

TABLE 5.5.1.2–1.—Potential Accident Frequency and Consequences (Median Meteorology)^a

Building	Accident	MEI			Offsite Population ^b		Individual Noninvolved Worker		Noninvolved Worker Population	
		Frequency (per year)	Dose (rem)	LCFs ^c	Dose (Person-rem)	LCFs ^d	Dose (rem)	LCFs ^c	Dose (Person-rem)	LCFs ^d
Building 191	Radioactive material dispersion from a spill and fire - No Action	<10 ⁻⁶	3.32 × 10 ⁻⁵	1.99 × 10 ⁻⁸	4.70 × 10 ⁻³	2.82 × 10 ⁻⁶	7.23 × 10 ⁻⁵	4.34 × 10 ⁻⁸	9.72 × 10 ⁻³	5.83 × 10 ⁻⁶
	Radioactive material dispersion from a spill and fire - Proposed Action	<10 ⁻⁶	Same	Same	Same	Same	Same	Same	Same	Same
Building 194	Design-basis earthquake and fire - No Action	10 ⁻⁶ to 10 ⁻⁴	8.66 × 10 ⁻⁴	5.20 × 10 ⁻⁷	2.23 × 10 ⁻¹	1.34 × 10 ⁻⁴	3.43 × 10 ⁻³	2.06 × 10 ⁻⁶	5.83 × 10 ⁻¹	3.50 × 10 ⁻⁴
	Design-basis earthquake and fire-Proposed Action	10 ⁻⁶ to 10 ⁻⁴	Same	Same	Same	Same	Same	Same	Same	Same
Building 239	Uncontrolled oxidation of plutonium at elevated temperature - No Action	<4.5 × 10 ⁻⁷	1.73 × 10 ⁻²	1.04 × 10 ⁻⁵	6.49	3.89 × 10 ⁻³	2.47 × 10 ⁻¹	1.48 × 10 ⁻⁴	2.59 × 10 ¹	1.55 × 10 ⁻²
	Uncontrolled oxidation of plutonium at elevated temperature - Proposed Action	<4.5 × 10 ⁻⁷	Same	Same	Same	Same	Same	Same	Same	Same
Building 251	Evaluation basis fire - No Action	10 ⁻⁶ to 10 ⁻⁴	6.01 × 10 ⁻¹	3.61 × 10 ⁻⁴	1.88 × 10 ²	1.13 × 10 ⁻¹	5.70	3.42 × 10 ⁻³	8.26 × 10 ²	4.96 × 10 ⁻¹
	Evaluation basis fire - Proposed Action	10 ⁻⁶ to 10 ⁻⁴	Same	Same	Same	Same	Same	Same	Same	Same
Building 331	Plutonium Metal Fire - No Action	10 ⁻⁶ to 10 ⁻⁴	5.02 × 10 ⁻²	3.01 × 10 ⁻⁵	2.39 × 10 ¹	1.43 × 10 ⁻²	6.40 × 10 ⁻¹	3.84 × 10 ⁻⁴	8.95 × 10 ¹	5.37 × 10 ⁻²
	Aircraft crash with subsequent fire - Proposed Action	1.53 × 10 ⁻⁶	1.63 × 10 ⁻¹	9.78 × 10 ⁻⁵	1.13 × 10 ²	6.78 × 10 ⁻²	2.11	1.27 × 10 ⁻³	2.73 × 10 ²	1.64 × 10 ⁻¹
Building 332	Aircraft Crash - No Action	4.86 × 10 ⁻⁶	1.48 × 10 ⁻¹	8.85 × 10 ⁻⁵	9.70 × 10 ¹	5.82 × 10 ⁻²	1.84	1.10 × 10 ⁻³	3.18 × 10 ²	1.91 × 10 ⁻¹
	Room Fire Unfiltered - Proposed Action	3.90 × 10 ⁻⁷	4.40 × 10 ⁻¹	2.64 × 10 ⁻⁴	2.80 × 10 ²	1.68 × 10 ⁻¹	4.94	2.96 × 10 ⁻³	9.30 × 10 ²	5.58 × 10 ⁻¹

TABLE 5.5.1.2–1.—Potential Accident Frequency and Consequences (Median Meteorology)^a (continued)

Building	Accident	Frequency (per year)	MEI		Offsite Population ^b		Individual Noninvolved Worker		Noninvolved Worker Population	
			Dose (rem)	LCFs ^c	Dose (Person- rem)	LCFs ^d	Dose (rem)	LCFs ^c	Dose (Person- rem)	LCFs ^d
Building 334	Uncontrolled oxidation of plutonium at elevated temperatures - No Action	$< 1.00 \times 10^{-6}$	1.64×10^{-1}	9.84×10^{-5}	6.80×10^1	4.08×10^{-2}	3.25	1.95×10^{-3}	2.31×10^2	1.39×10^{-1}
	Uncontrolled oxidation of plutonium at elevated temperatures - Proposed Action	$< 1.00 \times 10^{-6}$	Same	Same	Same	Same	Same	Same	Same	Same
Building 581	Earthquake - No Action	2.00×10^{-8}	4.78×10^{-4}	2.87×10^{-7}	1.96×10^{-1}	1.18×10^{-4}	1.43×10^{-3}	8.60×10^{-7}	2.08×10^{-1}	1.25×10^{-4}
	Earthquake during plutonium experiment without yield - Proposed Action	2.00×10^{-9}	1.65×10^{-3}	9.89×10^{-7}	5.46×10^{-1}	3.28×10^{-4}	4.99×10^{-3}	3.00×10^{-6}	7.41×10^{-1}	4.45×10^{-4}
Building 625	Aircraft Crash - No Action	6.10×10^{-7}	2.39×10^{-1}	1.43×10^{-4}	6.62×10^2	3.97×10^{-1}	6.49×10^{-1}	3.89×10^{-4}	3.04×10^1	1.82×10^{-2}
	Aircraft Crash - Proposed Action	6.10×10^{-7}	7.27×10^{-1}	4.36×10^{-4}	2.02×10^3	1.21	1.97	1.18×10^{-3}	9.24×10^1	5.54×10^{-2}
Building 696R	Aircraft Crash - No Action	6.29×10^{-7}	8.61×10^{-1}	5.17×10^{-4}	1.29×10^3	7.71×10^{-1}	1.39	8.33×10^{-4}	8.33×10^1	5.00×10^{-2}
	Aircraft Crash - Proposed Action	6.29×10^{-7}	Same	Same	Same	Same	Same	Same	Same	Same
Site 300 Materials Management Facilities	Depleted uranium release by fire - No Action	10^{-4} to 10^{-2}	3.93×10^{-4}	2.36×10^{-7}	3.81×10^{-1}	2.29×10^{-4}	3.94×10^{-2}	2.36×10^{-5}	9.42×10^{-2}	5.65×10^{-5}
	Depleted uranium release by fire - Proposed Action	10^{-4} to 10^{-2}	Same	Same	Same	Same	Same	Same	Same	Same
Onsite Transportation	Materials Management Section package explosion - No Action	$< 1.00 \times 10^{-6}$	1.16×10^{-1}	6.96×10^{-5}	4.01×10^1	2.41×10^{-2}	2.79	1.67×10^{-3}	1.71×10^2	1.03×10^{-1}
	Materials Management Section package explosion - Proposed Action	$< 1.00 \times 10^{-6}$	Same	Same	Same	Same	Same	Same	Same	Same

Source: Original

^a The consequences for the Reduced Operation Alternative would be the same as for the No Action Alternative.^b Based on the population of approximately 6,900,000 persons residing within 50 miles of LLNL.^c Increased likelihood of a latent cancer fatality.^d Increased number of latent cancer fatalities.

LCFs = latent cancer fatalities; MEI = maximally exposed individual.