

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

Date	By	Checked

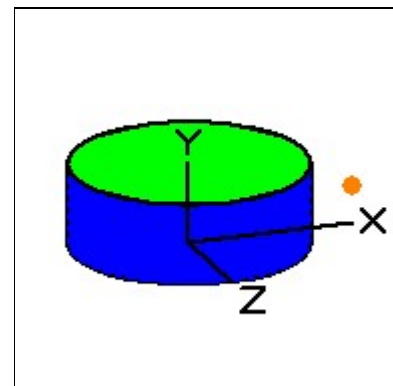
Filename	Run Date	Run Time	Duration
ESIS_D2.MS7	August 11, 2020	4:57:41 PM	00:00:00

Project Info	
Case Title	Example 3-1
Description	ESIS Problem #1 - Dose Point D2 -Buildup with Steel
Geometry	7 - Cylinder Volume - Side Shields

Source Dimensions	
Height	108.3 cm (3 ft 6.6 in)
Radius	154.0 cm (5 ft 0.6 in)

Dose Points			
A	X	Y	Z
#1	220.0 cm (7 ft 2.6 in)	50.15 cm (1 ft 7.7 in)	0.0 cm (0.0 in)

Shields			
Shield N	Dimension	Material	Density
Source	8.07e+06 cm ³	Water	1
Shield 1	2.54 cm	Iron	7.8
Transition	63.46 cm	Air	0.00129
Air Gap		Air	0.00122



Source Input: Grouping Method - User Defined Energies				
Group #	Energy (MeV)	Activity (Photons/sec)	Volume Source Photons/sec/cm ³	% Energy Activity
1	0.4	3.2276e+013	4.0000e+006	6.415%
2	0.8	5.6483e+013	7.0000e+006	22.451%
3	1.3	2.2593e+013	2.8000e+006	14.593%
4	1.7	6.6166e+013	8.2000e+006	55.887%
5	2.2	3.2276e+011	4.0000e+004	0.353%
6	2.5	2.4207e+011	3.0000e+004	0.301%
7	3.5	9.6828e+007	1.2000e+001	0.000%

Buildup: The material reference is Shield 1	
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

0.4	3.228e+13	1.843e+05	8.678e+05	3.591e+02	1.691e+03
0.8	5.648e+13	1.588e+06	5.910e+06	3.021e+03	1.124e+04
1.3	2.259e+13	1.829e+06	5.412e+06	3.192e+03	9.446e+03
1.7	6.617e+13	9.335e+06	2.466e+07	1.516e+04	4.005e+04
2.2	3.228e+11	7.562e+04	1.817e+05	1.135e+02	2.726e+02
2.5	2.421e+11	7.223e+04	1.658e+05	1.040e+02	2.386e+02
3.5	9.683e+07	5.289e+01	1.083e+02	6.834e-02	1.399e-01
Totals	1.781e+14	1.308e+07	3.720e+07	2.195e+04	6.294e+04