57 runs

July 19, 2000

Case	Population Distribution	Radionuclide Inventory	Evacuation Start Time	La/Ce Release Fraction	Evacuation Percentage	Case	Input Decks*	Output Decks
Base Case	Surry	11 batches plus rest of last core	1.4 hours after release begins	$1x10^{-6}$	99.5%	Base Case	atmos7b,c,d early299 SURSIT	BESTB,C,D
1	Surry	11 batches plus rest of last core	1.4 hours after release begins	$1x10^{-6}$	95%	1	atmos7b,c,d early2 SURSIT	0B,C,D
2	Surry	11 batches	1.4 hours after release begins	$1x10^{-6}$	95%	2	atmos6b,c,d early2 SURSIT	ONEB,C,D
3	100 people/mi^2	11 batches	1.4 hours after release begins	$1x10^{-6}$	95%	3	atmos6b,c,d early3	TWOB,C,D
4	100 people/mi^2	11 batches plus rest of last core	1.4 hours after release begins	$1x10^{-6}$	95%	4	atmos7b,c,d early3	7B,C,D
5	100 people/mi^2	11 batches plus rest of last core	3 hours before release begins	$1x10^{-6}$	95%	5	atmos8b,c,d early4	8B,C,D
6	100 people/mi^2	11 batches plus rest of last core	3 hours before release begins	$6x10^{-6}$	95%	6	atmos9b,c,d early4	9B,C,D
7	100 people/mi^2	11 batches plus rest of last core	3 hours before release begins	$1x10^{-6}$	99.5%	7	atmos8b,c,d early5	10B,C,D

Table 6. Cases examined using the MACCS2 consequence code.

*Cases 3 through 7 used 100 people/mi^2 instead of SURSIT.
*All cases used chrnc1_n and METSUR.

Case	Pop. Dist.	Inventory	Evacuation Start Time	La/Ce Rel. Fract.	Evac. %	Ru Rel. Fract.	Co inventory	Ru inventory	Case	Input Decks*	Output Decks
Base Case	Surry	11 batches plus rest of last core	1.4 hours after release begins	$1x10^{-6}$	99.5%	$2x10^{-5}$	Co-58 Co-60	Ru-103 Ru-106	Base Case	atmos7b,c,d early299 SURSIT	BESTB,C,D
11						1	Co-58 Co-60	Ru-103 Ru-106	11	atmos11d early299 SURSIT	ELEVEND
11a						1	0	Ru-103 Ru-106	11a	atmos1ad early299 SURSIT	ELEVENAD
11b						1	0	Ru-106	11b	atmos1bd early299 SURSIT	ELEVENBD
11c						1	0	Ru-103	11c	atmos1cd early299 SURSIT	ELEVENCD
11d						1	0	0	11d	atmos1dd early299 SURSIT	ELEVENDD

Table A. Cases examined using the MACCS2 consequence code.

*All cases used chrnc1_n and METSUR.

Case	Pop. Dist.	Inventory	Evacuation Start Time	La/Ce Rel. Fract.	Evac.%	Ru Rel. Fract.	Other	Case	Input Decks*	Output Decks
7	100 people/mi^2	11 batches plus rest of last core	3 hours before	1x10^{-6}	99.5%	2x10^{-5}		7	atmos8b,c,d early5	10B,C,D
12	"	"	"	"	"	1		12	atmos12d early5	TWELVED
13	Surry	"	"	"	"	2x10^{-5}		13	atmos8d early6,SURSIT	THIRTED
14	"	"	"	"	"	1		14	atmos12d early6,SURSIT	FOURTED
15	100 people/mi^2 W/EAB (.75mi)	"	"	"	"	2x10^{-5}		15	atmos8d early7	FIFTEED
16	100 people/mi^2 w/EAB (.75mi)	"	"	"	"	1		16	atmos12d early7	SIXTEED
17	100 people/mi^2 w/EAB (2mi)	"	"	"	"	2x10^{-5}		17	atmos8d early8	SEVENTD
18	100 people/mi^2 w/EAB (2mi)	"	"	"	"	1		18	atmos12d early8	EIGHTED
19	100 people/mi^2 w/EAB (5mi)	"	"	"	"	2x10^{-5}		19	atmos8d early9	NINETED
20	100 people/mi^2 w/EAB (5mi)	"	"	"	"	1		20	atmos12d early9	TWENTYD

21	100 people/mi^2 w/EAB (.75mi)	"	1.4 hours after	"	"	$2x10^{-5}$		21	atmos7d early10	TWONED
22	100 people/mi^2 w/EAB (.75mi)	"	1.4 hours after	"	"	1		22	atmos11d early10	TWTWOD
23	100 people/mi^2 w/EAB (.75mi)	"	1.4 hours after	"	"	1	Ru-106 inhalatio n DCF=0	23	atmos11d early11	TWTHREED
24	1000 people/mi^2 w/EAB (.75mi)	"	1.4 hours after	"	"	1		24	atmos11d early12	TWFOURD
31	Surry	"	1.4 hours after	"	"	$2x10^{-5}$	1 core	31	atmos31d early299	THONED
32	Surry	"	1.4 hours after	"	"	1	1 core	32	atmos32d early299	THWTWOD
33	100 people/mi^2 w/EAB (.75mi)	"	1.4 hours after	"	"	$2x10^{-5}$	1 core	33	atmos33d early10	THTHREED
34	100 people/mi^2 w/EAB (.75mi)	"	1.4 hours after	"	"	1	1 core	34	atmos34d early10	THFOURD
35	100 people/mi^2 w/EAB (.75mi)	"	1.4 hours after	"	"	$2x10^{-5}$	1 core (3.5 of Cs-137)	35	atmos35d early10	THFIVED
36	100 people/mi^2 w/EAB (.75mi)	"	1.4 hours after	"	"	1	1 core (3.5 of Ru-106)	36	atmos36d early10	THSIXD

41	Base Case with additional early fatality risk output							41	atmos7d early29a SURSIT	41
42	Case 11 with additional early fatality risk output							42	atmos11d early29a SURSIT	42
43	Case 21 with additional early fatality risk output							43	atmos7d early10a	43
44	Case 22 with additional early fatality risk output							44	atmos11d early10a	44
45	Surry	11 batches plus rest of last core	1.4 hours after	$1x10^{-6}$	95 %	1		45	atmos11d early2 SURSIT	45
45 a	Case 45 with 1% release of Ce, La, Ba, Sr							45 a	atmos45a early2 SURSIT	45a
45 b	Case 45 with 75% release of I, Cs, Ru and 1% release of Ce, La, Ba, Sr							45 b	atmos45b early2 SURSIT	45b
46	Surry	11 batches plus rest of last core	3 hours before	$1x10^{-6}$	95 %	1		46	atmos12d early695 SURSIT	46
46 a	Case 46 with 1% release of Ce, La, Ba, Sr							46 a	atmos46a early695 SURSIT	46a
46 b	Case 46 with 75% release of I, Cs, Ru and 1% release of Ce, La, Ba, Sr							46 b	atmos46b early695 SURSIT	46b

46 c	Case 46 with 75% release of I, Cs, Ru and 1% release of Ce, La, Ba, Sr Also, 75% release of Te							46 c	atmos46c early695 SURSIT	46c
46 d	Case 46 with 75% release of I, Cs, Ru and 1% release of Ce, La, Sr Also, 75% release of Te, Ba							46 d	atmos46d early695 SURSIT	46d
46 e	Case 46 with 75% release of I, Cs, Ru and 1% release of Ce, La Also, 75% release of Te, Ba, Sr							46 e	atmos46e early695 SURSIT	46e
47	Surry	11 batches plus rest of last core	1.4 hours after	$1x10^{-6}$	95 %	1	83MW plume	47	atm1183 early2 SURSIT	83l
47 b	Case 47 with 75% release of I, Cs, Ru and 1% release of Ce, La, Ba, Sr							47 b	atmos47b early2 SURSIT	47b
48	Surry	11 batches plus rest of last core	3 hours before	$1x10^{-6}$	95 %	1	83 MW plume	48	atm1283 early695 SURSIT	83e
49	Surry	11 batches plus rest of last core	1.4 hours after	$1x10^{-6}$	95 %	1	256 MW plume	49	atm11256 early2 SURSIT	256l
50	Surry	11 batches plus rest of last core	3 hours before	$1x10^{-6}$	95 %	1	256 MW plume	50	atm12256 early695 SURSIT	256e
91	Appendix C of MACCS code manual (uses 95% evacuation)							91	in1a,in2a1,in3a_n,METSUR, SURSIT	sample1
92	Appendix C of MACCS code manual with 99.5% evacuation							92	in1a,in2a2,in3a_n,METSUR, SURSIT	sample2

93	Case 11 with 75% release of I, Cs, and Ru	93	atmos93 early299, SURSIT	93
94	Case 11 with 75% release of I, Cs, and Ru and .1% release of La, Ce (and .2% Ba, Sr)	94	atmos94 early299 SURSIT	94
95	Case 11 with 75% release of I, Cs, and Ru and 1% release of La, Ce, Ba, Sr	95	atmos95 early299 SURSIT	95
96	Case 11 with 1% release of La, Ce, Ba, Sr	96	atmos96 early299 SURSIT	96
97	Case 14 with 1% release of La, Ce, Ba, Sr	97	atmos97 early6,SURSIT	97

Case (at t=1 year)	Description of Case	Distance	Prompt Fatalities	Societal Dose	Cancer Fatalities
Base Case	Evacuation after release Ru release fraction of $2x10^{-5}$	0-100	1.01	45,400	2,320
		0-500	1.01	595,000	26,800
11	Ru release fraction of 1	0-100	95.3	95,300	9,150
		0-500	95.3	624,000	33,900
11a	No Co isotopes	0-100	94.4	95,100	9,120
		0-500	94.4	627,000	34,000
11b	No Co isotopes Only Ru-106	0-100	94.3	95,100	9,120
		0-500	94.3	627,000	34,000
11c	No Co isotopes Only Ru-103	0-100	1.02	45,400	2,320
		0-500	1.02	595,000	26,800
11d	No Co isotopes No Ru isotopes	0-100	1.01	45,400	2,320
		0-500	1.01	595,000	26,800

Case (at t=1 year)	Description of Case	Distance	Prompt Fatalities	Societal Dose	Cancer Fatalities
7	Evacuation before release 100 people/mi^2 Ru release fraction of 2x10^{-5}	0-100	.067	46,600	2,170
		0-500	.067	473,000	21,300
12	Evacuation before release 100 people/mi^2 Ru release fraction of 1	0-100	.314	63,800	4,940
		0-500	.314	470,000	24,200
13	Evacuation before release Surry population Ru release fraction of 2x10^{-5}	0-100	.0048	41,800	1,990
		0-500	.0048	591,000	26,500
14	Evacuation before release Surry population Ru release fraction of 1	0-100	.132	67,500	6,300
		0-500	.132	597,000	31,000
15	Evacuation before release 100 people/mi^2 W/EAB (.75mi) Ru release fraction of 2x10^{-5}	0-100	.045	46,500	2,170
		0-500	.045	473,000	21,300
16	Evacuation before release 100 people/mi^2 w/EAB (.75mi) Ru release fraction of 1	0-100	.277	63,800	4,940
		0-500	.277	470,000	24,200
17	Evacuation before release 100 people/mi^2 W/EAB (2mi) Ru release fraction of 2x10^{-5}	0-100	.017	46,500	2,170
		0-500	.017	473,000	21,300
18	Evacuation before release 100 people/mi^2 w/EAB (2mi) Ru release fraction of 1	0-100	.182	63,800	4,940
		0-500	.182	470,000	24,200
19	Evacuation before release 100 people/mi^2 W/EAB (5mi) Ru release fraction of 2x10^{-5}	0-100	3.07E-6	46,500	2,170
		0-500	3.07E-6	473,000	21,300
20	Evacuation before release 100 people/mi^2 w/EAB (5mi) Ru release fraction of 1	0-100	.0246	63,700	4,940
		0-500	.0246	470,000	24,200

21	Evacuation after release 100 people/mi^2 W/EAB (.75mi) Ru release fraction of 2x10^{-5}	0-100	9.33	50,500	2,490
		0-500	9.33	477,000	21,600
22	Evacuation after release 100 people/mi^2 w/EAB (.75mi) Ru release fraction of 1	0-100	134	94,600	6,490
		0-500	134	501,000	25,700
23	Evacuation after release 100 people/mi^2 W/EAB (.75mi) Ru release fraction of 1 Ru-106 inhalation DCF=0	0-100	11.7	94,600	3,860
		0-500	11.7	501,000	21,500
24	Evacuation after release 1000 people/mi^2 w/EAB (.75mi) Ru release fraction of 1	0-100	1,340	860,000	60,600
		0-500	1,340	4,570,000	235,000
31	Evacuation after release Surry population Ru release fraction of 2x10^{-5} One core	0-100	.014	32,300	1,530
		0-500	.014	354,000	15,900
32	Evacuation after release Surry population Ru release fraction of 1 One core	0-100	50.5	72,500	7,360
		0-500	50.5	376,000	21,900
33	Evacuation after release 100 people/mi^2 W/EAB (.75mi) Ru release fraction of 2x10^{-5} One core	0-100	.177	31,000	1,480
		0-500	.177	276,000	12,500
34	Evacuation after release 100 people/mi^2 W/EAB (.75mi) Ru release fraction of 1 One core	0-100	103	65,900	4,960
		0-500	103	303,000	16,500

35	Evacuation after release 100 people/mi^2 W/EAB (.75mi) Ru release fraction of 2x10^{-5} One core(3.5 cores of Cs-137)	0-100	5.62	50,800	2,480
		0-500	5.62	492,000	22,300
36	Evacuation after release 100 people/mi^2 W/EAB (.75mi) Ru release fraction of 1 One core(3.5 cores of Ru-106)	0-100	127	74,300	5,620
		0-500	127	308,000	17,300
41,42,43,44	same as Base Case, Cases 11,21,22, but with additional early fatality risk output				
45	Evacuation after release Surry population Ru release fraction of 1 95% evacuation (This is Case 11 with 95% evacuation.)	0-100	92.2	95,000	9,150
		0-500	92.2	624,000	33,900
45a	Case 45 with 1% release of Ce, La, Ba, Sr	0-100	103	133,000	11,700
45b	Case 45 with 75% release of I, Cs, Ru and 1% release of Ce, La, Ba, Sr	0-100	54.9	117,000	10,300
46	Evacuation before release Surry population Ru release fraction of 1 95% evacuation (This is Case 14 with 95% evacuation.)	0-100	1.32	68,400	6,430
		0-500	1.32	597,000	31,200
46a	Case 46 with 1% release of Ce, La, Ba, Sr	0-100	1.54	88,900	8,160
46b	Case 46 with 75% release of I, Cs, Ru and 1% release of Ce, La, Ba, Sr	0-100	.543	79,400	6,880

46c	Case 46 with 75% release of I, Cs, Ru and 1% release of Ce, La, Ba, Sr. Also, 75% release of Te	0-100	.544	79,400	6,880
46d	Case 46 with 75% release of I, Cs, Ru and 1% release of Ce, La, Sr. Also, 75% release of Te, Ba	0-100	.544	79,400	6,880
46e	Case 46 with 75% release of I, Cs, Ru and 1% release of Ce, La. Also, 75% release of Te, Ba, Sr	0-100	.644	101,000	8,350
47	Case 45 with 83 MW plume	0-100	57.3	92,400	9,280
		0-500	57.3	613,000	34,400
47b	Case 47 with 75% release of I, Cs, Ru and 1% release of Ce, La, Ba, Sr	0-100	32.0	113,000	10,300
48	Case 46 with 83 MW plume	0-100	.00509	72,800	7,060
		0-500	.00509	594,000	32,200
49	Case 45 with 256 MW plume	0-100	18.3	82,400	8,380
		0-500	18.3	606,000	33,900
50	Case 46 with 256 MW plume	0-100	.00357	69,600	6,650
		0-500	.00357	593,000	32,200
91	Appendix C of MACCS code manual (95% evacuation)	0-100	13.4	43,700	2,090
		0-500	13.4	230,000	10,400
92	Appendix C of MACCS code manual (99.5% evacuation)	0-100	12.6	43,600	2,090
		0-500	12.6	230,000	10,400

93	Case 11 with 75% release of I, Cs, and Ru	0-100	49.5	79,800	7,580
		0-500	49.5	547,000	29,200
94	Case 11 with 75% release of I, Cs, and Ru and .1% release of La, Ce (and .2% Ba, Sr)	0-100	50.2	83,500	7,850
		0-500	50.2	552,000	29,600
95	Case 11 with 75% release of I, Cs, and Ru and 1% release of La, Ce, Ba, Sr	0-100	57.0	117,000	10,400
		0-500	57.0	599,000	32,700
96	Case 11 with 1% release of La, Ce, Ba, Sr	0-100	106	133,000	11,700
97	Case 14 with 1% release of La, Ce, Ba, Sr	0-100	.154	87,400	7,990