208	2.08	2080
8.05	9.66	5.0	6.0	0.0277	2.77	2770
9.66	11.27	6.0	7.0	0.0340	3.40	3400
11.27	12.87	7.0	8.0	0.0351	3.51	3510
12.87	14.48	8.0	9.0	0.0357	3.57	3570
14.48	16.09	9.0	10.0	0.0344	3.44	3440
16.09	32.19	10.0	20.0	0.0236	2.36	2360
32.19	48.28	20.0	30.0	0.0194	1.94	1940
48.28	64.37	30.0	40.0	0.0201	2.01	2010
64.37	80.47	40.0	50.0	0.0197	1.97	1970

Areas Requiring Decontamination

Radius (km)		Radius (mi)		Area Decontaminated		
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)
0.00	16.09	0.0	10.0	10589	106	41
16.09	32.19	10.0	20.0	21530	215	83
32.19	48.28	20.0	30.0	22750	228	88
48.28	64.37	30.0	40.0	22210	222	86
64.37	80.47	40.0	50.0	16750	168	65

5-yr Groundshine Doses from Cs-137

Radius (km)		Radius (mi)		Area Exceeding 0.1 mrem			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	2.33E+04	233	90	2.33E+04
16.09	32.19	10.0	20.0	3.05E+04	305	118	5.38E+04
32.19	48.28	20.0	30.0	6.62E+04	662	256	1.20E+05
48.28	64.37	30.0	40.0	8.90E+04	890	344	
64.37	80.47	40.0	50.0	1.15E+05	1150	444	2.09E+05

Radius (km)		Radius (mi)		Area Exceeding Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.13E+04	113	44	3.24E+05
16.09	32.19	10.0	20.0	2.39E+04	239	92	1.13E+04
32.19	48.28	20.0	30.0	2.36E+04	236	91	3.52E+04
48.28	64.37	30.0	40.0	2.34E+04	234	90	5.88E+04
64.37	80.47	40.0	50.0	1.78E+04	178	69	8.22E+04

Radius (km)		Radius (mi)		Area Exceeding 3*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	8.97E+03	90	35	1.00E+05
16.09	32.19	10.0	20.0	1.28E+04	128	50	8.97E+03
32.19	48.28	20.0	30.0	1.36E+04	136	53	2.18E+04
48.28	64.37	30.0	40.0	5.80E+03	58	22	3.54E+04
64.37	80.47	40.0	50.0	2.20E+03	22	8	4.12E+04

Radius (km)		Radius (mi)		Area Exceeding 15*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	4.72E+03	47	18	4.34E+04
16.09	32.19	10.0	20.0	5.78E+03	58	22	4.72E+03
32.19	48.28	20.0	30.0	0.00E+00	0	0	1.05E+04
48.28	64.37	30.0	40.0	0.00E+00	0	0	1.05E+04
64.37	80.47	40.0	50.0	0.00E+00	0	0	1.05E+04

1.05E+04

Farm Nonfarm
 5.89E+02 1.00E+04
 1.63E+03 1.99E+04
 1.85E+03 2.09E+04
 1.81E+03 2.04E+04
 1.35E+03 1.54E+04

reaction of and Requiring Decontamination for 5 regency . E-7

Radius (km)		Radius (mi)		Ring Area (sq mi)		Decontaminated Area (sq mi)			raction of Ring Decontaminated			
Inner	Outer	Inner	Outer	Inner	Outer	3	D	15	D	15	D	15
0.00	16.09	0.0	10.0	314		9	41	16	0.13	15	0.03	0.05
16.09	32.19	10.0	20.0	942		43	83	27	0.09	13	0.05	0.01
32.19	48.28	20.0	30.0	1570		39	88	49	0.06	0	0.02	0.00
48.28	64.37	30.0	40.0	2198		68	86	18	0.04	0	0.03	0.00
64.37	80.47	40.0	50.0	2826		60	65	4	0.02	0	0.02	0.00

source term - state medium - 3. 3E-
 mean long-term Centerline Groundshine Dose (5-yr exposure)

Radius (km)		Radius (mi)		Groundshine Dose (rem)		Groundshine Dose (mrem)	
Inner	Outer	Inner	Outer	()	(rem)	()	(mrem)
0.00	0.32	0.0	0.2	0.0003	0.03	33	33
0.32	1.61	0.2	1.0	0.0052	0.52	516	516
1.61	3.22	1.0	2.0	0.0161	1.61	1610	1610
3.22	4.83	2.0	3.0	0.0310	3.10	3100	3100
4.83	6.44	3.0	4.0	0.0327	3.27	3270	3270
6.44	8.05	4.0	5.0	0.0311	3.11	3110	3110
8.05	9.66	5.0	6.0	0.0266	2.66	2660	2660
9.66	11.27	6.0	7.0	0.0221	2.21	2210	2210
11.27	12.87	7.0	8.0	0.0175	1.75	1750	1750
12.87	14.48	8.0	9.0	0.0173	1.73	1730	1730
14.48	16.09	9.0	10.0	0.0176	1.76	1760	1760
16.09	32.19	10.0	20.0	0.0216	2.16	2160	2160
32.19	48.28	20.0	30.0	0.0194	1.94	1940	1940
48.28	64.37	30.0	40.0	0.0130	1.30	1300	1300
64.37	80.47	40.0	50.0	0.0081	0.81	809	809

Areas Requiring Decontamination

Radius (km)		Radius (mi)		Area Decontaminated (hectare)		Area Decontaminated (sq mi)	
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	(sq mi)
0.00	16.09	0.0	10.0	6631	66	26	26
16.09	32.19	10.0	20.0	11773	118	45	45
32.19	48.28	20.0	30.0	5103	51	20	20
48.28	64.37	30.0	40.0	0	0	0	0
64.37	80.47	40.0	50.0	0	0	0	0

Farm	Nonfarm
3.31E+02	6.30E+03
8.73E+02	1.09E+04
4.23E+02	4.68E+03
0.00E+00	0.00E+00
0.00E+00	0.00E+00

reaction of and Requiring Decontamination for frequency 3. 3E-

Radius (km)		Radius (mi)		Ring Area (sq mi)		Decontaminated Area (sq mi)			reaction of Ring Decontaminated			
Inner	Outer	Inner	Outer	Inner	Outer	total	D	3	D	15	D	15
0.00	16.09	0.0	10.0	314	314	26	9	12	5	0.08	0.03	0.04
16.09	32.19	10.0	20.0	942	942	45	24	21	0	0.05	0.03	0.02
32.19	48.28	20.0	30.0	1570	1570	20	20	0	0	0.01	0.01	0.00
48.28	64.37	30.0	40.0	2198	2198	0	0	0	0	0.00	0.00	0.00
64.37	80.47	40.0	50.0	2826	2826	0	0	0	0	0.00	0.00	0.00

**Source Term 7 - at 0 - . 3E-7
 Mean Long-term Centerline Groundshine Dose (5-yr exposure)**

Radius (km)		Radius (mi)		Groundshine Dose		
Inner	Outer	Inner	Outer	()	(rem)	(mrem)
0.00	0.32	0.0	0.2	0.0073	0.73	727
0.32	1.61	0.2	1.0	0.0324	3.24	3240
1.61	3.22	1.0	2.0	0.0307	3.07	3070
3.22	4.83	2.0	3.0	0.0203	2.03	2030
4.83	6.44	3.0	4.0	0.0145	1.45	1450
6.44	8.05	4.0	5.0	0.0147	1.47	1470
8.05	9.66	5.0	6.0	0.0178	1.78	1780
9.66	11.27	6.0	7.0	0.0177	1.77	1770
11.27	12.87	7.0	8.0	0.0183	1.83	1830
12.87	14.48	8.0	9.0	0.0178	1.78	1780
14.48	16.09	9.0	10.0	0.0168	1.68	1680
16.09	32.19	10.0	20.0	0.0144	1.44	1440
32.19	48.28	20.0	30.0	0.0044	0.44	439
48.28	64.37	30.0	40.0	0.0021	0.21	213
64.37	80.47	40.0	50.0	0.0013	0.13	132

Areas Requiring Decontamination

Radius (km)		Radius (mi)		Area Decontaminated		
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)
0.00	16.09	0.0	10.0	3313	33	13
16.09	32.19	10.0	20.0	0	0	0
32.19	48.28	20.0	30.0	0	0	0
48.28	64.37	30.0	40.0	0	0	0
64.37	80.47	40.0	50.0	0	0	0

5-yr Groundshine Doses from Cs-137

Radius (km)		Radius (mi)		Area Exceeding 0.1 mrem			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	2.32E+04	232	90	2.32E+04
16.09	32.19	10.0	20.0	3.05E+04	305	118	5.37E+04
32.19	48.28	20.0	30.0	6.63E+04	663	256	1.20E+05
48.28	64.37	30.0	40.0	8.90E+04	890	344	
64.37	80.47	40.0	50.0	1.15E+05	1150	444	2.09E+05

Radius (km)		Radius (mi)		Area Exceeding Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	3.53E+03	35	14	3.24E+05
16.09	32.19	10.0	20.0	0.00E+00	0	0	3.53E+03
32.19	48.28	20.0	30.0	0.00E+00	0	0	3.53E+03
48.28	64.37	30.0	40.0	0.00E+00	0	0	
64.37	80.47	40.0	50.0	0.00E+00	0	0	3.53E+03

Radius (km)		Radius (mi)		Area Exceeding 3*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.33E+03	13	5	3.53E+03
16.09	32.19	10.0	20.0	0.00E+00	0	0	1.33E+03
32.19	48.28	20.0	30.0	0.00E+00	0	0	1.33E+03
48.28	64.37	30.0	40.0	0.00E+00	0	0	
64.37	80.47	40.0	50.0	0.00E+00	0	0	1.33E+03

Radius (km)		Radius (mi)		Area Exceeding 15*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.86E+02	2	1	1.33E+03
16.09	32.19	10.0	20.0	0.00E+00	0	0	1.86E+02
32.19	48.28	20.0	30.0	0.00E+00	0	0	1.86E+02
48.28	64.37	30.0	40.0	0.00E+00	0	0	
64.37	80.47	40.0	50.0	0.00E+00	0	0	1.86E+02

1.86E+02

Source Term - 5. E-
 Mean Centerline Groundshine Dose (5-yr exposure)

Radius (km)		Radius (mi)		Groundshine Dose		
Inner	Outer	Inner	Outer	()	(rem)	(mrem)
0.00	0.32	0.0	0.2	0.0077	0.77	767
0.32	1.61	0.2	1.0	0.0342	3.42	3420
1.61	3.22	1.0	2.0	0.0296	2.96	2960
3.22	4.83	2.0	3.0	0.0203	2.03	2030
4.83	6.44	3.0	4.0	0.0153	1.53	1530
6.44	8.05	4.0	5.0	0.0177	1.77	1770
8.05	9.66	5.0	6.0	0.0182	1.82	1820
9.66	11.27	6.0	7.0	0.0182	1.82	1820
11.27	12.87	7.0	8.0	0.0203	2.03	2030
12.87	14.48	8.0	9.0	0.0188	1.88	1880
14.48	16.09	9.0	10.0	0.0180	1.80	1800
16.09	32.19	10.0	20.0	0.0125	1.25	1250
32.19	48.28	20.0	30.0	0.0038	0.38	381
48.28	64.37	30.0	40.0	0.0019	0.19	185
64.37	80.47	40.0	50.0	0.0012	0.12	115

Areas Requiring Decontamination

Radius (km)		Radius (mi)		Area Decontaminated		
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)
0.00	16.09	0.0	10.0	2862	29	11
16.09	32.19	10.0	20.0	0	0	0
32.19	48.28	20.0	30.0	0	0	0
48.28	64.37	30.0	40.0	0	0	0
64.37	80.47	40.0	50.0	0	0	0

5-yr Groundshine Doses from Cs-137

Radius (km)		Radius (mi)		Area Exceeding 0.1 mrem			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	2.32E+04	232	90	2.32E+04
16.09	32.19	10.0	20.0	3.05E+04	305	118	5.37E+04
32.19	48.28	20.0	30.0	6.63E+04	663	256	1.20E+05
48.28	64.37	30.0	40.0	8.90E+04	890	344	
64.37	80.47	40.0	50.0	1.15E+05	1150	444	2.09E+05

Radius (km)		Radius (mi)		Area Exceeding Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	3.35E+03	34	13	3.24E+05
16.09	32.19	10.0	20.0	0.00E+00	0	0	3.35E+03
32.19	48.28	20.0	30.0	0.00E+00	0	0	3.35E+03
48.28	64.37	30.0	40.0	0.00E+00	0	0	
64.37	80.47	40.0	50.0	0.00E+00	0	0	3.35E+03

Radius (km)		Radius (mi)		Area Exceeding 3*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.11E+03	11	4	3.35E+03
16.09	32.19	10.0	20.0	0.00E+00	0	0	1.11E+03
32.19	48.28	20.0	30.0	0.00E+00	0	0	1.11E+03
48.28	64.37	30.0	40.0	0.00E+00	0	0	
64.37	80.47	40.0	50.0	0.00E+00	0	0	1.11E+03

Radius (km)		Radius (mi)		Area Exceeding 15*Habitability			
Inner	Outer	Inner	Outer	(hectare)	(sq km)	(sq mi)	
0.00	16.09	0.0	10.0	1.60E+02	2	1	1.11E+03
16.09	32.19	10.0	20.0	0.00E+00	0	0	1.60E+02
32.19	48.28	20.0	30.0	0.00E+00	0	0	1.60E+02
48.28	64.37	30.0	40.0	0.00E+00	0	0	
64.37	80.47	40.0	50.0	0.00E+00	0	0	1.60E+02

1.60E+02

Farm	Nonfarm
1.32E+02	2.73E+03
0.00E+00	0.00E+00
0.00E+00	0.00E+00
0.00E+00	0.00E+00
0.00E+00	0.00E+00

reaction of and Requiring Decontamination for frequency 5. E-

Radius (km)		Radius (mi)		Ring Area (sq mi)		Decontaminated Area (sq mi)			reaction of Ring Decontaminated			
Inner	Outer	Inner	Outer	Inner	Outer	D 3	D 15	D 15	D 3	D 15	D 15	D 15
0.00	16.09	0.0	10.0	314		9	2	0	0.03	0.01	0.04	0.00
16.09	32.19	10.0	20.0	942		0	0	0	0.00	0.00	0.00	0.00
32.19	48.28	20.0	30.0	1570		0	0	0	0.00	0.00	0.00	0.00
48.28	64.37	30.0	40.0	2198		0	0	0	0.00	0.00	0.00	0.00
64.37	80.47	40.0	50.0	2826		0	0	0	0.00	0.00	0.00	0.00