

Summary from Appendix A2

Event	Initiator (IE) Frequency (per year)	SF Uncovery Frequency (per year)
Internal Fire (FIRE)	3.0×10^{-3}	4.5×10^{-8}
Loss of Cooling (LOC)	3.0×10^{-3}	1.4×10^{-8}
Loss of Inventory (LOI)	1.0×10^{-2}	3.1×10^{-9}
LOSP-Plant (LP1)	8.0×10^{-2}	3.0×10^{-8}
LOSP-Weather (LP2)	1.1×10^{-2}	1.3×10^{-7}
Total	0.107	2.2×10^{-7}

Note: A2 indicates total SFCU = 2.3×10^{-7} per year

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Structural Integrity of Spent Fuel Pool Structures Subject to Tornadoes and High Winds

NUREG/CR-2944 Region	Exceedance probability (per year)					
	F0	F1	F2	F3	F4	F5
A	7.4E-05	4.4E-05	1.5E-05	3.5E-06	5.6E-07	3.1E-08
B	5.6E-05	3.3E-05	1.1E-05	2.5E-06	3.7E-07	2.1E-08
C	2.9E-05	1.5E-05	4.1E-06	8.9E-07	1.3E-07	4.7E-09
D	3.6E-06	1.6E-06	3.9E-07	8.7E-08	1.6E-08	---
USA	3.5E-05	2.0E-05	6.1E-06	1.4E-06	2.2E-07	1.0E-08

Structural Integrity of Spent Fuel Pool Structures Subject to Heavy Loads Drops

Model Description	Probability of a loss-of-inventory (per year) for 100 lifts		
	High	Mean	Low
NUREG-0612 (Table 2)	6.9×10^{-6}	5.5×10^{-7}	2.2×10^{-9}
New Navy data, NUREG rigging model (Table 3)	4.8×10^{-6}	2.7×10^{-7}	4.4×10^{-9}
New Navy data, WIPP rigging model (Table 4)	2.1×10^{-6}	2.0×10^{-7}	2.8×10^{-8}
NEI 95% (new Navy/WIPP rigging) (Table 6)	2.9×10^{-6}	2.7×10^{-7}	1.5×10^{-8}
Reassessment of NUREG-1353	---	1.5×10^{-7}	---

Structural Integrity of Spent Fuel Pool Structures Subject to Aircraft Crashes

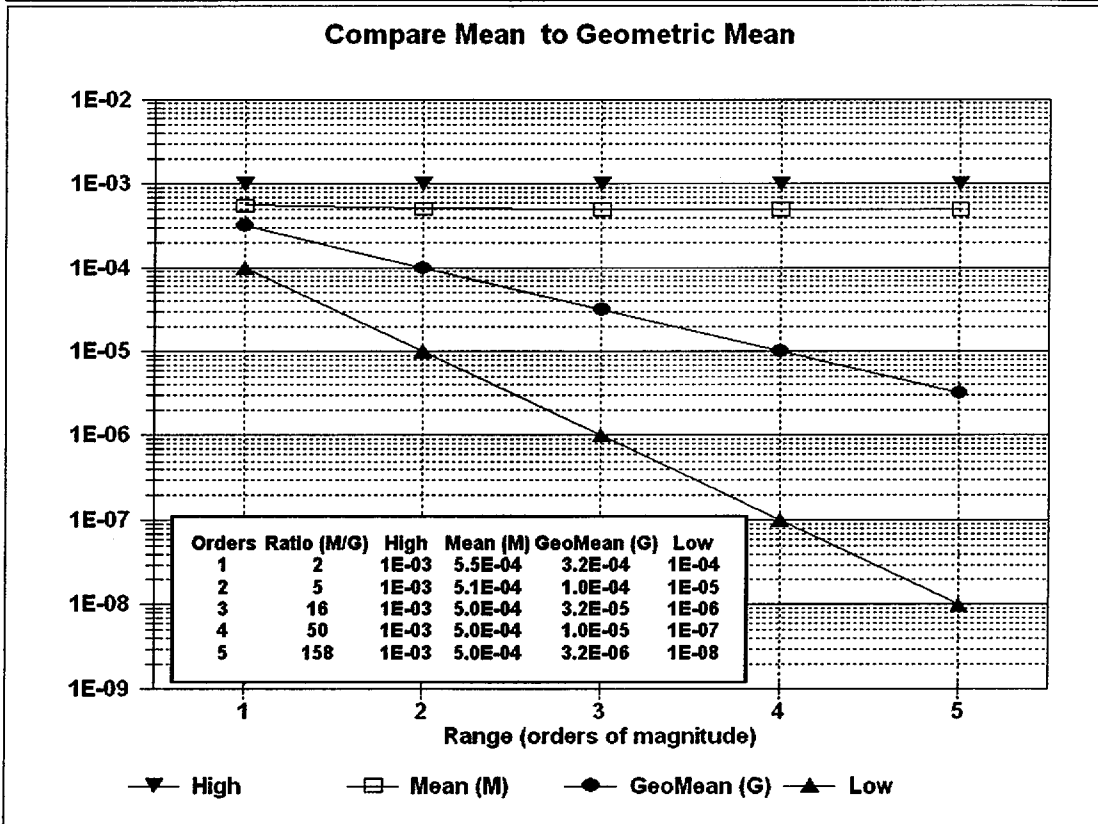
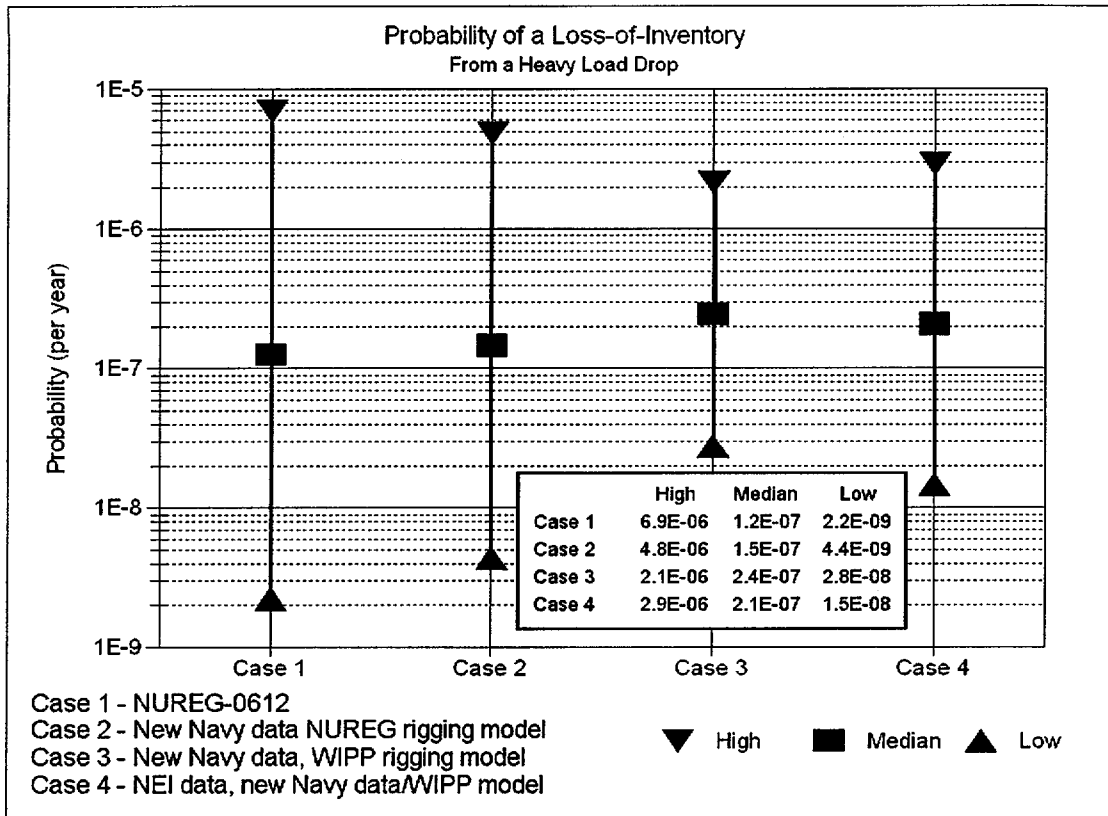
Significant pool damage

The estimated value range was 4.3×10^{-8} to 9.6×10^{-12} per year. The average value was estimated to be 2.9×10^{-9} per year.

Support system availability

The estimated value range was 1.0×10^{-6} to 1.0×10^{-10} per year. The average value was estimated to be 7.0×10^{-8} per year.

Heavy Loads



Tornadoes

Exceedance probability for each F-scale

NUREG/ CR-2944 Region	Exceedance probability (per year)					
	F0	F1	F2	F3	F4	F5
A	7.4E-05	4.4E-05	1.5E-05	3.5E-06	5.6E-07	3.1E-08
B	5.6E-05	3.3E-05	1.1E-05	2.5E-06	3.7E-07	2.1E-08
C	2.9E-05	1.5E-05	4.1E-06	8.9E-07	1.3E-07	4.7E-09
D	3.6E-06	1.6E-06	3.9E-07	8.7E-08	1.6E-08	---
USA	3.5E-05	2.0E-05	6.1E-06	1.4E-06	2.2E-07	1.0E-08

NUREG/CR-2944 Regionalization with facility locations

