

MicroShield 7.02
Dominion (07-MSD-7.02-1318)

Date	By	Checked

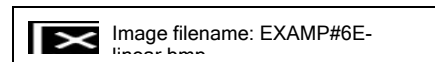
Filename	Run Date	Run Time	Duration
EXAMP#6E-linear.MS7	June 19, 2022	1:36:09 PM	00:00:00

Project Info	
Case Title	Example 6e
Description	User manual case for resin liner source inference
Geometry	7 - Cylinder Volume - Side Shields

Source Dimensions	
Height	121.92 cm (4 ft)
Radius	60.96 cm (2 ft)

Dose Points			
A	X	Y	Z
#1	487.68 cm (16 ft)	60.96 cm (2 ft)	0.0 cm (0.0 in)

Shields			
Shield N	Dimension	Material	Density
Source	1.42e+06 cm ³	Mixed ->	2.01
		Concrete	1.88
		Water	0.13
Shield 1	.635 cm	Iron	7.86
Shield 2	15.24 cm	Air	0.00122
Shield 3	5.08 cm	Air	0.00122
Shield 4	30.48 cm	Concrete	2.35
Transition	146.368 cm	Air	0.00122
Shield 6	30.48 cm	Concrete	2.35
Air Gap		Air	0.00122



Source Input: Grouping Method - Linear Energy				
Number of Groups: 25				
Lower Energy Cutoff: 0.015				
Photons < 0.015: Included				
Library: Grove				
Nuclide	Ci	Bq	μCi/cm ³	Bq/cm ³
Ba-137m	3.8137e+002	1.4111e+013	2.6794e+002	9.9136e+006
Co-58	5.2772e+001	1.9526e+012	3.7076e+001	1.3718e+006
Co-60	8.6716e+001	3.2085e+012	6.0924e+001	2.2542e+006
Cs-137	4.0314e+002	1.4916e+013	2.8323e+002	1.0480e+007
Mn-54	3.2597e+001	1.2061e+012	2.2901e+001	8.4735e+005
Sb-125	3.0106e+001	1.1139e+012	2.1152e+001	7.8261e+005
Te-125m	1.0765e+000	3.9829e+010	7.5628e-001	2.7982e+004

Buildup: The material reference is Shield 6

Integration Parameters					
Radial					16
Circumferential					16
Y Direction (axial)					16
Results					
Energy (MeV)	Activity (Photons/sec)	Fluence Rate MeV/cm ² /sec No Buildup	Fluence Rate MeV/cm ² /sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.0213	2.656e+12	1.868e-227	2.259e-22	5.270e-229	6.375e-24
0.1167	3.021e+09	9.104e-11	1.384e-08	1.415e-13	2.151e-11
0.1761	7.957e+10	3.028e-07	6.207e-05	5.189e-10	1.064e-07
0.21	7.766e+09	1.468e-07	2.935e-05	2.618e-10	5.234e-08
0.321	4.646e+09	2.694e-06	3.611e-04	5.151e-09	6.906e-07
0.3804	1.666e+10	3.466e-05	3.675e-03	6.731e-08	7.137e-06
0.4371	4.474e+11	2.573e-03	2.216e-01	5.035e-06	4.337e-04
0.511	5.830e+11	1.023e-02	6.892e-01	2.008e-05	1.353e-03
0.6006	1.980e+11	1.066e-02	5.529e-01	2.081e-05	1.079e-03
0.6612	1.288e+13	1.333e+00	5.915e+01	2.584e-03	1.147e-01
0.672	2.071e+10	2.392e-03	1.034e-01	4.631e-06	2.001e-04
0.8202	3.162e+12	1.365e+00	4.280e+01	2.588e-03	8.117e-02
1.1732	3.209e+12	1.315e+01	2.376e+02	2.349e-02	4.247e-01
1.3325	3.209e+12	2.803e+01	4.219e+02	4.863e-02	7.320e-01
1.6747	1.048e+10	3.305e-01	3.687e+00	5.392e-04	6.014e-03
Totals	2.648e+13	4.423e+01	7.668e+02	7.788e-02	1.362e+00