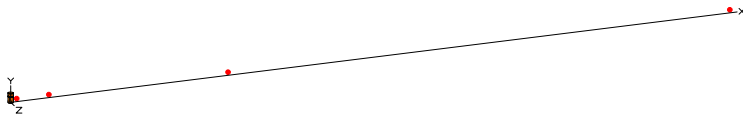


Case Title: BM10-57
Description: 1 mCi Co-57 - Unshielded
Geometry: 7 - Cylinder Volume - Side Shields

Source Dimensions		
Height	0.84 cm	0.3 in
Radius	0.13 cm	0.1 in

Dose Points			
	<u>X</u>	<u>Y</u>	<u>Z</u>
# 1	0.85 cm	0.42 cm	0 cm
	0.3 in	0.2 in	0.0 in
# 2	5.35 cm	0.42 cm	0 cm
	2.1 in	0.2 in	0.0 in
# 3	30.35 cm	0.42 cm	0 cm
	11.9 in	0.2 in	0.0 in
# 4	100.35 cm	0.42 cm	0 cm
	3 ft 3.5 in	0.2 in	0.0 in

Shields			
<u>Shield Name</u>	<u>Dimension</u>	<u>Material</u>	<u>Density</u>
Source	.045 cm ³	Stycast 1264 A/B	1.1
Transition		Air	0.00122
Air Gap		Air	0.00122
Wall Clad	.22 cm	Iron	7.86
Top Clad	.48 cm	Iron	7.86



Source Input				
Grouping Method : Actual Photon Energies				
<u>Nuclide</u>	<u>curies</u>	<u>becquerels</u>	<u>μCi/cm³</u>	<u>Bq/cm³</u>
Co-57	1.0000e-003	3.7000e+007	2.2423e+004	8.2963e+008

Buildup
The material reference is : Wall Clad

Integration Parameters	
Radial	10
Circumferential	10
Y Direction (axial)	20

Results - Dose Point # 1 - (0.85,0.42,0) cm					
<u>Energy</u>	<u>Activity</u>	<u>Fluence Rate</u>	<u>Fluence Rate</u>	<u>Exposure Rate</u>	<u>Exposure Rate</u>
<u>MeV</u>	<u>photons/sec</u>	<u>MeV/cm²/sec</u>	<u>MeV/cm²/sec</u>	<u>mR/hr</u>	<u>mR/hr</u>
		<u>No Buildup</u>	<u>With Buildup</u>	<u>No Buildup</u>	<u>With Buildup</u>
0.0007	2.869e+05	3.706e-43	1.834e-25	1.622e-42	8.029e-25
0.0064	6.153e+06	7.256e-41	3.592e-23	3.479e-41	1.722e-23
0.0064	1.214e+07	1.434e-40	7.099e-23	6.861e-41	3.396e-23
0.0071	2.451e+06	3.193e-41	1.580e-23	1.386e-41	6.859e-24
0.0144	3.531e+06	9.391e-41	4.649e-23	9.133e-42	4.521e-24
0.1221	3.164e+07	2.469e+05	3.240e+05	3.872e+02	5.081e+02
0.1365	3.923e+06	3.670e+04	4.748e+04	5.901e+01	7.635e+01
0.536	1.061e+04	4.986e+02	5.658e+02	9.778e-01	1.110e+00
0.692	5.916e+04	3.657e+03	4.069e+03	7.062e+00	7.858e+00
TOTALS:	6.019e+07	2.878e+05	3.762e+05	4.542e+02	5.934e+02

Results - Dose Point # 2 - (5.35,0.42,0) cm					
<u>Energy</u>	<u>Activity</u>	<u>Fluence Rate</u>	<u>Fluence Rate</u>	<u>Exposure Rate</u>	<u>Exposure Rate</u>
<u>MeV</u>	<u>photons/sec</u>	<u>MeV/cm²/sec</u>	<u>MeV/cm²/sec</u>	<u>mR/hr</u>	<u>mR/hr</u>
		<u>No Buildup</u>	<u>With Buildup</u>	<u>No Buildup</u>	<u>With Buildup</u>
0.0007	2.869e+05	3.249e-44	4.929e-27	1.422e-43	2.158e-26
0.0064	6.153e+06	6.362e-42	9.652e-25	3.050e-42	4.627e-25
0.0064	1.214e+07	1.257e-41	1.908e-24	6.016e-42	9.127e-25
0.0071	2.451e+06	2.799e-42	4.247e-25	1.215e-42	1.843e-25
0.0144	3.531e+06	8.234e-42	1.249e-24	8.008e-43	1.215e-25
0.1221	3.164e+07	6.739e+03	8.774e+03	1.057e+01	1.376e+01
0.1365	3.923e+06	9.991e+02	1.282e+03	1.607e+00	2.062e+00
0.536	1.061e+04	1.346e+01	1.522e+01	2.640e-02	2.985e-02
0.692	5.916e+04	9.870e+01	1.095e+02	1.906e-01	2.114e-01
TOTALS:	6.019e+07	7.851e+03	1.018e+04	1.239e+01	1.606e+01

Results - Dose Point # 3 - (30.35,0.42,0) cm

<u>Energy</u> <u>MeV</u>	<u>Activity</u> <u>photons/sec</u>	<u>Fluence Rate</u> <u>MeV/cm²/sec</u> <u>No Buildup</u>	<u>Fluence Rate</u> <u>MeV/cm²/sec</u> <u>With Buildup</u>	<u>Exposure Rate</u> <u>mR/hr</u> <u>No Buildup</u>	<u>Exposure Rate</u> <u>mR/hr</u> <u>With Buildup</u>
0.0007	2.869e+05	1.053e-45	1.534e-28	4.609e-45	6.716e-28
0.0064	6.153e+06	2.062e-43	3.004e-26	9.884e-44	1.440e-26
0.0064	1.214e+07	4.075e-43	5.937e-26	1.949e-43	2.841e-26
0.0071	2.451e+06	9.071e-44	1.322e-26	3.937e-44	5.737e-27
0.0144	3.531e+06	2.668e-43	3.888e-26	2.595e-44	3.781e-27
0.1221	3.164e+07	2.089e+02	2.726e+02	3.276e-01	4.274e-01
0.1365	3.923e+06	3.098e+01	3.985e+01	4.981e-02	6.408e-02
0.536	1.061e+04	4.180e-01	4.735e-01	8.198e-04	9.286e-04
0.692	5.916e+04	3.065e+00	3.405e+00	5.920e-03	6.576e-03
TOTALS:	6.019e+07	2.434e+02	3.163e+02	3.841e-01	4.990e-01

Results - Dose Point # 4 - (100.35,0.42,0) cm

<u>Energy</u> <u>MeV</u>	<u>Activity</u> <u>photons/sec</u>	<u>Fluence Rate</u> <u>MeV/cm²/sec</u> <u>No Buildup</u>	<u>Fluence Rate</u> <u>MeV/cm²/sec</u> <u>With Buildup</u>	<u>Exposure Rate</u> <u>mR/hr</u> <u>No Buildup</u>	<u>Exposure Rate</u> <u>mR/hr</u> <u>With Buildup</u>
0.0007	2.869e+05	8.469e-47	1.404e-29	3.707e-46	6.143e-29
0.0064	6.153e+06	1.658e-44	2.748e-27	7.950e-45	1.317e-27
0.0064	1.214e+07	3.277e-44	5.431e-27	1.568e-44	2.599e-27
0.0071	2.451e+06	7.296e-45	1.209e-27	3.167e-45	5.248e-28
0.0144	3.531e+06	2.146e-44	3.557e-27	2.087e-45	3.459e-28
0.1221	3.164e+07	1.888e+01	2.479e+01	2.960e-02	3.887e-02
0.1365	3.923e+06	2.800e+00	3.630e+00	4.503e-03	5.836e-03
0.536	1.061e+04	3.797e-02	4.325e-02	7.446e-05	8.481e-05
0.692	5.916e+04	2.786e-01	3.110e-01	5.380e-04	6.006e-04
TOTALS:	6.019e+07	2.200e+01	2.878e+01	3.472e-02	4.539e-02