

Attachment 3
USEI 2005 Performance Assessment Model
Output

Attachment 3-1
Model Dose Rate at
One Meter from a Hopper Car

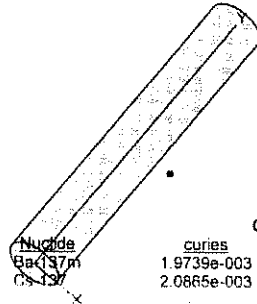
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MicroShield v5.05 (5.05-00473)
American Ecology

Page : 1
DOS File : CS-K061.MS5
Run Date : September 28, 2005
Run Time : 4:35:44 PM
Duration : 00:00:06

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

Case Title: Case 1
Description: Case 1
Geometry: 7 - Cylinder Volume - Side Shields



Source Dimensions
Height 1.5e+3 cm 50 ft
Radius 121.92 cm 4 ft

Dose Points
1 X 1.92e+02 cm 6 ft 3.6 in Y 762 cm 25 ft Z 0 cm 0.0 in

Shield Name	Dimension	Material	Density
Source	2513.274 ft ³	Iron	1.5
Transition	.018 ft	Iron	7.86
Air Gap		Air	0.00122

Source Input
Grouping Method : Actual Photon Energies

Nuclide	curies	becquerels	μCi/cm ³	Bq/cm ³
Ba-137m	1.9739e-003	7.3033e+007	2.7735e-005	1.0262e+000
Cs-137	2.0865e-003	7.7202e+007	2.9319e-005	1.0046e+000

Buildup
The material reference is : Source

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

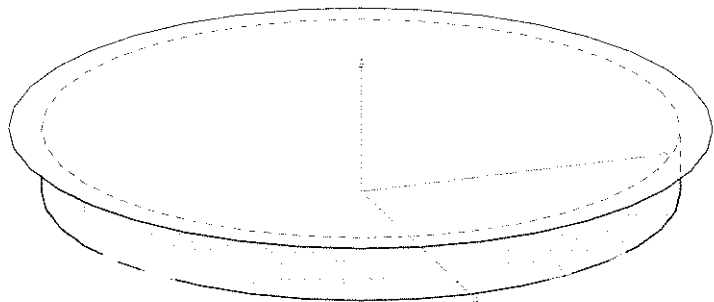
Energy MeV	Activity photons/sec	Fluence Rate MeV/cm ² /sec		Exposure Rate mR/hr	
		No Buildup	With Buildup	No Buildup	With Buildup
0.0318	1.512e+06	5.123e-21	5.664e-21	4.267e-23	4.718e-23
0.0322	2.790e+06	3.057e-20	3.389e-20	2.460e-22	2.728e-22
0.0364	1.015e+06	2.858e-16	3.242e-16	1.624e-18	1.842e-18
0.6616	6.572e+07	2.461e-01	7.331e-01	4.772e-04	1.421e-03
TOTALS:	7.103e+07	2.461e-01	7.331e-01	4.772e-04	1.421e-03

Attachment 3-2
72 m² Area at 1 Meter Lifts

Page : 1
 DOS File: NUCORCEL.MS5
 Run Date: October 4, 2005
 Run Time: 10:39:16 PM
 Duration: 00:00:00

File Ref:
 Date:
 By:
 Checked:

Case Title: Nucor Cell
 Description: Cs-137, 10pCi/g-Cell
 Geometry: 8 - Cylinder Volume - End Shields

**Source Dimensions**

Height	100.0 cm	3 ft 3.4 in
Radius	478.0 cm	15 ft 8.2 in

Dose Points

#	X	Y	Z
1	0 cm 0.0 in	200 cm 6 ft 6.7 in	0 cm 0.0 in

Shields

Shield Name	Dimension	Material	Density
Source	71.78 m ³	Concrete	1.5
Shield 1	.006 m	Iron	7.86
Air Gap		Air	0.00122

Source Input

Grouping Method : Standard Indices

Number of Groups : 4

Lower Energy Cutoff : 0.015

Photons < 0.015 : Excluded

Library : Grove

Nuclide	curies	becquerels	uCi/cm ³	Bq/cm ³
Ba-137m	1.0166e-003	3.7613e+007	1.4162e-005	5.2401e-001
Cs-137	1.0746e-003	3.9760e+007	1.4971e-005	5.5392e-001

Buildup

The material reference is : Source

Integration Parameters

Radial	20
Circumferential	10
Y Direction (axial)	10

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
0.0318	7.787e+05	5.623e-21	1.255e-20	4.684e-23	1.045e-22
0.0322	1.437e+06	3.456e-20	7.856e-20	2.781e-22	6.322e-22
0.0364	5.228e+05	4.569e-16	1.259e-15	2.596e-18	7.153e-18
0.6616	3.384e+07	5.326e-01	1.755e+00	1.033e-03	3.402e-03
TOTALS:	3.658e+07	5.326e-01	1.755e+00	1.033e-03	3.402e-03

Attachment 3-3
Dose: All Pathways Summed

