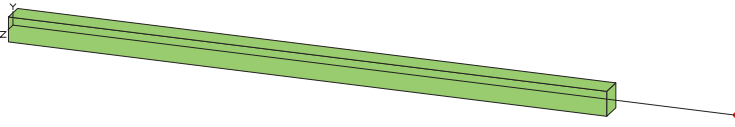


**Case Title: Hematite**  
**Description: Ind. Occ., Infinite Slab Unshielded Backfill - EU 3.5%**  
**Geometry: 16 - Infinite Slab**

**Source Dimensions**  
Thick 480.0 cm 15 ft 9.0 in

**Dose Points**

	<u>X</u>	<u>Y</u>	<u>Z</u>
# 1	580 cm 19 ft 0.3 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
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/cm<sup>3</sup></u>	<u>Bq/cm<sup>3</sup></u>
Ac-227	8.3419e-006	3.0865e-001
Bi-210	3.5148e-007	1.3005e-002
Bi-211	8.2852e-006	3.0655e-001
Bi-214	1.4058e-006	5.2015e-002
Fr-223	1.1512e-007	4.2594e-003
Pa-231	2.3443e-005	8.6740e-001
Pa-234	2.5187e-004	9.3193e+000
Pa-234m	1.5742e-001	5.8245e+003
Pb-210	3.5212e-007	1.3029e-002
Pb-211	8.2852e-006	3.0655e-001
Pb-214	1.4058e-006	5.2015e-002
Po-210	3.3413e-007	1.2363e-002
Po-211	2.2619e-008	8.3689e-004
Po-214	1.4055e-006	5.2004e-002
Po-215	8.2853e-006	3.0656e-001
Po-218	1.4061e-006	5.2026e-002
Ra-223	8.2853e-006	3.0656e-001
Ra-226	1.4075e-006	5.2078e-002
Rn-219	8.2853e-006	3.0656e-001
Rn-222	1.4061e-006	5.2026e-002
Th-227	8.1918e-006	3.0310e-001
Th-230	2.1753e-004	8.0485e+000
Th-231	3.6950e-002	1.3671e+003
Th-234	1.5742e-001	5.8245e+003
Tl-207	8.2626e-006	3.0572e-001
U-234	8.0556e-001	2.9806e+004
U-235	3.6950e-002	1.3671e+003
U-238	1.5742e-001	5.8245e+003

**Buildup**  
**The material reference is : Source**

**Results**

<u>Energy</u> <u>MeV</u>	<u>Activity</u> <u>photons/sec</u>	<u>Fluence Rate</u> <u>MeV/cm<sup>2</sup>/sec</u> <u>No Buildup</u>	<u>Fluence Rate</u> <u>MeV/cm<sup>2</sup>/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>
0.015	5.636e+03	1.936e+00	1.967e+00	1.660e-01	1.687e-01
0.02	3.675e-03	4.876e-06	5.087e-06	1.689e-07	1.762e-07
0.03	2.004e+02	1.406e+00	1.647e+00	1.393e-02	1.632e-02
0.04	1.340e-02	2.614e-04	3.744e-04	1.156e-06	1.656e-06
0.05	3.520e+01	1.357e+00	2.269e+00	3.615e-03	6.044e-03
0.06	2.345e+02	1.452e+01	3.112e+01	2.885e-02	6.180e-02
0.08	1.688e+02	1.928e+01	4.995e+01	3.051e-02	7.905e-02
0.1	5.124e+02	8.642e+01	2.813e+02	1.322e-01	4.303e-01
0.15	2.159e+02	6.706e+01	2.732e+02	1.104e-01	4.498e-01
0.2	8.457e+02	3.939e+02	1.665e+03	6.952e-01	2.939e+00
0.3	9.163e-01	7.517e-01	3.067e+00	1.426e-03	5.819e-03
0.4	6.725e-01	8.283e-01	3.122e+00	1.614e-03	6.084e-03
0.5	8.522e-01	1.445e+00	5.054e+00	2.837e-03	9.920e-03
0.6	3.497e+00	7.723e+00	2.514e+01	1.508e-02	4.906e-02
0.8	1.935e+01	6.524e+01	1.860e+02	1.241e-01	3.538e-01
1.0	6.184e+01	2.910e+02	7.536e+02	5.365e-01	1.389e+00
1.5	1.314e+00	1.146e+01	2.474e+01	1.929e-02	4.163e-02
2.0	1.822e-01	2.468e+00	4.848e+00	3.817e-03	7.497e-03
TOTALS:	7.938e+03	9.668e+02	3.312e+03	1.885e+00	6.014e+00