

Mean consequences for severe spent fuel pool accident.

May 18, 1999

Population distribution: Surry  
 Fission product inventory: 11 batches of spent fuel  
 Evacuation start time: evacuation begins 1.3 hours after fission product release begins  
 Fission product release fraction:  $1 \times 10^{-6}$  for La and Ce  
 Evacuation fraction: .95 of population

1.OUT	Distance (miles)	Prompt Fatalities	Societal Dose (person-Sv)	Cancer Fatalities
12 days after discharge	0-100	1.07	46,000	2,300
	0-500	1.07	557,000	25,100
	0-1000	1.07	630,000	28,400

Population distribution: 100 persons/mile<sup>2</sup> (with no exclusion area)  
 Fission product inventory: 11 batches of spent fuel  
 Evacuation start time: evacuation begins 1.3 hours after fission product release begins  
 Fission product release fraction:  $1 \times 10^{-6}$  for La and Ce  
 Evacuation fraction: .95 of population

2.OUT	Distance (miles)	Prompt Fatalities	Societal Dose (person-Sv)	Cancer Fatalities
12 days after discharge	0-100	13.3	50,800	2,460
	0-500	13.3	450,000	20,300
	0-1000	13.3	699,000	31,600

Population distribution: 100 persons/mile<sup>2</sup> (with no exclusion area)  
 Fission product inventory: 11 batches of spent fuel **plus** rest of last core  
 Evacuation start time: evacuation begins 1.3 hours after fission product release begins  
 Fission product release fraction:  $1 \times 10^{-6}$  for La and Ce  
 Evacuation fraction: .95 of population

7B.OUT, 7C.OUT, 7D.OUT	Distance (miles)	Prompt Fatalities	Societal Dose (person-Sv)	Cancer Fatalities
30 days after discharge	0-100	18.3	53,500	2,610
	0-500	18.3	454,000	20,600
	0-1000	18.3	723,000	32,700
90 days after discharge	0-100	16.3	52,100	2,560
	0-500	16.3	465,000	21,100
	0-1000	16.3	730,000	33,000
1 year after discharge	0-100	12.7	50,900	2,490
	0-500	12.7	477,000	21,600
	0-1000	12.7	730,000	33,000

C/SK

Population distribution: 100 persons/mile<sup>2</sup> (with no exclusion area)  
 Fission product inventory: 11 batches of spent fuel **plus** rest of last core  
 Evacuation start time: evacuation begins 3 hours before fission product release begins  
 Fission product release fraction:  $1 \times 10^{-6}$  for La and Ce  
 Evacuation fraction: .95 of population

8B.OUT, 8C.OUT, 8D.OUT	Distance (miles)	Prompt Fatalities	Societal Dose (person-Sv)	Cancer Fatalities
30 days after discharge	0-100	.96	48,300	2,260
	0-500	.96	449,000	20,200
	0-1000	.96	718,000	32,300
90 days after discharge	0-100	.83	47,500	2,220
	0-500	.83	460,000	20,700
	0-1000	.83	725,000	32,700
1 year after discharge	0-100	.67	46,700	2,180
	0-500	.67	473,000	21,300
	0-1000	.67	725,000	32,600

Population distribution: 100 persons/mile<sup>2</sup> (with no exclusion area) ✓  
 Fission product inventory: 11 batches of spent fuel **plus** rest of last core ✓  
 Evacuation start time: evacuation begins 3 hours before fission product release begins  
 Fission product release fraction:  $6 \times 10^{-6}$  for La and Ce  
 Evacuation fraction: .95 of population

9B.OUT, 9C.OUT, 9D.OUT	Distance (miles)	Prompt Fatalities	Societal Dose (person-Sv)	Cancer Fatalities
30 days after discharge	0-100	.96	48,300	2,260
	0-500	.96	449,000	20,200
	0-1000	.96	718,000	32,300
90 days after discharge	0-100	.83	47,500	2,200
	0-500	.83	460,000	20,700
	0-1000	.83	725,000	32,700
1 year after discharge	0-100	.67	46,700	2,180
	0-500	.67	473,000	21,300
	0-1000	.67	725,000	32,700

Population distribution: 100 persons/mile<sup>2</sup> (with no exclusion area)  
 Fission product inventory: 11 batches of spent fuel plus rest of last core  
 Evacuation start time: evacuation begins 3 hours before fission product release begins  
 Fission product release fraction:  $1 \times 10^{-6}$  for La and Ce  
 Evacuation fraction: .995 of population

10B.OUT, 10C.OUT, 10D.OUT	Distance (miles)	Prompt Fatalities	Societal Dose (person-Sv)	Cancer Fatalities
30 days after discharge	0-100	.096	48,100	2,250
	0-500	.096	449,000	20,200
	0-1000	.096	718,000	32,300
90 days after discharge	0-100	.083	47,400	2,210
	0-500	.083	460,000	20,700
	0-1000	.083	725,000	32,700
1 year after discharge	0-100	.067	46,600	2,170
	0-500	.067	473,000	21,300
	0-1000	.067	725,000	32,600