MicroShield 6.22 (6.10-0033)
International Isotopes Inc

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DOS File : BM-10-57_side_shielded.ms6
Run Date: June 8, 2009
Run Time: 11:29:37 AM
Duration : 00:00:01

File Ref: _____
Date: _____
By: _____
Checked: _____

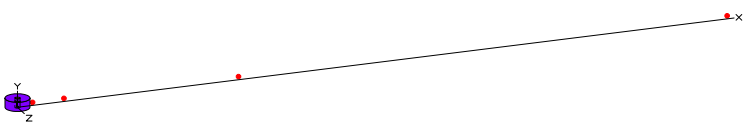
Case Title: BM10-57
Description: 1 mCi Co-57 - Shielded
Geometry: 7 - Cylinder Volume - Side Shields

Source Dimensions

Height	0.84 cm	0.3 in
Radius	0.13 cm	0.1 in

Dose Points

	X	Y	Z
# 1	2.18 cm	0.42 cm	0 cm
	0.9 in	0.2 in	0.0 in
# 2	6.68 cm	0.42 cm	0 cm
	2.6 in	0.2 in	0.0 in
# 3	31.68 cm	0.42 cm	0 cm
	1 ft 0.5 in	0.2 in	0.0 in
# 4	101.68 cm	0.42 cm	0 cm
	3 ft 4.0 in	0.2 in	0.0 in



Shields

Shield Name	Dimension	Material	Density
Source	.045 cm³	Stycast 1264 A/B	1.1
Shield 1	1.33 cm	Iron	7.86
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

Nuclide	curies	becquerels	µCi/cm³	Bq/cm³
Co-57	1.0000e-003	3.7000e+007	2.2423e+004	8.2963e+008

Buildup
The material reference is : Shield 1

Integration Parameters

Radial	10
Circumferential	10
Y Direction (axial)	20

Results - Dose Point # 1 - (2.18,0.42,0) cm

Energy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.0007	2.869e+05	3.418e-300	2.943e-26	1.496e-299	1.288e-25
0.0064	6.153e+06	6.692e-298	5.762e-24	3.209e-298	2.763e-24
0.0064	1.214e+07	1.323e-297	1.139e-23	6.329e-298	5.449e-24
0.0071	2.451e+06	2.945e-298	2.536e-24	1.278e-298	1.100e-24
0.0144	3.531e+06	8.662e-298	7.458e-24	8.424e-299	7.254e-25
0.1221	3.164e+07	3.115e+03	6.658e+03	4.885e+00	1.044e+01
0.1365	3.923e+06	6.767e+02	1.500e+03	1.088e+00	2.411e+00
0.536	1.061e+04	3.447e+01	6.843e+01	6.760e-02	1.342e-01
0.692	5.916e+04	2.779e+02	5.058e+02	5.367e-01	9.768e-01
TOTALS:	6.019e+07	4.105e+03	8.732e+03	6.577e+00	1.396e+01

Results - Dose Point # 2 - (6.68,0.42,0) cm

Energy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.0007	2.869e+05	9.907e-301	3.164e-27	4.336e-300	1.385e-26
0.0064	6.153e+06	1.940e-298	6.195e-25	9.300e-299	2.970e-25
0.0064	1.214e+07	3.834e-298	1.224e-24	1.834e-298	5.858e-25
0.0071	2.451e+06	8.535e-299	2.726e-25	3.704e-299	1.183e-25
0.0144	3.531e+06	2.511e-298	8.017e-25	2.442e-299	7.798e-26
0.1221	3.164e+07	3.401e+02	7.254e+02	5.332e-01	1.137e+00
0.1365	3.923e+06	7.369e+01	1.630e+02	1.185e-01	2.620e-01
0.536	1.061e+04	3.724e+00	7.373e+00	7.303e-03	1.446e-02
0.692	5.916e+04	3.000e+01	5.448e+01	5.794e-02	1.052e-01
TOTALS:	6.019e+07	4.475e+02	9.502e+02	7.169e-01	1.519e+00

Results - Dose Point # 3 - (31.68,0.42,0) cm

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0.0007	2.869e+05	6.000e-302	1.408e-28	2.626e-301	6.164e-28
0.0064	6.153e+06	1.175e-299	2.757e-26	5.633e-300	1.322e-26
0.0064	1.214e+07	2.322e-299	5.449e-26	1.111e-299	2.607e-26
0.0071	2.451e+06	5.170e-300	1.213e-26	2.244e-300	5.265e-27
0.0144	3.531e+06	1.521e-299	3.569e-26	1.479e-300	3.471e-27
0.1221	3.164e+07	1.510e+01	3.221e+01	2.367e-02	5.051e-02
0.1365	3.923e+06	3.271e+00	7.237e+00	5.260e-03	1.164e-02
0.536	1.061e+04	1.654e-01	3.279e-01	3.244e-04	6.430e-04
0.692	5.916e+04	1.333e+00	2.423e+00	2.574e-03	4.679e-03
TOTALS:	6.019e+07	1.987e+01	4.220e+01	3.183e-02	6.747e-02

Results - Dose Point # 4 - (101.68,0.42,0) cm

Energy MeV	Activity photons/sec	Fluence Rate MeV/cm²/sec No Buildup	Fluence Rate MeV/cm²/sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.0007	2.869e+05	5.200e-303	1.367e-29	2.276e-302	5.984e-29
0.0064	6.153e+06	1.018e-300	2.677e-27	4.881e-301	1.283e-27
0.0064	1.214e+07	2.012e-300	5.290e-27	9.628e-301	2.531e-27
0.0071	2.451e+06	4.480e-301	1.178e-27	1.944e-301	5.111e-28
0.0144	3.531e+06	1.318e-300	3.464e-27	1.282e-301	3.369e-28
0.1221	3.164e+07	1.448e+00	3.094e+00	2.270e-03	4.852e-03
0.1365	3.923e+06	3.139e-01	6.957e-01	5.047e-04	1.119e-03
0.536	1.061e+04	1.594e-02	3.172e-02	3.126e-05	6.222e-05
0.692	5.916e+04	1.286e-01	2.345e-01	2.483e-04	4.529e-04
TOTALS:	6.019e+07	1.906e+00	4.056e+00	3.054e-03	6.485e-03