

FUNCTIONS OF ENGINEERED SAFETY FEATURES

Courtesy of U.S. NRC.

Source: Rasmussen, Norman et al. "Reactor Safety Study." WASH-1400. Washington DC: U.S. NRC, 1975.

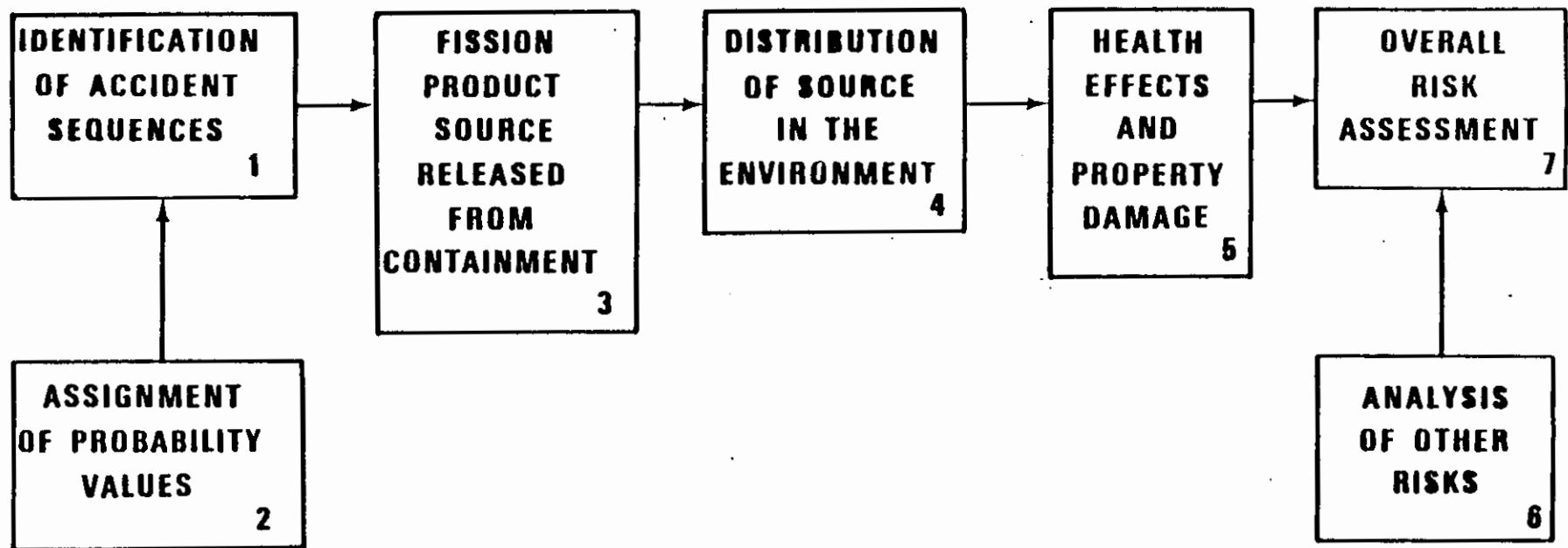
TABLE VI 3-1 INITIAL ACTIVITY OF RADIONUCLIDES IN THE NUCLEAR REACTOR CORE AT THE TIME OF THE HYPOTHETICAL ACCIDENT

No.	Radionuclide	Radioactive Inventory Source (curies x 10 ⁻³)	Half-Life (days)
1	Cobalt-58	0.0078	71.0
2	Cobalt-60	0.0029	1,920
3	Krypton-85	0.0056	1,950
4	Krypton-85m	0.24	0.181
5	Krypton-87	0.47	0.0528
6	Krypton-88	0.68	0.117
7	Rubidium-86	0.00026	18.7
8	Strontium-89	0.94	52.1
9	Strontium-90	0.037	11,030
10	Strontium-91	1.1	0.403
11	Yttrium-90	0.039	2.67
12	Yttrium-91	1.2	59.0
13	Zirconium-95	1.5	63.2
14	Zirconium-97	1.5	0.71
15	Niobium-95	1.5	35.0
16	Molybdenum-99	1.6	2.8
17	Technetium-99m	1.4	0.25
18	Ruthenium-103	1.1	39.5
19	Ruthenium-105	0.72	0.185
20	Ruthenium-106	0.25	366
21	Rhodium-105	0.49	1.50
22	Tellurium-127	0.059	0.391
23	Tellurium-127m	0.011	109
24	Tellurium-129	0.31	0.048
25	Tellurium-129m	0.053	0.340
26	Tellurium-131a	0.13	1.25
27	Tellurium-132	1.2	1.25
28	Antimony-127	0.061	1.88
29	Antimony-129	0.33	0.179
30	Iodine-131	0.85	8.05
31	Iodine-132	1.2	0.0958
32	Iodine-133	1.7	0.875
33	Iodine-134	1.9	0.0366
34	Iodine-135	1.5	0.280
35	Xenon-133	1.7	5.28
36	Xenon-135	0.34	0.384
37	Cesium-134	0.075	750
38	Cesium-136	0.030	13.0
39	Cesium-137	0.047	11,000
40	Barium-140	1.6	12.8
41	Lanthanum-140	1.6	1.67
42	Cerium-141	1.5	32.3
43	Cerium-143	1.3	1.38
44	Cerium-144	0.85	284
45	Praseodymium-143	1.3	13.7
46	Neodymium-147	0.60	11.1
47	Neptunium-239	16.4	2.35
48	Plutonium-238	0.00057	32,500
49	Plutonium-239	0.00021	8.9 x 10 ⁶
50	Plutonium-240	0.00021	2.4 x 10 ⁶
51	Plutonium-241	0.034	5,350
52	Americium-241	0.000017	1.5 x 10 ⁵
53	Curium-242	0.0050	163
54	Curium-244	0.00021	5,630

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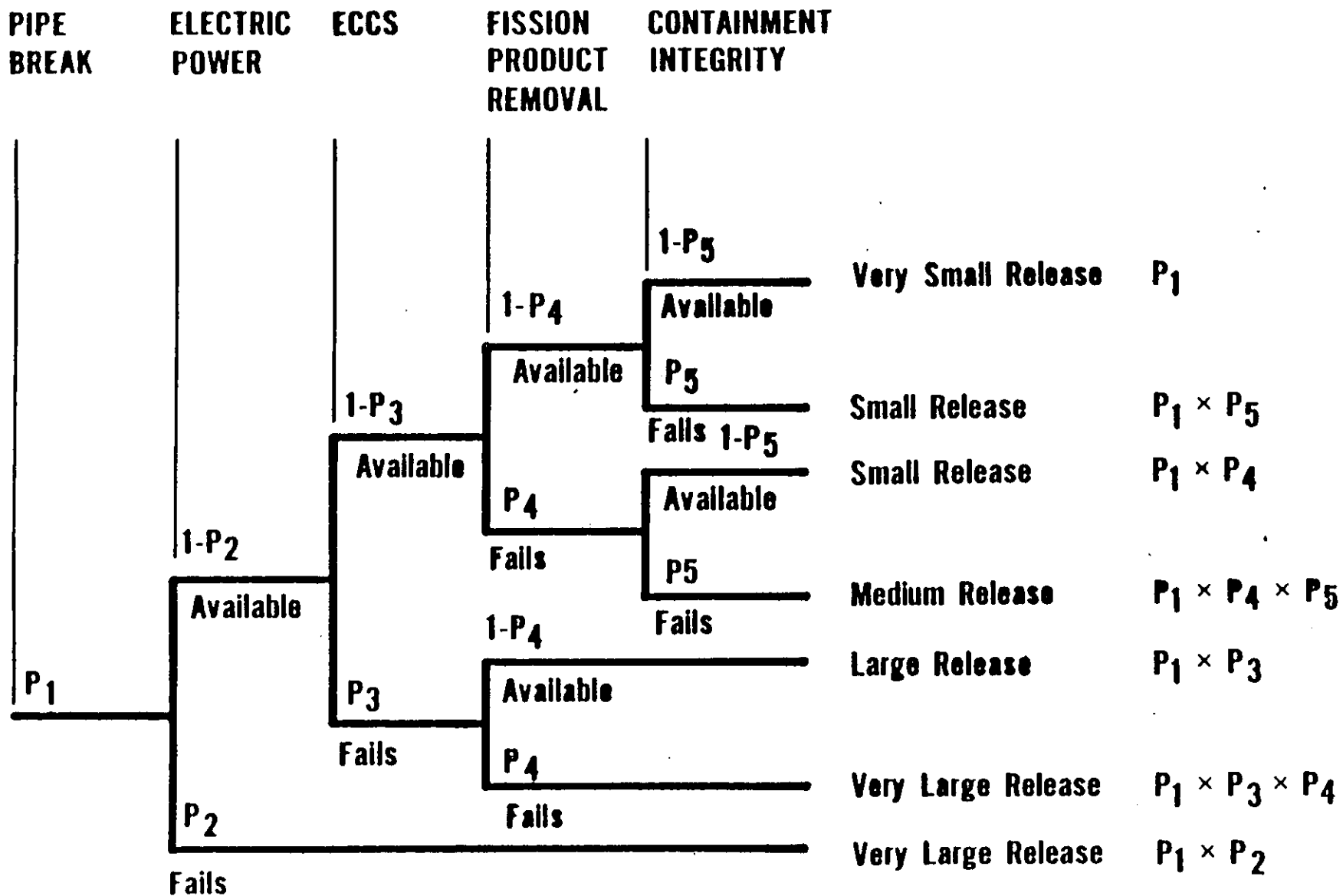
BASIC SEVEN TASKS IN REACTOR SAFETY STUDY



Courtesy of U.S. NRC.

Source: Rasmussen, Norman et al. "Reactor Safety Study." WASH-1400. Washington DC: U.S. NRC, 1975.

SIMPLIFIED EVENT TREE FOR A LOCA IN A TYPICAL NUCLEAR POWER PLANT



Courtesy of U.S. NRC.

Source: Rasmussen, Norman et al. "Reactor Safety Study." WASH-1400. Washington DC: U.S. NRC, 1975.

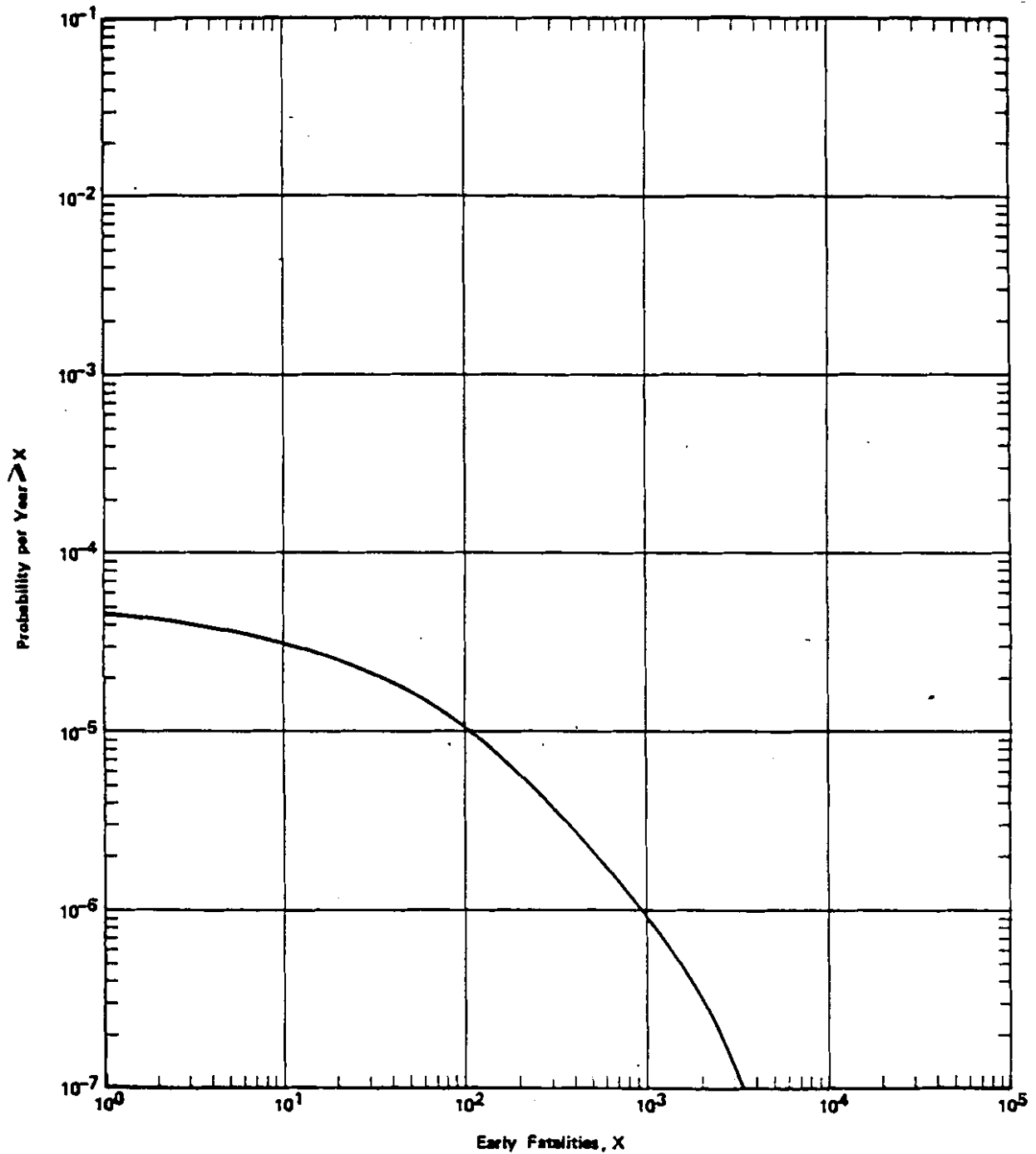


FIGURE 5-10 Probability Distribution for Early Fatalities per Year for 100 Reactors

Note: Approximate uncertainties are estimated to be represented by factors of 1/4 and 4 on consequence magnitudes and by factors of 1/5 and 5 on probabilities.

Courtesy of U.S. NRC.

Source: Rasmussen, Norman et al. "Reactor Safety Study." WASH-1400. Washington DC: U.S. NRC, 1975.

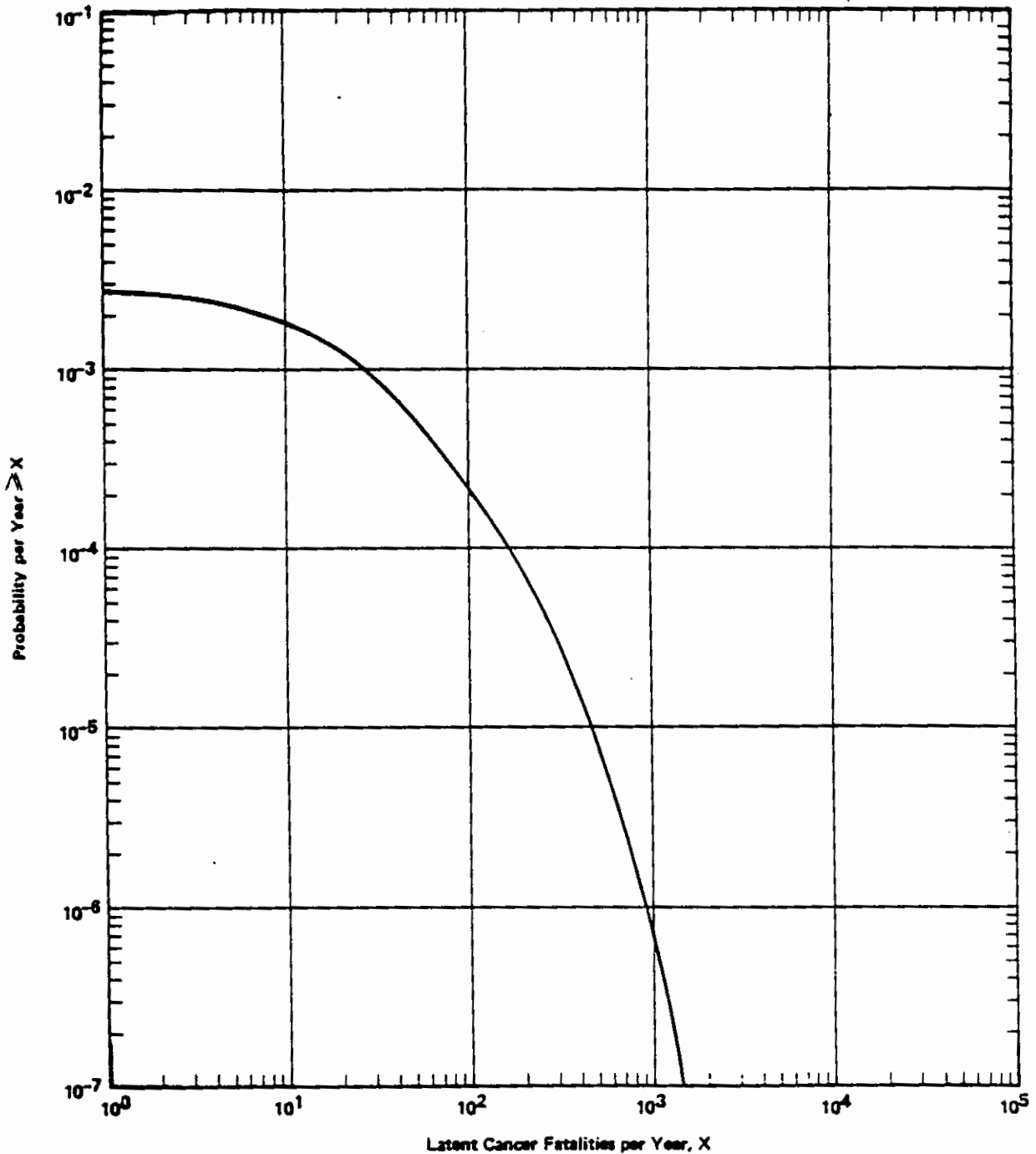


FIGURE 5-12 Probability Distribution for Latent Cancer Fatality Incidence per Year for 100 Reactors

Note: Approximate uncertainties are estimated to be represented by factors of 1/6 and 3 on consequence magnitudes and by factors of 1/5 and 5 on probabilities.

Courtesy of U.S. NRC.

Source: Rasmussen, Norman et al. "Reactor Safety Study." WASH-1400. Washington DC: U.S. NRC, 1975.

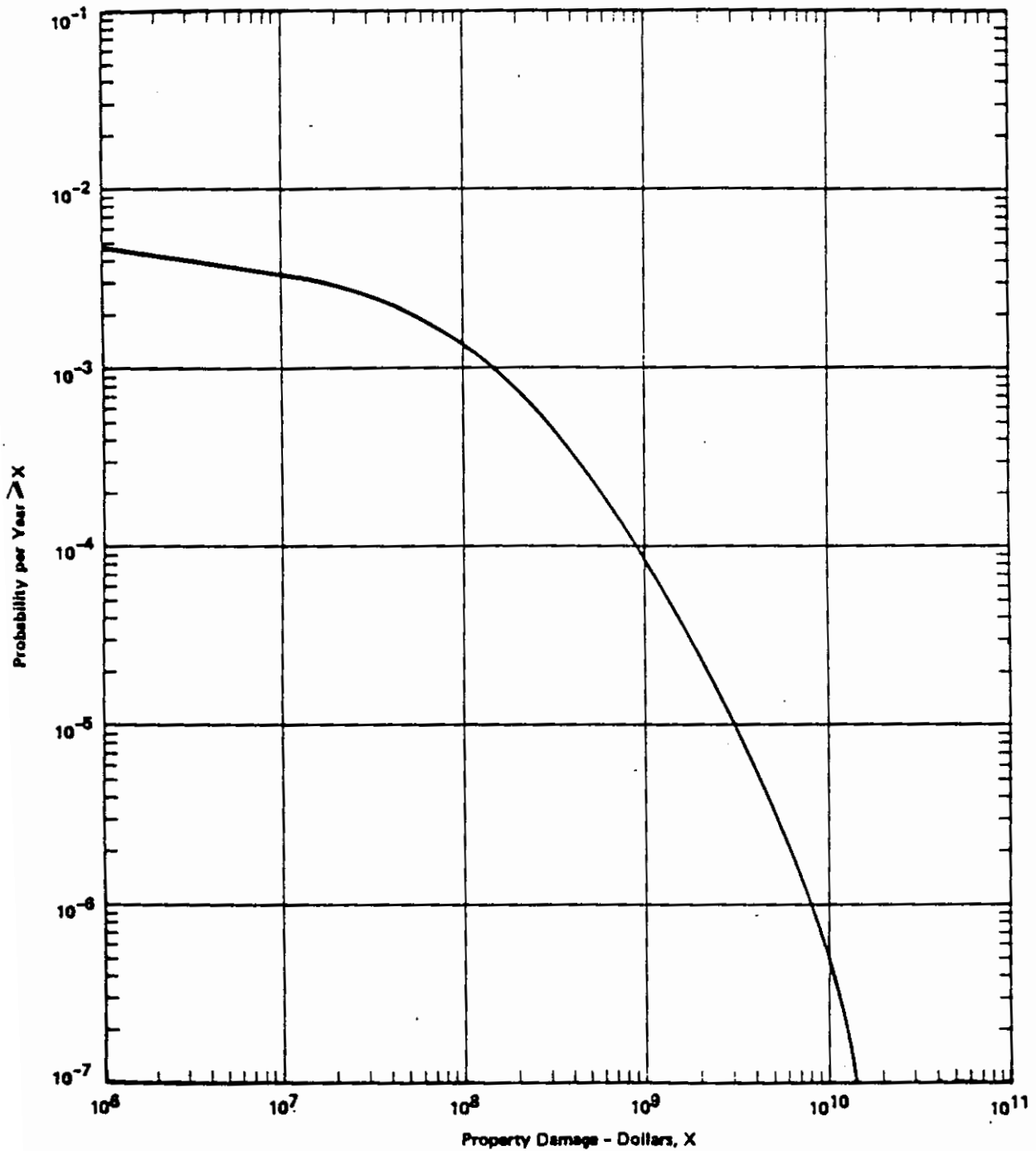


FIGURE 5-15 Probability Distribution for Property Damage per Year for 100 Reactors

Note: Approximate uncertainties are estimated to be represented by factors of 1/5 and 2 on consequence magnitudes and by factors of 1.5 and 5 on probabilities.

Courtesy of U.S. NRC.

Source: Rasmussen, Norman et al. "Reactor Safety Study." WASH-1400. Washington DC: U.S. NRC, 1975.

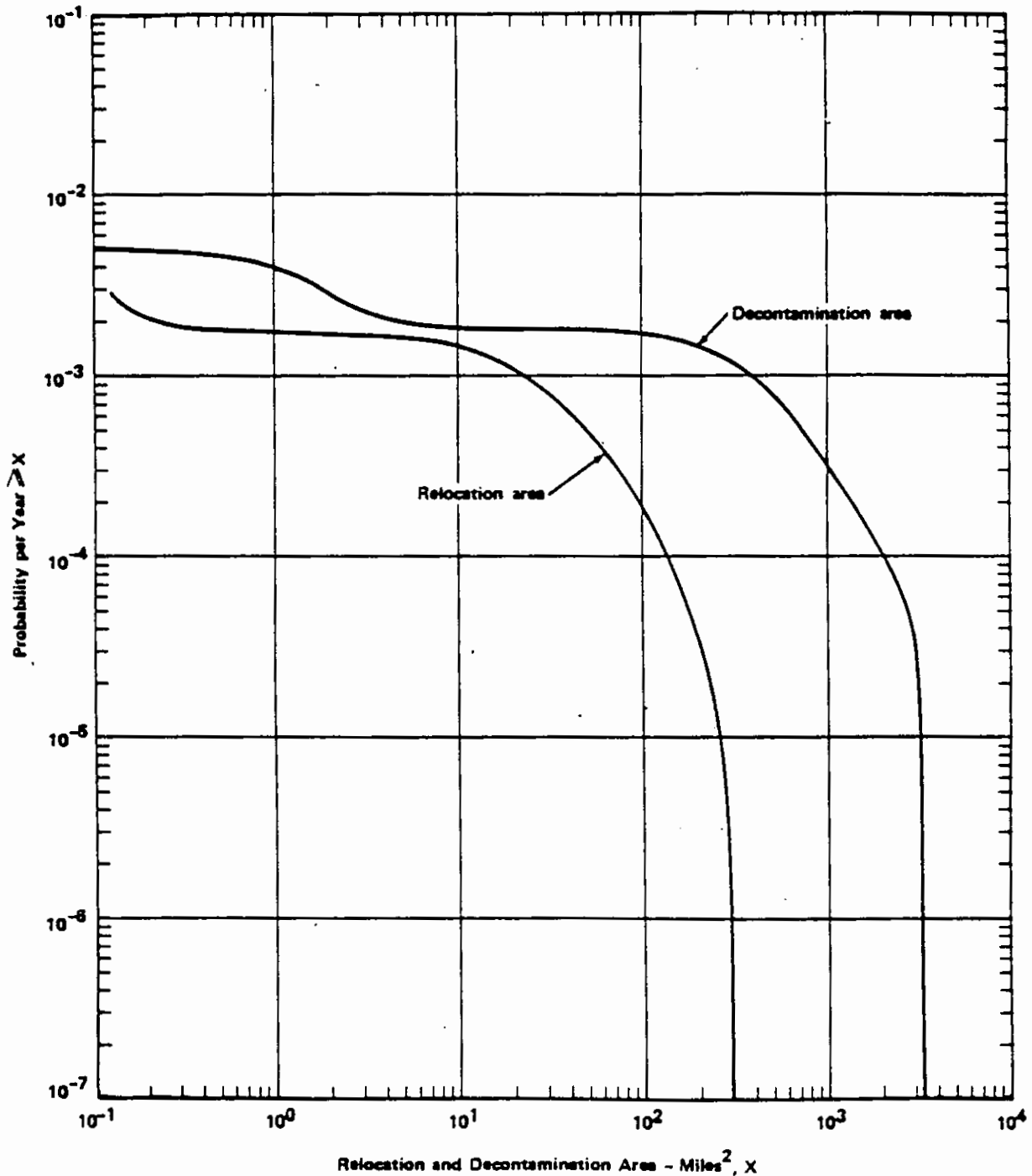


FIGURE 5-16 Probability Distribution for Relocation and Decontamination Area per Year for 100 Reactors

Note: Approximate uncertainties are estimated to be represented by factors of 1/5 and 2 on consequence magnitudes and by factors of 1.5 and 5 on probabilities.

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