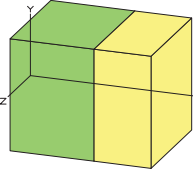


MicroShield 6.20 (6.20-0000)
Duratek Inc.

Page : 1
DOS File : Th-232c Shielded Shallow Surf.ms6
Run Date : February 21, 2008
Run Time : 3:25:19 PM
Duration : 00:00:00

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

Case Title: Hematite
Description: Ind. Occ., Infinite Slab Shielded Shallow Surf - Th-232+C
Geometry: 16 - Infinite Slab



Thick 15.0 cm 5.9 in

Dose Points

	<u>X</u>	<u>Y</u>	<u>Z</u>
# 1	125.16 cm 4 ft 1.3 in	0 cm 0.0 in	0 cm 0.0 in

Shields

<u>Shield Name</u>	<u>Dimension</u>	<u>Material</u>	<u>Density</u>
Source	Infinite	Concrete	1.6
Shield 1	.102 m	Concrete	2.35
Air Gap		Air	0.00122

Source Input
Grouping Method : Standard Indices
Number of Groups : 25
Lower Energy Cutoff : 0.015
Photons < 0.015 : Included
Library : Grove

<u>Nuclide</u>	<u>μCi/cm³</u>	<u>Bq/cm³</u>
Ac-228	9.7312e-001	3.6005e+004
Bi-212	9.5964e-001	3.5507e+004
Pb-212	9.5964e-001	3.5507e+004
Po-212	6.1484e-001	2.2749e+004
Po-216	9.5965e-001	3.5507e+004
Ra-224	9.5965e-001	3.5507e+004
Ra-228	9.7312e-001	3.6005e+004
Rn-220	9.5965e-001	3.5507e+004
Th-228	9.5972e-001	3.5510e+004
Th-232	1.0000e+000	3.7000e+004
Tl-208	3.4480e-001	1.2758e+004

Buildup
The material reference is : Shield 1

Results

<u>Energy</u> <u>MeV</u>	<u>Activity</u> <u>photons/sec</u>	<u>Fluence Rate</u>		<u>Exposure Rate</u>	
		<u>No Buildup</u> <u>MeV/cm²/sec</u>	<u>With Buildup</u> <u>MeV/cm²/sec</u>	<u>No Buildup</u> <u>mR/hr</u>	<u>With Buildup</u> <u>mR/hr</u>
0.015	2.933e+04	0.000e+00	0.000e+00	0.000e+00	0.000e+00
0.04	3.631e+02	6.419e-07	1.913e-06	2.839e-09	8.461e-09
0.06	2.508e+02	2.839e-03	1.952e-02	5.640e-06	3.877e-05
0.08	1.533e+04	2.401e+00	2.591e+01	3.800e-03	4.100e-02
0.1	2.551e+03	1.347e+00	1.937e+01	2.060e-03	2.963e-02
0.15	1.513e+03	3.447e+00	6.194e+01	5.676e-03	1.020e-01
0.2	1.931e+04	1.001e+02	1.772e+03	1.767e-01	3.128e+00
0.3	9.354e+03	1.410e+02	2.107e+03	2.674e-01	3.997e+00
0.4	8.514e+02	2.669e+01	3.260e+02	5.201e-02	6.351e-01
0.5	4.953e+03	2.717e+02	2.785e+03	5.334e-01	5.466e+00
0.6	1.130e+04	9.728e+02	8.530e+03	1.899e+00	1.665e+01
0.8	1.137e+04	1.975e+03	1.321e+04	3.757e+00	2.512e+01

Page : 2
DOS File : Th-232c Shielded Shallow Surf.ms6
Run Date: February 21, 2008
Run Time: 3:25:19 PM
Duration : 00:00:00

<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>
1.0	2.096e+04	6.213e+03	3.396e+04	1.145e+01	6.259e+01
1.5	4.812e+03	3.662e+03	1.384e+04	6.161e+00	2.329e+01
2.0	1.083e+02	1.549e+02	4.771e+02	2.395e-01	7.377e-01
3.0	1.273e+04	4.155e+04	1.003e+05	5.637e+01	1.361e+02
TOTALS:	1.451e+05	5.507e+04	1.774e+05	8.092e+01	2.778e+02