

Table E-9. Plutonium-242.

Accident	Quantity released (curies)	Frequency (per year)	Accident consequences			Latent cancer fatalities (LCF)		
			Uninvolved worker (rem)	MEI ^a (rem)	Offsite population (person-rem)	Uninvolved worker	MEI	Offsite population
						(Point estimate of increased risk per year)	(Increased risk of LCF per occurrence)	
NO ACTION								
H/F-Canyon (without dissolver)								
Airborne release of plutonium solution resulting from coil and tube failure in F-Canyon water cooling tower	17.0	4.00E-02	16.5	0.755	4.42E+03	2.6E-04 6.6E-03	1.5E-05 3.8E-04	8.8E-02 2.2
Severe earthquake	64.7	2.00E-04	9.91	0.447	2.64E+03	7.9E-07 4.0E-03	4.5E-08 2.2E-04	2.6E-04 1.3
Fire in a plutonium process vessel	56.2	6.10E-05	10.6	1.75	1.29E+04	2.6E-07 4.2E-03	5.3E-08 8.8E-04	3.9E-04 6.5
Inadvertent transfer of plutonium solution from a processing vessel to the ground outside building	24.9	7.40E-05	1.61	7.24E-02	4.30E+02	4.8E-08 6.4E-04	2.7E-09 3.6E-05	1.6E-05 0.22
CONVERSION								
H/F-Canyon (without dissolver)								
Same accident analysis as that for the No-Action Alternative								
HB-Line, Phase II (normal processing)								
Severe earthquake	7.00E-04	2.00E-04	1.79E-02	8.28E-04	4.83	1.4E-09 7.2E-06	8.3E-11 4.1E-07	4.8E-07 2.4E-03
Unpropagated fire in gloveboxes	1.60E-03	4.70E-02	6.46E-03	1.07E-03	7.88	1.2E-07 2.6E-06	2.5E-08 5.4E-07	1.9E-04 3.9E-03

Table E-9. (continued).

Accident	Quantity released (curies)	Frequency (per year)	Accident consequences			Latent cancer fatalities (LCF)		
			Uninvolved worker (rem)	MEI ^a (rem)	Offsite population (person-rem)	Uninvolved worker	MEI	Offsite population
						(Point estimate of increased risk per year)	(Increased risk of LCF per occurrence)	(Increased risk of LCF per occurrence)
INTERIM STORAGE								
Existing Vaults (235-F)								
Rupture storage container (e.g., radiolytic decay)	5.14E-04	2.00E-02	8.62E-04	1.43E-04	1.05	6.9E-09 3.4E-07	1.4E-09 7.2E-08	1.1E-05 5.3E-04
Severe earthquake	1.05E-02	2.00E-04	0.60	7.0E-03	10	4.8E-08 2.4E-04	7.0E-10 3.5E-06	1.0E-06 5.0E-03
Fire	2.0E-5	5.0E-02	6.0E-04	2.0E-05	0.10	1.2E-08 2.4E-07	5.0E-10 1.0E-08	2.5E-06 5.0E-05
High-Level Waste Tanks								
Severe earthquake	(b)	2.00E-04	(b)	3.41E-03	0.26	(b) (b)	3.4E-10 1.7E-06	2.6E-08 1.3E-04
Hydrogen explosion in a tank	(b)	2.00E-05	0.291	1.13E-02	0.43	2.3E-09 1.2E-04	1.1E-10 5.7E-06	4.3E-09 2.2E-04
Waste tank filter fire	(b)	2.5E-02	9.55E-02	3.68E-03	8.5	9.6E-07 3.8E-05	4.6E-08 1.8E-06	1.1E-04 4.3E-03
FINAL STABILIZATION								
FB-LINE (Recovery Operations)								
Severe earthquake	0.434	2.00E-04	1.13	5.02E-02	3.06E+02	9.0E-08 4.5E-04	5.0E-09 2.5E-05	3.1E-05 1.5E-01
Inadvertent nuclear criticality in processing solution or solid	(a)	1.40E-04	(a)	2.64E-03	2.93	(a) (a)	1.8E-10 1.3E-06	2.1E-07 1.5E-03
Propagated fire in processing vessels or gloveboxes	4.31E-04	5.26E-03	1.78E-03	2.92E-05	0.216	3.7E-09 7.1E-07	7.7E-11 1.5E-08	5.7E-07 1.1E-04

Table E-9. (continued).

Accident	Quantity released (curies)	Frequency (per year)	Accident consequences			Latent cancer fatalities (LCF)		
			Uninvolved worker (rem)	MEI ^a (rem)	Offsite population (person-rem)	Uninvolved worker	MEI	Offsite population
						(Point estimate of increased risk per year)	(Increased risk of LCF per occurrence)	(Increased risk of LCF per occurrence)
F-Canyon (Second Pu cycle Pu Contribution)								
Airborne release Pu solution resulting from coil & tube failure in F-Area Canyon water cooling tower	0.218	4.00E-02	0.531	2.44E-02	1.44E+02	8.8E-06	4.8E -07	2.9E-03
Severe earthquake	0.365	2.00E-04	3.43	0.158	9.22E+02	2.2E-04	1.2E-05	7.2E-02
Fire in a plutonium process vessel	1.59	6.10E-05	2.27	0.378	2.78E+03	2.8E-07	1.6E-08	9.2E-05
Inadvertent transfer of plutonium solution from a processing vesssel to the ground outside building	9.65E-02	7.40E-05	0.872	4.02E-02	2.35E+02	1.4E-03	7.9E-05	0.46
						5.5E-08	1.2E-08	8.5E-05
						9.0E-04	1.9E-04	1.4
						2.6E-08	1.5E-09	8.7E-06
						3.5E-04	2.0E-05	0.12

a. MEI = maximally exposed individual.