

Appendix C

Spatial Mesh for the Seven Layer Air-over-Ground DOORS Geometry

Table C1. 130 intervals along R axis to 3,000 m and 110 intervals along Z axis extending from -0.5 m below ground to 2,000 m above the ground

#	Radius	Mid-point	Delta R	#	Height	Mid-point	Delta Z
1	0.0000E+00	5.0000E+02	1.0000E+03	1	-5.0000E+01	-4.7500E+01	5.0000E+00
2	1.0000E+03	1.1000E+03	2.0000E+02	2	-4.5000E+01	-4.2500E+01	5.0000E+00
3	1.2000E+03	1.3200E+03	2.4000E+02	3	-4.0000E+01	-3.7500E+01	5.0000E+00
4	1.4400E+03	1.5850E+03	2.9000E+02	4	-3.5000E+01	-3.2500E+01	5.0000E+00
5	1.7300E+03	1.9000E+03	3.4000E+02	5	-3.0000E+01	-2.7500E+01	5.0000E+00
6	2.0700E+03	2.2800E+03	4.2000E+02	6	-2.5000E+01	-2.2500E+01	5.0000E+00
7	2.4900E+03	2.7400E+03	5.0000E+02	7	-2.0000E+01	-1.9000E+01	2.0000E+00
8	2.9900E+03	3.2850E+03	5.9000E+02	8	-1.8000E+01	-1.7000E+01	2.0000E+00
9	3.5800E+03	3.9400E+03	7.2000E+02	9	-1.6000E+01	-1.5000E+01	2.0000E+00
10	4.3000E+03	4.7300E+03	8.6000E+02	10	-1.4000E+01	-1.3000E+01	2.0000E+00
11	5.1600E+03	5.6750E+03	1.0300E+03	11	-1.2000E+01	-1.1000E+01	2.0000E+00
12	6.1900E+03	6.8100E+03	1.2400E+03	12	-1.0000E+01	-9.5000E+00	1.0000E+00
13	7.4300E+03	8.0900E+03	1.3200E+03	13	-9.0000E+00	-8.5000E+00	1.0000E+00
14	8.7500E+03	1.0000E+04	2.5000E+03	14	-8.0000E+00	-7.5000E+00	1.0000E+00
15	1.1250E+04	1.2500E+04	2.5000E+03	15	-7.0000E+00	-6.5000E+00	1.0000E+00
16	1.3750E+04	1.5000E+04	2.5000E+03	16	-6.0000E+00	-5.5000E+00	1.0000E+00
17	1.6250E+04	1.7500E+04	2.5000E+03	17	-5.0000E+00	-4.5000E+00	1.0000E+00
18	1.8750E+04	2.0000E+04	2.5000E+03	18	-4.0000E+00	-3.5000E+00	1.0000E+00
19	2.1250E+04	2.2500E+04	2.5000E+03	19	-3.0000E+00	-2.5000E+00	1.0000E+00
20	2.3750E+04	2.5000E+04	2.5000E+03	20	-2.0000E+00	-1.5000E+00	1.0000E+00
21	2.6250E+04	2.7500E+04	2.5000E+03	21	-1.0000E+00	-5.0000E-01	1.0000E+00
22	2.8750E+04	3.0000E+04	2.5000E+03	22	0.0000E+00	1.0000E+02	2.0000E+02
23	3.1250E+04	3.2500E+04	2.5000E+03	23	2.0000E+02	4.0000E+02	4.0000E+02
24	3.3750E+04	3.5000E+04	2.5000E+03	24	6.0000E+02	9.0000E+02	6.0000E+02
25	3.6250E+04	3.7500E+04	2.5000E+03	25	1.2000E+03	1.5000E+03	6.0000E+02
26	3.8750E+04	4.0000E+04	2.5000E+03	26	1.8000E+03	2.2000E+03	8.0000E+02
27	4.1250E+04	4.2500E+04	2.5000E+03	27	2.6000E+03	3.1750E+03	1.1500E+03
28	4.3750E+04	4.5000E+04	2.5000E+03	28	3.7500E+03	5.0000E+03	2.5000E+03
29	4.6250E+04	4.7500E+04	2.5000E+03	29	6.2500E+03	7.5000E+03	2.5000E+03
30	4.8750E+04	5.0000E+04	2.5000E+03	30	8.7500E+03	1.0000E+04	2.5000E+03
31	5.1250E+04	5.2500E+04	2.5000E+03	31	1.1250E+04	1.2500E+04	2.5000E+03
32	5.3750E+04	5.5000E+04	2.5000E+03	32	1.3750E+04	1.5000E+04	2.5000E+03
33	5.6250E+04	5.7500E+04	2.5000E+03	33	1.6250E+04	1.7500E+04	2.5000E+03
34	5.8750E+04	6.0000E+04	2.5000E+03	34	1.8750E+04	2.0000E+04	2.5000E+03
35	6.1250E+04	6.2500E+04	2.5000E+03	35	2.1250E+04	2.2500E+04	2.5000E+03
36	6.3750E+04	6.5000E+04	2.5000E+03	36	2.3750E+04	2.5000E+04	2.5000E+03
37	6.6250E+04	6.7500E+04	2.5000E+03	37	2.6250E+04	2.7500E+04	2.5000E+03
38	6.8750E+04	7.0000E+04	2.5000E+03	38	2.8750E+04	3.0000E+04	2.5000E+03
39	7.1250E+04	7.2500E+04	2.5000E+03	39	3.1250E+04	3.2500E+04	2.5000E+03
40	7.3750E+04	7.5000E+04	2.5000E+03	40	3.3750E+04	3.5000E+04	2.5000E+03
41	7.6250E+04	7.7500E+04	2.5000E+03	41	3.6250E+04	3.7500E+04	2.5000E+03
42	7.8750E+04	8.0000E+04	2.5000E+03	42	3.8750E+04	4.0000E+04	2.5000E+03
43	8.1250E+04	8.2500E+04	2.5000E+03	43	4.1250E+04	4.2500E+04	2.5000E+03
44	8.3750E+04	8.5000E+04	2.5000E+03	44	4.3750E+04	4.4775E+04	2.0500E+03
45	8.6250E+04	8.7500E+04	2.5000E+03	45	4.5800E+04	4.6700E+04	1.8000E+03
46	8.8750E+04	9.0000E+04	2.5000E+03	46	4.7600E+04	4.8400E+04	1.6000E+03
47	9.1250E+04	9.2500E+04	2.5000E+03	47	4.9200E+04	4.9900E+04	1.4000E+03
48	9.3750E+04	9.5000E+04	2.5000E+03	48	5.0600E+04	5.1200E+04	1.2000E+03
49	9.6250E+04	9.7500E+04	2.5000E+03	49	5.1800E+04	5.2300E+04	1.0000E+03
50	9.8750E+04	1.0000E+05	2.5000E+03	50	5.2800E+04	5.3250E+04	9.0000E+02
51	1.0125E+05	1.0250E+05	2.5000E+03	51	5.3700E+04	5.4100E+04	8.0000E+02
52	1.0375E+05	1.0500E+05	2.5000E+03	52	5.4500E+04	5.4750E+04	5.0000E+02
53	1.0625E+05	1.0750E+05	2.5000E+03	53	5.5000E+04	5.5250E+04	5.0000E+02
54	1.0875E+05	1.1000E+05	2.5000E+03	54	5.5500E+04	5.5700E+04	4.0000E+02
55	1.1125E+05	1.1250E+05	2.5000E+03	55	5.5900E+04	5.6100E+04	4.0000E+02
56	1.1375E+05	1.1500E+05	2.5000E+03	56	5.6300E+04	5.6450E+04	3.0000E+02
57	1.1625E+05	1.1750E+05	2.5000E+03	57	5.6600E+04	5.6700E+04	2.0000E+02
58	1.1875E+05	1.2000E+05	2.5000E+03	58	5.6800E+04	5.6900E+04	2.0000E+02
59	1.2125E+05	1.2250E+05	2.5000E+03	59	5.7000E+04	5.7500E+04	1.0000E+02
60	1.2375E+05	1.2500E+05	2.5000E+03	60	5.8000E+04	5.8500E+04	1.0000E+03
61	1.2625E+05	1.2750E+05	2.5000E+03	61	5.9000E+04	5.9100E+04	2.0000E+02
62	1.2875E+05	1.3000E+05	2.5000E+03	62	5.9200E+04	5.9300E+04	2.0000E+02
63	1.3125E+05	1.3250E+05	2.5000E+03	63	5.9400E+04	5.9550E+04	3.0000E+02
64	1.3375E+05	1.3500E+05	2.5000E+03	64	5.9700E+04	5.9900E+04	4.0000E+02

Radiation Transport Calculations for Hiroshima and Nagasaki

Table C1. Continued

#	Radius	Mid-point	Delta R	#	Height	Mid-point	Delta Z
65	1.36250E+05	1.37500E+05	2.50000E+03	65	6.01000E+04	6.03000E+04	4.00000E+02
66	1.38750E+05	1.40000E+05	2.50000E+03	66	6.05000E+04	6.07500E+04	5.00000E+02
67	1.41250E+05	1.42500E+05	2.50000E+03	67	6.10000E+04	6.13500E+04	7.00000E+02
68	1.43750E+05	1.45000E+05	2.50000E+03	68	6.17000E+04	6.21000E+04	8.00000E+02
69	1.46250E+05	1.47500E+05	2.50000E+03	69	6.25000E+04	6.30000E+04	1.00000E+03
70	1.48750E+05	1.50000E+05	2.50000E+03	70	6.35000E+04	6.38500E+04	7.00000E+02
71	1.51250E+05	1.52500E+05	2.50000E+03	71	6.42000E+04	6.48000E+04	1.20000E+03
72	1.53750E+05	1.55000E+05	2.50000E+03	72	6.54000E+04	6.61500E+04	1.50000E+03
73	1.56250E+05	1.57500E+05	2.50000E+03	73	6.69000E+04	6.77000E+04	1.60000E+03
74	1.58750E+05	1.60000E+05	2.50000E+03	74	6.85000E+04	6.97500E+04	2.50000E+03
75	1.61250E+05	1.62500E+05	2.50000E+03	75	7.10000E+04	7.22500E+04	2.50000E+03
76	1.63750E+05	1.65000E+05	2.50000E+03	76	7.35000E+04	7.47500E+04	2.50000E+03
77	1.66250E+05	1.67500E+05	2.50000E+03	77	7.60000E+04	7.72500E+04	2.50000E+03
78	1.68750E+05	1.70000E+05	2.50000E+03	78	7.85000E+04	7.97500E+04	2.50000E+03
79	1.71250E+05	1.72500E+05	2.50000E+03	79	8.10000E+04	8.22500E+04	2.50000E+03
80	1.73750E+05	1.75000E+05	2.50000E+03	80	8.35000E+04	8.47500E+04	2.50000E+03
81	1.76250E+05	1.77500E+05	2.50000E+03	81	8.60000E+04	8.72500E+04	2.50000E+03
82	1.78750E+05	1.80000E+05	2.50000E+03	82	8.85000E+04	9.00000E+04	3.00000E+03
83	1.81250E+05	1.82500E+05	2.50000E+03	83	9.15000E+04	9.30000E+04	3.00000E+03
84	1.83750E+05	1.85000E+05	2.50000E+03	84	9.45000E+04	9.60000E+04	3.00000E+03
85	1.86250E+05	1.87500E+05	2.50000E+03	85	9.75000E+04	9.90000E+04	3.00000E+03
86	1.88750E+05	1.90000E+05	2.50000E+03	86	1.00500E+05	1.02000E+05	3.00000E+03
87	1.91250E+05	1.92500E+05	2.50000E+03	87	1.03500E+05	1.05000E+05	3.00000E+03
88	1.93750E+05	1.95000E+05	2.50000E+03	88	1.06500E+05	1.08000E+05	3.00000E+03
89	1.96250E+05	1.97500E+05	2.50000E+03	89	1.09500E+05	1.11000E+05	3.00000E+03
90	1.98750E+05	2.00000E+05	2.50000E+03	90	1.12500E+05	1.14000E+05	3.00000E+03
91	2.01250E+05	2.02500E+05	2.50000E+03	91	1.15500E+05	1.17000E+05	3.00000E+03
92	2.03750E+05	2.05000E+05	2.50000E+03	92	1.18500E+05	1.20250E+05	3.50000E+03
93	2.06250E+05	2.07500E+05	2.50000E+03	93	1.22000E+05	1.23750E+05	3.50000E+03
94	2.08750E+05	2.10000E+05	2.50000E+03	94	1.25500E+05	1.27250E+05	3.50000E+03
95	2.11250E+05	2.12500E+05	2.50000E+03	95	1.29000E+05	1.30750E+05	3.50000E+03
96	2.13750E+05	2.15000E+05	2.50000E+03	96	1.32500E+05	1.34250E+05	3.50000E+03
97	2.16250E+05	2.17500E+05	2.50000E+03	97	1.36000E+05	1.37750E+05	3.50000E+03
98	2.18750E+05	2.20000E+05	2.50000E+03	98	1.39500E+05	1.41250E+05	3.50000E+03
99	2.21250E+05	2.22500E+05	2.50000E+03	99	1.43000E+05	1.44750E+05	3.50000E+03
100	2.23750E+05	2.25000E+05	2.50000E+03	100	1.46500E+05	1.48250E+05	3.50000E+03
101	2.26250E+05	2.27500E+05	2.50000E+03	101	1.50000E+05	1.52500E+05	5.00000E+03
102	2.28750E+05	2.30000E+05	2.50000E+03	102	1.55000E+05	1.57500E+05	5.00000E+03
103	2.31250E+05	2.32500E+05	2.50000E+03	103	1.60000E+05	1.62500E+05	5.00000E+03
104	2.33750E+05	2.35000E+05	2.50000E+03	104	1.65000E+05	1.67500E+05	5.00000E+03
105	2.36250E+05	2.37500E+05	2.50000E+03	105	1.70000E+05	1.72500E+05	5.00000E+03
106	2.38750E+05	2.40000E+05	2.50000E+03	106	1.75000E+05	1.77500E+05	5.00000E+03
107	2.41250E+05	2.42500E+05	2.50000E+03	107	1.80000E+05	1.82500E+05	5.00000E+03
108	2.43750E+05	2.45000E+05	2.50000E+03	108	1.85000E+05	1.87500E+05	5.00000E+03
109	2.46250E+05	2.47500E+05	2.50000E+03	109	1.90000E+05	1.92500E+05	5.00000E+03
110	2.48750E+05	2.50000E+05	2.50000E+03	110	1.95000E+05	1.97500E+05	5.00000E+03
111	2.51250E+05	2.52500E+05	2.50000E+03	111	2.00000E+05		
112	2.53750E+05	2.55000E+05	2.50000E+03				
113	2.56250E+05	2.57500E+05	2.50000E+03				
114	2.58750E+05	2.60000E+05	2.50000E+03				
115	2.61250E+05	2.62500E+05	2.50000E+03				
116	2.63750E+05	2.65000E+05	2.50000E+03				
117	2.66250E+05	2.67500E+05	2.50000E+03				
118	2.68750E+05	2.70000E+05	2.50000E+03				
119	2.71250E+05	2.72500E+05	2.50000E+03				
120	2.73750E+05	2.75000E+05	2.50000E+03				
121	2.76250E+05	2.77500E+05	2.50000E+03				
122	2.78750E+05	2.80000E+05	2.50000E+03				
123	2.81250E+05	2.82500E+05	2.50000E+03				
124	2.83750E+05	2.85000E+05	2.50000E+03				
125	2.86250E+05	2.87500E+05	2.50000E+03				
126	2.88750E+05	2.90000E+05	2.50000E+03				
127	2.91250E+05	2.92500E+05	2.50000E+03				
128	2.93750E+05	2.95000E+05	2.50000E+03				
129	2.96250E+05	2.97500E+05	2.50000E+03				
130	2.98750E+05	3.00000E+05	2.50000E+03				
131	3.01250E+05						

Appendix D

Total Dose and Activation

Table D.I. DS86 Hiroshima total doses and activations for 580-m HOB above standard ground at 15-kt yield

Ground slant range meter	Dose		Reaction		⁶⁰ Co(n,p)		¹⁵¹ Eu->gnd		⁶³ Ni(n,γ)		³² S(n,p)		⁸⁶ K(n,α)	
	Neutron dose	Secondary gamma dose	Primary gamma dose	Total gamma dose	Abundance	Half-life	Time units	Branching ratio	Detector height	Units in atoms (unless otherwise indicated)	Bq/mg Cu	Bq/mg Eu	Bq/mg Ni	dpm/g S
0	3.93E+1	5.88E+1	7.26E+1	1.31E+2	0.96941	40.08	1	0.6917	0.4782	0.5218	0.03634	0.9502	0.93258	
25	3.83E+1	5.71E+1	7.18E+1	1.29E+2	80000	35.453	68.9332	63.54	151.96	151.96	58.71	32.064	39.102	
50	3.69E+1	5.46E+1	7.06E+1	1.25E+2	80000	301000	5.2714	100.1	13.542	8.593	100.1	14.262	301000	years
75	3.51E+1	5.13E+1	6.90E+1	1.20E+2										days
100	3.40E+1	4.95E+1	6.80E+1	1.17E+2										years
125	3.20E+1	4.71E+1	6.61E+1	1.13E+2										years
150	3.00E+1	4.46E+1	6.33E+1	1.08E+2										years
175	2.78E+1	4.20E+1	6.06E+1	1.03E+2										years
200	2.56E+1	3.93E+1	5.80E+1	9.73E+1										years
225	2.34E+1	3.66E+1	5.54E+1	9.20E+1										years
250	2.15E+1	3.39E+1	5.29E+1	8.64E+1										years
275	1.93E+1	3.13E+1	4.87E+1	7.99E+1										years
300	1.74E+1	2.87E+1	4.53E+1	7.40E+1										years
325	1.56E+1	2.62E+1	4.15E+1	6.77E+1										years
350	1.38E+1	2.39E+1	3.80E+1	6.19E+1										years
375	1.22E+1	2.17E+1	3.47E+1	5.63E+1										years
400	1.08E+1	1.96E+1	3.19E+1	5.15E+1										years
425	9.43E+0	1.77E+1	2.93E+1	4.70E+1										years
450	8.24E+0	1.60E+1	2.68E+1	4.27E+1										years
475	7.15E+0	1.44E+1	2.43E+1	3.87E+1										years
500	6.18E+0	1.29E+1	2.21E+1	3.50E+1										years
525	5.33E+0	1.16E+1	1.98E+1	3.14E+1										years
550	4.59E+0	1.04E+1	1.79E+1	2.83E+1										years
575	3.92E+0	9.28E+0	1.60E+1	2.53E+1										years
600	3.36E+0	8.31E+0	1.44E+1	2.28E+1										years
625	2.87E+0	7.44E+0	1.30E+1	2.04E+1										years
650	2.44E+0	6.66E+0	1.16E+1	1.82E+1										years
675	2.07E+0	5.97E+0	1.04E+1	1.64E+1										years
700	1.76E+0	5.34E+0	9.31E+0	1.47E+1										years
725	1.49E+0	4.79E+0	8.32E+0	1.31E+1										years
750	1.26E+0	4.30E+0	7.44E+0	1.17E+1										years
775	1.07E+0	3.86E+0	6.66E+0	1.05E+1										years
800	8.99E-1	3.46E+0	5.95E+0	9.41E+0										years
825	7.59E-1	3.11E+0	5.34E+0	8.45E+0										years