

Table E-10. Mark-16 and -22 fuel.

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 (Point estimate of increased risk per year) (Increased risk of LCF per occurrence)	MEI	Offsite population
NO ACTION								
L-Reactor Basin (storage)								
Inadvertent draindown of half the basin water to the Savannah River	2.57E+03	1.08E-02	(b)	9.12E-04	0.678	(b) (b)	4.9E-09 4.6E-07	3.7E-06 3.4E-04
Severe earthquake	4.27E+05	2.00E-04	7.64E-02	5.36E-03	17.7	6.1E-09 3.1E-05	5.4E-10 2.7E-06	1.8E-06 8.9E-03
Inadvertent overflow 37,850 liters ^c of basin water through sewer system to Savannah River	15.1	1.56E-02	(b)	5.37E-06	3.99E-03	(b) (b)	4.2E-11 2.7E-09	3.1E-08 2.0E-06
CONVERSION								
H-Canyon (limiting solution source term)								
Unpropagated fire in solution vessel	0.594	2.02E-02	2.15	0.355	2.62E+03	1.7E-05 8.6E-04	3.6E-06 1.8E-04	2.6E-02 1.3
Inadvertent transfer from a processing vessel to the ground outside the H-Canyon building	1.32	4.00E-04	31.0	1.42	8.27E+03	1.0E-05 2.4E-02	2.8E-07 7.1E-04	1.7E-03 4.1
Inadvertent transfer of solution to H-Canyon sump	3.15E-02	8.10E-02	0.114	1.88E-02	1.39E+02	3.7E-06 4.6E-05	7.6E-07 9.4E-06	5.6E-03 7.0E-02
Airborne release of solutions resulting from coil and tube failure in H-Canyon cooling system	2.08E-02	2.55E-03	0.136	6.25E-03	36	1.4E-07 5.4E-05	8.0E-09 3.1E-06	4.6E-05 1.8E-02
Inadvertent nuclear criticality	4.76E+04	1.56E-03	(b)	1.32E-03	(b)	(b) (b)	1.0E-09 6.6E-07	(b) (b)
Severe earthquake	1.17	2.00E-04	27.4	1.26	7.31E+03	4.4E-06 2.2E-02	1.3E-07 6.3E-04	7.3E-04 3.7

Table E-10. (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)	(Point estimate of increased risk per year)	(Point estimate of increased risk per year)
(Increased risk of LCF per occurrence)								
CONVERSION (continued)								
H-Outside (UNH tank)								
Transfer error	(b)	1.75E-02	(b)	4.30E-05	0.286	(b)	3.8E-10	2.5E-06
						(b)	2.2E-08	1.4E-04
Liquid release due to severe earthquake	(b)	2.00E-04	(b)	4.58E-02	2.72E+02	(b)	4.6E-09	2.8E-05
						(b)	2.3E-05	0.14
FA-Line (normal operations)								
Eructation (spewing from overpressurization) in vessel during processing	3.40E-05	4.00E-02	1.97E-04	9.04E-06	5.49E-02	3.2E-09	1.8E-10	1.1E-06
						7.9E-08	4.5E-09	2.7E-05
"Red-oil" explosion (i.e., uncontrollable reaction of contaminated organic materials) in the denitrator	2.30E-05	1.40E-04	1.33E-04	6.12E-06	3.71E-02	7.4E-12	4.3E-13	2.6E-09
						5.3E-08	3.1E-09	1.9E-05
Design-basis tornado	2.60	1.00E-06	(b)	2.9E-05	8.0	(b)	1.5E-14	4.0E-09
						(b)	1.5E-08	4.0E-03
Severe earthquake	1.29E-06	2.00E-04	7.47E-06	3.43E-07	2.08E-03	6.0E-13	3.4E-14	2.1E-10
						3.0E-09	1.7E-10	1.0E-06
Uranium Solidification Facility (normal operations)								
Severe earthquake	(b)	2.00E-04	5.90E-02	1.01E-04	0.700	4.7E-09	1.0E-11	7.0E-08
						2.4E-05	5.1E-08	3.5E-04
Uncontrolled chemical reaction during processing in denitrator pot	4.91E-07	4.90E-06	5.25E-07	8.22E-08	6.26E-04	1.0E-15	2.0E-16	1.5E-12
						2.1E-10	4.1E-11	3.1E-07
Inadvertent criticality	(b)	2.27E-04	16.4	1.33E-02	18.8	1.5E-06	1.5E-09	2.1E-06
						6.6E-03	6.7E-06	9.4E-03

Table E-10. (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 (Point estimate of increased risk per year) (Increased risk of LCF per occurrence)	MEI	Offsite population
INTERIM STORAGE								
New Storage Vault (USF)								
Severe earthquakes	(b)	2.00E-04	5.90E-02	1.01E-04	0.700	4.7E-09 2.4E-05	1.0E-11 5.1E-08	7.0E-08 3.5E-04
Inadvertent criticality	(b)	2.27E-04	16.4	1.33E-02	18.8	1.5E-06 6.6E-03	1.5E-09 6.7E-06	2.1E-06 9.4E-03
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

a. MEI = maximally exposed individual.

b. These data were not available.

c. To convert liters to gallons, multiply by 0.26418.