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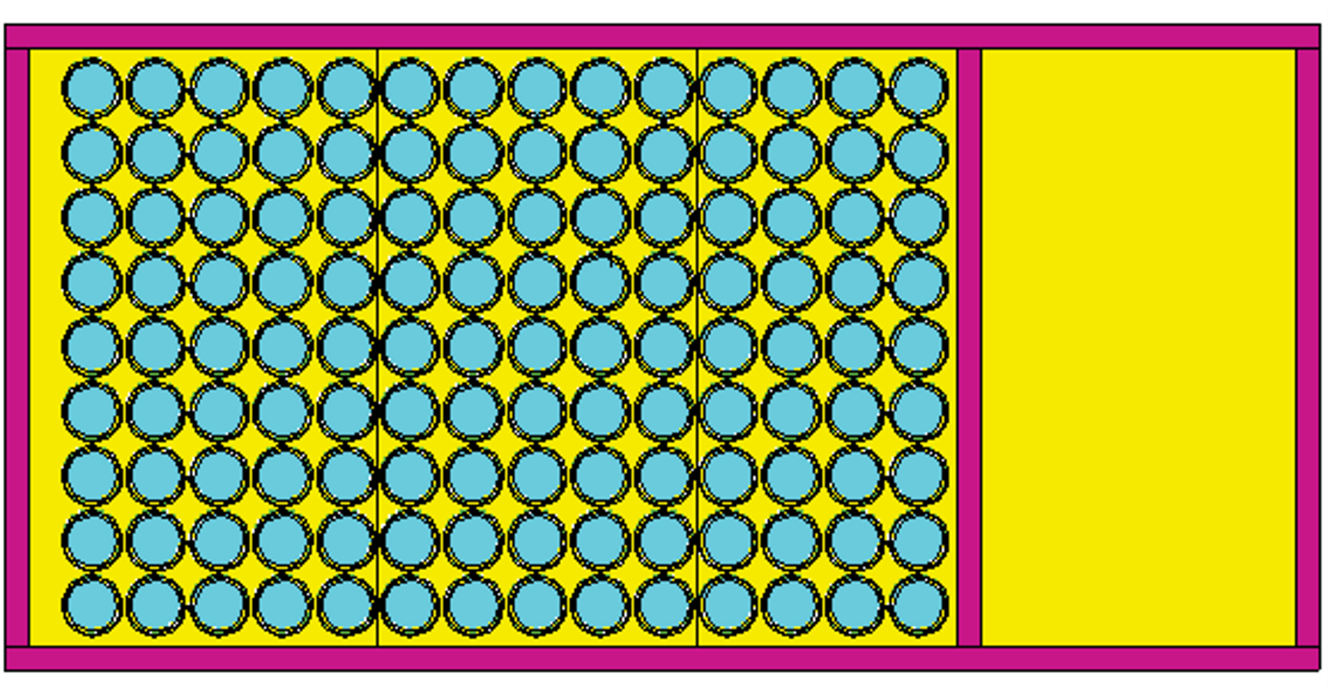
Attachment B

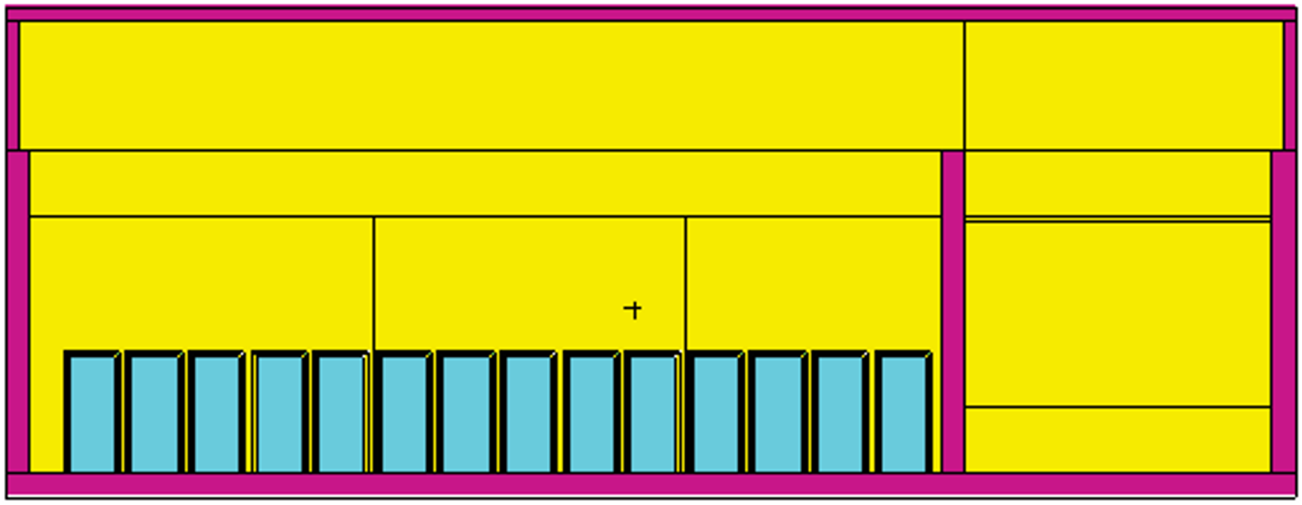
MCNP Cases and Geometry

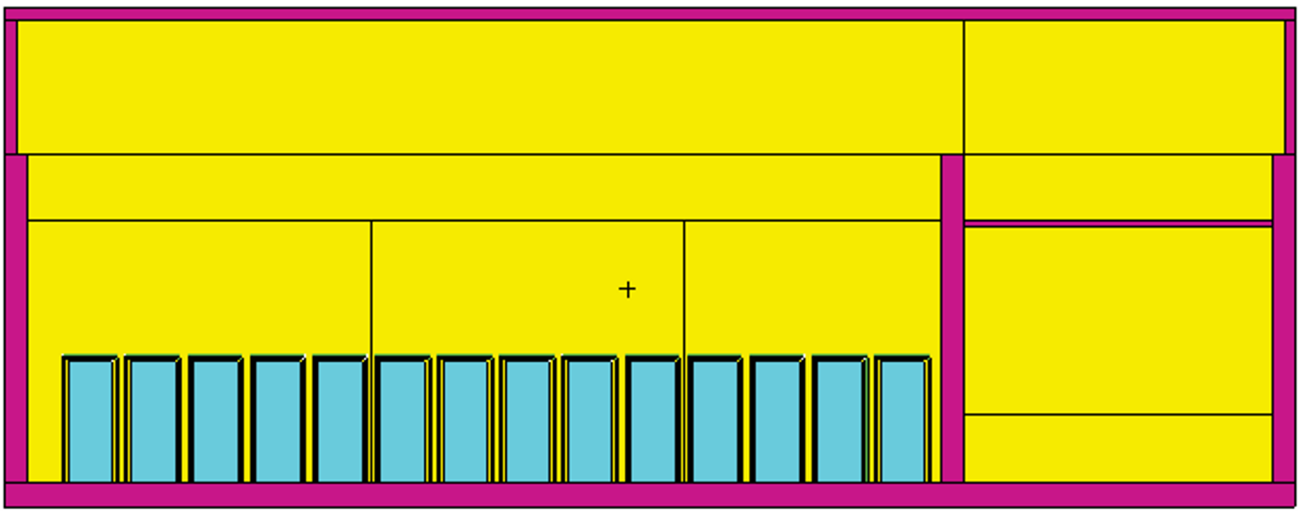
The following plots are generated by MCNP and further illustrate the geometry, and also verify the correct location of the sources, source biasing, and source translations. In addition, plots are provided to show the tally locations.

MCNP Plan Plot of the Model

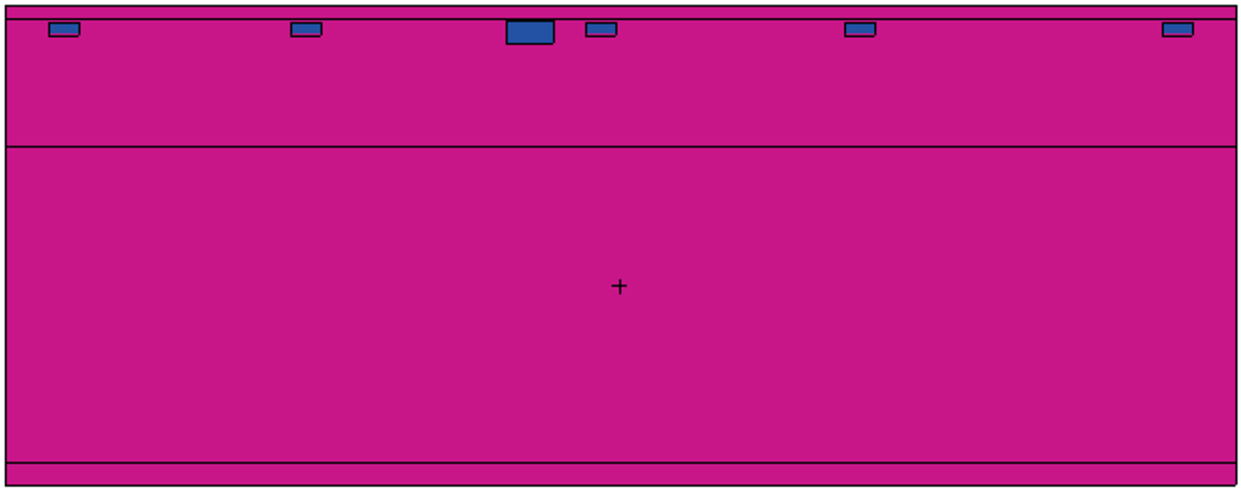


MCNP Side Plot Through the Model (one with concrete floor over truck bay)



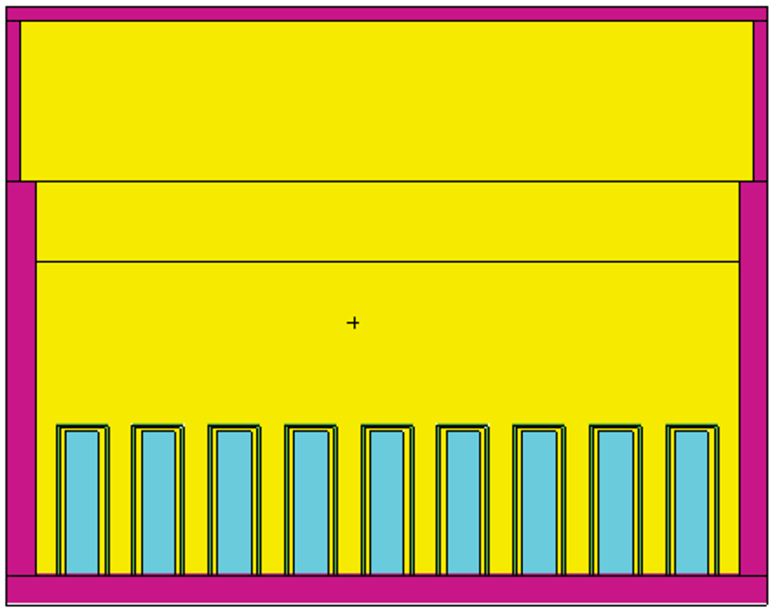


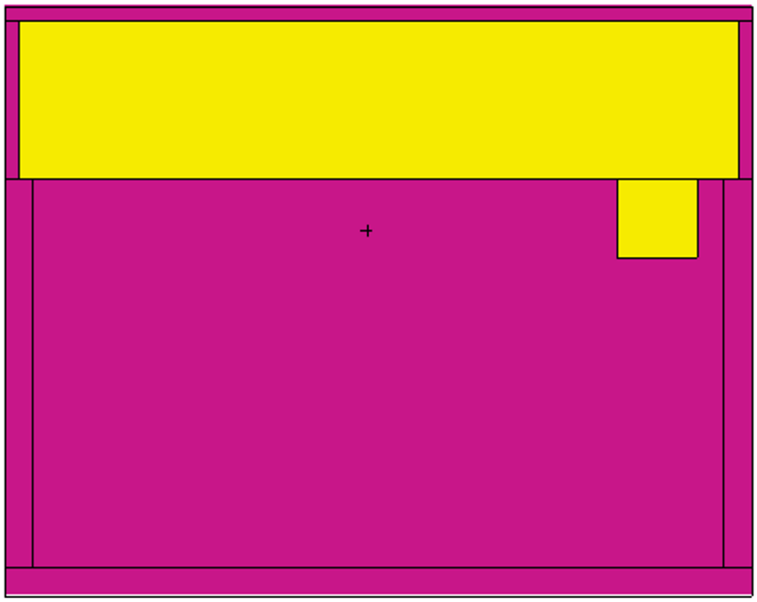
MCNP Side Plot Showing North Wall (with HVAC Openings)



MCNP Cross Section Plots

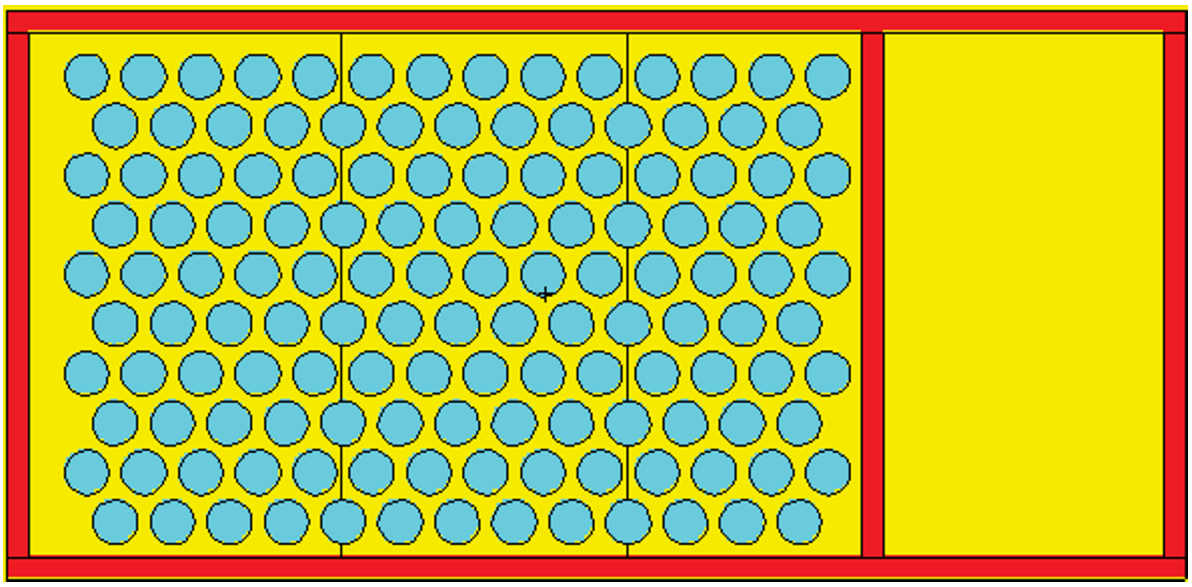
(one through storage, one through truck bay shield wall)



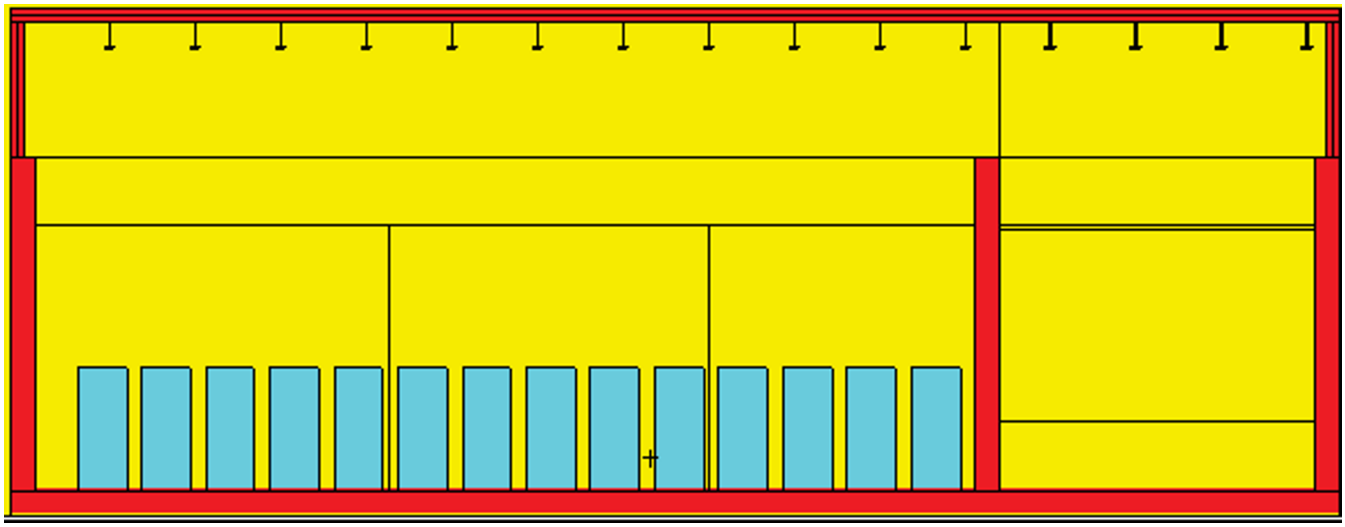


MCNP Plan Plot of the Model
(Hexagonal HIC Geometry)

The following plot shows the overhead view of the hexagonal HIC geometry. In this hexagonal configuration, there are 135 HIC positions.



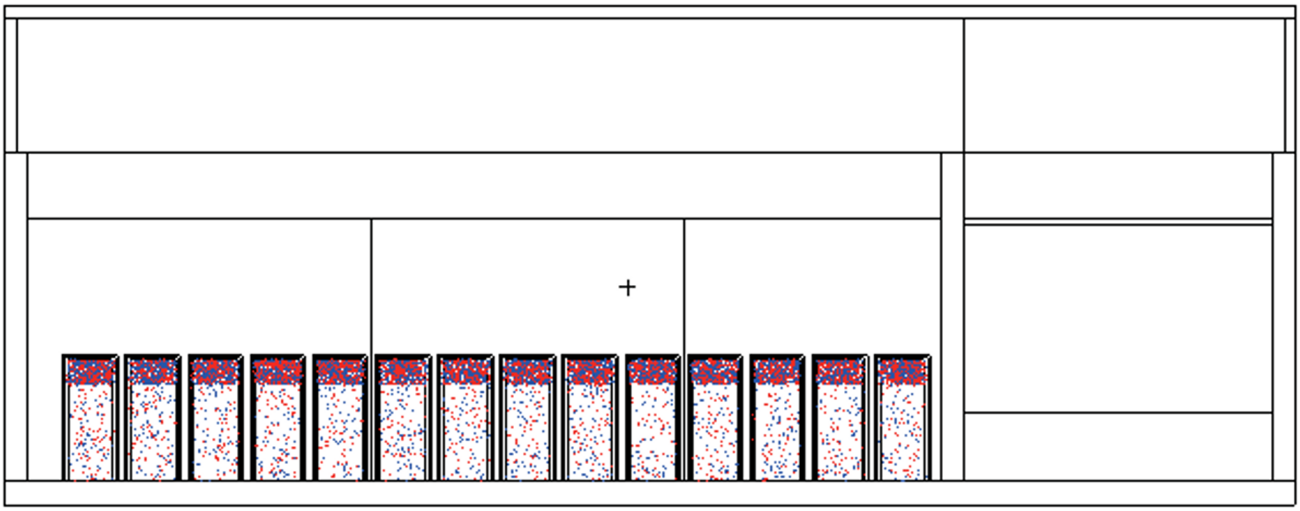
MCNP Side Plot Through the Model (with I-Beams)

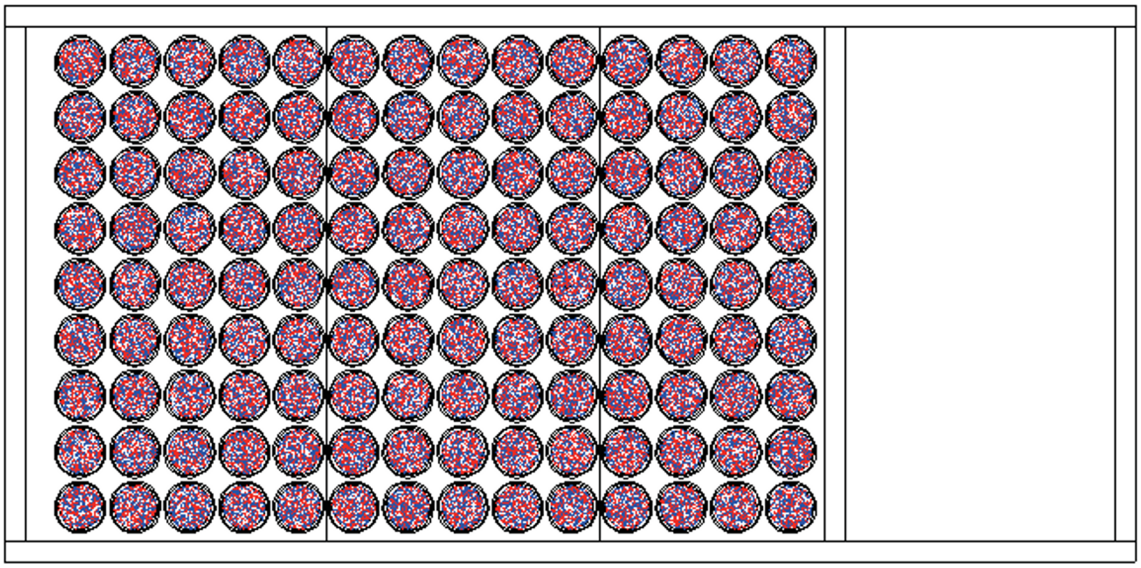


The following plots show the source location before translation. Each of the "dots" represents a source photon starting location. The plots clearly show source "biasing" towards the top of the stack of HICs which greatly improves the final statistics and decreases the running time needed.

Note: The actual source is evenly distributed, these plots are only intended to show the biasing effect.

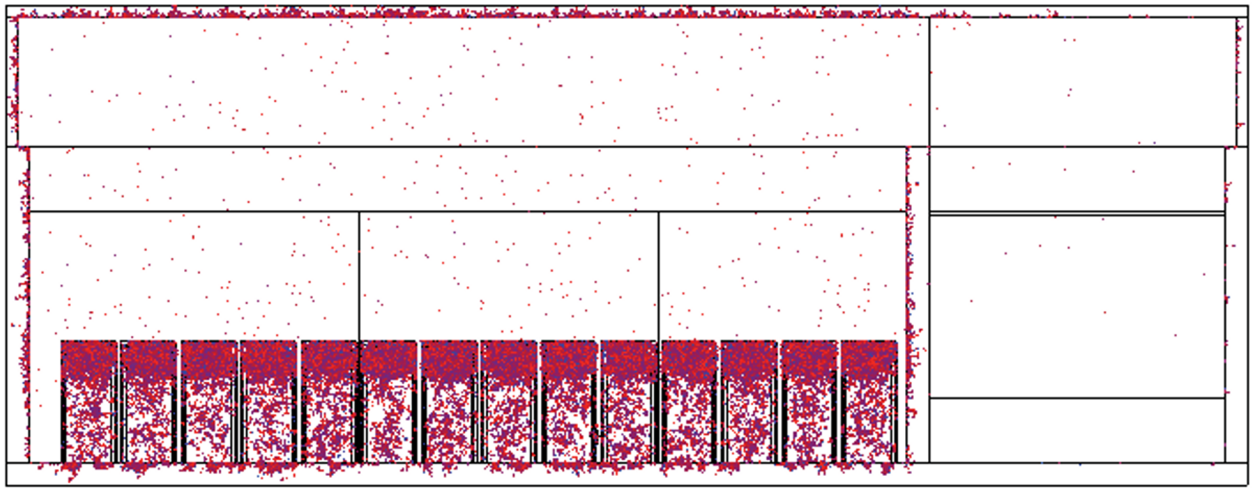
MCNP Plots Showing Source Location





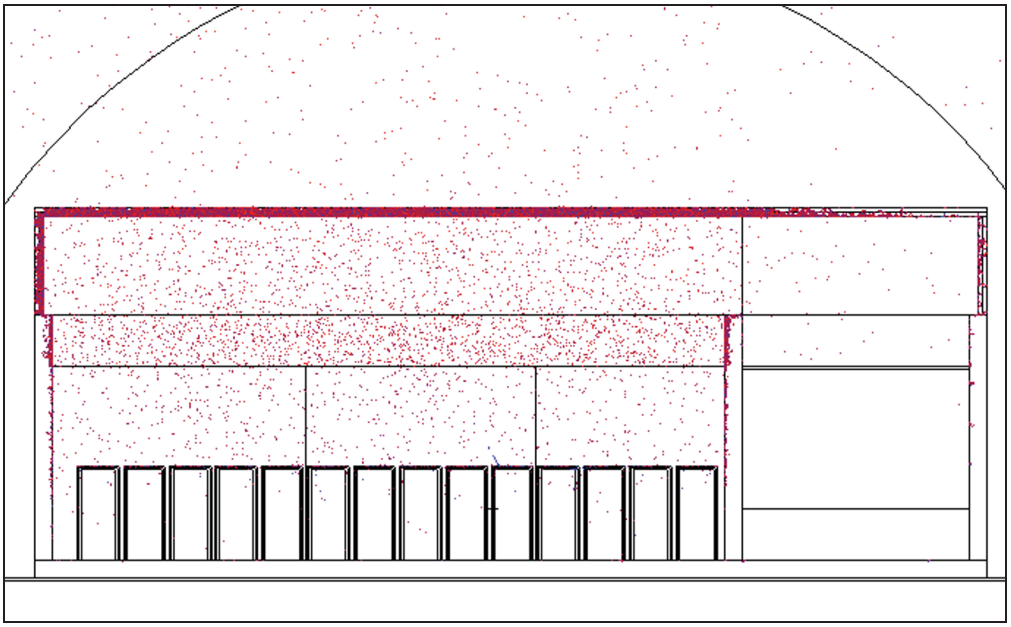
The following plot shows photon collisions (i.e. a “dot” is plotted each time a photon is scattered or interacts with the model). These plots are generated before the source translation, clearly showing the majority of collisions within the sources.

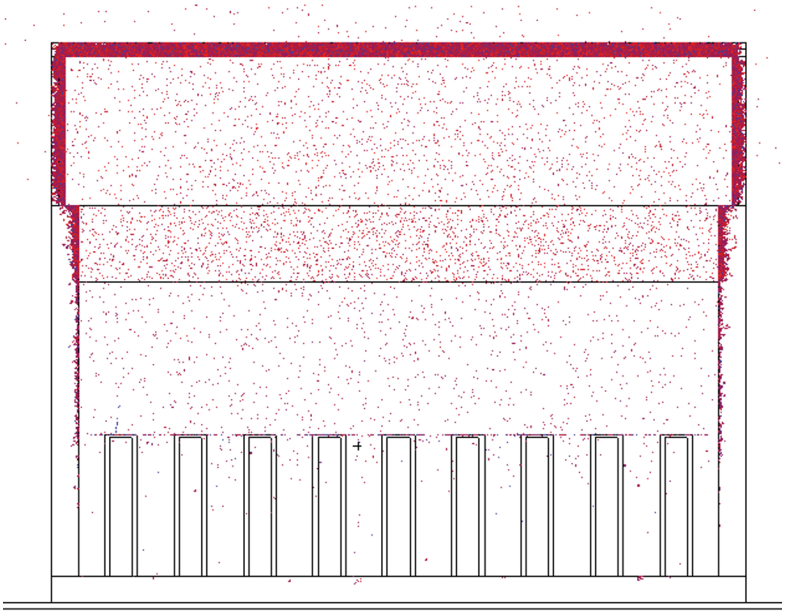
MCNP Plot Showing Photon Collisions Before Source Translation



The following plots show photon collisions (i.e. a “dot” is plotted each time a photon is scattered or interacts with the model). These plots are generated after the source translation which clearly shows that the source is now translated to the air space above the HICs which is needed for the skyshine analysis.

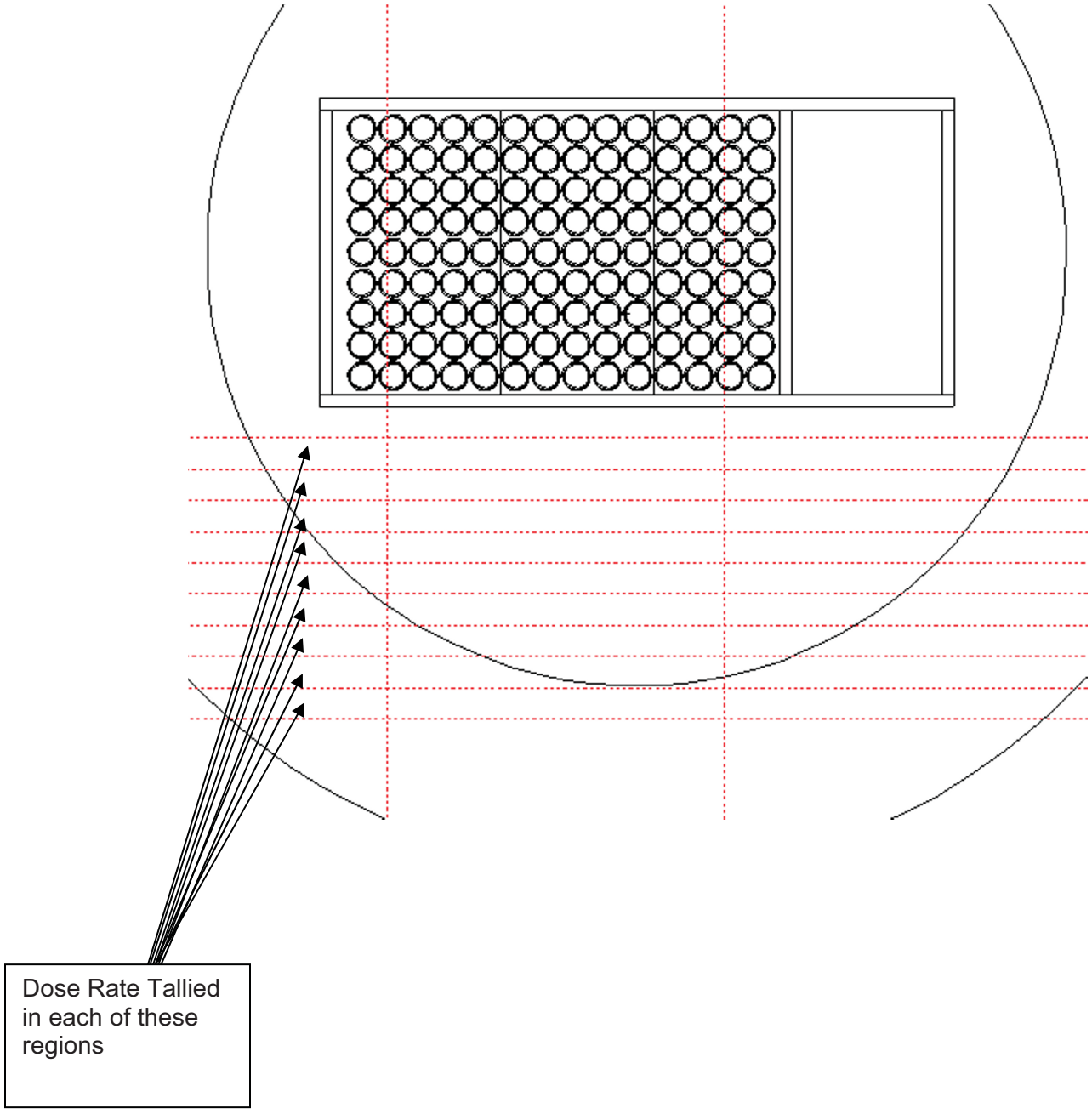
MCNP Plots Showing Photon Collisions After Source Translation



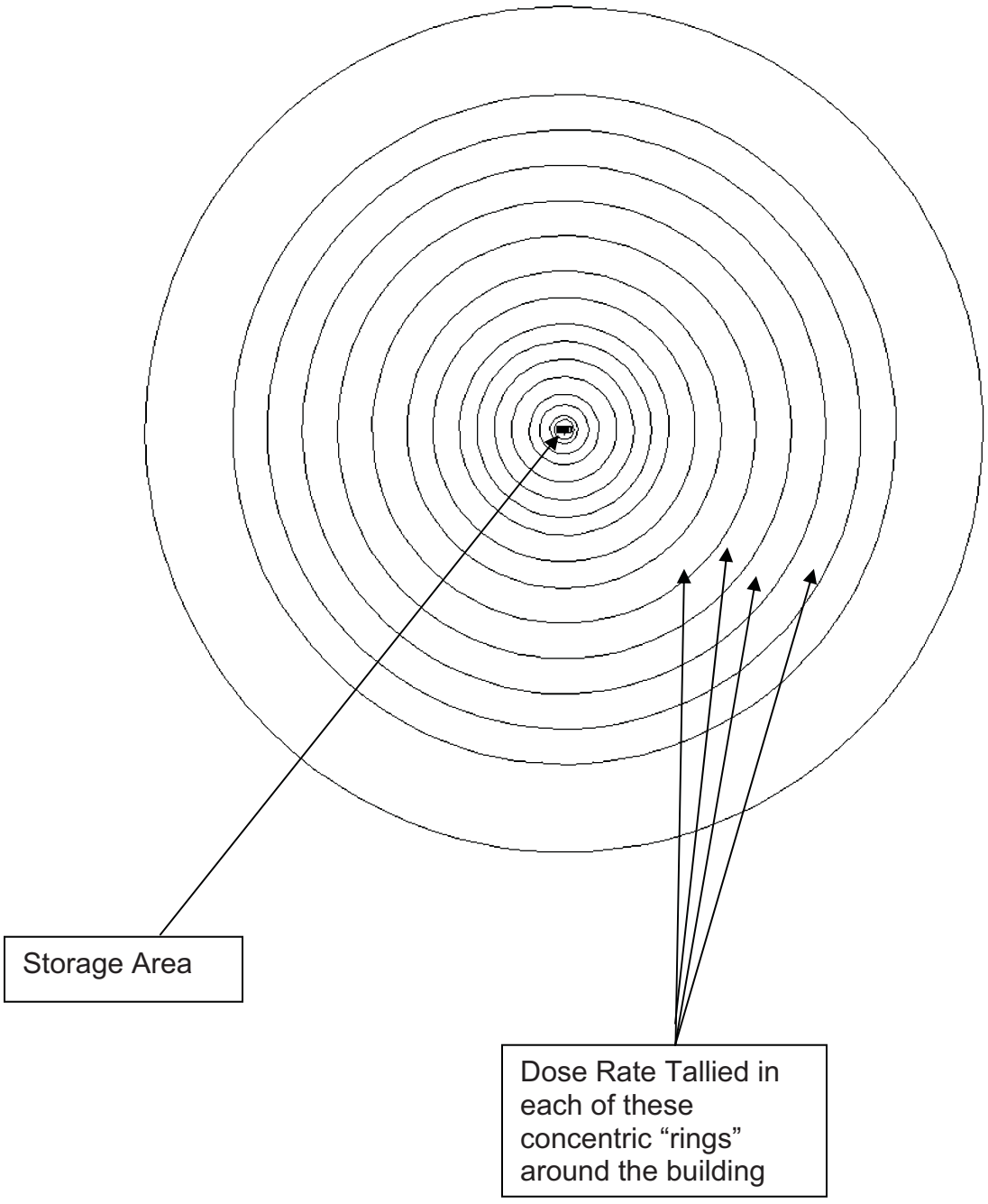


The following plots show the MCNP tally regions (i.e. the regions in which the dose rates were determined). This was performed by tallying the photons into groups, then multiplying each group by photon flux to dose rate conversion factors which are taken from the MCNP user manual and presented in the MCNP cases.

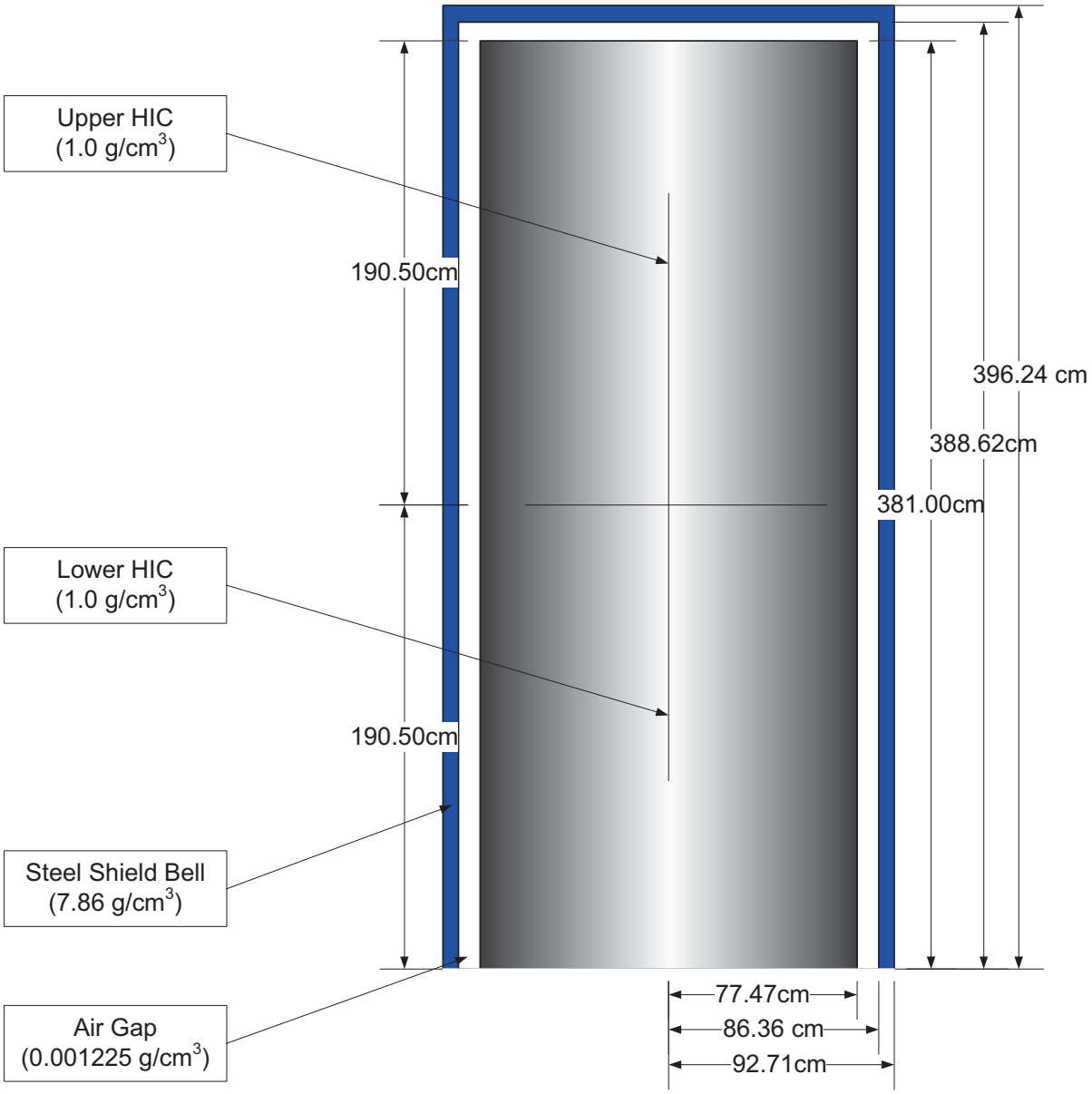
MCNP Plot Showing Tally Locations (1 of 2)



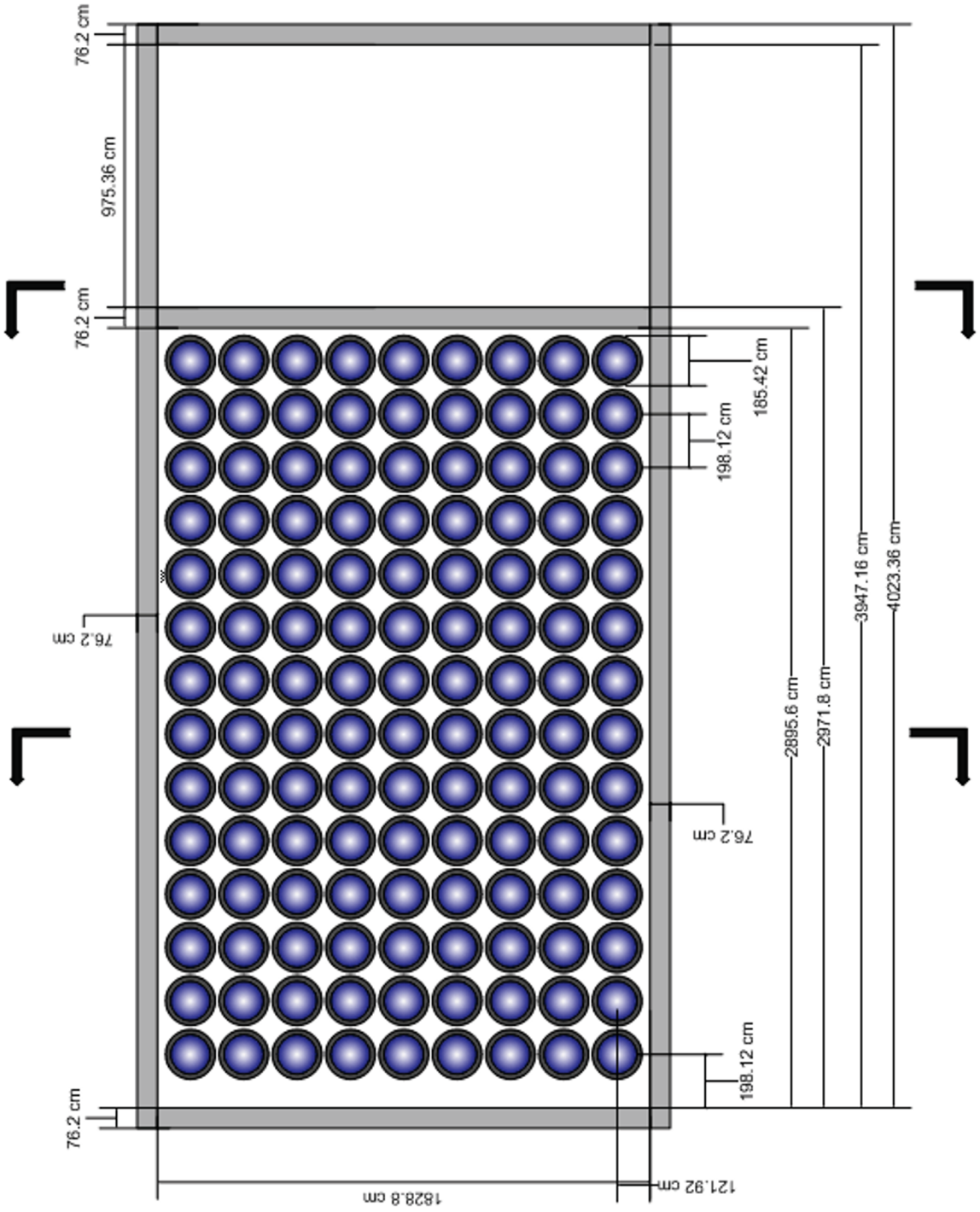
MCNP Plot Showing Tally Locations (2 of 2)



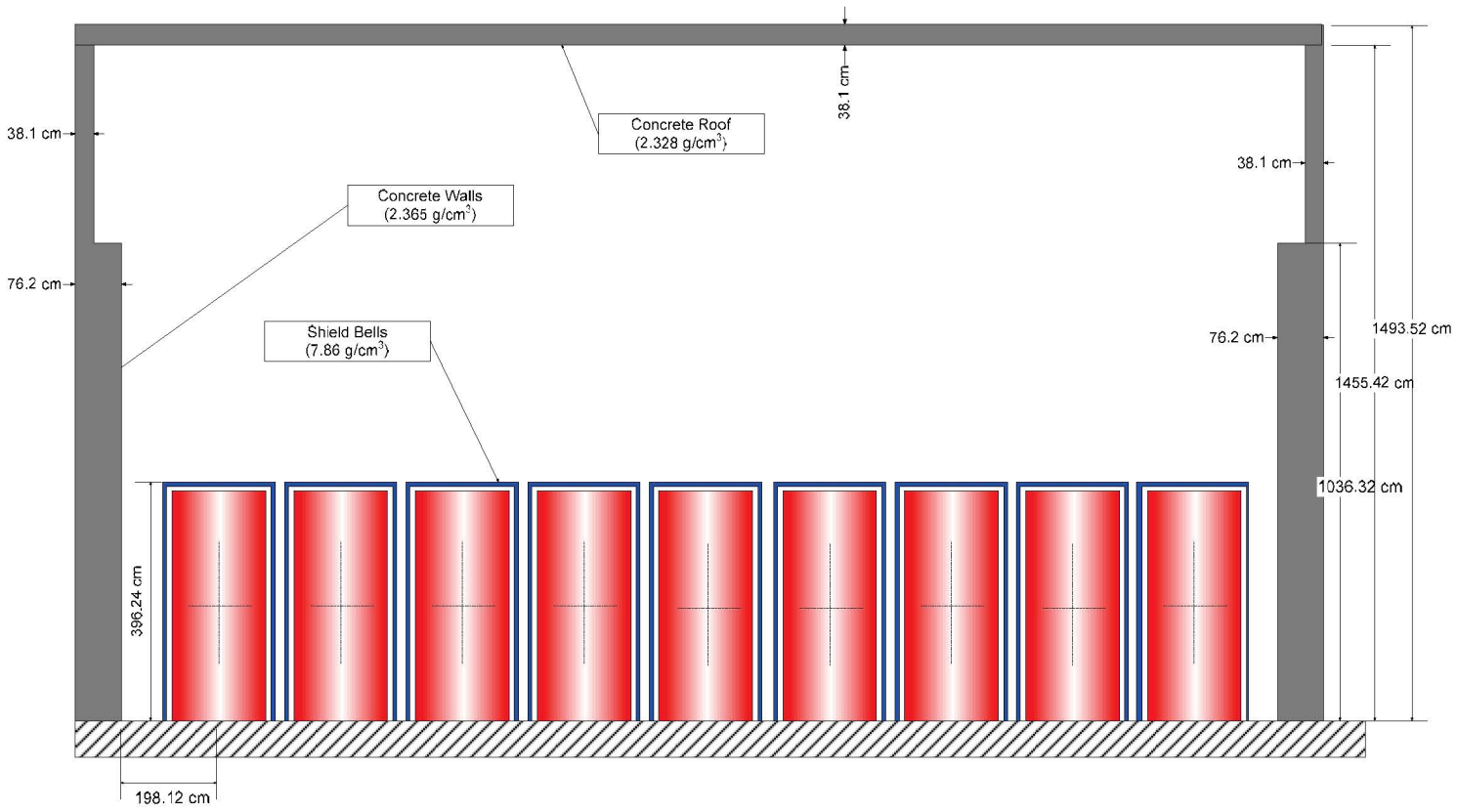
Sketch Showing 2 HICs in a Shield Bell (cm)



Sketch Showing Plan View (cm)



Sketch Showing a Slice through the Storage Area (cm)



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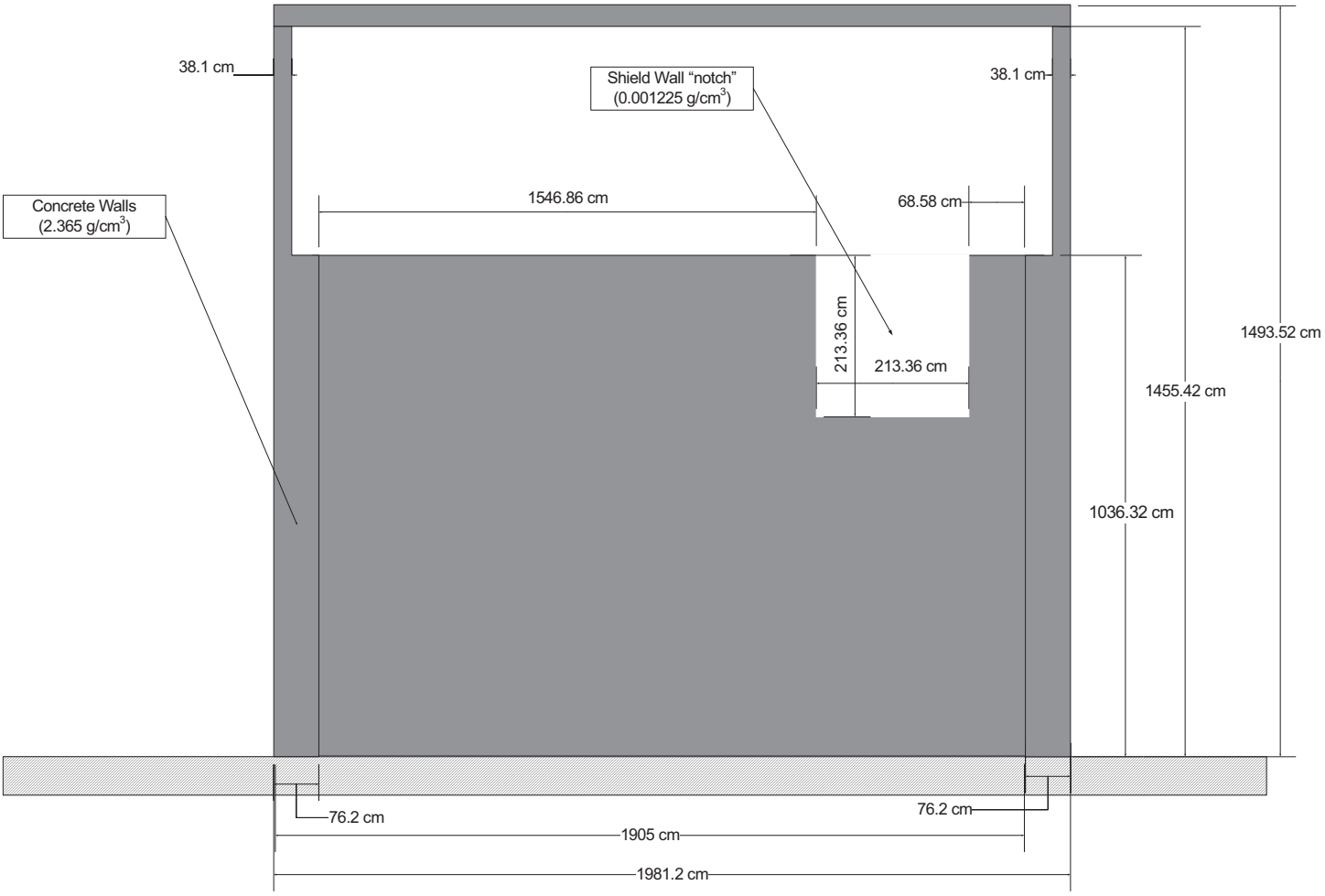
Sketch Showing a Slice through the Truck Bay Wall (cm)



Excel Spreadsheet with MCNP Conversion Factors

	A	B	C	D	E	F	G	H	I	J
1	**MCNP Evaluation of Skyshine (and thin wall to ground scatter) from IRSF**									
2										
3	**CASE: HICs without Shield Bell**									
4	**Single HIC Source Term for 100 R/hr Contact**									
5										
6	**Factors used for conversion of MCNP output**									
7										
8	1.16E+13	photons per second								
9	72	nominal source height (inches)								
10	30.5	nominal source radius (inches)								
11										
12	150	source height for two high stacking (inches)								
13	126	number of two high stack positions (for rectangular arrangement)								
14	135	number of two high stack positions (for hexagonal arrangement)								
15										
16	3.045E+15	source strength in photons/sec for IRSF filled with 100 R/hr containers (included in MCNP input)								
17										
18	1.07	factor to adjust number of positions from rectangular to hexagonal arrangement								

Excel Spreadsheet with MCNP Detector Results (no shield bells)

	A	B	C	D	E	F	G	H	I	J
1	**MCNP Evaluation of Skyshine (and thin wall to ground scatter) from IRSF**									
2										
3	**Case: HICs without Shield Bells**									
4	Single HIC Source Term for 100 R/hr Contact									
5										
6	**Truck Bay Dose Rate (no concrete floor): detector f2 - results from NSBNC.o**									
7	MCNP Output	MCNP Error	Dose Rate	Dose Rate						
8	(Rem/hr)		(mRem/hr)	(mRem/year)						
9	2.39E-01	0.0134	2.42E+02	2.12E+06						
10										
11	**Truck Bay Dose Rate (concrete floor): detector f2 - results from NSBTR.o**									
12	MCNP Output	MCNP Error	Dose Rate	Dose Rate						
13	(Rem/hr)		(mRem/hr)	(mRem/year)						
14	6.11E-03	0.0132	6.19E+00	5.43E+04						
15										
16	**Rings Outside Building: detector f12 - results from NSBTR.o**									
17	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description					
18	(Rem/hr)		(Rem/hr)	(Rem/year)	(distance from IRSF center)					
19	1.50E-03	0.0067	1.51E-03	1.32E+01	Average in ring between 28.5 and 40 meters					
20	9.52E-04	0.005	9.56E-04	8.38E+00	Average in ring between 40 and 70 meters					
21	4.69E-04	0.0046	4.71E-04	4.13E+00	Average in ring between 70 and 100 meters					
22	2.19E-04	0.0051	2.20E-04	1.93E+00	Average in ring between 100 and 150 meters					
23	1.01E-04	0.0058	1.01E-04	8.87E-01	Average in ring between 150 and 200 meters					
24	4.56E-05	0.0061	4.59E-05	4.02E-01	Average in ring between 200 and 250 meters					
25	2.22E-05	0.0045	2.23E-05	1.96E-01	Average in ring between 250 and 300 meters					
26	9.93E-06	0.0042	9.97E-06	8.74E-02	Average in ring between 300 and 375 meters					
27	3.95E-06	0.0045	3.96E-06	3.47E-02	Average in ring between 375 and 450 meters					
28	1.46E-06	0.0049	1.46E-06	1.28E-02	Average in ring between 450 and 550 meters					
29	4.80E-07	0.0048	4.82E-07	4.23E-03	Average in ring between 550 and 650 meters					
30	1.69E-07	0.0109	1.71E-07	1.50E-03	Average in ring between 650 and 750 meters					
31	**6.00E-08**	**0.0067**	**6.04E-08**	**5.29E-04**	**Average in ring between 750 and 850 meters**					
32	2.28E-08	0.0145	2.32E-08	2.03E-04	Average in ring between 850 and 950 meters					
33	4.86E-09	0.0086	4.91E-09	4.30E-05	Average in ring between 950 and 1200 meters					
34										
35	**Slabs Adjacent to Ventilation Penetration Side: detector f22 - results from NSBTR.o**									
36	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description					
37	(Rem/hr)		(Rem/hr)	(Rem/year)						
38	1.03E-03	0.0374	1.06E-03	9.32E+00	Average, at 0 to 2 meters from wall					
39	1.58E-03	0.0363	1.64E-03	1.44E+01	Average, at 2 to 4 meters from wall					
40	2.04E-03	0.0337	2.11E-03	1.85E+01	Average, at 4 to 6 meters from wall					
41	2.76E-03	0.0395	2.87E-03	2.52E+01	Average, at 6 to 8 meters from wall					
42	3.08E-03	0.0341	3.19E-03	2.80E+01	Average, at 8 to 10 meters from wall					
43	3.37E-03	0.0338	3.48E-03	3.05E+01	Average, at 10 to 12 meters from wall					
44	3.51E-03	0.0364	3.64E-03	3.19E+01	Average, at 12 to 14 meters from wall					
45	3.63E-03	0.0336	3.76E-03	3.29E+01	Average, at 14 to 16 meters from wall					
46	3.42E-03	0.0308	3.52E-03	3.09E+01	Average, at 16 to 18 meters from wall					
47	**3.66E-03**	**0.0424**	**3.81E-03**	**3.34E+01**	**Average, at 18 to 20 meters from wall**					
48	3.53E-03	0.0379	3.67E-03	3.22E+01	Average, at 20 to 22 meters from wall					
49	3.29E-03	0.0468	3.44E-03	3.02E+01	Average, at 22 to 24 meters from wall					
50	3.07E-03	0.0341	3.18E-03	2.78E+01	Average, at 24 to 26 meters from wall					
51	2.78E-03	0.0311	2.87E-03	2.51E+01	Average, at 26 to 28 meters from wall					
52	2.80E-03	0.0453	2.93E-03	2.57E+01	Average, at 28 to 30 meters from wall					
53	2.79E-03	0.0557	2.94E-03	2.58E+01	Average, at 30 to 32 meters from wall					
54	2.47E-03	0.0497	2.59E-03	2.27E+01	Average, at 32 to 34 meters from wall					
55	2.31E-03	0.0436	2.41E-03	2.11E+01	Average, at 34 to 36 meters from wall					
56										
57	**Dose Rate on Vent Side Wall 7ft Above Ground: detector f32 - results from NSBTR.o**									
58	MCNP Output	MCNP Error	Dose Rate	Dose Rate						
59	(Rem/hr)		(Rem/hr)	(Rem/year)						
60	1.09E-03	0.0439	1.14E-03	9.97E+00						

	A	B	C	D	E
61					
62	**Vertical Detectors toward North, w/ HVAC effects: detector f42 - results from NSBTR.o**				
63	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description
64	(Rem/hr)		(Rem/hr)	(Rem/year)	
65	6.50E-04	0.0147	6.59E-04	5.78E+00	Average, at ring 2003: 100 m from IRSF center
66	2.38E-04	0.0169	2.42E-04	2.12E+00	Average, at ring 2004: 150 m from IRSF center
67	1.02E-04	0.0155	1.04E-04	9.08E-01	Average, at ring 2005: 200 m from IRSF center
68	4.87E-05	0.0199	4.97E-05	4.36E-01	Average, at ring 2006: 250 m from IRSF center
69	2.55E-05	0.0220	2.61E-05	2.29E-01	Average, at ring 2007: 300 m from IRSF center
70	9.85E-06	0.0282	1.01E-05	8.88E-02	Average, at ring 2008: 375 m from IRSF center
71	3.92E-06	0.0279	4.03E-06	3.53E-02	Average, at ring 2009: 450 m from IRSF center
72	1.29E-06	0.036	1.33E-06	1.17E-02	Average, at ring 2010: 550 m from IRSF center
73	4.55E-07	0.0543	4.80E-07	4.21E-03	Average, at ring 2011: 650 m from IRSF center
74	1.61E-07	0.0711	1.73E-07	1.52E-03	Average, at ring 2012: 750 m from IRSF center
75	6.21E-08	0.0883	6.76E-08	5.92E-04	Average, at ring 2013: 850 m from IRSF center
76					
77	**Vertical Detectors toward South w/out HVAC effects: detector f52 - results from NSBTR.o**				
78	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description
79	(Rem/hr)		(Rem/hr)	(Rem/year)	
80	4.14E-04	0.0105	4.19E-04	3.67E+00	Average, at ring 2003: 100 m from IRSF center
81	1.60E-04	0.0126	1.62E-04	1.42E+00	Average, at ring 2004: 150 m from IRSF center
82	7.30E-05	0.0136	7.40E-05	6.49E-01	Average, at ring 2005: 200 m from IRSF center
83	3.60E-05	0.0178	3.66E-05	3.21E-01	Average, at ring 2006: 250 m from IRSF center
84	1.82E-05	0.0185	1.85E-05	1.63E-01	Average, at ring 2007: 300 m from IRSF center
85	7.60E-06	0.0249	7.78E-06	6.82E-02	Average, at ring 2008: 375 m from IRSF center
86	3.13E-06	0.0422	3.27E-06	2.86E-02	Average, at ring 2009: 450 m from IRSF center
87	9.52E-07	0.0429	9.93E-07	8.70E-03	Average, at ring 2010: 550 m from IRSF center
88	3.39E-07	0.0569	3.59E-07	3.14E-03	Average, at ring 2011: 650 m from IRSF center
89	1.37E-07	0.1015	1.50E-07	1.32E-03	Average, at ring 2012: 750 m from IRSF center
90	3.83E-08	0.0711	4.10E-08	3.60E-04	Average, at ring 2013: 850 m from IRSF center
91					
92	**Dose above HICs: detector f62 - results from NSBNC.o**				
93	MCNP Output	MCNP Error	Dose Rate	Dose Rate	
94	(Rem/hr)		(Rem/hr)	(Rem/year)	
95	4.90E+01	0.0008	4.90E+01	4.30E+05	
96					

Excel Spreadsheet with MCNP Detector Results (with shield bells)

	A	B	C	D	E	F	G	H	I	J
1	**MCNP Evaluation of Skyshine (and thin wall to ground scatter) from IRSF**									
2										
3	**Case: HICs with Shield Bells**									
4	Single HIC Source Term for 100 R/hr Contact									
5										BELL
6	**Truck Bay Dose Rate (no concrete floor): detector f2 - results from sbnc.o**									EFFECT
7	MCNP Output	MCNP Error	Dose Rate	Dose Rate						
8	(Rem/hr)		(mRem/hr)	(mRem/year)						
9	7.47E-03	0.0437	7.79E+00	6.83E+04						31.0
10										
11	**Truck Bay Dose Rate (concrete floor): detector f2 - results from sbtr.o**									
12	MCNP Output	MCNP Error	Dose Rate	Dose Rate						B.E.
13	(Rem/hr)		(mRem/hr)	(mRem/year)						
14	1.88E-04	0.0244	1.93E-01	1.69E+03						32.2
15										
16	**Rings Outside Building: detector f12 - results from sbtr.o**									
17	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description					B.E.
18	(Rem/hr)		(Rem/hr)	(Rem/year)	(distance from IRSF center)					
19	4.15E-05	0.0106	4.20E-05	3.68E-01	Average in ring between 28.5 and 40 meters					35.9
20	2.69E-05	0.0078	2.71E-05	2.37E-01	Average in ring between 40 and 70 meters					35.3
21	1.40E-05	0.0106	1.41E-05	1.24E-01	Average in ring between 70 and 100 meters					33.4
22	6.51E-06	0.0082	6.56E-06	5.75E-02	Average in ring between 100 and 150 meters					33.5
23	2.94E-06	0.0082	2.96E-06	2.60E-02	Average in ring between 150 and 200 meters					34.2
24	1.37E-06	0.0131	1.39E-06	1.21E-02	Average in ring between 200 and 250 meters					33.1
25	6.70E-07	0.0116	6.78E-07	5.94E-03	Average in ring between 250 and 300 meters					32.9
26	2.92E-07	0.0089	2.95E-07	2.58E-03	Average in ring between 300 and 375 meters					33.8
27	1.12E-07	0.0085	1.13E-07	9.93E-04	Average in ring between 375 and 450 meters					35.0
28	4.12E-08	0.0128	4.17E-08	3.65E-04	Average in ring between 450 and 550 meters					35.1
29	1.28E-08	0.0100	1.29E-08	1.13E-04	Average in ring between 550 and 650 meters					37.4
30	4.16E-09	0.0114	4.21E-09	3.69E-05	Average in ring between 650 and 750 meters					40.7
31	**1.47E-09**	**0.0220**	**1.50E-09**	**1.32E-05**	**Average in ring between 750 and 850 meters**					40.1
32	5.11E-10	0.0204	5.21E-10	4.57E-06	Average in ring between 850 and 950 meters					44.4
33	1.01E-10	0.0214	1.03E-10	9.00E-07	Average in ring between 950 and 1200 meters					47.8
34										
35	**Slabs Adjacent to Ventilation Penetration Side: detector f22 - results from sbtr.o**									
36	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description					B.E.
37	(Rem/hr)		(Rem/hr)	(Rem/year)						
38	3.44E-05	0.0459	3.60E-05	3.15E-01	Average, at 0 to 2 meters from wall					29.6
39	4.70E-05	0.0512	4.94E-05	4.33E-01	Average, at 2 to 4 meters from wall					33.2
40	6.02E-05	0.0503	6.32E-05	5.54E-01	Average, at 4 to 6 meters from wall					33.4
41	6.87E-05	0.0439	7.17E-05	6.29E-01	Average, at 6 to 8 meters from wall					40.0
42	8.47E-05	0.0335	8.76E-05	7.68E-01	Average, at 8 to 10 meters from wall					36.4
43	8.65E-05	0.0318	8.92E-05	7.82E-01	Average, at 10 to 12 meters from wall					39.0
44	9.40E-05	0.0344	9.72E-05	8.52E-01	Average, at 12 to 14 meters from wall					37.4
45	9.51E-05	0.0398	9.88E-05	8.66E-01	Average, at 14 to 16 meters from wall					38.0
46	9.81E-05	0.0422	1.02E-04	8.96E-01	Average, at 16 to 18 meters from wall					34.4
47	1.03E-04	0.0466	1.07E-04	9.42E-01	Average, at 18 to 20 meters from wall					35.5
48	**1.15E-04**	**0.0761**	**1.24E-04**	**1.09E+00**	**Average, at 20 to 22 meters from wall**					29.6
49	9.26E-05	0.0438	9.66E-05	8.47E-01	Average, at 22 to 24 meters from wall					35.6
50	9.57E-05	0.0403	9.95E-05	8.72E-01	Average, at 24 to 26 meters from wall					31.9
51	8.21E-05	0.0567	8.68E-05	7.61E-01	Average, at 26 to 28 meters from wall					33.0
52	7.98E-05	0.0700	8.54E-05	7.49E-01	Average, at 28 to 30 meters from wall					34.3
53	7.29E-05	0.0447	7.62E-05	6.68E-01	Average, at 30 to 32 meters from wall					38.6
54	6.65E-05	0.0485	6.97E-05	6.11E-01	Average, at 32 to 34 meters from wall					37.2
55	6.70E-05	0.0445	6.99E-05	6.13E-01	Average, at 34 to 36 meters from wall					34.4
56										
57	**Dose Rate on Vent Side Wall 7ft Above Ground: detector f32 - results from sbtr.o**									
58	MCNP Output	MCNP Error	Dose Rate	Dose Rate						B.E.
59	(Rem/hr)		(Rem/hr)	(Rem/year)						
60	2.75E-05	0.0590	2.92E-05	2.56E-01						39.0

	A	B	C	D	E	J
61						
62	**Vertical Detectors toward North, w/ HVAC effects: detector f42 - results from sbtr.o**					
63	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description	B.E.
64	(Rem/hr)		(Rem/hr)	(Rem/year)		
65	2.02E-05	0.0249	2.07E-05	1.82E-01	Average, at ring 2003: 100 m from IRSF center	31.8
66	6.91E-06	0.0299	7.12E-06	6.24E-02	Average, at ring 2004: 150 m from IRSF center	34.0
67	3.02E-06	0.0497	3.17E-06	2.78E-02	Average, at ring 2005: 200 m from IRSF center	32.7
68	1.46E-06	0.0477	1.53E-06	1.34E-02	Average, at ring 2006: 250 m from IRSF center	32.5
69	6.68E-07	0.0531	7.04E-07	6.17E-03	Average, at ring 2007: 300 m from IRSF center	37.1
70	2.78E-07	0.0736	2.98E-07	2.61E-03	Average, at ring 2008: 375 m from IRSF center	34.0
71	1.03E-07	0.0521	1.09E-07	9.52E-04	Average, at ring 2009: 450 m from IRSF center	37.1
72	3.38E-08	0.0734	3.63E-08	3.18E-04	Average, at ring 2010: 550 m from IRSF center	36.7
73	1.27E-08	0.1707	1.49E-08	1.31E-04	Average, at ring 2011: 650 m from IRSF center	32.2
74	4.65E-09	0.1530	5.36E-09	4.70E-05	Average, at ring 2012: 750 m from IRSF center	32.2
75	8.02E-10	0.2502	1.00E-09	8.79E-06	Average, at ring 2013: 850 m from IRSF center	67.4
76						
77	**Vertical Detectors toward South w/out HVAC effects: detector f52 - results from sbtr.o**					
78	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description	B.E.
79	(Rem/hr)		(Rem/hr)	(Rem/year)		
80	1.14E-05	0.0217	1.17E-05	1.02E-01	Average, at ring 2003: 100 m from IRSF center	35.8
81	4.75E-06	0.0317	4.90E-06	4.29E-02	Average, at ring 2004: 150 m from IRSF center	33.0
82	2.09E-06	0.0261	2.14E-06	1.88E-02	Average, at ring 2005: 200 m from IRSF center	34.5
83	1.02E-06	0.0300	1.05E-06	9.19E-03	Average, at ring 2006: 250 m from IRSF center	34.9
84	4.83E-07	0.0399	5.02E-07	4.40E-03	Average, at ring 2007: 300 m from IRSF center	36.9
85	2.08E-07	0.0986	2.29E-07	2.01E-03	Average, at ring 2008: 375 m from IRSF center	34.0
86	7.82E-08	0.0714	8.38E-08	7.35E-04	Average, at ring 2009: 450 m from IRSF center	39.0
87	2.27E-08	0.1002	2.50E-08	2.19E-04	Average, at ring 2010: 550 m from IRSF center	39.7
88	6.58E-09	0.1206	7.37E-09	6.46E-05	Average, at ring 2011: 650 m from IRSF center	48.7
89	4.43E-09	0.3952	6.18E-09	5.42E-05	Average, at ring 2012: 750 m from IRSF center	24.3
90	9.14E-10	0.2432	1.14E-09	9.96E-06	Average, at ring 2013: 850 m from IRSF center	36.1
91						
92	**Dose above HICs: detector f62 - results from sbnc.o**					
93	MCNP Output	MCNP Error	Dose Rate	Dose Rate		B.E.
94	(Rem/hr)		(Rem/hr)	(Rem/year)		
95	1.56E+00	0.0021	1.57E+00	1.37E+04		31.3
96						

Excel Spreadsheet with MCNP Detector Results – Direct Dose Only

(no shield bells)

	A	B	C	D	E	F	G	H	I
1	**MCNP Evaluation of Direct Dose Through IRSF Wall (no sky shine)**								
2									
3	**Case: HICs without Shield Bells**								
4	Single HIC Source Term for 100 R/hr Contact								
31									
32	**Vertical Detectors toward North, w/ HVAC effects: detector f42 - results from NSBWT.o**								
33	**MCNP Output**	**MCNP Error**	**Dose Rate**	**Dose Rate**	**Detector Description**				
34	**(Rem/hr)**		**(Rem/hr)**	**(Rem/year)**					
35	2.55E-05	0.0126	2.58E-05	2.26E-01	Average, at ring 2003: 100 m from IRSF center				
36	8.14E-06	0.0170	8.28E-06	7.26E-02	Average, at ring 2004: 150 m from IRSF center				
37	3.26E-06	0.0211	3.33E-06	2.92E-02	Average, at ring 2005: 200 m from IRSF center				
38	1.50E-06	0.0240	1.53E-06	1.34E-02	Average, at ring 2006: 250 m from IRSF center				
39	7.59E-07	0.0281	7.80E-07	6.84E-03	Average, at ring 2007: 300 m from IRSF center				
40	3.01E-07	0.0346	3.11E-07	2.73E-03	Average, at ring 2008: 375 m from IRSF center				
41	1.32E-07	0.0474	1.38E-07	1.21E-03	Average, at ring 2009: 450 m from IRSF center				
42	3.92E-08	0.0713	4.20E-08	3.68E-04	Average, at ring 2010: 550 m from IRSF center				
43	1.66E-08	0.0981	1.83E-08	1.60E-04	Average, at ring 2011: 650 m from IRSF center				
44	6.12E-09	0.1540	7.06E-09	6.19E-05	Average, at ring 2012: 750 m from IRSF center				
45	2.80E-09	0.2078	3.38E-09	2.97E-05	Average, at ring 2013: 850 m from IRSF center				

Excel Spreadsheet with MCNP Detector Results – Direct Dose Only (with shield bells)

	A	B	C	D	E	F	G	H	I
1	**MCNP Evaluation of Direct Dose Through IRSF Wall (no sky shine)**								
2									
3	**Case: HICs with Shield Bells**								
4	Single HIC Source Term for 100 R/hr Contact								
31									
32	**Vertical Detectors toward North, w/ HVAC effects: detector f42 - results from SBSWt.o**								
33	**MCNP Output**	**MCNP Error**	**Dose Rate**	**Dose Rate**	**Detector Description**				
34	**(Rem/hr)**		**(Rem/hr)**	**(Rem/year)**					
35	1.17E-06	0.0397	1.22E-06	1.07E-02	Average, at ring 2003: 100 m from IRSF center				
36	3.57E-07	0.0470	3.74E-07	3.28E-03	Average, at ring 2004: 150 m from IRSF center				
37	1.44E-07	0.059	1.52E-07	1.34E-03	Average, at ring 2005: 200 m from IRSF center				
38	6.66E-08	0.0708	7.13E-08	6.25E-04	Average, at ring 2006: 250 m from IRSF center				
39	3.49E-08	0.0887	3.79E-08	3.33E-04	Average, at ring 2007: 300 m from IRSF center				
40	1.23E-08	0.0929	1.35E-08	1.18E-04	Average, at ring 2008: 375 m from IRSF center				
41	5.65E-09	0.1155	6.31E-09	5.53E-05	Average, at ring 2009: 450 m from IRSF center				
42	2.12E-09	0.1521	2.44E-09	2.14E-05	Average, at ring 2010: 550 m from IRSF center				
43	8.33E-10	0.2164	1.01E-09	8.88E-06	Average, at ring 2011: 650 m from IRSF center				
44	3.87E-10	0.2351	4.78E-10	4.19E-06	Average, at ring 2012: 750 m from IRSF center				
45	1.75E-10	0.3056	2.29E-10	2.01E-06	Average, at ring 2013: 850 m from IRSF center				

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Excel Spreadsheet with Comparison of Results to Onsite and Offsite Limits

(for no shield bell case)

Dose vs. Distance for Filled Bare HICs with 25 R/hr Average Contact for 40CFR190 Compliance Evaluation

distance (meters)	Side w/ HVAC Rem/hr	Side w/out HVAC Rem/hr	distance (meters)	Ring Detector around IRSF Rem/hr
100	1.65E-04	1.05E-04	125	5.50E-05
150	6.05E-05	4.04E-05	175	2.53E-05
200	2.59E-05	1.85E-05	225	1.15E-05
250	1.24E-05	9.16E-06	275	5.58E-06
300	6.52E-06	4.64E-06	337.5	2.49E-06
375	2.53E-06	1.95E-06	412.5	9.91E-07
450	1.01E-06	8.17E-07	500	3.66E-07
550	3.33E-07	2.48E-07	600	1.21E-07
650	1.20E-07	8.97E-08	700	4.27E-08
750	**4.32E-08**	**3.76E-08**	**800**	**1.51E-08**
850	**1.69E-08**	**1.03E-08**		

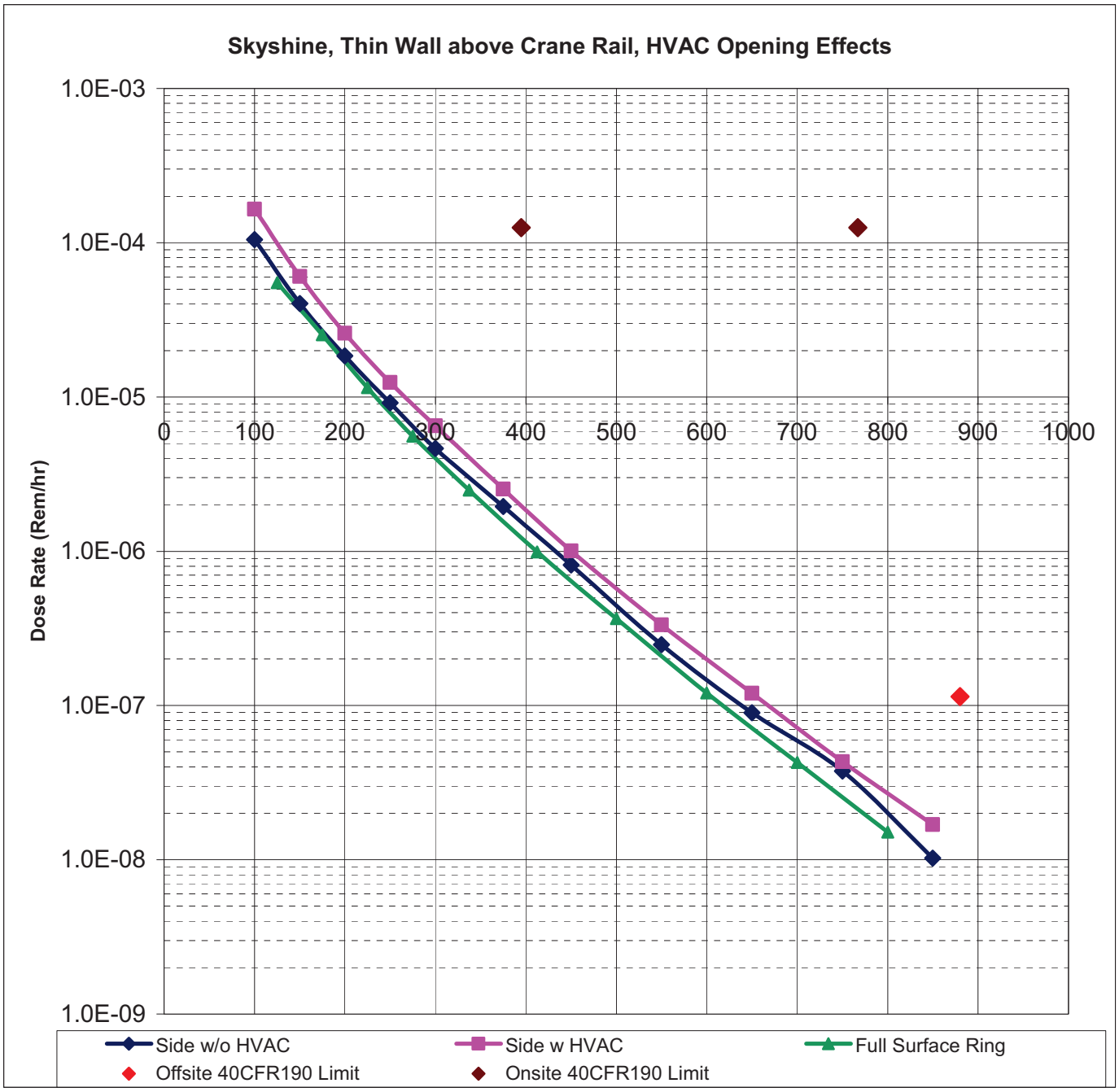
Dose Limit applicable to bounding La Salle nearest resident		Dose Limit applicable to bounding La Salle onsite 40CFR190 receptors (with occupancy credit)		
distance (meters)	limit (Rem/hr) at 1mR/yr	distance (meters)	Occupancy (hr/yr)	limit (Rem/hr) at 2.5 mR/yr
880	**1.14E-07**	**395**	**20**	**1.25E-04**
		767	**20**	**1.25E-04**

Observations:

1. (No HVAC) side dose rates slightly higher than ring average because this detector extended well up into the air for particle collection

2. **In any case, the limit value (nearest resident, continuous occupancy) is clearly met if the dose rates in the building vicinity is maintained at or below 1 mR/hr by controlling average contact dose rates.**

Graph with Comparison of Results to Onsite and Offsite Limits
(for no shield bell case)



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Excel Spreadsheet with MCNP Detector Results

Hexagonal HIC Geometry and I-Beams

	A	B	C	D	E	F	G	H	I
1	**MCNP Evaluation of Skyshine (and thin wall to ground scatter) from IRSF**								
2									
3	**Case: HICs without Shield Bells - Hexagonal Arrangement w/ I-Beams**								
4	Single HIC Source Term for 100 R/hr Contact								
5									
6	1.07 factor to adjust number of positions from rectangular to hexagonal arrangement								
7									
8	**Truck Bay Dose Rate: detector f2 - results from IBEN.o**								
9	MCNP Output	MCNP Error	Dose Rate	Dose Rate					
10	(Rem/hr)		(mRem/hr)	(mRem/year)					
11	1.55E-01	0.0057	1.67E+02	1.46E+06					
12									
13	**Rings Outside Building: detector f12 - results from IBEN.o**								
14	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description				
15	(Rem/hr)		(Rem/hr)	(Rem/year)	(distance from IRSF center)				
16	1.24E-03	0.0069	1.34E-03	1.17E+01	Average in ring between 28.5 and 40 meters				
17	7.81E-04	0.0052	8.41E-04	7.37E+00	Average in ring between 40 and 70 meters				
18	3.87E-04	0.0054	4.17E-04	3.65E+00	Average in ring between 70 and 100 meters				
19	1.80E-04	0.0047	1.93E-04	1.70E+00	Average in ring between 100 and 150 meters				
20	8.30E-05	0.0066	8.95E-05	7.84E-01	Average in ring between 150 and 200 meters				
21	3.83E-05	0.0082	4.14E-05	3.63E-01	Average in ring between 200 and 250 meters				
22	1.86E-05	0.0060	2.01E-05	1.76E-01	Average in ring between 250 and 300 meters				
23	8.31E-06	0.0054	8.95E-06	7.85E-02	Average in ring between 300 and 375 meters				
24	3.31E-06	0.0058	3.57E-06	3.13E-02	Average in ring between 375 and 450 meters				
25	1.22E-06	0.0061	1.32E-06	1.15E-02	Average in ring between 450 and 550 meters				
26	4.16E-07	0.0192	4.54E-07	3.98E-03	Average in ring between 550 and 650 meters				
27	1.42E-07	0.0094	1.54E-07	1.35E-03	Average in ring between 650 and 750 meters				
28	**5.15E-08**	**0.0120**	**5.59E-08**	**4.90E-04**	**Average in ring between 750 and 850 meters**				
29	2.27E-08	0.1403	2.77E-08	2.43E-04	Average in ring between 850 and 950 meters				
30	4.22E-09	0.0150	4.59E-09	4.02E-05	Average in ring between 950 and 1200 meters				
31									
32	**Slabs Adjacent to Ventilation Penetration Side: detector f22 - results from IBEN.o**								
33	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description				
34	(Rem/hr)		(Rem/hr)	(Rem/year)					
35	8.52E-04	0.0425	9.52E-04	8.34E+00	Average, at 0 to 2 meters from wall				
36	1.22E-03	0.0337	1.35E-03	1.18E+01	Average, at 2 to 4 meters from wall				
37	1.67E-03	0.0327	1.85E-03	1.62E+01	Average, at 4 to 6 meters from wall				
38	1.95E-03	0.0251	2.14E-03	1.88E+01	Average, at 6 to 8 meters from wall				
39	2.34E-03	0.0316	2.58E-03	2.26E+01	Average, at 8 to 10 meters from wall				
40	2.82E-03	0.0369	3.13E-03	2.74E+01	Average, at 10 to 12 meters from wall				
41	2.94E-03	0.0331	3.26E-03	2.86E+01	Average, at 12 to 14 meters from wall				
42	3.05E-03	0.0369	3.39E-03	2.97E+01	Average, at 14 to 16 meters from wall				
43	2.81E-03	0.0227	3.08E-03	2.70E+01	Average, at 16 to 18 meters from wall				
44	**3.10E-03**	**0.0396**	**3.46E-03**	**3.03E+01**	**Average, at 18 to 20 meters from wall**				
45	2.66E-03	0.0245	2.92E-03	2.56E+01	Average, at 20 to 22 meters from wall				
46	2.85E-03	0.0520	3.22E-03	2.82E+01	Average, at 22 to 24 meters from wall				
47	2.57E-03	0.0348	2.85E-03	2.50E+01	Average, at 24 to 26 meters from wall				
48	2.40E-03	0.0396	2.67E-03	2.34E+01	Average, at 26 to 28 meters from wall				
49	2.31E-03	0.0379	2.57E-03	2.25E+01	Average, at 28 to 30 meters from wall				
50	2.18E-03	0.0424	2.43E-03	2.13E+01	Average, at 30 to 32 meters from wall				
51	2.14E-03	0.0603	2.43E-03	2.13E+01	Average, at 32 to 34 meters from wall				
52	1.88E-03	0.0405	2.09E-03	1.83E+01	Average, at 34 to 36 meters from wall				
53									
54	**Dose Rate on Vent Side Wall 7ft Above Ground: detector f32 - results from IBEN.o**								
55	MCNP Output	MCNP Error	Dose Rate	Dose Rate					
56	(Rem/hr)		(Rem/hr)	(Rem/year)					
57	7.83E-04	0.0389	8.71E-04	7.64E+00					
58									

	A	B	C	D	E	F	G	H	I
59	**Vertical Detectors toward North, w/ HVAC effects: detector f42 - results from IBEN.o**								
60	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description				
61	(Rem/hr)		(Rem/hr)	(Rem/year)					
62	5.46E-04	0.0158	5.94E-04	5.21E+00	Average, at ring 2003: 100 m from IRSF center				
63	1.99E-04	0.0191	2.18E-04	1.91E+00	Average, at ring 2004: 150 m from IRSF center				
64	8.44E-05	0.0165	9.20E-05	8.06E-01	Average, at ring 2005: 200 m from IRSF center				
65	4.05E-05	0.0191	4.42E-05	3.88E-01	Average, at ring 2006: 250 m from IRSF center				
66	2.03E-05	0.0216	2.22E-05	1.95E-01	Average, at ring 2007: 300 m from IRSF center				
67	7.94E-06	0.0260	8.72E-06	7.65E-02	Average, at ring 2008: 375 m from IRSF center				
68	3.24E-06	0.0403	3.61E-06	3.17E-02	Average, at ring 2009: 450 m from IRSF center				
69	1.14E-06	0.0570	1.30E-06	1.14E-02	Average, at ring 2010: 550 m from IRSF center				
70	3.75E-07	0.0495	4.21E-07	3.69E-03	Average, at ring 2011: 650 m from IRSF center				
71	1.38E-07	0.0667	1.58E-07	1.38E-03	Average, at ring 2012: 750 m from IRSF center				
72	5.54E-08	0.1441	6.79E-08	5.95E-04	Average, at ring 2013: 850 m from IRSF center				
73									
74	**Vertical Detectors toward South w/out HVAC effects: detector f52 - results from IBEN.o**								
75	MCNP Output	MCNP Error	Dose Rate	Dose Rate	Detector Description				
76	(Rem/hr)		(Rem/hr)	(Rem/year)					
77	3.47E-04	0.0133	3.77E-04	3.30E+00	Average, at ring 2003: 100 m from IRSF center				
78	1.32E-04	0.0138	1.43E-04	1.26E+00	Average, at ring 2004: 150 m from IRSF center				
79	6.41E-05	0.0205	7.01E-05	6.15E-01	Average, at ring 2005: 200 m from IRSF center				
80	2.98E-05	0.0210	3.26E-05	2.85E-01	Average, at ring 2006: 250 m from IRSF center				
81	1.58E-05	0.0284	1.75E-05	1.53E-01	Average, at ring 2007: 300 m from IRSF center				
82	5.98E-06	0.0371	6.65E-06	5.83E-02	Average, at ring 2008: 375 m from IRSF center				
83	2.42E-06	0.0463	2.71E-06	2.37E-02	Average, at ring 2009: 450 m from IRSF center				
84	7.98E-07	0.0568	9.04E-07	7.92E-03	Average, at ring 2010: 550 m from IRSF center				
85	2.77E-07	0.0845	3.21E-07	2.82E-03	Average, at ring 2011: 650 m from IRSF center				
86	9.68E-08	0.1034	1.14E-07	1.00E-03	Average, at ring 2012: 750 m from IRSF center				
87	3.84E-08	0.1695	4.81E-08	4.22E-04	Average, at ring 2013: 850 m from IRSF center				
88									
89	**Dose above HICs: detector f62 - results from IBEN.o**								
90	MCNP Output	MCNP Error	Dose Rate	Dose Rate					
91	(Rem/hr)		(Rem/hr)	(Rem/year)					
92	4.55E+01	0.0012	4.88E+01	4.28E+05					
93									

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Onsite and Offsite Dose Rates at Occupied Areas

(Hexagonal, 135-Position, HIC Configuration)

Nuclear Station	Location of Occupied Areas Outside the Restricted Areas Situated Closest to the IRSF	Approximate Distance from Center of IRSF to Occupied Area (meters)	Estimated Occupancy (hours/year)	Annual Dose (mrem)	Container Basis For Skyshine	Derivation from MCNP Analyses
LaSalle	Nearest Residence	880	8766	0.30	LaSalle Limited to 50 R/hr Average Upwardly Facing HIC Contact Dose Rate	Dose rate at 850m vertical detector conservatively used, HVAC side, adjusted from 100 R/hr
	Restricted area boundary fence nearest to the IRSF (i.e., to the west of LaSalle IFSF)	395	20	0.08		Interpolated 395m dose rate from HVAC side, vertical detector results for 375m and 450m, adjusted from 100 R/hr
	Gate House	767	20	0.002		Interpolated 767m dose rate from HVAC side, vertical detector results, adjusted from 100 R/hr

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MCNP Case to Translate the Source Without Shield Bells

(No concrete floor)

```
         Thread Name & Version = mcnp5VE_RSICC, 1.40

         ._ _    _   ._   ._   |_
         |_|_|  (_   |_|  |_)   _)
                         |
 +-------------------------------------------------------------------+
 |   This program was prepared by the Regents of the University of    |
 |California at Los Alamos National Laboratory (the University) under |
 |  contract number W-7405-ENG-36 with the U.S. Department of Energy  |
 |(DoE).  The University has certain rights in the program pursuant to|
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 | University makes any warranty, express or implied, or assumes any  |
 |     liability or responsibility for the use of this software.      |
 +-------------------------------------------------------------------+

1mcnp     version 5     ld=11112005                    03/18/09 19:23:01
 ************************************************************************                probid =  03/18/09
19:23:01
  inp = NSBNC.i outp = NSBNC.o

    1-       c     Created on: Tuesday, November 11, 2008 at 09:35
    2-       c     Canister Cells
    3-          11     5      -1 -11 1209 -1212
    4-          12     5      -1 -12 1209 -1212
    5-          13     5      -1 -13 1209 -1212
    6-          14     5      -1 -14 1209 -1212
    7-          15     5      -1 -15 1209 -1212
    8-          16     5      -1 -16 1209 -1212
    9-          17     5      -1 -17 1209 -1212
   10-          18     5      -1 -18 1209 -1212
   11-          19     5      -1 -19 1209 -1212
   12-          21     5      -1 -21 1209 -1212
   13-          22     5      -1 -22 1209 -1212
   14-          23     5      -1 -23 1209 -1212
   15-          24     5      -1 -24 1209 -1212
   16-          25     5      -1 -25 1209 -1212
   17-          26     5      -1 -26 1209 -1212
   18-          27     5      -1 -27 1209 -1212
   19-          28     5      -1 -28 1209 -1212
   20-          29     5      -1 -29 1209 -1212
   21-          31     5      -1 -31 1209 -1212
   22-          32     5      -1 -32 1209 -1212
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   27-          37     5      -1 -37 1209 -1212
   28-          38     5      -1 -38 1209 -1212
   29-          39     5      -1 -39 1209 -1212
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   37-          48     5      -1 -48 1209 -1212
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   45-          57     5      -1 -57 1209 -1212
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   47-          59     5      -1 -59 1209 -1212
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   49-          62     5      -1 -62 1209 -1212
   50-          63     5      -1 -63 1209 -1212
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117-         137      5       -1 -137 1209 -1212
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122-         143      5       -1 -143 1209 -1212
123-         144      5       -1 -144 1209 -1212
124-         145      5       -1 -145 1209 -1212
125-         146      5       -1 -146 1209 -1212
126-         147      5       -1 -147 1209 -1212
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128-         149      5       -1 -149 1209 -1212
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  213     3 -0.001225 -213 1209 -1213 #13
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  215     3 -0.001225 -215 1209 -1213 #15
  216     3 -0.001225 -216 1209 -1213 #16
  217     3 -0.001225 -217 1209 -1213 #17
  218     3 -0.001225 -218 1209 -1213 #18
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  221     3 -0.001225 -221 1209 -1213 #21
  222     3 -0.001225 -222 1209 -1213 #22
  223     3 -0.001225 -223 1209 -1213 #23
  224     3 -0.001225 -224 1209 -1213 #24
  225     3 -0.001225 -225 1209 -1213 #25
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  228     3 -0.001225 -228 1209 -1213 #28
  229     3 -0.001225 -229 1209 -1213 #29
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  233     3 -0.001225 -233 1209 -1213 #33
  234     3 -0.001225 -234 1209 -1213 #34
  235     3 -0.001225 -235 1209 -1213 #35
  236     3 -0.001225 -236 1209 -1213 #36
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```

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```

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376-         543     3 -0.001225 -543 1209 -1214 #343 #143
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378-         545     3 -0.001225 -545 1209 -1214 #345 #145
379-         546     3 -0.001225 -546 1209 -1214 #346 #146
380-         547     3 -0.001225 -547 1209 -1214 #347 #147
381-         548     3 -0.001225 -548 1209 -1214 #348 #148
382-         549     3 -0.001225 -549 1209 -1214 #349 #149
383-       c Walls
384-        1200     3 -0.001225 1222 -1221 1206 -1208 1220 -1219  $Notch
385-        1201     1   -2.365 1206 -1208 1202 -1203 -1219 1209 #1200  $Inner Wall
386-        1202     1   -2.365 1207 -1233 1219 -1215 -1225 1226  $Top of Back Wall
387-       12021     1   -2.365 1233 -1223 1219 -1215 1226 -1225  $Split in Back Wall
388-        1203     1   -2.365 1207 -1205 -1219 1209 -1203 1202  $Bottom of Back Wall
389-        1204     1   -2.365 1225 -1234 1207 -1218 1219 -1215  $Top Of Right Wall
390-       12041     1   -2.365 1234 -1204 1207 -1218 1219 -1215  $Split in Right Wall
391-        1205     1   -2.365 1203 -1204 1207 -1218 -1219 1209  $Bottom of Right Wall
392-        1206     1   -2.365 1235 -1218 -1225 1226 1219 -1215  $Top of Front Wall
393-       12061     1   -2.365 1224 -1235 -1225 1226 1219 -1215  $Split in Front Wall
394-        1207     1   -2.365 1217 -1218 -1203 1202 -1219 1209  $Bottom of Front Wall
395-        1208     1   -2.365 1201 -1236 -1218 1207 1219 -1215 #10000 $Top of Left Wall
396-                    #10001 #10002 #10003 #10004 #10005
397-       12081     1   -2.365 -1226 1236 -1218 1207 1219 -1215 #10000 $Split in Left Wall
398-                    #10001 #10002 #10003 #10004 #10005
399-        1209     1   -2.365 -1202 1201 -1218 1207 -1219 1209  $Bottom of Left Wall
400-        1210     1   -2.365 -1209 1227 1207 -1218 -1204 1201  $Floor
401-        1211     1   -2.328 1215 -1237 1207 -1218 -1204 1201  $Roof
402-       12111     1   -2.328 1237 -1216 1207 -1218 -1204 1201  $Split in Roof
403-       c   Air
404-        9999     0         2015  $Outside Model
405-        9998     3 -0.001225 1205 -1228 -1220 1209 -1203 1202 #(-416 1209 -1214 )#
406-                   (-417 1209 -1214 )#(-418 1209 -1214 )#(-419 1209 -1214 )#
407-                   (-421 1209 -1214 )#(-422 1209 -1214 )#(-423 1209 -1214 )#
408-                   (-424 1209 -1214 )#(-425 1209 -1214 )#(-426 1209 -1214 )#
409-                   (-427 1209 -1214 )#(-428 1209 -1214 )#(-429 1209 -1214 )#
410-                   (-431 1209 -1214 )#(-432 1209 -1214 )#(-433 1209 -1214 )#
411-                   (-434 1209 -1214 )#(-435 1209 -1214 )#(-436 1209 -1214 )#
412-                   (-437 1209 -1214 )#(-438 1209 -1214 )#(-439 1209 -1214 )#
413-                   (-441 1209 -1214 )#(-442 1209 -1214 )#(-443 1209 -1214 )#
414-                   (-444 1209 -1214 )#(-445 1209 -1214 )#(-446 1209 -1214 )#
415-                   (-447 1209 -1214 )#(-448 1209 -1214 )#(-449 1209 -1214 )#
416-                   (-451 1209 -1214 )#(-452 1209 -1214 )#(-453 1209 -1214 )#
417-                   (-454 1209 -1214 )#(-455 1209 -1214 )#(-456 1209 -1214 )#
418-                   (-457 1209 -1214 )#(-458 1209 -1214 )#(-459 1209 -1214 )#
419-                   (-411 1209 -1214 )#(-412 1209 -1214 )#(-413 1209 -1214 )#
420-                   (-414 1209 -1214 )#(-415 1209 -1214 )
421-        9997     3 -0.001225 1228 -1229 -1220 1209 -1203 1202 #(-468 1209 -1214 )#
422-                   (-469 1209 -1214 )#(-471 1209 -1214 )#(-472 1209 -1214 )#
423-                   (-473 1209 -1214 )#(-474 1209 -1214 )#(-475 1209 -1214 )#
424-                   (-476 1209 -1214 )#(-477 1209 -1214 )#(-478 1209 -1214 )#
425-                   (-479 1209 -1214 )#(-481 1209 -1214 )#(-482 1209 -1214 )#
426-                   (-483 1209 -1214 )#(-484 1209 -1214 )#(-485 1209 -1214 )#
427-                   (-486 1209 -1214 )#(-487 1209 -1214 )#(-488 1209 -1214 )#
428-                   (-489 1209 -1214 )#(-491 1209 -1214 )#(-492 1209 -1214 )#
429-                   (-493 1209 -1214 )#(-494 1209 -1214 )#(-495 1209 -1214 )#
430-                   (-496 1209 -1214 )#(-497 1209 -1214 )#(-498 1209 -1214 )#
431-                   (-499 1209 -1214 )#(-501 1209 -1214 )#(-502 1209 -1214 )#
432-                   (-503 1209 -1214 )#(-504 1209 -1214 )#(-505 1209 -1214 )#
433-                   (-506 1209 -1214 )#(-507 1209 -1214 )#(-508 1209 -1214 )#
434-                   (-509 1209 -1214 )#(-461 1209 -1214 )#(-462 1209 -1214 )#
435-                   (-463 1209 -1214 )#(-464 1209 -1214 )#(-465 1209 -1214 )#
436-                   (-466 1209 -1214 )#(-467 1209 -1214 )
437-        9996     3 -0.001225 1229 -1206 -1220 1209 -1203 1202 #(-519 1209 -1214 )#
438-                   (-521 1209 -1214 )#(-522 1209 -1214 )#(-523 1209 -1214 )#
439-                   (-524 1209 -1214 )#(-525 1209 -1214 )#(-526 1209 -1214 )#
440-                   (-527 1209 -1214 )#(-528 1209 -1214 )#(-529 1209 -1214 )#
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441-                  (-531 1209 -1214 )#(-532 1209 -1214 )#(-533 1209 -1214 )#
442-                  (-534 1209 -1214 )#(-535 1209 -1214 )#(-536 1209 -1214 )#
443-                  (-537 1209 -1214 )#(-538 1209 -1214 )#(-539 1209 -1214 )#
444-                  (-541 1209 -1214 )#(-542 1209 -1214 )#(-543 1209 -1214 )#
445-                  (-544 1209 -1214 )#(-545 1209 -1214 )#(-546 1209 -1214 )#
446-                  (-547 1209 -1214 )#(-548 1209 -1214 )#(-549 1209 -1214 )#
447-                  (-511 1209 -1214 )#(-512 1209 -1214 )#(-513 1209 -1214 )#
448-                  (-514 1209 -1214 )#(-515 1209 -1214 )#(-516 1209 -1214 )#
449-                  (-517 1209 -1214 )#(-518 1209 -1214 )
450-        9995     3 -0.001225 1220 -1219 1205 -1206 -1203 1202  $Notch Air Side A
451-        9994     3 -0.001225 -1215 1219 1223 -1208 -1225 1226  $Air Above Crane Rail
452-        9993     3 -0.001225 1209 -1231 1208 -1217 -1203 1202  $Bottom Air Side B
453-        9992     3 -0.001225 -1230 1231 1208 -1217 -1203 1202  $Air Up to Shield Side B
454-        9991     3 -0.001225 -1220 1230 1208 -1217 -1203 1202  $Truck Bay Shield
455-        9990     3 -0.001225 1220 -1219 1208 -1217 -1203 1202  $Notch Air Side B
456-        9989     3 -0.001225 -1215 1219 1208 -1224 -1225 1226  $Notch Air Side B
457-        9988     3 -0.001225 (-2000 -1207 1201 -1204 1227 -1216 ):
458-                  (1218 -2000 1201 -1204 1227 -1216 ):(-2000 -1201 1227 -1216 ):
459-                  (1204 -2000 1227 -1216 ):(1216 -2000 )
460-        9987     0          -1232 -2015  $Bottom Void
461-        9986     3 -0.001225 1232 -1227 -2015  $6 in Ground Air
462-       c      Ductwork Penetrations
463-       10000     3 -0.001225 12441 -12451 12321 -12331 1201 -1226
464-       10001     3 -0.001225 12441 -12451 12341 -12351 1201 -1226
465-       10002     3 -0.001225 12461 -12471 12361 -12371 1201 -1226
466-       10003     3 -0.001225 12441 -12451 12381 -12391 1201 -1226
467-       10004     3 -0.001225 12401 -12411 12441 -12451 1201 -1226
468-       10005     3 -0.001225 12441 -12451 12421 -12431 1201 -1226
469-       c Sphere Detector Cells
470-        2001     3 -0.001225 2000 -2001 1227
471-        2002     3 -0.001225 2001 -2002 1227
472-        2003     3 -0.001225 -2003 2002 1227
473-        2004     3 -0.001225 2003 -2004 1227
474-        2005     3 -0.001225 2004 -2005 1227
475-        2006     3 -0.001225 2005 -2006 1227
476-        2007     3 -0.001225 2006 -2007 1227
477-        2008     3 -0.001225 2007 -2008 1227
478-        2009     3 -0.001225 2008 -2009 1227
479-        2010     3 -0.001225 2009 -2010 1227
480-        2011     3 -0.001225 2010 -2011 1227
481-        2012     3 -0.001225 2011 -2012 1227
482-        2013     3 -0.001225 2012 -2013 1227
483-        2014     3 -0.001225 2013 -2014 1227
484-        2015     3 -0.001225 2014 -2015 1227
485-
486-       c     Source Canisters
487-          11       c/z 198.12 121.92 77.47
488-          12       c/z 198.12 320.04 77.47
489-          13       c/z 198.12 518.16 77.47
490-          14       c/z 198.12 716.28 77.47
491-          15       c/z 198.12 914.4 77.47
492-          16       c/z 198.12 1112.52 77.47
493-          17       c/z 198.12 1310.64 77.47
494-          18       c/z 198.12 1508.76 77.47
495-          19       c/z 198.12 1706.88 77.47
496-          21       c/z 396.24 121.92 77.47
497-          22       c/z 396.24 320.04 77.47
498-          23       c/z 396.24 518.16 77.47
499-          24       c/z 396.24 716.28 77.47
500-          25       c/z 396.24 914.4 77.47
501-          26       c/z 396.24 1112.52 77.47
502-          27       c/z 396.24 1310.64 77.47
503-          28       c/z 396.24 1508.76 77.47
504-          29       c/z 396.24 1706.88 77.47
505-          31       c/z 594.36 121.92 77.47
506-          32       c/z 594.36 320.04 77.47
507-          33       c/z 594.36 518.16 77.47
508-          34       c/z 594.36 716.28 77.47
509-          35       c/z 594.36 914.4 77.47
510-          36       c/z 594.36 1112.52 77.47
511-          37       c/z 594.36 1310.64 77.47
512-          38       c/z 594.36 1508.76 77.47
513-          39       c/z 594.36 1706.88 77.47
514-          41       c/z 792.48 121.92 77.47
515-          42       c/z 792.48 320.04 77.47
516-          43       c/z 792.48 518.16 77.47
517-          44       c/z 792.48 716.28 77.47
518-          45       c/z 792.48 914.4 77.47
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519-          46       c/z 792.48 1112.52 77.47
520-          47       c/z 792.48 1310.64 77.47
521-          48       c/z 792.48 1508.76 77.47
522-          49       c/z 792.48 1706.88 77.47
523-          51       c/z 990.6 121.92 77.47
524-          52       c/z 990.6 320.04 77.47
525-          53       c/z 990.6 518.16 77.47
526-          54       c/z 990.6 716.28 77.47
527-          55       c/z 990.6 914.4 77.47
528-          56       c/z 990.6 1112.52 77.47
529-          57       c/z 990.6 1310.64 77.47
530-          58       c/z 990.6 1508.76 77.47
531-          59       c/z 990.6 1706.88 77.47
532-          61       c/z 1188.72 121.92 77.47
533-          62       c/z 1188.72 320.04 77.47
534-          63       c/z 1188.72 518.16 77.47
535-          64       c/z 1188.72 716.28 77.47
536-          65       c/z 1188.72 914.4 77.47
537-          66       c/z 1188.72 1112.52 77.47
538-          67       c/z 1188.72 1310.64 77.47
539-          68       c/z 1188.72 1508.76 77.47
540-          69       c/z 1188.72 1706.88 77.47
541-          71       c/z 1386.84 121.92 77.47
542-          72       c/z 1386.84 320.04 77.47
543-          73       c/z 1386.84 518.16 77.47
544-          74       c/z 1386.84 716.28 77.47
545-          75       c/z 1386.84 914.4 77.47
546-          76       c/z 1386.84 1112.52 77.47
547-          77       c/z 1386.84 1310.64 77.47
548-          78       c/z 1386.84 1508.76 77.47
549-          79       c/z 1386.84 1706.88 77.47
550-          81       c/z 1584.96 121.92 77.47
551-          82       c/z 1584.96 320.04 77.47
552-          83       c/z 1584.96 518.16 77.47
553-          84       c/z 1584.96 716.28 77.47
554-          85       c/z 1584.96 914.4 77.47
555-          86       c/z 1584.96 1112.52 77.47
556-          87       c/z 1584.96 1310.64 77.47
557-          88       c/z 1584.96 1508.76 77.47
558-          89       c/z 1584.96 1706.88 77.47
559-          91       c/z 1783.08 121.92 77.47
560-          92       c/z 1783.08 320.04 77.47
561-          93       c/z 1783.08 518.16 77.47
562-          94       c/z 1783.08 716.28 77.47
563-          95       c/z 1783.08 914.4 77.47
564-          96       c/z 1783.08 1112.52 77.47
565-          97       c/z 1783.08 1310.64 77.47
566-          98       c/z 1783.08 1508.76 77.47
567-          99       c/z 1783.08 1706.88 77.47
568-         101       c/z 1981.2 121.92 77.47
569-         102       c/z 1981.2 320.04 77.47
570-         103       c/z 1981.2 518.16 77.47
571-         104       c/z 1981.2 716.28 77.47
572-         105       c/z 1981.2 914.4 77.47
573-         106       c/z 1981.2 1112.52 77.47
574-         107       c/z 1981.2 1310.64 77.47
575-         108       c/z 1981.2 1508.76 77.47
576-         109       c/z 1981.2 1706.88 77.47
577-         111       c/z 2179.32 121.92 77.47
578-         112       c/z 2179.32 320.04 77.47
579-         113       c/z 2179.32 518.16 77.47
580-         114       c/z 2179.32 716.28 77.47
581-         115       c/z 2179.32 914.4 77.47
582-         116       c/z 2179.32 1112.52 77.47
583-         117       c/z 2179.32 1310.64 77.47
584-         118       c/z 2179.32 1508.76 77.47
585-         119       c/z 2179.32 1706.88 77.47
586-         121       c/z 2377.44 121.92 77.47
587-         122       c/z 2377.44 320.04 77.47
588-         123       c/z 2377.44 518.16 77.47
589-         124       c/z 2377.44 716.28 77.47
590-         125       c/z 2377.44 914.4 77.47
591-         126       c/z 2377.44 1112.52 77.47
592-         127       c/z 2377.44 1310.64 77.47
593-         128       c/z 2377.44 1508.76 77.47
594-         129       c/z 2377.44 1706.88 77.47
595-         131       c/z 2575.56 121.92 77.47
596-         132       c/z 2575.56 320.04 77.47
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597-         133       c/z 2575.56 518.16 77.47
598-         134       c/z 2575.56 716.28 77.47
599-         135       c/z 2575.56 914.4 77.47
600-         136       c/z 2575.56 1112.52 77.47
601-         137       c/z 2575.56 1310.64 77.47
602-         138       c/z 2575.56 1508.76 77.47
603-         139       c/z 2575.56 1706.88 77.47
604-         141       c/z 2773.68 121.92 77.47
605-         142       c/z 2773.68 320.04 77.47
606-         143       c/z 2773.68 518.16 77.47
607-         144       c/z 2773.68 716.28 77.47
608-         145       c/z 2773.68 914.4 77.47
609-         146       c/z 2773.68 1112.52 77.47
610-         147       c/z 2773.68 1310.64 77.47
611-         148       c/z 2773.68 1508.76 77.47
612-         149       c/z 2773.68 1706.88 77.47
613-       c     Inside of Shield Bell
614-         211       c/z 198.12 121.92 86.36
615-         212       c/z 198.12 320.04 86.36
616-         213       c/z 198.12 518.16 86.36
617-         214       c/z 198.12 716.28 86.36
618-         215       c/z 198.12 914.4 86.36
619-         216       c/z 198.12 1112.52 86.36
620-         217       c/z 198.12 1310.64 86.36
621-         218       c/z 198.12 1508.76 86.36
622-         219       c/z 198.12 1706.88 86.36
623-         221       c/z 396.24 121.92 86.36
624-         222       c/z 396.24 320.04 86.36
625-         223       c/z 396.24 518.16 86.36
626-         224       c/z 396.24 716.28 86.36
627-         225       c/z 396.24 914.4 86.36
628-         226       c/z 396.24 1112.52 86.36
629-         227       c/z 396.24 1310.64 86.36
630-         228       c/z 396.24 1508.76 86.36
631-         229       c/z 396.24 1706.88 86.36
632-         231       c/z 594.36 121.92 86.36
633-         232       c/z 594.36 320.04 86.36
634-         233       c/z 594.36 518.16 86.36
635-         234       c/z 594.36 716.28 86.36
636-         235       c/z 594.36 914.4 86.36
637-         236       c/z 594.36 1112.52 86.36
638-         237       c/z 594.36 1310.64 86.36
639-         238       c/z 594.36 1508.76 86.36
640-         239       c/z 594.36 1706.88 86.36
641-         241       c/z 792.48 121.92 86.36
642-         242       c/z 792.48 320.04 86.36
643-         243       c/z 792.48 518.16 86.36
644-         244       c/z 792.48 716.28 86.36
645-         245       c/z 792.48 914.4 86.36
646-         246       c/z 792.48 1112.52 86.36
647-         247       c/z 792.48 1310.64 86.36
648-         248       c/z 792.48 1508.76 86.36
649-         249       c/z 792.48 1706.88 86.36
650-         251       c/z 990.6 121.92 86.36
651-         252       c/z 990.6 320.04 86.36
652-         253       c/z 990.6 518.16 86.36
653-         254       c/z 990.6 716.28 86.36
654-         255       c/z 990.6 914.4 86.36
655-         256       c/z 990.6 1112.52 86.36
656-         257       c/z 990.6 1310.64 86.36
657-         258       c/z 990.6 1508.76 86.36
658-         259       c/z 990.6 1706.88 86.36
659-         261       c/z 1188.72 121.92 86.36
660-         262       c/z 1188.72 320.04 86.36
661-         263       c/z 1188.72 518.16 86.36
662-         264       c/z 1188.72 716.28 86.36
663-         265       c/z 1188.72 914.4 86.36
664-         266       c/z 1188.72 1112.52 86.36
665-         267       c/z 1188.72 1310.64 86.36
666-         268       c/z 1188.72 1508.76 86.36
667-         269       c/z 1188.72 1706.88 86.36
668-         271       c/z 1386.84 121.92 86.36
669-         272       c/z 1386.84 320.04 86.36
670-         273       c/z 1386.84 518.16 86.36
671-         274       c/z 1386.84 716.28 86.36
672-         275       c/z 1386.84 914.4 86.36
673-         276       c/z 1386.84 1112.52 86.36
674-         277       c/z 1386.84 1310.64 86.36
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675-         278       c/z 1386.84 1508.76 86.36
676-         279       c/z 1386.84 1706.88 86.36
677-         281       c/z 1584.96 121.92 86.36
678-         282       c/z 1584.96 320.04 86.36
679-         283       c/z 1584.96 518.16 86.36
680-         284       c/z 1584.96 716.28 86.36
681-         285       c/z 1584.96 914.4 86.36
682-         286       c/z 1584.96 1112.52 86.36
683-         287       c/z 1584.96 1310.64 86.36
684-         288       c/z 1584.96 1508.76 86.36
685-         289       c/z 1584.96 1706.88 86.36
686-         291       c/z 1783.08 121.92 86.36
687-         292       c/z 1783.08 320.04 86.36
688-         293       c/z 1783.08 518.16 86.36
689-         294       c/z 1783.08 716.28 86.36
690-         295       c/z 1783.08 914.4 86.36
691-         296       c/z 1783.08 1112.52 86.36
692-         297       c/z 1783.08 1310.64 86.36
693-         298       c/z 1783.08 1508.76 86.36
694-         299       c/z 1783.08 1706.88 86.36
695-         301       c/z 1981.2 121.92 86.36
696-         302       c/z 1981.2 320.04 86.36
697-         303       c/z 1981.2 518.16 86.36
698-         304       c/z 1981.2 716.28 86.36
699-         305       c/z 1981.2 914.4 86.36
700-         306       c/z 1981.2 1112.52 86.36
701-         307       c/z 1981.2 1310.64 86.36
702-         308       c/z 1981.2 1508.76 86.36
703-         309       c/z 1981.2 1706.88 86.36
704-         311       c/z 2179.32 121.92 86.36
705-         312       c/z 2179.32 320.04 86.36
706-         313       c/z 2179.32 518.16 86.36
707-         314       c/z 2179.32 716.28 86.36
708-         315       c/z 2179.32 914.4 86.36
709-         316       c/z 2179.32 1112.52 86.36
710-         317       c/z 2179.32 1310.64 86.36
711-         318       c/z 2179.32 1508.76 86.36
712-         319       c/z 2179.32 1706.88 86.36
713-         321       c/z 2377.44 121.92 86.36
714-         322       c/z 2377.44 320.04 86.36
715-         323       c/z 2377.44 518.16 86.36
716-         324       c/z 2377.44 716.28 86.36
717-         325       c/z 2377.44 914.4 86.36
718-         326       c/z 2377.44 1112.52 86.36
719-         327       c/z 2377.44 1310.64 86.36
720-         328       c/z 2377.44 1508.76 86.36
721-         329       c/z 2377.44 1706.88 86.36
722-         331       c/z 2575.56 121.92 86.36
723-         332       c/z 2575.56 320.04 86.36
724-         333       c/z 2575.56 518.16 86.36
725-         334       c/z 2575.56 716.28 86.36
726-         335       c/z 2575.56 914.4 86.36
727-         336       c/z 2575.56 1112.52 86.36
728-         337       c/z 2575.56 1310.64 86.36
729-         338       c/z 2575.56 1508.76 86.36
730-         339       c/z 2575.56 1706.88 86.36
731-         341       c/z 2773.68 121.92 86.36
732-         342       c/z 2773.68 320.04 86.36
733-         343       c/z 2773.68 518.16 86.36
734-         344       c/z 2773.68 716.28 86.36
735-         345       c/z 2773.68 914.4 86.36
736-         346       c/z 2773.68 1112.52 86.36
737-         347       c/z 2773.68 1310.64 86.36
738-         348       c/z 2773.68 1508.76 86.36
739-         349       c/z 2773.68 1706.88 86.36
740-       c     Outside of Shield Bell
741-         411       c/z 198.12 121.92 92.71
742-         412       c/z 198.12 320.04 92.71
743-         413       c/z 198.12 518.16 92.71
744-         414       c/z 198.12 716.28 92.71
745-         415       c/z 198.12 914.4 92.71
746-         416       c/z 198.12 1112.52 92.71
747-         417       c/z 198.12 1310.64 92.71
748-         418       c/z 198.12 1508.76 92.71
749-         419       c/z 198.12 1706.88 92.71
750-         421       c/z 396.24 121.92 92.71
751-         422       c/z 396.24 320.04 92.71
752-         423       c/z 396.24 518.16 92.71
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753-         424       c/z 396.24 716.28 92.71
754-         425       c/z 396.24 914.4 92.71
755-         426       c/z 396.24 1112.52 92.71
756-         427       c/z 396.24 1310.64 92.71
757-         428       c/z 396.24 1508.76 92.71
758-         429       c/z 396.24 1706.88 92.71
759-         431       c/z 594.36 121.92 92.71
760-         432       c/z 594.36 320.04 92.71
761-         433       c/z 594.36 518.16 92.71
762-         434       c/z 594.36 716.28 92.71
763-         435       c/z 594.36 914.4 92.71
764-         436       c/z 594.36 1112.52 92.71
765-         437       c/z 594.36 1310.64 92.71
766-         438       c/z 594.36 1508.76 92.71
767-         439       c/z 594.36 1706.88 92.71
768-         441       c/z 792.48 121.92 92.71
769-         442       c/z 792.48 320.04 92.71
770-         443       c/z 792.48 518.16 92.71
771-         444       c/z 792.48 716.28 92.71
772-         445       c/z 792.48 914.4 92.71
773-         446       c/z 792.48 1112.52 92.71
774-         447       c/z 792.48 1310.64 92.71
775-         448       c/z 792.48 1508.76 92.71
776-         449       c/z 792.48 1706.88 92.71
777-         451       c/z 990.6 121.92 92.71
778-         452       c/z 990.6 320.04 92.71
779-         453       c/z 990.6 518.16 92.71
780-         454       c/z 990.6 716.28 92.71
781-         455       c/z 990.6 914.4 92.71
782-         456       c/z 990.6 1112.52 92.71
783-         457       c/z 990.6 1310.64 92.71
784-         458       c/z 990.6 1508.76 92.71
785-         459       c/z 990.6 1706.88 92.71
786-         461       c/z 1188.72 121.92 92.71
787-         462       c/z 1188.72 320.04 92.71
788-         463       c/z 1188.72 518.16 92.71
789-         464       c/z 1188.72 716.28 92.71
790-         465       c/z 1188.72 914.4 92.71
791-         466       c/z 1188.72 1112.52 92.71
792-         467       c/z 1188.72 1310.64 92.71
793-         468       c/z 1188.72 1508.76 92.71
794-         469       c/z 1188.72 1706.88 92.71
795-         471       c/z 1386.84 121.92 92.71
796-         472       c/z 1386.84 320.04 92.71
797-         473       c/z 1386.84 518.16 92.71
798-         474       c/z 1386.84 716.28 92.71
799-         475       c/z 1386.84 914.4 92.71
800-         476       c/z 1386.84 1112.52 92.71
801-         477       c/z 1386.84 1310.64 92.71
802-         478       c/z 1386.84 1508.76 92.71
803-         479       c/z 1386.84 1706.88 92.71
804-         481       c/z 1584.96 121.92 92.71
805-         482       c/z 1584.96 320.04 92.71
806-         483       c/z 1584.96 518.16 92.71
807-         484       c/z 1584.96 716.28 92.71
808-         485       c/z 1584.96 914.4 92.71
809-         486       c/z 1584.96 1112.52 92.71
810-         487       c/z 1584.96 1310.64 92.71
811-         488       c/z 1584.96 1508.76 92.71
812-         489       c/z 1584.96 1706.88 92.71
813-         491       c/z 1783.08 121.92 92.71
814-         492       c/z 1783.08 320.04 92.71
815-         493       c/z 1783.08 518.16 92.71
816-         494       c/z 1783.08 716.28 92.71
817-         495       c/z 1783.08 914.4 92.71
818-         496       c/z 1783.08 1112.52 92.71
819-         497       c/z 1783.08 1310.64 92.71
820-         498       c/z 1783.08 1508.76 92.71
821-         499       c/z 1783.08 1706.88 92.71
822-         501       c/z 1981.2 121.92 92.71
823-         502       c/z 1981.2 320.04 92.71
824-         503       c/z 1981.2 518.16 92.71
825-         504       c/z 1981.2 716.28 92.71
826-         505       c/z 1981.2 914.4 92.71
827-         506       c/z 1981.2 1112.52 92.71
828-         507       c/z 1981.2 1310.64 92.71
829-         508       c/z 1981.2 1508.76 92.71
830-         509       c/z 1981.2 1706.88 92.71
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831-         511       c/z 2179.32 121.92 92.71
832-         512       c/z 2179.32 320.04 92.71
833-         513       c/z 2179.32 518.16 92.71
834-         514       c/z 2179.32 716.28 92.71
835-         515       c/z 2179.32 914.4 92.71
836-         516       c/z 2179.32 1112.52 92.71
837-         517       c/z 2179.32 1310.64 92.71
838-         518       c/z 2179.32 1508.76 92.71
839-         519       c/z 2179.32 1706.88 92.71
840-         521       c/z 2377.44 121.92 92.71
841-         522       c/z 2377.44 320.04 92.71
842-         523       c/z 2377.44 518.16 92.71
843-         524       c/z 2377.44 716.28 92.71
844-         525       c/z 2377.44 914.4 92.71
845-         526       c/z 2377.44 1112.52 92.71
846-         527       c/z 2377.44 1310.64 92.71
847-         528       c/z 2377.44 1508.76 92.71
848-         529       c/z 2377.44 1706.88 92.71
849-         531       c/z 2575.56 121.92 92.71
850-         532       c/z 2575.56 320.04 92.71
851-         533       c/z 2575.56 518.16 92.71
852-         534       c/z 2575.56 716.28 92.71
853-         535       c/z 2575.56 914.4 92.71
854-         536       c/z 2575.56 1112.52 92.71
855-         537       c/z 2575.56 1310.64 92.71
856-         538       c/z 2575.56 1508.76 92.71
857-         539       c/z 2575.56 1706.88 92.71
858-         541       c/z 2773.68 121.92 92.71
859-         542       c/z 2773.68 320.04 92.71
860-         543       c/z 2773.68 518.16 92.71
861-         544       c/z 2773.68 716.28 92.71
862-         545       c/z 2773.68 914.4 92.71
863-         546       c/z 2773.68 1112.52 92.71
864-         547       c/z 2773.68 1310.64 92.71
865-         548       c/z 2773.68 1508.76 92.71
866-         549       c/z 2773.68 1706.88 92.71
867-       c    Planes
868-        1201        py -76.2  $Outside Left Wall
869-        1202        py 0  $Inside Left Thick Wall
870-        1203        py 1828.8  $Inside Right Thick Wall
871-        1204        py 1905  $Outside Right Wall
872-        1205        px 0  $Inside Back Thick Wall
873-        1206        px 2895.6  $Front of Inner Wall
874-        1207        px -76.2  $Outside Back Wall
875-        1208        px 2971.8  $Back of Inner Wall
876-        1209        pz 0  $Top of Floor
877-        c 1211        pz 190.5  $Top of Bot HIC
878-        1212        pz 381  $Top of Top HIC
879-        1213        pz 388.62  $Bot of Bell Top
880-        1214        pz 396.24  $Top of Bell Top
881-        1215        pz 1455.42  $Bottom of Roof
882-        1216        pz 1493.52  $Top of Roof
883-        1217        px 3947.16  $Inner Truck Bay Wall
884-        1218        px 4023.36  $Outer Truck Bay Wall
885-        1219        pz 1036.32  $Top of Inner Wall
886-        1220        pz 822.96  $Bottom of Notch
887-        1221        py 1760.22  $Right of notch
888-        1222        py 1546.86  $Left of notch
889-        1223        px -38.1  $Inside Back Thin Wall
890-        1224        px 3985.26  $Inside Front Thin Wall
891-        1225        py 1866.9  $Inside Right Thin Wall
892-        1226        py -38.1  $Inside Left Thin Wall
893-        1227        pz -76.2  $Bottom of Floor
894-        1228        px 1089.66  $Zone 1 Air
895-        1229        px 2080.26  $Zone 2 Air
896-        1230        pz 807.72  $Bottom of Truck Bay Shield
897-        1231        pz 213.36  $7ft Detector Surface
898-        1232        pz -91.44  $Bottom Void
899-        1233        px -57.15  $Split for Back Wall
900-        1234        py 1885.95  $Split for Right Wall
901-        1235        px 4004.31  $Split for Front Wall
902-        1236        py -57.15  $Split for Left Wall
903-        1237        pz 1474.47  $Split for Roof
904-       c    HVAC Duct Openings
905-       12321        px 68.58  $Duct1S1
906-       12331        px 170.18  $Duct1 S2
907-       12341        px 871.22  $Duct2 S1
908-       12351        px 972.82  $Duct2 S2
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 909-       12361        px 1595.12  $Duct3 S1
 910-       12371        px 1747.52  $Duct3 S2
 911-       12381        px 1856.74  $Duct4 S1
 912-       12391        px 1958.34  $Duct4 S2
 913-       12401        px 2720.34  $Duct5 S1
 914-       12411        px 2821.94  $Duct5 S2
 915-       12421        px 3776.98  $Duct6 S1
 916-       12431        px 3878.58  $Duct6 S2
 917-       12441        pz 1397  $Small Ducts Bottom
 918-       12451        pz 1437.64  $Small Duct Top
 919-       12461        pz 1369.06  $Large Ducts Bottom
 920-       12471        pz 1445.26  $Large Duct Top
 921-       c   Spheres for detectors
 922-        2000         s 1973.58 914.4 -72.6 2800  $Closest Sphere
 923-        2001         s 1973.58 914.4 -72.6 4000
 924-        2002         s 1973.58 914.4 -72.6 7000
 925-        2003         s 1973.58 914.4 -72.6 10000
 926-        2004         s 1973.58 914.4 -72.6 15000
 927-        2005         s 1973.58 914.4 -72.6 20000
 928-        2006         s 1973.58 914.4 -72.6 25000
 929-        2007         s 1973.58 914.4 -72.6 30000
 930-        2008         s 1973.58 914.4 -72.6 37500
 931-        2009         s 1973.58 914.4 -72.6 45000
 932-        2010         s 1973.58 914.4 -72.6 55000
 933-        2011         s 1973.58 914.4 -72.6 65000
 934-        2012         s 1973.58 914.4 -72.6 75000
 935-        2013         s 1973.58 914.4 -72.6 85000
 936-        2014         s 1973.58 914.4 -72.6 95000
 937-        2015         s 1973.58 914.4 -72.6 120000
 938-        2016        py -276.2
 939-        2017        py -476.2
 940-        2018        py -676.2
 941-        2019        py -876.2
 942-        2020        py -1076.2
 943-        2021        py -1276.2
 944-        2022        py -1476.2
 945-        2023        py -1676.2
 946-        2024        py -1876.2
 947-        2025        py -2076.2
 948-        2026        px 359.054
 949-        2027        px 2535.94
 950-        2028        py -2276.2
 951-        2029        py -2476.2
 952-        2030        py -2676.2
 953-        2031        py -2876.2
 954-        2032        py -3076.2
 955-        2033        py -3276.2
 956-        2034        py -3476.2
 957-        2035        py -3676.2
 958-
 959-       mode  p
 960-       c  Materials
 961-       m1    1000.           -0.015  $ Concrete from 6.4
 962-             8000.           -1.057 11000.          -0.041 12000.          -0.085
 963-             13000.          -0.137 14000.          -0.487 15000.          -0.002
 964-             16000.          -0.002 19000.          -0.015 20000.          -0.295
 965-             22000.          -0.011 25000.          -0.003 26000.          -0.178
 966-       m2    13000.                1  $ Aluminum
warning. material   2 is not used in the problem.
 967-       m3    7000.          0.78969  $ Air
 968-             8000.          0.21019 6000.          0.00012
 969-       m4    26000.                1  $ Iron
warning. material   4 is not used in the problem.
 970-       m5    1000.                 2  $ Water
 971-             8000.                 1
 972-       imp:p             1 394r                  0           1 10r          $ 11, 9
 973-                         0           1 21r          $ 9987, 2015
 974-       phys:p  100 1 0
 975-       sdef erg=d5 x=d1 y=d2 z=d3 cel=d4 eff=0.0001 wgt=3.045E+15
 976-       si1  0 2895.6
 977-       sp1  0.0 1.0
 978-       si2  0 1828.8
 979-       sp2  0.0 1.0
 980-       si3  0.01 304.8 381.00
 981-       sp3  0.0 0.8 0.2
 982-       sb3  0.0 0.2 1.0
 983-       si4  L 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 31 32
 984-            33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 51 52 53 54 55
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 985-            56 57 58 59 61 62 63 64 65 66 67 68 69 71 72 73 74 75 76 77 78
 986-            79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96 97 98 99 101
 987-            102 103 104 105 106 107 108 109 111 112 113 114 115 116 117 118
 988-            119 121 122 123 124 125 126 127 128 129 131 132 133 134 135 136
 989-            137 138 139 141 142 143 144 145 146 147 148 149
 990-       sp4  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 991-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 992-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 993-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 994-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 995-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 996-            1  1  1  1  1  1  1  1  1  1  1  1  1
 997-       si5 l 1.1730 1.3325
 998-       sp5   1      1
 999-       ssw 1220(9995)
1000-       c ssr
1001-       c ===========================================================================
1002-       c ===========================================================================
1003-       c Truck bay dose rate
1004-       f2:p 1231
warning. without bremsstrahlung, flux estimates will be low.
1005-       c ===========================================================================
1006-       c ===========================================================================
1007-       c Rings outside the building
1008-       f12:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1009-       fs12 -2000 -2001 -2002 -2003 -2004 -2005 -2006 -2007 -2008 -2009
1010-            -2010 -2011 -2012 -2013 -2014
1011-       sd12 1e50 2.564E+07 1.037e8 1.602e8 3.927e8 5.498e8 7.069e8 8.639e8 1.590e9
1012-            1.944e9 3.142e9 3.770e9 4.398e9 5.027e9 5.655e9 1.689e10
1013-       c ===========================================================================
1014-       c ===========================================================================
1015-       c Slabs Ajacent to Ventilation Penetration Side
1016-       f22:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1017-       fs22 1201 -2026 2027
1018-            2016 2017 2018 2019 2020
1019-            2021 2022 2023 2024 2025
1020-            2028 2029 2030 2031 2032
1021-            2033 2034 2035
1022-       sd22 1e50 1e50 1e50
1023-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1024-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1025-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1026-            4.35376e5 4.35376e5 4.35376e5 1e50
1027-       c ===========================================================================
1028-       c ===========================================================================
1029-       c Dose Rate on Vent Side Wall 7ft up avg
1030-       f32:p 1201
warning. without bremsstrahlung, flux estimates will be low.
1031-       fs32 1231 -2026 2027 -1227
1032-       sd32 1e50 1e50 1e50 1e50 6.30E+05
1033-       c ===========================================================================
1034-       c ===========================================================================
1035-       c detectors toward north, with HVAC effects
1036-       f42:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1037-       fs42 1219 -1209 1201 -1205 1206
1038-       sd42 1e50 1e50 1e50 1e50 1e50 3.00e06
1039-            1e50 1e50 1e50 1e50 1e50 3.00e06
1040-            1e50 1e50 1e50 1e50 1e50 3.00e06
1041-            1e50 1e50 1e50 1e50 1e50 3.00e06
1042-            1e50 1e50 1e50 1e50 1e50 3.00e06
1043-            1e50 1e50 1e50 1e50 1e50 3.00e06
1044-            1e50 1e50 1e50 1e50 1e50 3.00e06
1045-            1e50 1e50 1e50 1e50 1e50 3.00e06
1046-            1e50 1e50 1e50 1e50 1e50 3.00e06
1047-            1e50 1e50 1e50 1e50 1e50 3.00e06
1048-            1e50 1e50 1e50 1e50 1e50 3.00e06
1049-       c detectors toward sorth, with no HVAC effects
1050-       f52:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1051-       fs52 1219 -1209 -1201 -1205 1206
1052-       sd52 1e50 1e50 1e50 1e50 1e50 3.00e06
1053-            1e50 1e50 1e50 1e50 1e50 3.00e06
1054-            1e50 1e50 1e50 1e50 1e50 3.00e06
1055-            1e50 1e50 1e50 1e50 1e50 3.00e06
1056-            1e50 1e50 1e50 1e50 1e50 3.00e06
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 1057-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1058-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1059-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1060-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1061-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1062-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1063-       c ======================================================================
 1064-       c ======================================================================
 1065-       c Detector above the HICS (used as a source check)
 1066-       f62:p 1219
 warning. without bremsstrahlung, flux estimates will be low.
 1067-       fs62 -1205 1206 1203 -1202
 1068-       sd62  1e50 1e50 1e50  1e50 5.30E+06
 1069-       c ======================================================================
 1070-       c ======================================================================
 1071-       c Photon Flux to Dose Rate Conversion Factors
 1072-       de0 0.01 0.03 0.05 0.07 0.10 0.15 0.20
 1073-            0.25 0.30 0.35 0.40 0.45 0.50 0.55
 1074-            0.60 0.65 0.70 0.80 1.00 1.40 1.80
 1075-            2.20 2.60 2.80 3.25 3.75 4.25 4.75
 1076-            5.00 5.25 5.75 6.25 6.75 7.50 9.00
 1077-            11.0 13.0 15.0
 1078-       df0 LIN 3.96E-06 5.82E-07 2.90E-07 2.58E-07 2.83E-07 3.79E-07 5.01E-07
 1079-            6.31e-07 7.59E-07 8.78E-07 9.85E-07 1.08E-06 1.17E-06 1.27E-06
 1080-            1.36e-06 1.44E-06 1.52E-06 1.68E-06 1.98E-06 2.51E-06 2.99E-06
 1081-            3.42e-06 3.82E-06 4.01E-06 4.41E-06 4.83E-06 5.23E-06 5.60E-06
 1082-            5.80e-06 6.01E-06 6.37E-06 6.74E-06 7.11E-06 7.66E-06 8.77E-06
 1083-            1.03e-05 1.18E-05 1.33E-05
 1084-       nps 70000000

 warning.   2 materials had unnormalized fractions. print table 40.

 warning.   1 of the materials appear at more than one density.

 warning. sum of segment sizes differs from total in  25 cases.
1cells                                                                          print
table 60
```

cell	mat	atom density	gram density	volume	mass	pieces	photon importance
1	11	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
2	12	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
3	13	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
4	14	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
5	15	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
6	16	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
7	17	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
8	18	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
9	19	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
10	21	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
11	22	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
12	23	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
13	24	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
14	25	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
15	26	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
16	27	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
17	28	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
18	29	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
19	31	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
20	32	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
21	33	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
22	34	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
23	35	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
24	36	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
25	37	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
26	38	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
27	39	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
28	41	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
29	42	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
30	43	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
31	44	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
32	45	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
33	46	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
34	47	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
35	48	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
36	49	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
37	51	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

38	52	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
39	53	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
40	54	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
41	55	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
42	56	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
43	57	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
44	58	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
45	59	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
46	61	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
47	62	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
48	63	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
49	64	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
50	65	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
51	66	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
52	67	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
53	68	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
54	69	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
55	71	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
56	72	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
57	73	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
58	74	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
59	75	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
60	76	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
61	77	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
62	78	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
63	79	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
64	81	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
65	82	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
66	83	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
67	84	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
68	85	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
69	86	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
70	87	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
71	88	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
72	89	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
73	91	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
74	92	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
75	93	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
76	94	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
77	95	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
78	96	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
79	97	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
80	98	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
81	99	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
82	101	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
83	102	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
84	103	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
85	104	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
86	105	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
87	106	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
88	107	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
89	108	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
90	109	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
91	111	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
92	112	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
93	113	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
94	114	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
95	115	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
96	116	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
97	117	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
98	118	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
99	119	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
100	121	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
101	122	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
102	123	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
103	124	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
104	125	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
105	126	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
106	127	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
107	128	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
108	129	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
109	131	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
110	132	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
111	133	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
112	134	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
113	135	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
114	136	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
115	137	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

116	138	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
117	139	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
118	141	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
119	142	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
120	143	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
121	144	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
122	145	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
123	146	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
124	147	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
125	148	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
126	149	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
127	211	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
128	212	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
129	213	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
130	214	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
131	215	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
132	216	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
133	217	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
134	218	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
135	219	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
136	221	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
137	222	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
138	223	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
139	224	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
140	225	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
141	226	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
142	227	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
143	228	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
144	229	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
145	231	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
146	232	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
147	233	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
148	234	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
149	235	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
150	236	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
151	237	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
152	238	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
153	239	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
154	241	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
155	242	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
156	243	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
157	244	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
158	245	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
159	246	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
160	247	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
161	248	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
162	249	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
163	251	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
164	252	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
165	253	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
166	254	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
167	255	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
168	256	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
169	257	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
170	258	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
171	259	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
172	261	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
173	262	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
174	263	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
175	264	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
176	265	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
177	266	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
178	267	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
179	268	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
180	269	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
181	271	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
182	272	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
183	273	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
184	274	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
185	275	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
186	276	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
187	277	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
188	278	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
189	279	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
190	281	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
191	282	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
192	283	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
193	284	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00

194	285	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
195	286	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
196	287	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
197	288	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
198	289	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
199	291	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
200	292	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
201	293	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
202	294	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
203	295	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
204	296	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
205	297	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
206	298	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
207	299	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
208	301	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
209	302	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
210	303	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
211	304	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
212	305	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
213	306	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
214	307	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
215	308	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
216	309	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
217	311	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
218	312	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
219	313	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
220	314	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
221	315	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
222	316	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
223	317	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
224	318	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
225	319	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
226	321	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
227	322	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
228	323	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
229	324	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
230	325	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
231	326	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
232	327	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
233	328	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
234	329	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
235	331	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
236	332	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
237	333	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
238	334	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
239	335	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
240	336	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
241	337	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
242	338	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
243	339	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
244	341	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
245	342	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
246	343	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
247	344	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
248	345	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
249	346	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
250	347	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
251	348	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
252	349	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
253	411	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
254	412	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
255	413	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
256	414	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
257	415	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
258	416	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
259	417	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
260	418	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
261	419	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
262	421	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
263	422	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
264	423	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
265	424	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
266	425	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
267	426	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
268	427	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
269	428	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
270	429	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
271	431	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00

272	432	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
273	433	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
274	434	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
275	435	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
276	436	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
277	437	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
278	438	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
279	439	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
280	441	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
281	442	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
282	443	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
283	444	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
284	445	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
285	446	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
286	447	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
287	448	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
288	449	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
289	451	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
290	452	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
291	453	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
292	454	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
293	455	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
294	456	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
295	457	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
296	458	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
297	459	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
298	461	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
299	462	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
300	463	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
301	464	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
302	465	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
303	466	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
304	467	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
305	468	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
306	469	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
307	471	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
308	472	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
309	473	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
310	474	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
311	475	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
312	476	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
313	477	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
314	478	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
315	479	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
316	481	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
317	482	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
318	483	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
319	484	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
320	485	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
321	486	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
322	487	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
323	488	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
324	489	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
325	491	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
326	492	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
327	493	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
328	494	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
329	495	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
330	496	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
331	497	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
332	498	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
333	499	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
334	501	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
335	502	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
336	503	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
337	504	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
338	505	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
339	506	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
340	507	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
341	508	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
342	509	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
343	511	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
344	512	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
345	513	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
346	514	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
347	515	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
348	516	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
349	517	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00

350	518	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
351	519	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
352	521	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
353	522	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
354	523	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
355	524	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
356	525	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
357	526	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
358	527	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
359	528	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
360	529	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
361	531	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
362	532	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
363	533	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
364	534	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
365	535	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
366	536	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
367	537	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
368	538	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
369	539	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
370	541	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
371	542	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
372	543	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
373	544	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
374	545	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
375	546	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
376	547	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
377	548	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
378	549	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
379	1200	3	5.11393E-05	1.22500E-03	3.46881E+06	4.24930E+03	0	1.0000E+00
380	1201	1	7.34055E-02	2.36500E+00	1.40947E+08	3.33340E+08	0	1.0000E+00
381	1202	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	1.0000E+00
382	12021	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	1.0000E+00
383	1203	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	1.0000E+00
384	1204	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	1.0000E+00
385	12041	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	1.0000E+00
386	1205	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	1.0000E+00
387	1206	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	1.0000E+00
388	12061	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	1.0000E+00
389	1207	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	1.0000E+00
390	1208	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	1.0000E+00
391	12081	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	1.0000E+00
392	1209	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	1.0000E+00
393	1210	1	7.34055E-02	2.36500E+00	6.18900E+08	1.46370E+09	0	1.0000E+00
394	1211	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	1.0000E+00
395	12111	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	1.0000E+00
396	9999	0	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0	0.0000E+00
397	9998	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
398	9997	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
399	9996	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
400	9995	3	5.11393E-05	1.22500E-03	1.12984E+09	1.38406E+06	0	1.0000E+00
401	9994	3	5.11393E-05	1.22500E-03	2.40306E+09	2.94375E+06	0	1.0000E+00
402	9993	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	1.0000E+00
403	9992	3	5.11393E-05	1.22500E-03	1.06018E+09	1.29872E+06	0	1.0000E+00
404	9991	3	5.11393E-05	1.22500E-03	2.71842E+07	3.33006E+04	0	1.0000E+00
405	9990	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	1.0000E+00
406	9989	3	5.11393E-05	1.22500E-03	8.09132E+08	9.91186E+05	0	1.0000E+00
407	9988	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
408	9987	0	0.00000E+00	0.00000E+00	3.61826E+15	0.00000E+00	1	0.0000E+00
409	9986	3	5.11393E-05	1.22500E-03	6.89441E+11	8.44566E+08	1	1.0000E+00
410	10000	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
411	10001	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
412	10002	3	5.11393E-05	1.22500E-03	4.42451E+05	5.42002E+02	0	1.0000E+00
413	10003	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
414	10004	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
415	10005	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
416	2001	3	5.11393E-05	1.22500E-03	8.81574E+10	1.07993E+08	1	1.0000E+00
417	2002	3	5.11393E-05	1.22500E-03	5.84709E+11	7.16269E+08	1	1.0000E+00
418	2003	3	5.11393E-05	1.22500E-03	1.37659E+12	1.68633E+09	1	1.0000E+00
419	2004	3	5.11393E-05	1.22500E-03	4.97560E+12	6.09511E+09	1	1.0000E+00
420	2005	3	5.11393E-05	1.22500E-03	9.68856E+12	1.18685E+10	1	1.0000E+00
421	2006	3	5.11393E-05	1.22500E-03	1.59723E+13	1.95661E+10	1	1.0000E+00
422	2007	3	5.11393E-05	1.22500E-03	2.38269E+13	2.91879E+10	1	1.0000E+00
423	2008	3	5.11393E-05	1.22500E-03	5.39037E+13	6.60320E+10	1	1.0000E+00
424	2009	3	5.11393E-05	1.22500E-03	8.04121E+13	9.85049E+10	1	1.0000E+00
425	2010	3	5.11393E-05	1.22500E-03	1.57615E+14	1.93078E+11	1	1.0000E+00
426	2011	3	5.11393E-05	1.22500E-03	2.26732E+14	2.77747E+11	1	1.0000E+00
427	2012	3	5.11393E-05	1.22500E-03	3.08416E+14	3.77809E+11	1	1.0000E+00

```
   428  2013    3  5.11393E-05 1.22500E-03 4.02666E+14 4.93265E+11     1  1.0000E+00
   429  2014    3  5.11393E-05 1.22500E-03 5.09482E+14 6.24115E+11     1  1.0000E+00
   430  2015    3  5.11393E-05 1.22500E-03 1.82349E+15 2.23378E+12     1  1.0000E+00

 total                                     7.23819E+15 4.44050E+12

    minimum source weight = 7.3080E+14    maximum source weight = 1.4616E+16

 ***************************************************
 * Random Number Generator  =                    1 *
 * Random Number Seed       =       19073486328125 *
 * Random Number Multiplier =       19073486328125 *
 * Random Number Adder      =                    0 *
 * Random Number Bits Used  =                   48 *
 * Random Number Stride     =               152917 *
 ***************************************************


        12 warning messages so far.
1cross-section tables                                                                                    print
table 100

     table    length

                        tables from file mcplib04

   1000.04p    1898  ENDF/B-VI Release 8 Photoatomic Data for 1-H                                  mat 100
02/07/03
   6000.04p    3152  ENDF/B-VI Release 8 Photoatomic Data for 6-C                                  mat 600
02/07/03
   7000.04p    3194  ENDF/B-VI Release 8 Photoatomic Data for 7-N                                  mat 700
02/07/03
   8000.04p    3272  ENDF/B-VI Release 8 Photoatomic Data for 8-O                                  mat 800
02/07/03
  11000.04p    3995  ENDF/B-VI Release 8 Photoatomic Data for 11-NA                                mat1100
02/07/03
  12000.04p    3781  ENDF/B-VI Release 8 Photoatomic Data for 12-MG                                mat1200
02/07/03
  13000.04p    4846  ENDF/B-VI Release 8 Photoatomic Data for 13-AL                                mat1300
02/07/03
  14000.04p    4792  ENDF/B-VI Release 8 Photoatomic Data for 14-SI                                mat1400
02/07/03
  15000.04p    4498  ENDF/B-VI Release 8 Photoatomic Data for 15-P                                 mat1500
02/07/03
  16000.04p    4654  ENDF/B-VI Release 8 Photoatomic Data for 16-S                                 mat1600
02/07/03
  19000.04p    5047  ENDF/B-VI Release 8 Photoatomic Data for 19-K                                 mat1900
02/07/03
  20000.04p    5013  ENDF/B-VI Release 8 Photoatomic Data for 20-CA                                mat2000
02/07/03
  22000.04p    5742  ENDF/B-VI Release 8 Photoatomic Data for 22-TI                                mat2200
02/07/03
  25000.04p    5598  ENDF/B-VI Release 8 Photoatomic Data for 25-MN                                mat2500
02/07/03
  26000.04p    5718  ENDF/B-VI Release 8 Photoatomic Data for 26-FE                                mat2600
02/07/03

  total       65200

 warning. simple physics turned on for photons > 100 mev.


*****************************************************************************************************************
*******
 dump no.    1 on file runtpe       nps =           0     coll =              0     ctm =        0.00   nrn =
0


        13 warning messages so far.


*****************************************************************************************************************
*******
 dump no.    2 on file runtpe       nps =     7043381     coll =       96377999     ctm =       60.00   nrn =
7180262942
```

```
************************************************************************************************************
*******
 dump no.    3 on file runtpe       nps =    14000012     coll =      191551071     ctm =      120.02   nrn =
14275858273


************************************************************************************************************
*******
 dump no.    4 on file runtpe       nps =    20933393     coll =      286418000     ctm =      180.02   nrn =
21347974466


************************************************************************************************************
*******
 dump no.    5 on file runtpe       nps =    27882508     coll =      381520354     ctm =      240.03   nrn =
28436114881


************************************************************************************************************
*******
 dump no.    6 on file runtpe       nps =    34833406     coll =      476638463     ctm =      300.05   nrn =
35523550551


************************************************************************************************************
*******
 dump no.    7 on file runtpe       nps =    41756317     coll =      571363482     ctm =      360.05   nrn =
42581282697


************************************************************************************************************
*******
 dump no.    8 on file runtpe       nps =    48625319     coll =      665326059     ctm =      420.07   nrn =
49584967982


************************************************************************************************************
*******
 dump no.    9 on file runtpe       nps =    55586807     coll =      760612929     ctm =      480.07   nrn =
56680275872


************************************************************************************************************
*******
 dump no.   10 on file runtpe       nps =    62518311     coll =      855462769     ctm =      540.08   nrn =
63748362502


************************************************************************************************************
*******
 dump no.   11 on file runtpe       nps =    69493237     coll =      950899721     ctm =      600.09   nrn =
70859156550

1problem summary

      run terminated when    70000000  particle histories were done.
+                                                                                              03/19/09
05:28:03
      c     Created on: Tuesday, November 11, 2008 at 09:35                                probid =  03/18/09
19:23:01
0
 photon creation     tracks      weight        energy            photon loss         tracks      weight
energy
                                (per source particle)                                          (per source
particle)

 source             70000000    3.0447E+15    1.2528E+00          escape               33357    4.9860E+11
2.5714E-05
                                                                  energy cutoff            0    0.            0.
```

weight window	0	0.	0.	time cutoff	0	0.	0.
cell importance	0	0.	0.	weight window	0	0.	0.
weight cutoff	0	0.	0.	cell importance	0	0.	0.
e or t importance	0	0.	0.	weight cutoff	0	0.	0.
dxtran	0	0.	0.	e or t importance	0	0.	0.
forced collisions	0	0.	0.	dxtran	0	0.	0.
exp. transform	0	0.	0.	forced collisions	0	0.	0.
from neutrons	0	0.	0.	exp. transform	0	0.	0.
1.1978E+00				compton scatter	0	0.	
bremsstrahlung	0	0.	0.	capture	73666342	3.1545E+15	
5.5001E-02							
p-annihilation	56838	2.4469E+12	4.1067E-04	pair production	28419	1.2234E+12	
5.2572E-04							
photonuclear	0	0.	0.	photonuclear abs	0	0.	0.
electron x-rays	0	0.	0.				
1st fluorescence	3671280	1.0910E+14	1.9177E-04				
2nd fluorescence	0	0.	0.				
total	73728118	3.1562E+15	1.2534E+00	total	73728118	3.1562E+15	
1.2534E+00							

number of photons banked	28419	average time of (shakes)	cutoffs
photon tracks per source particle	1.0533E+00	escape 9.4461E+01	tco
1.0000E+33			
photon collisions per source particle	1.3683E+01	capture 9.9654E-01	eco
1.0000E-03			
total photon collisions	957835054	capture or escape 1.0113E+00	wc1 -
5.0000E-01			
		any termination 1.0109E+00	wc2 -
2.5000E-01			

computer time so far in this run	604.85 minutes	maximum number ever in bank	1
computer time in mcrun	604.56 minutes	bank overflows to backup file	0
source particles per minute	1.1579E+05		
random numbers generated	71376598071	most random numbers used was	15312 in
history 15415295			

range of sampled source weights = 7.3080E+14 to 1.4616E+16

source efficiency = 0.0036 in cell 11

source efficiency = 0.0036 in cell 12

source efficiency = 0.0036 in cell 13

source efficiency = 0.0036 in cell 14

source efficiency = 0.0036 in cell 15

source efficiency = 0.0036 in cell 16

source efficiency = 0.0036 in cell 17

source efficiency = 0.0036 in cell 18

source efficiency = 0.0036 in cell 19

source efficiency = 0.0036 in cell 21

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source efficiency = 0.0036 in cell 69
source efficiency = 0.0036 in cell 71
source efficiency = 0.0036 in cell 72
source efficiency = 0.0036 in cell 73
source efficiency = 0.0036 in cell 74
source efficiency = 0.0036 in cell 75

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source efficiency = 0.0036  in cell    76
source efficiency = 0.0036  in cell    77
source efficiency = 0.0036  in cell    78
source efficiency = 0.0036  in cell    79
source efficiency = 0.0036  in cell    81
source efficiency = 0.0036  in cell    82
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source efficiency = 0.0036  in cell    93
source efficiency = 0.0036  in cell    94
source efficiency = 0.0036  in cell    95
source efficiency = 0.0036  in cell    96
source efficiency = 0.0036  in cell    97
source efficiency = 0.0036  in cell    98
source efficiency = 0.0036  in cell    99
source efficiency = 0.0036  in cell   101
source efficiency = 0.0036  in cell   102
source efficiency = 0.0036  in cell   103
source efficiency = 0.0036  in cell   104
source efficiency = 0.0036  in cell   105
source efficiency = 0.0036  in cell   106
source efficiency = 0.0036  in cell   107
source efficiency = 0.0036  in cell   108
source efficiency = 0.0036  in cell   109
source efficiency = 0.0036  in cell   111
source efficiency = 0.0036  in cell   112
source efficiency = 0.0036  in cell   113
source efficiency = 0.0036  in cell   114
source efficiency = 0.0036  in cell   115
source efficiency = 0.0035  in cell   116
source efficiency = 0.0036  in cell   117
source efficiency = 0.0036  in cell   118
```

source efficiency = 0.0036 in cell 119

source efficiency = 0.0036 in cell 121

source efficiency = 0.0036 in cell 122

source efficiency = 0.0035 in cell 123

source efficiency = 0.0036 in cell 124

source efficiency = 0.0036 in cell 125

source efficiency = 0.0036 in cell 126

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source efficiency = 0.0036 in cell 145

source efficiency = 0.0036 in cell 146

source efficiency = 0.0035 in cell 147

source efficiency = 0.0036 in cell 148

source efficiency = 0.0036 in cell 149

warning. biased source position rejection sampling is dangerous.
1photon activity in each cell print
table 126

cell	tracks entering	population	collisions	collisions * weight (per history)	number weighted energy	flux weighted energy	average track weight (relative)	average track mfp (cm)
1 11	662750	640140	5930460	2.7962E+14	4.3146E-01	4.3146E-01	3.2617E+15	8.7482E+00
2 12	708259	683798	6249866	2.9586E+14	4.2382E-01	4.2382E-01	3.2759E+15	8.6753E+00
3 13	712209	687944	6265079	2.9605E+14	4.2546E-01	4.2546E-01	3.2768E+15	8.6907E+00
4 14	711812	687870	6251859	2.9399E+14	4.2346E-01	4.2346E-01	3.2527E+15	8.6732E+00
5 15	711856	687750	6263928	2.9725E+14	4.2437E-01	4.2437E-01	3.2881E+15	8.6819E+00
6 16	711349	687382	6276916	2.9762E+14	4.2282E-01	4.2282E-01	3.2855E+15	8.6686E+00
7 17	712608	688658	6286899	2.9686E+14	4.2465E-01	4.2465E-01	3.2677E+15	8.6836E+00
8 18	706870	682940	6228791	2.9606E+14	4.2561E-01	4.2561E-01	3.2869E+15	8.6946E+00
9 19	663139	640104	5929871	2.7853E+14	4.3189E-01	4.3189E-01	3.2521E+15	8.7509E+00
10 21	710184	682586	6249612	2.9674E+14	4.2427E-01	4.2427E-01	3.2873E+15	8.6819E+00
11 22	772057	740640	6668398	3.1988E+14	4.1580E-01	4.1580E-01	3.3171E+15	8.6009E+00
12 23	777713	746684	6709841	3.2034E+14	4.1647E-01	4.1647E-01	3.3051E+15	8.6047E+00
13 24	779358	747526	6712701	3.2019E+14	4.1602E-01	4.1602E-01	3.3002E+15	8.6030E+00
14 25	778218	746568	6716292	3.1964E+14	4.1498E-01	4.1498E-01	3.2962E+15	8.5918E+00
15 26	777598	745902	6702925	3.2044E+14	4.1489E-01	4.1489E-01	3.3061E+15	8.5919E+00
16 27	778451	746890	6726395	3.2109E+14	4.1570E-01	4.1570E-01	3.3033E+15	8.5986E+00

17	28	772658	741032	6675757	3.1867E+14	4.1626E-01	4.1626E-01	3.3023E+15	8.6040E+00
18	29	709771	682008	6245181	2.9737E+14	4.2468E-01	4.2468E-01	3.2971E+15	8.6850E+00
19	31	713983	686382	6279640	2.9693E+14	4.2345E-01	4.2345E-01	3.2736E+15	8.6726E+00
20	32	778150	746195	6707039	3.2184E+14	4.1527E-01	4.1527E-01	3.3205E+15	8.5956E+00
21	33	783826	752103	6757834	3.2249E+14	4.1504E-01	4.1504E-01	3.3033E+15	8.5924E+00
22	34	784998	753172	6766111	3.2436E+14	4.1507E-01	4.1507E-01	3.3180E+15	8.5928E+00
23	35	784883	753012	6760252	3.2324E+14	4.1493E-01	4.1493E-01	3.3088E+15	8.5895E+00
24	36	784176	752112	6746931	3.2238E+14	4.1493E-01	4.1493E-01	3.3062E+15	8.5913E+00
25	37	783489	751232	6737064	3.2375E+14	4.1470E-01	4.1470E-01	3.3269E+15	8.5876E+00
26	38	778403	746503	6711788	3.2169E+14	4.1613E-01	4.1613E-01	3.3156E+15	8.6025E+00
27	39	715636	687842	6281337	2.9795E+14	4.2381E-01	4.2381E-01	3.2775E+15	8.6764E+00
28	41	715739	687835	6288590	2.9925E+14	4.2456E-01	4.2456E-01	3.2967E+15	8.6844E+00
29	42	779654	747822	6714842	3.2053E+14	4.1564E-01	4.1564E-01	3.3029E+15	8.5991E+00
30	43	783152	751350	6736899	3.2051E+14	4.1424E-01	4.1424E-01	3.2890E+15	8.5854E+00
31	44	785082	753241	6761800	3.2242E+14	4.1562E-01	4.1562E-01	3.3030E+15	8.5983E+00
32	45	784873	753224	6753897	3.2205E+14	4.1401E-01	4.1401E-01	3.2960E+15	8.5838E+00
33	46	784777	752871	6744972	3.2186E+14	4.1406E-01	4.1406E-01	3.2994E+15	8.5830E+00
34	47	784522	752464	6757546	3.2342E+14	4.1402E-01	4.1402E-01	3.3132E+15	8.5837E+00
35	48	779470	747508	6720598	3.2268E+14	4.1438E-01	4.1438E-01	3.3194E+15	8.5860E+00
36	49	715558	687559	6285018	2.9699E+14	4.2373E-01	4.2373E-01	3.2756E+15	8.6746E+00
37	51	715566	687556	6285152	2.9876E+14	4.2396E-01	4.2396E-01	3.2925E+15	8.6769E+00
38	52	779691	747753	6719344	3.2284E+14	4.1482E-01	4.1482E-01	3.3236E+15	8.5896E+00
39	53	783015	751182	6734182	3.2302E+14	4.1425E-01	4.1425E-01	3.3146E+15	8.5841E+00
40	54	786541	754484	6765783	3.2306E+14	4.1409E-01	4.1409E-01	3.3075E+15	8.5829E+00
41	55	786519	754427	6774899	3.2415E+14	4.1466E-01	4.1466E-01	3.3138E+15	8.5875E+00
42	56	785506	753685	6758115	3.2350E+14	4.1434E-01	4.1434E-01	3.3158E+15	8.5857E+00
43	57	785689	753913	6760333	3.2254E+14	4.1442E-01	4.1442E-01	3.3009E+15	8.5863E+00
44	58	781080	749365	6726112	3.2113E+14	4.1469E-01	4.1469E-01	3.3034E+15	8.5898E+00
45	59	715436	687508	6281655	2.9854E+14	4.2347E-01	4.2347E-01	3.2902E+15	8.6724E+00
46	61	717354	689425	6301671	2.9821E+14	4.2404E-01	4.2404E-01	3.2817E+15	8.6780E+00
47	62	781434	749508	6730389	3.2163E+14	4.1492E-01	4.1492E-01	3.3071E+15	8.5919E+00
48	63	785650	753550	6758532	3.2336E+14	4.1436E-01	4.1436E-01	3.3107E+15	8.5868E+00
49	64	786270	754366	6772453	3.2439E+14	4.1356E-01	4.1356E-01	3.3116E+15	8.5787E+00
50	65	786179	754383	6753946	3.2186E+14	4.1380E-01	4.1380E-01	3.2960E+15	8.5813E+00
51	66	785922	754252	6765059	3.2208E+14	4.1523E-01	4.1523E-01	3.2977E+15	8.5947E+00
52	67	784187	752579	6744327	3.2052E+14	4.1478E-01	4.1478E-01	3.2873E+15	8.5898E+00
53	68	780378	748625	6721911	3.2189E+14	4.1468E-01	4.1468E-01	3.3142E+15	8.5900E+00
54	69	714944	687051	6273040	2.9803E+14	4.2296E-01	4.2296E-01	3.2880E+15	8.6679E+00
55	71	717058	689122	6273789	2.9817E+14	4.2324E-01	4.2324E-01	3.2906E+15	8.6701E+00
56	72	780575	748901	6716997	3.1928E+14	4.1652E-01	4.1652E-01	3.2929E+15	8.6072E+00
57	73	784779	752960	6755004	3.2336E+14	4.1395E-01	4.1395E-01	3.3149E+15	8.5827E+00
58	74	787458	755494	6774839	3.2398E+14	4.1453E-01	4.1453E-01	3.3111E+15	8.5882E+00
59	75	784816	752891	6755467	3.2230E+14	4.1391E-01	4.1391E-01	3.3076E+15	8.5823E+00
60	76	786462	754704	6772962	3.2278E+14	4.1520E-01	4.1520E-01	3.3016E+15	8.5936E+00
61	77	786449	754548	6770042	3.2327E+14	4.1240E-01	4.1240E-01	3.2994E+15	8.5675E+00
62	78	779731	747871	6722270	3.2026E+14	4.1479E-01	4.1479E-01	3.2943E+15	8.5896E+00
63	79	716468	688535	6280919	2.9800E+14	4.2299E-01	4.2299E-01	3.2840E+15	8.6690E+00
64	81	717542	689284	6297332	2.9929E+14	4.2304E-01	4.2304E-01	3.2927E+15	8.6689E+00
65	82	780935	749303	6719130	3.2087E+14	4.1417E-01	4.1417E-01	3.3002E+15	8.5847E+00
66	83	785217	752959	6753783	3.2233E+14	4.1434E-01	4.1434E-01	3.3059E+15	8.5862E+00
67	84	786681	754919	6767095	3.2335E+14	4.1431E-01	4.1431E-01	3.3075E+15	8.5860E+00
68	85	787404	755338	6772162	3.2418E+14	4.1445E-01	4.1445E-01	3.3139E+15	8.5864E+00
69	86	787849	755813	6789712	3.2474E+14	4.1388E-01	4.1388E-01	3.3080E+15	8.5810E+00
70	87	785710	753880	6765906	3.2251E+14	4.1451E-01	4.1451E-01	3.3035E+15	8.5871E+00
71	88	782040	749939	6736256	3.2098E+14	4.1455E-01	4.1455E-01	3.2970E+15	8.5881E+00
72	89	716719	688733	6299194	2.9930E+14	4.2292E-01	4.2292E-01	3.2878E+15	8.6684E+00
73	91	716253	688317	6289095	2.9705E+14	4.2340E-01	4.2340E-01	3.2707E+15	8.6711E+00
74	92	781620	749912	6735941	3.2059E+14	4.1398E-01	4.1398E-01	3.2933E+15	8.5830E+00
75	93	783357	752104	6744026	3.2259E+14	4.1355E-01	4.1355E-01	3.3114E+15	8.5789E+00
76	94	784989	753266	6756418	3.2338E+14	4.1418E-01	4.1418E-01	3.3120E+15	8.5845E+00
77	95	786124	754457	6761326	3.2404E+14	4.1419E-01	4.1419E-01	3.3178E+15	8.5861E+00
78	96	787198	754785	6761767	3.2517E+14	4.1302E-01	4.1302E-01	3.3218E+15	8.5728E+00
79	97	785655	753705	6757011	3.2413E+14	4.1495E-01	4.1495E-01	3.3235E+15	8.5928E+00
80	98	781050	749030	6717413	3.2154E+14	4.1506E-01	4.1506E-01	3.3164E+15	8.5941E+00
81	99	715868	687972	6280592	2.9862E+14	4.2395E-01	4.2395E-01	3.2927E+15	8.6761E+00
82	101	716971	688962	6289701	2.9857E+14	4.2358E-01	4.2358E-01	3.2826E+15	8.6733E+00
83	102	780121	748144	6717551	3.2208E+14	4.1480E-01	4.1480E-01	3.3186E+15	8.5907E+00
84	103	786240	754427	6765557	3.2359E+14	4.1419E-01	4.1419E-01	3.3095E+15	8.5844E+00
85	104	785899	754012	6766103	3.2399E+14	4.1400E-01	4.1400E-01	3.3110E+15	8.5822E+00
86	105	786650	754531	6766050	3.2240E+14	4.1503E-01	4.1503E-01	3.2989E+15	8.5916E+00
87	106	784437	752842	6739652	3.2226E+14	4.1477E-01	4.1477E-01	3.3096E+15	8.5906E+00
88	107	785446	753562	6770319	3.2466E+14	4.1356E-01	4.1356E-01	3.3150E+15	8.5781E+00
89	108	780521	748635	6729653	3.2200E+14	4.1472E-01	4.1472E-01	3.3119E+15	8.5894E+00
90	109	714994	687140	6278104	2.9746E+14	4.2444E-01	4.2444E-01	3.2850E+15	8.6846E+00
91	111	716126	688244	6298351	2.9970E+14	4.2258E-01	4.2258E-01	3.2941E+15	8.6655E+00
92	112	780392	748530	6715715	3.1994E+14	4.1483E-01	4.1483E-01	3.2950E+15	8.5905E+00
93	113	785111	753195	6751896	3.2230E+14	4.1419E-01	4.1419E-01	3.3035E+15	8.5846E+00
94	114	786308	754288	6770920	3.2445E+14	4.1434E-01	4.1434E-01	3.3154E+15	8.5860E+00
95	115	785581	753495	6766036	3.2344E+14	4.1401E-01	4.1401E-01	3.3090E+15	8.5816E+00
96	116	785761	753974	6772177	3.2310E+14	4.1507E-01	4.1507E-01	3.3056E+15	8.5929E+00
97	117	785361	753782	6769402	3.2460E+14	4.1352E-01	4.1352E-01	3.3135E+15	8.5772E+00
98	118	780300	748500	6727980	3.2108E+14	4.1512E-01	4.1512E-01	3.3007E+15	8.5930E+00
99	119	714346	686493	6278906	2.9844E+14	4.2314E-01	4.2314E-01	3.2891E+15	8.6694E+00
100	121	715999	687896	6296931	2.9927E+14	4.2251E-01	4.2251E-01	3.2917E+15	8.6647E+00
101	122	779802	747851	6724785	3.1934E+14	4.1595E-01	4.1595E-01	3.2917E+15	8.6008E+00
102	123	783817	751739	6751040	3.2323E+14	4.1473E-01	4.1473E-01	3.3115E+15	8.5902E+00
103	124	785224	753553	6764574	3.2331E+14	4.1424E-01	4.1424E-01	3.3069E+15	8.5851E+00
104	125	784997	753185	6761277	3.2432E+14	4.1317E-01	4.1317E-01	3.3197E+15	8.5744E+00
105	126	783663	752099	6755257	3.2161E+14	4.1532E-01	4.1532E-01	3.3006E+15	8.5945E+00
106	127	784526	752674	6747401	3.2226E+14	4.1407E-01	4.1407E-01	3.3059E+15	8.5842E+00

107	128	779445	747884	6716113	3.2215E+14	4.1648E-01	4.1648E-01	3.3189E+15	8.6057E+00
108	129	715067	687176	6283561	2.9779E+14	4.2376E-01	4.2376E-01	3.2817E+15	8.6766E+00
109	131	712418	684474	6260298	2.9703E+14	4.2446E-01	4.2446E-01	3.2821E+15	8.6822E+00
110	132	773240	741541	6677098	3.1960E+14	4.1481E-01	4.1481E-01	3.3057E+15	8.5921E+00
111	133	780667	748723	6727626	3.2206E+14	4.1501E-01	4.1501E-01	3.3124E+15	8.5924E+00
112	134	778707	747097	6719037	3.2095E+14	4.1451E-01	4.1451E-01	3.3045E+15	8.5870E+00
113	135	779549	747597	6722904	3.2034E+14	4.1441E-01	4.1441E-01	3.2946E+15	8.5875E+00
114	136	778988	747052	6711911	3.2232E+14	4.1413E-01	4.1413E-01	3.3207E+15	8.5836E+00
115	137	778746	747007	6725915	3.2145E+14	4.1550E-01	4.1550E-01	3.3094E+15	8.5963E+00
116	138	772204	740426	6671482	3.1842E+14	4.1525E-01	4.1525E-01	3.3046E+15	8.5955E+00
117	139	710926	683075	6250561	2.9784E+14	4.2331E-01	4.2331E-01	3.2986E+15	8.6734E+00
118	141	664244	638887	5932434	2.8063E+14	4.3019E-01	4.3019E-01	3.2745E+15	8.7375E+00
119	142	710983	682997	6254988	2.9577E+14	4.2328E-01	4.2328E-01	3.2688E+15	8.6705E+00
120	143	715069	687149	6279461	2.9815E+14	4.2428E-01	4.2428E-01	3.2936E+15	8.6813E+00
121	144	715206	687389	6286958	2.9741E+14	4.2325E-01	4.2325E-01	3.2794E+15	8.6714E+00
122	145	716116	688164	6284855	2.9867E+14	4.2351E-01	4.2351E-01	3.2908E+15	8.6722E+00
123	146	714647	686658	6279001	2.9826E+14	4.2264E-01	4.2264E-01	3.2887E+15	8.6646E+00
124	147	714404	686715	6269111	2.9702E+14	4.2416E-01	4.2416E-01	3.2828E+15	8.6804E+00
125	148	710688	682946	6255203	2.9705E+14	4.2378E-01	4.2378E-01	3.2843E+15	8.6758E+00
126	149	664963	639399	5940185	2.8028E+14	4.3083E-01	4.3083E-01	3.2701E+15	8.7431E+00
127	211	429650	350438	986	4.2825E+10	4.7790E-01	4.7790E-01	2.8465E+15	8.3995E+03
128	212	502786	399708	1154	5.0331E+10	4.6388E-01	4.6388E-01	2.9139E+15	8.2619E+03
129	213	510147	405454	1200	5.0018E+10	4.5935E-01	4.5935E-01	2.9340E+15	8.2276E+03
130	214	510912	405978	1143	4.3472E+10	4.5809E-01	4.5809E-01	2.9372E+15	8.2165E+03
131	215	510746	405449	1161	5.2388E+10	4.6094E-01	4.6094E-01	2.9506E+15	8.2383E+03
132	216	508477	404042	1176	4.8181E+10	4.6066E-01	4.6066E-01	2.9383E+15	8.2379E+03
133	217	508478	404304	1171	5.0310E+10	4.6138E-01	4.6138E-01	2.9326E+15	8.2401E+03
134	218	503028	400303	1137	4.6782E+10	4.6368E-01	4.6368E-01	2.9410E+15	8.2598E+03
135	219	429491	349840	946	4.0225E+10	4.7915E-01	4.7915E-01	2.8520E+15	8.4092E+03
136	221	508852	399630	1199	5.1793E+10	4.5703E-01	4.5703E-01	2.9489E+15	8.2120E+03
137	222	609734	466086	1462	6.9217E+10	4.4108E-01	4.4108E-01	3.0579E+15	8.0558E+03
138	223	617206	472354	1469	6.3935E+10	4.4144E-01	4.4144E-01	3.0538E+15	8.0537E+03
139	224	620851	473683	1556	6.7620E+10	4.3766E-01	4.3766E-01	3.0524E+15	8.0279E+03
140	225	618673	472688	1523	7.1243E+10	4.3880E-01	4.3880E-01	3.0402E+15	8.0349E+03
141	226	618597	472313	1476	6.7181E+10	4.3914E-01	4.3914E-01	3.0510E+15	8.0335E+03
142	227	617665	472071	1486	6.8278E+10	4.3838E-01	4.3838E-01	3.0578E+15	8.0314E+03
143	228	610075	466460	1446	6.7067E+10	4.4157E-01	4.4157E-01	3.0618E+15	8.0584E+03
144	229	508514	399053	1157	4.9371E+10	4.5851E-01	4.5851E-01	2.9636E+15	8.2217E+03
145	231	514292	403499	1201	5.5979E+10	4.5339E-01	4.5339E-01	2.9699E+15	8.1830E+03
146	232	619458	472636	1521	7.0230E+10	4.3690E-01	4.3690E-01	3.0598E+15	8.0197E+03
147	233	627455	478736	1557	6.8424E+10	4.3676E-01	4.3676E-01	3.0710E+15	8.0165E+03
148	234	629585	479963	1563	7.1263E+10	4.3662E-01	4.3662E-01	3.0609E+15	8.0161E+03
149	235	628423	479328	1528	6.8121E+10	4.3339E-01	4.3339E-01	3.0701E+15	7.9858E+03
150	236	628472	478941	1532	7.0345E+10	4.3609E-01	4.3609E-01	3.0534E+15	8.0092E+03
151	237	628221	478760	1549	6.1199E+10	4.3554E-01	4.3554E-01	3.0664E+15	8.0043E+03
152	238	619728	473439	1542	7.1243E+10	4.4070E-01	4.4070E-01	3.0547E+15	8.0512E+03
153	239	516759	405471	1245	5.5844E+10	4.5527E-01	4.5527E-01	2.9461E+15	8.1956E+03
154	241	516891	405440	1219	4.9621E+10	4.5802E-01	4.5802E-01	2.9414E+15	8.2153E+03
155	242	621857	474841	1500	6.3663E+10	4.3725E-01	4.3725E-01	3.0456E+15	8.0186E+03
156	243	628172	479251	1512	6.9938E+10	4.3622E-01	4.3622E-01	3.0481E+15	8.0139E+03
157	244	629405	479848	1521	6.0907E+10	4.3511E-01	4.3511E-01	3.0480E+15	8.0007E+03
158	245	630019	481069	1531	7.4500E+10	4.3494E-01	4.3494E-01	3.0607E+15	7.9991E+03
159	246	630509	480670	1525	6.2536E+10	4.3478E-01	4.3478E-01	3.0494E+15	7.9972E+03
160	247	629440	479518	1577	6.9823E+10	4.3353E-01	4.3353E-01	3.0737E+15	7.9850E+03
161	248	621584	474174	1550	6.8152E+10	4.3882E-01	4.3882E-01	3.0452E+15	8.0348E+03
162	249	517279	405022	1172	4.8337E+10	4.5520E-01	4.5520E-01	2.9289E+15	8.1955E+03
163	251	517761	405609	1243	5.3244E+10	4.5525E-01	4.5525E-01	2.9555E+15	8.1903E+03
164	252	622584	474563	1576	7.0011E+10	4.3744E-01	4.3744E-01	3.0526E+15	8.0236E+03
165	253	629197	479329	1511	6.9332E+10	4.3367E-01	4.3367E-01	3.0480E+15	7.9883E+03
166	254	630940	480746	1592	7.2558E+10	4.3737E-01	4.3737E-01	3.0350E+15	8.0210E+03
167	255	631252	481051	1483	6.8445E+10	4.3315E-01	4.3315E-01	3.0650E+15	7.9866E+03
168	256	631334	481215	1528	6.9708E+10	4.3601E-01	4.3601E-01	3.0582E+15	8.0085E+03
169	257	630863	481194	1574	6.9593E+10	4.3313E-01	4.3313E-01	3.0469E+15	7.9842E+03
170	258	623556	475803	1565	6.6127E+10	4.3857E-01	4.3857E-01	3.0319E+15	8.0351E+03
171	259	517730	405503	1203	5.1438E+10	4.5501E-01	4.5501E-01	2.9398E+15	8.1930E+03
172	261	519121	406190	1167	5.3046E+10	4.5242E-01	4.5242E-01	2.9603E+15	8.1692E+03
173	262	623177	475077	1523	6.6680E+10	4.3717E-01	4.3717E-01	3.0431E+15	8.0207E+03
174	263	630922	480513	1546	6.7515E+10	4.3273E-01	4.3273E-01	3.0453E+15	7.9772E+03
175	264	631493	481608	1560	7.1827E+10	4.3461E-01	4.3461E-01	3.0517E+15	7.9939E+03
176	265	631995	482327	1494	6.6774E+10	4.3384E-01	4.3384E-01	3.0652E+15	7.9906E+03
177	266	630806	481374	1604	6.5741E+10	4.3665E-01	4.3665E-01	3.0549E+15	8.0169E+03
178	267	629598	480024	1531	6.9739E+10	4.3943E-01	4.3943E-01	3.0361E+15	8.0408E+03
179	268	623163	475381	1527	6.6722E+10	4.4004E-01	4.4004E-01	3.0451E+15	8.0447E+03
180	269	517679	405602	1239	5.4194E+10	4.5562E-01	4.5562E-01	2.9510E+15	8.2026E+03
181	271	520360	407600	1219	5.2597E+10	4.5478E-01	4.5478E-01	2.9351E+15	8.1851E+03
182	272	623555	475949	1554	6.9186E+10	4.3653E-01	4.3653E-01	3.0324E+15	8.0152E+03
183	273	630193	480243	1569	7.0136E+10	4.3711E-01	4.3711E-01	3.0575E+15	8.0175E+03
184	274	633184	482664	1479	6.4832E+10	4.3617E-01	4.3617E-01	3.0674E+15	8.0108E+03
185	275	631347	480476	1518	6.6033E+10	4.3348E-01	4.3348E-01	3.0779E+15	7.9920E+03
186	276	631031	481573	1495	6.6785E+10	4.3399E-01	4.3399E-01	3.0581E+15	7.9900E+03
187	277	631344	481381	1636	7.2422E+10	4.3467E-01	4.3467E-01	3.0501E+15	7.9979E+03
188	278	622363	474452	1479	6.1857E+10	4.3793E-01	4.3793E-01	3.0527E+15	8.0277E+03
189	279	519328	406343	1215	5.0968E+10	4.5002E-01	4.5002E-01	2.9469E+15	8.1516E+03
190	281	519891	406779	1161	4.8222E+10	4.5375E-01	4.5375E-01	2.9439E+15	8.1799E+03
191	282	624189	476052	1497	6.8392E+10	4.4024E-01	4.4024E-01	3.0364E+15	8.0478E+03
192	283	630822	480751	1588	7.2516E+10	4.3537E-01	4.3537E-01	3.0463E+15	8.0076E+03
193	284	632150	481659	1562	7.0460E+10	4.3490E-01	4.3490E-01	3.0717E+15	7.9999E+03
194	285	632993	482759	1479	6.9990E+10	4.3333E-01	4.3333E-01	3.0702E+15	7.9877E+03
195	286	633122	482583	1545	6.8497E+10	4.3596E-01	4.3596E-01	3.0621E+15	8.0061E+03
196	287	630309	480490	1505	7.1848E+10	4.3522E-01	4.3522E-01	3.0574E+15	7.9967E+03

197	288	624816	476428	1445	6.7056E+10	4.3644E-01	4.3644E-01	3.0491E+15	8.0122E+03
198	289	519108	406164	1208	5.4862E+10	4.5401E-01	4.5401E-01	2.9458E+15	8.1841E+03
199	291	518899	405877	1160	5.1584E+10	4.5636E-01	4.5636E-01	2.9273E+15	8.1992E+03
200	292	623806	476269	1508	6.6524E+10	4.3876E-01	4.3876E-01	3.0386E+15	8.0325E+03
201	293	628484	479693	1574	7.1180E+10	4.3779E-01	4.3779E-01	3.0475E+15	8.0242E+03
202	294	630059	480572	1502	6.7453E+10	4.3928E-01	4.3928E-01	3.0500E+15	8.0339E+03
203	295	632217	482322	1547	7.2088E+10	4.3538E-01	4.3538E-01	3.0640E+15	8.0016E+03
204	296	632757	482131	1489	6.6127E+10	4.3318E-01	4.3318E-01	3.0627E+15	7.9827E+03
205	297	630751	480830	1519	6.6639E+10	4.3720E-01	4.3720E-01	3.0668E+15	8.0177E+03
206	298	624772	476401	1526	6.6315E+10	4.3738E-01	4.3738E-01	3.0426E+15	8.0265E+03
207	299	518986	406585	1248	5.7660E+10	4.5734E-01	4.5734E-01	2.9433E+15	8.2111E+03
208	301	518894	406391	1166	4.8275E+10	4.5603E-01	4.5603E-01	2.9409E+15	8.2017E+03
209	302	622862	475065	1555	7.1577E+10	4.3504E-01	4.3504E-01	3.0598E+15	8.0003E+03
210	303	630662	480890	1494	6.7964E+10	4.3491E-01	4.3491E-01	3.0562E+15	8.0013E+03
211	304	631121	481039	1539	7.1013E+10	4.3675E-01	4.3675E-01	3.0481E+15	8.0151E+03
212	305	632459	481943	1536	7.0585E+10	4.3603E-01	4.3603E-01	3.0609E+15	8.0072E+03
213	306	631632	481918	1520	6.9228E+10	4.3760E-01	4.3760E-01	3.0475E+15	8.0220E+03
214	307	629655	480082	1666	7.5513E+10	4.3505E-01	4.3505E-01	3.0612E+15	8.0023E+03
215	308	622939	475430	1579	7.0240E+10	4.4070E-01	4.4070E-01	3.0646E+15	8.0530E+03
216	309	516364	404213	1239	5.1020E+10	4.5551E-01	4.5551E-01	2.9418E+15	8.1975E+03
217	311	517408	405161	1221	5.0039E+10	4.5330E-01	4.5330E-01	2.9648E+15	8.1755E+03
218	312	622922	475311	1551	6.9551E+10	4.3506E-01	4.3506E-01	3.0579E+15	8.0017E+03
219	313	630136	480095	1573	7.3748E+10	4.3481E-01	4.3481E-01	3.0599E+15	7.9981E+03
220	314	631841	481590	1532	6.6576E+10	4.3748E-01	4.3748E-01	3.0616E+15	8.0189E+03
221	315	630616	480552	1487	6.5908E+10	4.3541E-01	4.3541E-01	3.0480E+15	8.0066E+03
222	316	629699	480172	1485	6.8267E+10	4.3602E-01	4.3602E-01	3.0613E+15	8.0089E+03
223	317	629094	480234	1538	7.2193E+10	4.3653E-01	4.3653E-01	3.0535E+15	8.0123E+03
224	318	620666	474055	1537	6.8215E+10	4.4107E-01	4.4107E-01	3.0483E+15	8.0533E+03
225	319	516040	404515	1200	5.0811E+10	4.5704E-01	4.5704E-01	2.9519E+15	8.2134E+03
226	321	517135	405281	1235	5.4152E+10	4.5583E-01	4.5583E-01	2.9559E+15	8.2003E+03
227	322	621861	474252	1471	6.6137E+10	4.3740E-01	4.3740E-01	3.0491E+15	8.0189E+03
228	323	628134	478610	1549	7.1911E+10	4.3439E-01	4.3439E-01	3.0607E+15	7.9963E+03
229	324	628804	479911	1468	6.7098E+10	4.3315E-01	4.3315E-01	3.0491E+15	7.9895E+03
230	325	630086	479755	1483	6.8048E+10	4.3424E-01	4.3424E-01	3.0696E+15	7.9953E+03
231	326	627852	479118	1567	7.0710E+10	4.3584E-01	4.3584E-01	3.0767E+15	8.0096E+03
232	327	628742	479516	1483	6.7850E+10	4.3664E-01	4.3664E-01	3.0657E+15	8.0167E+03
233	328	621343	474836	1531	6.6962E+10	4.3733E-01	4.3733E-01	3.0485E+15	8.0209E+03
234	329	515508	404083	1184	5.0446E+10	4.5456E-01	4.5456E-01	2.9621E+15	8.1918E+03
235	331	511493	401217	1254	5.5342E+10	4.5895E-01	4.5895E-01	2.9304E+15	8.2241E+03
236	332	611971	467546	1509	6.8716E+10	4.4163E-01	4.4163E-01	3.0423E+15	8.0602E+03
237	333	621148	474256	1597	6.8643E+10	4.4122E-01	4.4122E-01	3.0465E+15	8.0572E+03
238	334	619867	473422	1613	6.8017E+10	4.3726E-01	4.3726E-01	3.0366E+15	8.0230E+03
239	335	621237	473886	1480	7.0199E+10	4.3925E-01	4.3925E-01	3.0445E+15	8.0393E+03
240	336	621176	474243	1572	7.1556E+10	4.3780E-01	4.3780E-01	3.0588E+15	8.0281E+03
241	337	618400	472412	1452	6.8518E+10	4.3752E-01	4.3752E-01	3.0584E+15	8.0244E+03
242	338	610373	466541	1431	6.6315E+10	4.3882E-01	4.3882E-01	3.0491E+15	8.0373E+03
243	339	510143	400366	1192	5.2712E+10	4.5826E-01	4.5826E-01	2.9506E+15	8.2205E+03
244	341	433190	348997	949	3.9860E+10	4.7590E-01	4.7590E-01	2.8487E+15	8.3810E+03
245	342	510330	400016	1265	5.1887E+10	4.6013E-01	4.6013E-01	2.9535E+15	8.2400E+03
246	343	515825	404297	1182	4.8243E+10	4.5431E-01	4.5431E-01	2.9420E+15	8.1846E+03
247	344	516920	404891	1210	4.8536E+10	4.5416E-01	4.5416E-01	2.9387E+15	8.1849E+03
248	345	518070	405801	1247	5.1897E+10	4.5572E-01	4.5572E-01	2.9377E+15	8.1962E+03
249	346	516648	404793	1215	5.3348E+10	4.5598E-01	4.5598E-01	2.9399E+15	8.1965E+03
250	347	515935	404437	1223	5.3234E+10	4.5840E-01	4.5840E-01	2.9323E+15	8.2195E+03
251	348	509778	400076	1225	5.2659E+10	4.5750E-01	4.5750E-01	2.9416E+15	8.2145E+03
252	349	433003	348702	980	4.0580E+10	4.7555E-01	4.7555E-01	2.8565E+15	8.3814E+03
253	411	462475	361480	755	3.0099E+10	4.6758E-01	4.6758E-01	2.6871E+15	8.3173E+03
254	412	549092	417042	965	3.8242E+10	4.5796E-01	4.5796E-01	2.7699E+15	8.2184E+03
255	413	557577	423160	973	4.1896E+10	4.5508E-01	4.5508E-01	2.7718E+15	8.1916E+03
256	414	558293	423839	993	4.0121E+10	4.5289E-01	4.5289E-01	2.7824E+15	8.1741E+03
257	415	558062	423310	976	4.5498E+10	4.5491E-01	4.5491E-01	2.7956E+15	8.1928E+03
258	416	555606	421619	966	4.0632E+10	4.5442E-01	4.5442E-01	2.7728E+15	8.1911E+03
259	417	555574	421658	989	4.0674E+10	4.5457E-01	4.5457E-01	2.7824E+15	8.1856E+03
260	418	549860	417639	951	3.9881E+10	4.5945E-01	4.5945E-01	2.7906E+15	8.2270E+03
261	419	462331	361146	772	3.0276E+10	4.6861E-01	4.6861E-01	2.7054E+15	8.3259E+03
262	421	556070	416191	947	3.8847E+10	4.5164E-01	4.5164E-01	2.7956E+15	8.1712E+03
263	422	675160	490158	1323	5.5666E+10	4.3868E-01	4.3868E-01	2.8957E+15	8.0374E+03
264	423	683839	496787	1252	5.2941E+10	4.3799E-01	4.3799E-01	2.9011E+15	8.0285E+03
265	424	688065	498771	1251	5.4518E+10	4.3573E-01	4.3573E-01	2.8964E+15	8.0129E+03
266	425	685734	497404	1274	5.3171E+10	4.3904E-01	4.3904E-01	2.8889E+15	8.0393E+03
267	426	684959	497264	1214	5.0561E+10	4.3855E-01	4.3855E-01	2.8937E+15	8.0321E+03
268	427	684236	496580	1194	4.6385E+10	4.3732E-01	4.3732E-01	2.9007E+15	8.0262E+03
269	428	675203	490304	1194	4.9559E+10	4.3958E-01	4.3958E-01	2.9089E+15	8.0446E+03
270	429	556288	415933	968	4.1447E+10	4.5385E-01	4.5385E-01	2.8034E+15	8.1865E+03
271	431	563084	420931	984	4.2804E+10	4.4725E-01	4.4725E-01	2.8002E+15	8.1365E+03
272	432	686580	497518	1208	5.3672E+10	4.3526E-01	4.3526E-01	2.9041E+15	8.0074E+03
273	433	695461	504043	1279	5.8182E+10	4.3521E-01	4.3521E-01	2.9134E+15	8.0056E+03
274	434	697628	505124	1313	5.6355E+10	4.3543E-01	4.3543E-01	2.9115E+15	8.0061E+03
275	435	696762	504874	1235	5.5938E+10	4.3274E-01	4.3274E-01	2.9070E+15	7.9817E+03
276	436	696778	504093	1303	5.7044E+10	4.3339E-01	4.3339E-01	2.8977E+15	7.9893E+03
277	437	696276	504164	1297	5.4998E+10	4.3390E-01	4.3390E-01	2.8970E+15	7.9930E+03
278	438	686485	497959	1230	5.4695E+10	4.3966E-01	4.3966E-01	2.8907E+15	8.0448E+03
279	439	565156	422721	1032	3.9536E+10	4.4832E-01	4.4832E-01	2.7947E+15	8.1424E+03
280	441	565687	422727	976	4.0340E+10	4.5207E-01	4.5207E-01	2.7821E+15	8.1705E+03
281	442	689009	499612	1326	5.7086E+10	4.3649E-01	4.3649E-01	2.8870E+15	8.0142E+03
282	443	696467	504638	1278	5.8965E+10	4.3454E-01	4.3454E-01	2.8904E+15	8.0005E+03
283	444	698087	505326	1282	5.4445E+10	4.3469E-01	4.3469E-01	2.8919E+15	7.9982E+03
284	445	698639	506518	1217	5.2774E+10	4.3401E-01	4.3401E-01	2.9035E+15	7.9916E+03
285	446	699030	506065	1306	5.0530E+10	4.3376E-01	4.3376E-01	2.8945E+15	7.9914E+03
286	447	698146	504992	1271	5.3536E+10	4.3390E-01	4.3390E-01	2.8993E+15	7.9881E+03

287	448	689324	499186	1247	5.2492E+10	4.3732E-01	4.3732E-01	2.8841E+15	8.0242E+03
288	449	566698	422625	992	3.7135E+10	4.5098E-01	4.5098E-01	2.7646E+15	8.1625E+03
289	451	567020	423191	998	4.3942E+10	4.5033E-01	4.5033E-01	2.7884E+15	8.1534E+03
290	452	690395	499639	1262	5.6021E+10	4.3745E-01	4.3745E-01	2.8858E+15	8.0232E+03
291	453	698186	504848	1312	5.5948E+10	4.3160E-01	4.3160E-01	2.8927E+15	7.9733E+03
292	454	699495	506404	1249	5.3703E+10	4.3432E-01	4.3432E-01	2.8851E+15	7.9984E+03
293	455	699827	506619	1215	5.0175E+10	4.3160E-01	4.3160E-01	2.9023E+15	7.9750E+03
294	456	700083	506891	1253	5.2753E+10	4.3375E-01	4.3375E-01	2.9014E+15	7.9915E+03
295	457	700035	506971	1246	5.3672E+10	4.3230E-01	4.3230E-01	2.8866E+15	7.9806E+03
296	458	691407	500979	1274	6.2295E+10	4.3648E-01	4.3648E-01	2.8906E+15	8.0211E+03
297	459	566594	422794	984	3.8043E+10	4.4805E-01	4.4805E-01	2.7838E+15	8.1368E+03
298	461	568415	423711	1053	4.6301E+10	4.4596E-01	4.4596E-01	2.7995E+15	8.1212E+03
299	462	690920	500364	1269	6.0656E+10	4.3391E-01	4.3391E-01	2.8952E+15	7.9947E+03
300	463	699145	505730	1285	5.3087E+10	4.3122E-01	4.3122E-01	2.8893E+15	7.9688E+03
301	464	700004	507014	1226	5.4852E+10	4.3372E-01	4.3372E-01	2.8979E+15	7.9879E+03
302	465	701147	508224	1336	5.4215E+10	4.3263E-01	4.3263E-01	2.8949E+15	7.9824E+03
303	466	699646	507040	1273	5.2367E+10	4.3473E-01	4.3473E-01	2.8954E+15	8.0021E+03
304	467	698058	505513	1232	5.2336E+10	4.3740E-01	4.3740E-01	2.8826E+15	8.0248E+03
305	468	690701	500437	1135	4.3785E+10	4.3990E-01	4.3990E-01	2.8826E+15	8.0462E+03
306	469	566788	422938	1011	4.4078E+10	4.5017E-01	4.5017E-01	2.7956E+15	8.1587E+03
307	471	569664	425119	996	4.5905E+10	4.4810E-01	4.4810E-01	2.7731E+15	8.1330E+03
308	472	691240	501157	1324	5.5875E+10	4.3675E-01	4.3675E-01	2.8731E+15	8.0195E+03
309	473	698935	505841	1271	5.3735E+10	4.3558E-01	4.3558E-01	2.9018E+15	8.0061E+03
310	474	702354	508261	1288	5.1730E+10	4.3410E-01	4.3410E-01	2.9074E+15	7.9944E+03
311	475	700494	506061	1272	5.3745E+10	4.3275E-01	4.3275E-01	2.9015E+15	7.9862E+03
312	476	700304	507234	1269	5.7284E+10	4.3444E-01	4.3444E-01	2.8882E+15	7.9943E+03
313	477	699833	507012	1237	5.1991E+10	4.3340E-01	4.3340E-01	2.8982E+15	7.9912E+03
314	478	690207	499491	1269	5.4507E+10	4.3575E-01	4.3575E-01	2.8899E+15	8.0095E+03
315	479	568760	423886	1010	4.2480E+10	4.4761E-01	4.4761E-01	2.7892E+15	8.1354E+03
316	481	569017	424385	963	3.7427E+10	4.4962E-01	4.4962E-01	2.7839E+15	8.1507E+03
317	482	692052	500778	1272	5.7514E+10	4.3844E-01	4.3844E-01	2.8868E+15	8.0350E+03
318	483	699090	506053	1279	5.5603E+10	4.3370E-01	4.3370E-01	2.8802E+15	7.9948E+03
319	484	700919	507254	1295	5.7754E+10	4.3341E-01	4.3341E-01	2.9047E+15	7.9882E+03
320	485	702084	508450	1279	5.5008E+10	4.3262E-01	4.3262E-01	2.9050E+15	7.9839E+03
321	486	702304	508044	1276	5.5374E+10	4.3244E-01	4.3244E-01	2.9020E+15	7.9771E+03
322	487	699396	506595	1310	5.5134E+10	4.3456E-01	4.3456E-01	2.9012E+15	7.9954E+03
323	488	692368	501336	1233	5.2941E+10	4.3660E-01	4.3660E-01	2.8875E+15	8.0138E+03
324	489	568469	423683	992	4.3879E+10	4.4732E-01	4.4732E-01	2.7886E+15	8.1302E+03
325	491	568273	423563	1029	4.4662E+10	4.5138E-01	4.5138E-01	2.7710E+15	8.1615E+03
326	492	691405	501378	1254	5.3359E+10	4.3756E-01	4.3756E-01	2.8742E+15	8.0255E+03
327	493	697380	505466	1308	5.6700E+10	4.3471E-01	4.3471E-01	2.8858E+15	8.0015E+03
328	494	698964	506246	1267	5.4685E+10	4.3529E-01	4.3529E-01	2.8984E+15	8.0034E+03
329	495	701042	508052	1341	5.9424E+10	4.3334E-01	4.3334E-01	2.9017E+15	7.9862E+03
330	496	701569	507827	1298	5.6794E+10	4.3288E-01	4.3288E-01	2.9032E+15	7.9813E+03
331	497	699756	506405	1290	5.4330E+10	4.3314E-01	4.3314E-01	2.9034E+15	7.9878E+03
332	498	692836	501381	1303	5.5259E+10	4.3801E-01	4.3801E-01	2.8895E+15	8.0312E+03
333	499	568427	423990	974	3.8336E+10	4.5133E-01	4.5133E-01	2.7783E+15	8.1664E+03
334	501	568336	423791	1021	4.2198E+10	4.5094E-01	4.5094E-01	2.7853E+15	8.1608E+03
335	502	690644	500124	1229	5.7065E+10	4.3576E-01	4.3576E-01	2.8993E+15	8.0112E+03
336	503	699341	506507	1292	5.1375E+10	4.3196E-01	4.3196E-01	2.9022E+15	7.9797E+03
337	504	699899	506800	1296	5.5979E+10	4.3499E-01	4.3499E-01	2.8880E+15	8.0028E+03
338	505	701612	507557	1269	5.7284E+10	4.3714E-01	4.3714E-01	2.8948E+15	8.0165E+03
339	506	700904	507659	1286	5.2503E+10	4.3489E-01	4.3489E-01	2.8903E+15	7.9978E+03
340	507	698231	505502	1260	5.1041E+10	4.3429E-01	4.3429E-01	2.9002E+15	7.9980E+03
341	508	690639	500241	1273	4.6813E+10	4.3746E-01	4.3746E-01	2.8899E+15	8.0292E+03
342	509	565252	421532	992	4.1102E+10	4.5073E-01	4.5073E-01	2.7875E+15	8.1628E+03
343	511	566459	422673	993	4.1311E+10	4.4822E-01	4.4822E-01	2.7986E+15	8.1353E+03
344	512	690371	500253	1295	5.6167E+10	4.3600E-01	4.3600E-01	2.8904E+15	8.0091E+03
345	513	698860	505545	1269	5.1730E+10	4.3447E-01	4.3447E-01	2.9021E+15	7.9966E+03
346	514	700405	507005	1316	4.9444E+10	4.3477E-01	4.3477E-01	2.8993E+15	7.9973E+03
347	515	699362	506311	1254	5.0582E+10	4.3292E-01	4.3292E-01	2.8855E+15	7.9885E+03
348	516	697979	505536	1223	5.1845E+10	4.3370E-01	4.3370E-01	2.8999E+15	7.9884E+03
349	517	697752	505735	1288	5.5499E+10	4.3555E-01	4.3555E-01	2.8892E+15	8.0044E+03
350	518	687637	498902	1217	5.1782E+10	4.3904E-01	4.3904E-01	2.8874E+15	8.0385E+03
351	519	564984	421746	1117	4.8358E+10	4.5178E-01	4.5178E-01	2.7812E+15	8.1698E+03
352	521	566117	422476	963	3.6634E+10	4.4840E-01	4.4840E-01	2.7885E+15	8.1410E+03
353	522	688754	498926	1289	5.6501E+10	4.3596E-01	4.3596E-01	2.8809E+15	8.0125E+03
354	523	696523	503952	1260	5.3620E+10	4.3366E-01	4.3366E-01	2.9018E+15	7.9900E+03
355	524	697006	505359	1137	5.0550E+10	4.3290E-01	4.3290E-01	2.8897E+15	7.9879E+03
356	525	697924	504981	1246	5.4664E+10	4.3352E-01	4.3352E-01	2.9126E+15	7.9902E+03
357	526	696159	504536	1286	5.7065E+10	4.3476E-01	4.3476E-01	2.9173E+15	8.0018E+03
358	527	696229	504635	1291	5.8109E+10	4.3445E-01	4.3445E-01	2.9016E+15	7.9981E+03
359	528	688857	499739	1271	5.8099E+10	4.3714E-01	4.3714E-01	2.9028E+15	8.0216E+03
360	529	563939	421223	916	3.7333E+10	4.4981E-01	4.4981E-01	2.7963E+15	8.1531E+03
361	531	559614	418238	960	4.5926E+10	4.5463E-01	4.5463E-01	2.7806E+15	8.1922E+03
362	532	677540	491539	1271	5.2148E+10	4.3993E-01	4.3993E-01	2.8717E+15	8.0478E+03
363	533	687777	498525	1277	5.3996E+10	4.3798E-01	4.3798E-01	2.8812E+15	8.0284E+03
364	534	687539	498523	1259	5.5593E+10	4.3662E-01	4.3662E-01	2.8842E+15	8.0196E+03
365	535	688597	498917	1261	5.1052E+10	4.3804E-01	4.3804E-01	2.8846E+15	8.0307E+03
366	536	688179	499085	1279	5.6000E+10	4.3724E-01	4.3724E-01	2.9079E+15	8.0248E+03
367	537	685024	497034	1234	4.6406E+10	4.3527E-01	4.3527E-01	2.8979E+15	8.0070E+03
368	538	676413	490661	1204	5.2043E+10	4.3802E-01	4.3802E-01	2.9060E+15	8.0328E+03
369	539	557934	417184	972	3.8712E+10	4.5003E-01	4.5003E-01	2.7932E+15	8.1569E+03
370	541	467166	360163	761	2.9764E+10	4.6601E-01	4.6601E-01	2.6798E+15	8.3018E+03
371	542	557977	416869	963	3.5642E+10	4.5595E-01	4.5595E-01	2.7783E+15	8.2075E+03
372	543	564538	421555	1006	4.1050E+10	4.4807E-01	4.4807E-01	2.7707E+15	8.1361E+03
373	544	565728	422168	906	3.7626E+10	4.4680E-01	4.4680E-01	2.7887E+15	8.1267E+03
374	545	567089	423153	941	3.9181E+10	4.5104E-01	4.5104E-01	2.7755E+15	8.1617E+03
375	546	565615	422094	999	3.9390E+10	4.5078E-01	4.5078E-01	2.7894E+15	8.1572E+03
376	547	564630	421784	1040	4.2794E+10	4.5276E-01	4.5276E-01	2.7744E+15	8.1748E+03

377	548	557749	416890	950	3.5110E+10	4.5162E-01	4.5162E-01	2.7811E+15	8.1675E+03
378	549	466737	359858	800	2.9378E+10	4.6337E-01	4.6337E-01	2.6952E+15	8.2848E+03
379	1200	56941	52738	782	1.3718E+10	3.9555E-01	3.9555E-01	1.0500E+15	7.7903E+03
380	1201	2366104	2272574	11514102	2.7111E+14	4.2147E-01	4.2147E-01	1.6302E+15	3.9831E+00
381	1202	37784	34962	186722	2.4976E+12	3.7260E-01	3.7260E-01	9.4173E+14	3.8344E+00
382	12021	656488	632978	2833325	4.2540E+13	3.8499E-01	3.8499E-01	1.0209E+15	3.7966E+00
383	1203	2115726	2043698	10405671	2.4123E+14	4.1794E-01	4.1794E-01	1.6071E+15	3.9672E+00
384	1204	1110751	1072031	4740334	7.1077E+13	3.8446E-01	3.8446E-01	1.0197E+15	3.7911E+00
385	12041	54015	49857	263247	3.5019E+12	3.5479E-01	3.5479E-01	9.2354E+14	3.7440E+00
386	1205	3868159	3711723	18896373	4.3980E+14	4.2283E-01	4.2283E-01	1.6086E+15	3.9896E+00
387	1206	2594	2392	12228	1.5384E+11	3.1357E-01	3.1357E-01	8.6024E+14	3.5544E+00
388	12061	62457	60672	251958	3.6254E+12	2.3907E-01	2.3907E-01	9.8188E+14	3.0798E+00
389	1207	67998	66591	256944	3.8074E+12	1.6404E-01	1.6404E-01	1.0305E+15	2.6824E+00
390	1208	62138	57197	286633	3.9608E+12	3.5587E-01	3.5587E-01	9.6183E+14	3.7415E+00
391	12081	1089333	1049238	4619695	6.9534E+13	3.8466E-01	3.8466E-01	1.0254E+15	3.7917E+00
392	1209	3862209	3706610	18862736	4.3979E+14	4.2277E-01	4.2277E-01	1.6107E+15	3.9886E+00
393	1210	2293261	2146730	10529142	1.3614E+15	4.3093E-01	4.3093E-01	9.4228E+15	4.0266E+00
394	1211	8198531	7731909	37048950	5.9230E+14	4.0591E-01	4.0591E-01	1.0880E+15	3.9682E+00
395	12111	704556	649700	3548098	5.3731E+13	3.9513E-01	3.9513E-01	1.0554E+15	3.9987E+00
397	9998	22059280	13310937	797988	1.8094E+13	4.4120E-01	4.4120E-01	1.5099E+15	8.0979E+03
398	9997	24098668	14833103	824008	1.8259E+13	4.4358E-01	4.4358E-01	1.4716E+15	8.1073E+03
399	9996	18094261	11054385	601780	1.3464E+13	4.4069E-01	4.4069E-01	1.4902E+15	8.0934E+03
400	9995	14079268	11567161	631166	1.0433E+13	4.1467E-01	4.1467E-01	1.1114E+15	7.9125E+03
401	9994	12549070	9789320	1020638	1.7053E+13	3.8970E-01	3.8970E-01	1.1311E+15	7.7277E+03
402	9993	55328	44206	2628	4.1917E+10	1.2894E-01	1.2894E-01	1.0604E+15	5.5952E+03
403	9992	127570	102231	12757	1.9408E+11	1.3834E-01	1.3834E-01	1.0615E+15	5.6978E+03
404	9991	117191	104701	550	9.3125E+09	1.4623E-01	1.4623E-01	1.0533E+15	5.7876E+03
405	9990	194387	166496	10803	1.6832E+11	1.7288E-01	1.7288E-01	1.0571E+15	6.0128E+03
406	9989	780739	602076	53083	8.1939E+11	3.1563E-01	3.1563E-01	1.0527E+15	7.1600E+03
407	9988	94376	87746	15941	2.3149E+11	4.3932E-01	4.3932E-01	1.0356E+15	8.3978E+03
409	9986	33263	33231	181	2.0880E+09	1.8354E-01	1.8354E-01	1.0561E+15	6.0490E+03
410	10000	3673	3049	18	1.8792E+08	3.6566E-01	3.6566E-01	1.0969E+15	7.5865E+03
411	10001	4991	4163	26	6.6816E+08	3.6750E-01	3.6750E-01	1.1113E+15	7.5909E+03
412	10002	13092	11463	81	8.4564E+08	3.9815E-01	3.9815E-01	1.1491E+15	7.8279E+03
413	10003	5145	4308	24	2.5056E+08	3.6891E-01	3.6891E-01	1.0842E+15	7.6327E+03
414	10004	3660	3006	15	1.5660E+08	3.6209E-01	3.6209E-01	1.0890E+15	7.5340E+03
415	10005	277	235	4	4.1760E+07	2.9310E-01	2.9310E-01	8.6650E+14	7.0931E+03
416	2001	93550	84100	19602	2.9153E+11	4.2354E-01	4.2354E-01	1.0355E+15	8.2242E+03
417	2002	94768	80689	52024	7.8414E+11	3.7618E-01	3.7618E-01	1.0366E+15	7.7714E+03
418	2003	91719	73371	57714	8.6040E+11	3.2641E-01	3.2641E-01	1.0310E+15	7.2883E+03
419	2004	88309	67026	102874	1.4991E+12	2.8524E-01	2.8524E-01	1.0216E+15	6.8689E+03
420	2005	79145	57200	102034	1.5104E+12	2.4738E-01	2.4738E-01	1.0428E+15	6.4761E+03
421	2006	67896	47725	93686	1.3974E+12	2.2544E-01	2.2544E-01	1.0435E+15	6.2414E+03
422	2007	56019	38907	80289	1.2076E+12	2.1133E-01	2.1133E-01	1.0445E+15	6.0796E+03
423	2008	44102	31025	95352	1.4214E+12	2.0241E-01	2.0241E-01	1.0386E+15	5.9859E+03
424	2009	30584	21415	67983	9.8407E+11	1.9671E-01	1.9671E-01	1.0091E+15	5.8982E+03
425	2010	20128	14227	57333	8.1854E+11	1.9612E-01	1.9612E-01	1.0096E+15	5.8878E+03
426	2011	11530	8115	32626	4.8820E+11	1.9189E-01	1.9189E-01	1.0675E+15	5.8575E+03
427	2012	6439	4531	18728	2.7824E+11	1.9305E-01	1.9305E-01	1.0488E+15	5.9013E+03
428	2013	3625	2537	10626	1.6191E+11	1.8649E-01	1.8649E-01	1.0680E+15	5.8202E+03
429	2014	2004	1379	5849	8.7644E+10	1.8828E-01	1.8828E-01	1.0211E+15	5.8001E+03
430	2015	895	750	4635	7.2589E+10	1.9538E-01	1.9538E-01	1.1052E+15	5.8919E+03
total		370613636	295931380	957835054	4.3202E+16				

1tally 2 nps = 70000000
tally type 2 particle flux averaged over a surface.
tally for photons

this tally is modified by a dose function.

areas
surface: 1231
1.78374E+06

surface 1231
2.38752E-01 0.0134

==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 2

tfc bin behavior	--mean-- behavior	---------relative error--------- value	decrease	decrease rate	----variance of the variance---- value	decrease	decrease rate	--figure of merit-- -pdf- behavior	slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant random	>3.00
observed	random	0.01	yes	yes	0.01	yes	yes	constant random	4.44

```
 passed?        yes          yes      yes          yes             yes      yes         yes               yes
yes         yes

==================================================================================================================
===================

 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart
to verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 2.3567E-01 to 2.4207E-01; 2.3247E-01 to 2.4527E-01;
2.2928E-01 to 2.4847E-01
 estimated  symmetric confidence interval(1,2,3 sigma): 2.3555E-01 to 2.4195E-01; 2.3236E-01 to 2.4515E-01;
2.2916E-01 to 2.4835E-01

1analysis of the results in the tally fluctuation chart bin (tfc) for tally   2 with nps =    70000000  print
table 160


 normed average tally per history  = 2.38752E-01          unnormed average tally per history  = 4.25871E+05
 estimated tally relative error    = 0.0134               estimated variance of the variance  = 0.0129
 relative error from zero tallies  = 0.0048               relative error from nonzero scores  = 0.0125

 number of nonzero history tallies =       44186          efficiency for the nonzero tallies  = 0.0006
 history number of largest  tally  =    66143877          largest  unnormalized history tally = 1.10860E+11
 (largest  tally)/(average tally)  = 2.60313E+05          (largest  tally)/(avg nonzero tally)= 1.64317E+02

 (confidence interval shift)/mean  = 0.0005               shifted confidence interval center  = 2.38874E-01


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1           value(nps+1)/value(nps)-1.

      mean                            2.38752E-01             2.39640E-01                     0.003719
      relative error                  1.33939E-02             1.38490E-02                     0.033983
      variance of the variance        1.29455E-02             1.62810E-02                     0.257662
      shifted center                  2.38874E-01             2.38897E-01                     0.000096
      figure of merit                 9.22045E+00             8.62433E+00                    -0.064652

 the estimated inverse power slope of the 200 largest  tallies starting at 1.18410E+10 is 4.4410
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.158E+05)*( 8.924E-03)**2 = (1.158E+05)*(7.963E-
05) = 9.220E+00

1tally  12        nps =    70000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons

           this tally is modified by a dose function.

           areas
                surface:     1227
               segment
                 1       1.00000E+50
                 2       2.56400E+07
                 3       1.03700E+08
                 4       1.60200E+08
                 5       3.92700E+08
                 6       5.49800E+08
                 7       7.06900E+08
                 8       8.63900E+08
                 9       1.59000E+09
                10       1.94400E+09
                11       3.14200E+09
                12       3.77000E+09
                13       4.39800E+09
                14       5.02700E+09
                15       5.65500E+09
                16       1.68900E+10
```

```
 surface  1227
 segment:       -2000
                4.26669E-46 0.0806

 surface  1227
 segment:        2000    -2001
                1.59189E-03 0.0591

 surface  1227
 segment:        2000     2001    -2002
                1.07909E-03 0.0745

 surface  1227
 segment:        2000     2001     2002    -2003
                5.17306E-04 0.1188

 surface  1227
 segment:        2000     2001     2002     2003    -2004
                2.21940E-04 0.0652

 surface  1227
 segment:        2000     2001     2002     2003     2004    -2005
                1.14616E-04 0.0879

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005    -2006
                3.85769E-05 0.0588

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006    -2007
                2.17108E-05 0.0906

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007    -2008
                1.16297E-05 0.1135

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008    -2009
                4.00550E-06 0.1257

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009    -2010
                1.31833E-06 0.1436

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
    -2011
                4.59483E-07 0.2631

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011    -2012
                1.11245E-07 0.1946

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012    -2013
                7.82426E-08 0.5742

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012     2013    -2014
                1.11719E-08 0.3997

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012     2013     2014
                1.30726E-09 0.6093


================================================================================================================
==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  12
```

```
 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random       >3.00
 observed     random        0.61      yes          yes            0.48      yes         yes            constant
random       0.00
 passed?        yes           no      yes          yes              no      yes         yes               yes
yes          no


================================================================================================================
==================


 warning.  the tally in the tally fluctuation chart bin did not pass  3 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  12 with nps =    70000000  print
table 160


 normed average tally per history  = 1.30726E-09          unnormed average tally per history  = 2.20796E+01
 estimated tally relative error    = 0.6093               estimated variance of the variance  = 0.4847
 relative error from zero tallies  = 0.5774               relative error from nonzero scores  = 0.1949

 number of nonzero history tallies =           3          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =     9833620          largest  unnormalized history tally = 7.59255E+08
 (largest  tally)/(average tally)  = 3.43871E+07          (largest  tally)/(avg nonzero tally)= 1.47373E+00

 (confidence interval shift)/mean  = 0.2045               shifted confidence interval center  = 1.57466E-09


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities          value at nps          value at nps+1          value(nps+1)/value(nps)-1.

      mean                           1.30726E-09            1.94944E-09                   0.491245
      relative error                 6.09346E-01            5.24865E-01                  -0.138641
      variance of the variance       4.84746E-01            3.33235E-01                  -0.312558
      shifted center                 1.57466E-09            1.59581E-09                   0.013432
      figure of merit                4.45488E-03            6.00437E-03                   0.347820

 there is not enough information in the largest  history scores (usually less than 500 scores) for a reliable
estimate of the slope.
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.158E+05)*( 1.961E-04)**2 = (1.158E+05)*(3.847E-
08) = 4.455E-03

1unnormed tally density for tally  12            nonzero tally mean(m) = 5.152E+08   nps =    70000000  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 0.0)
  tally  number num den log den:d-------------------------------------------------------------------------------
--------------------
 3.98+08      1 1.74-16 -15.758
*******************************************************************************************
 5.01+08      1 1.39-16 -15.858 ************************************************************
 6.31+08      0 0.00+00   0.000
 7.94+08      1 8.74-17 -16.058 *
  total       3 4.29-08         d-------------------------------------------------------------------------------
--------------------

1tally  22        nps =    70000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons

           this tally is modified by a dose function.

           areas
                surface:     1227
               segment
```

```
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       4.35376E+05
                5       4.35376E+05
                6       4.35376E+05
                7       4.35376E+05
                8       4.35376E+05
                9       4.35376E+05
               10       4.35376E+05
               11       4.35376E+05
               12       4.35376E+05
               13       4.35376E+05
               14       4.35376E+05
               15       4.35376E+05
               16       4.35376E+05
               17       4.35376E+05
               18       4.35376E+05
               19       4.35376E+05
               20       4.35376E+05
               21       4.35376E+05
               22       1.00000E+50

surface  1227
segment:        1201
                2.39277E-45 0.0501

surface  1227
segment:       -1201    -2026
                1.16232E-45 0.0485

surface  1227
segment:       -1201     2026     2027
                9.82016E-46 0.0406

surface  1227
segment:       -1201     2026    -2027     2016
                3.12192E-03 0.4182

surface  1227
segment:       -1201     2026    -2027    -2016     2017
                1.44075E-03 0.1644

surface  1227
segment:       -1201     2026    -2027    -2016    -2017     2018
                2.11735E-03 0.2017

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018     2019
                3.63180E-03 0.3846

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019     2020
                3.33931E-03 0.2143

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020     2021
                7.73946E-03 0.5501

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021     2022
                3.47506E-03 0.1840

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022     2023
                3.56723E-03 0.1993

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     2024
                2.88555E-03 0.1233

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024     2025
                2.60586E-03 0.1307

surface  1227
```

```
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025     2028
                3.11174E-03 0.1787

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028     2029
                3.90292E-03 0.3024

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029     2030
                3.42400E-03 0.2217

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030     2031
                2.55497E-03 0.1417

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031     2032
                2.51811E-03 0.2003

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032     2033
                1.72164E-03 0.1578

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033     2034
                2.14811E-03 0.2285

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034     2035
                1.91615E-02 0.9172

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034    -2035
                2.23142E-46 0.0850
```

==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 22

tfc bin behavior	--mean-- behavior	---------relative error--------- value	decrease	decrease rate	----variance of the variance---- value	decrease	decrease rate	--figure of merit-- -pdf- value	behavior slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random >3.00
observed	random	0.08	yes	yes	0.18	no	no	decrease	random 2.50
passed?	yes	yes	yes	yes	no	no	no	no	yes no

==========

warning. the tally in the tally fluctuation chart bin did not pass 5 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 22 with nps = 70000000 print table 160

```
 normed average tally per history  = 2.23142E-46          unnormed average tally per history  = 2.23142E+04
 estimated tally relative error    = 0.0850              estimated variance of the variance  = 0.1799
 relative error from zero tallies  = 0.0288              relative error from nonzero scores  = 0.0799
```

```
 number of nonzero history tallies =        1204          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =    56559823          largest  unnormalized history tally = 8.30302E+10
 (largest  tally)/(average tally)  = 3.72096E+06          (largest  tally)/(avg nonzero tally)= 6.40004E+01

 (confidence interval shift)/mean  = 0.0148               shifted confidence interval center  = 2.26449E-46


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities          value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                           2.23142E-46             2.35004E-46                    0.053156
      relative error                 8.49679E-02             9.51668E-02                    0.120032
      variance of the variance       1.79913E-01             1.72057E-01                   -0.043664
      shifted center                 2.26449E-46             2.27187E-46                    0.003259
      figure of merit                2.29115E-01             1.82639E-01                   -0.202852

 the estimated inverse power slope of the  60 largest  tallies starting at 4.54891E+09 is 2.5045
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.158E+05)*( 1.407E-03)**2 = (1.158E+05)*(1.979E-
06) = 2.291E-01

1unnormed tally density for tally  22            nonzero tally mean(m) = 1.297E+09   nps =    70000000  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 2.5)
  tally  number num den log den:d-------------------d-------------------d--------------------d------------------
-d------------------
 2.00+08      5 1.74-15 -14.759 ********************|********************|********************|*********
|
 2.51+08    164 4.53-14 -13.343
********************|********************|********************|********************|******************
 3.16+08    164 3.60-14 -13.443
********************|********************|********************|********************|****************
 3.98+08    141 2.46-14 -13.609
********************|********************|********************|********************|*************
 5.01+08    118 1.64-14 -13.786
********************|********************|********************|********************|*********
 6.31+08    123 1.35-14 -13.868
********************|********************|********************|********************|*******
 7.94+08     96 8.39-15 -14.076
********************|********************|********************|********************|***
 1.00+09     88 6.11-15 -14.214
********************|********************|********************|********************|
 1.26+09     64 3.53-15 -14.452 ********************|********************|********************|***************
|
 1.58+09     50 2.19-15 -14.659 mmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmm
|
 2.00+09     32 1.11-15 -14.953 ********************|********************|********************|*****
|
 2.51+09     32 8.85-16 -15.053 ********************|********************|********************|***
|
 3.16+09     28 6.15-16 -15.211 ********************|********************|********************|
|
 3.98+09     23 4.01-16 -15.397 ********************|********************|*****************   |
|
 5.01+09     24 3.33-16 -15.478 ********************|********************|***************     |   s
|
 6.31+09     16 1.76-16 -15.754 ********************|********************|*********           |s
|
 7.94+09      8 7.00-17 -16.155 ********************|********************|*                 s |
|
 1.00+10     12 8.34-17 -16.079 ********************|********************|***            s    |
|
 1.26+10      4 2.21-17 -16.656 ********************|***********         |           s        |
|
 1.58+10      3 1.31-17 -16.881 ********************|******              |       s            |
|
 2.00+10      2 6.96-18 -17.157 ********************|*                   |   s                |
|
 2.51+10      1 2.77-18 -17.558 *************        |                    s                   |
|
```

```
 3.16+10      4 8.79-18 -17.056 ********************|***            s   |                    |
|
 3.98+10      0 0.00+00   0.000                     |          s        |                    |
|
 5.01+10      1 1.39-18 -17.858 *******             |     s             |                    |
|
 6.31+10      0 0.00+00   0.000                     | s                 |                    |
|
 7.94+10      0 0.00+00   0.000                   s |                   |                    |
|
 1.00+11      1 6.95-19 -18.158 *           s       |                   |                    |
|
  total    1204 1.72-05         d-------------------d-------------------d--------------------d------------------
-d------------------

1tally  32        nps =    70000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons

           this tally is modified by a dose function.

           areas
                surface:     1201
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       1.00000E+50
                 5       6.30000E+05

 surface  1201
 segment:        1231
                 2.80174E-45 0.0228

 surface  1201
 segment:       -1231    -2026
                 8.02911E-49 0.4325

 surface  1201
 segment:       -1231     2026     2027
                 1.04741E-47 0.5505

 surface  1201
 segment:       -1231     2026    -2027    -1227
                 0.00000E+00 0.0000

 surface  1201
 segment:       -1231     2026    -2027     1227
                 4.81641E-03 0.3104


==========================================================================================================================
===================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  32

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.31      yes          yes            0.17      yes         yes            constant
random       0.00
 passed?        yes           no      yes          yes              no      yes         yes               yes
yes          no


==========================================================================================================================
===================

 warning.  the tally in the tally fluctuation chart bin did not pass  3 of the 10 statistical checks.
```

```
1analysis of the results in the tally fluctuation chart bin (tfc) for tally  32 with nps =    70000000  print
table 160


 normed average tally per history  = 4.81641E-03          unnormed average tally per history  = 3.03434E+03
 estimated tally relative error    = 0.3104               estimated variance of the variance  = 0.1663
 relative error from zero tallies  = 0.1443               relative error from nonzero scores  = 0.2748

 number of nonzero history tallies =          48          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =    11252687          largest  unnormalized history tally = 3.29988E+10
 (largest  tally)/(average tally)  = 1.08751E+07          (largest  tally)/(avg nonzero tally)= 7.45723E+00

 (confidence interval shift)/mean  = 0.0611               shifted confidence interval center  = 5.11049E-03


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1           value(nps+1)/value(nps)-1.

      mean                            4.81641E-03             5.56469E-03                    0.155359
      relative error                  3.10393E-01             3.00428E-01                   -0.032103
      variance of the variance        1.66349E-01             1.46508E-01                   -0.119272
      shifted center                  5.11049E-03             5.12653E-03                    0.003139
      figure of merit                 1.71688E-02             1.83266E-02                    0.067436

 there is not enough information in the largest  history scores (usually less than 500 scores) for a reliable
estimate of the slope.
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.158E+05)*( 3.851E-04)**2 = (1.158E+05)*(1.483E-
07) = 1.717E-02

1unnormed tally density for tally  32            nonzero tally mean(m) = 4.425E+09   nps =    70000000  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 0.0)
  tally  number num den log den:d----------------------------------d----------------------------------d---------
--------------------
 2.51+08      4 1.11-15 -14.956
**********************************|**********************************|*****************************
 3.16+08      3 6.59-16 -15.181
**********************************|**********************************|*********************
 3.98+08      4 6.98-16 -15.156
**********************************|**********************************|**********************
 5.01+08      8 1.11-15 -14.955
**********************************|**********************************|*****************************
 6.31+08      7 7.71-16 -15.113
**********************************|**********************************|**********************
 7.94+08      3 2.62-16 -15.581 ********************************** |*********************************** |*******
 1.00+09      3 2.08-16 -15.681 ********************************** |*********************************** |***
 1.26+09      2 1.10-16 -15.957 ********************************** |******************************     |
 1.58+09      1 4.38-17 -16.358 ********************************** |***************                    |
 2.00+09      1 3.48-17 -16.458 ********************************** |*************                      |
 2.51+09      0 0.00+00   0.000                                    |                                    |
 3.16+09      1 2.20-17 -16.658 ********************************** |*****                              |
 3.98+09      0 0.00+00   0.000                                    |                                    |
 5.01+09      1 1.39-17 -16.858 mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm                     |
 6.31+09      2 2.20-17 -16.657 ********************************** |*****                              |
 7.94+09      1 8.74-18 -17.058 *************************            |                                    |
 1.00+10      0 0.00+00   0.000                                    |                                    |
 1.26+10      0 0.00+00   0.000                                    |                                    |
 1.58+10      0 0.00+00   0.000                                    |                                    |
 2.00+10      3 1.04-17 -16.981 ****************************       |                                    |
 2.51+10      1 2.77-18 -17.558 ********                         |                                    |
 3.16+10      2 4.39-18 -17.357 ***************                  |                                    |
 3.98+10      1 1.74-18 -17.758 *                                |                                    |
  total      48 6.86-07         d----------------------------------d----------------------------------d---------
--------------------

1tally  42        nps =    70000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons

           this tally is modified by a dose function.
```

areas

surface: segment	2003	2004	2005	2006	2007	2008	2009
1	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
2	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
3	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
4	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
5	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
6	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06

surface: segment	2010	2011	2012	2013
1	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
2	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
3	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
4	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
5	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
6	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06

surface	2003					
segment:	1219					
	1.28676E-44	0.0110				
surface	2003					
segment:	-1219	-1209				
	1.97387E-47	0.2078				
surface	2003					
segment:	-1219	1209	1201			
	1.40914E-46	0.1002				
surface	2003					
segment:	-1219	1209	-1201	-1205		
	6.81489E-47	0.1036				
surface	2003					
segment:	-1219	1209	-1201	1205	1206	
	6.51225E-47	0.2461				
surface	2003					
segment:	-1219	1209	-1201	1205	-1206	
	7.58109E-04	0.1644				
surface	2004					
segment:	1219					
	1.13946E-44	0.0133				
surface	2004					
segment:	-1219	-1209				
	1.19156E-47	0.2496				
surface	2004					
segment:	-1219	1209	1201			
	7.56468E-47	0.0944				
surface	2004					
segment:	-1219	1209	-1201	-1205		
	3.53194E-47	0.1186				
surface	2004					
segment:	-1219	1209	-1201	1205	1206	
	3.77231E-47	0.1182				
surface	2004					
segment:	-1219	1209	-1201	1205	-1206	
	2.01204E-04	0.2155				
surface	2005					
segment:	1219					
	9.90581E-45	0.0162				
surface	2005					

```
segment:       -1219    -1209
                5.01108E-48 0.2527

surface  2005
segment:       -1219     1209     1201
                4.16952E-47 0.1135

surface  2005
segment:       -1219     1209    -1201    -1205
                2.53793E-47 0.2280

surface  2005
segment:       -1219     1209    -1201     1205     1206
                2.23052E-47 0.1518

surface  2005
segment:       -1219     1209    -1201     1205    -1206
                1.07205E-04 0.2131

surface  2006
segment:        1219
                8.05487E-45 0.0147

surface  2006
segment:       -1219    -1209
                3.15306E-48 0.2129

surface  2006
segment:       -1219     1209     1201
                2.78206E-47 0.1191

surface  2006
segment:       -1219     1209    -1201    -1205
                1.78410E-47 0.2089

surface  2006
segment:       -1219     1209    -1201     1205     1206
                1.22775E-47 0.2249

surface  2006
segment:       -1219     1209    -1201     1205    -1206
                4.72713E-05 0.3343

surface  2007
segment:        1219
                6.43815E-45 0.0183

surface  2007
segment:       -1219    -1209
                3.34775E-48 0.3327

surface  2007
segment:       -1219     1209     1201
                1.60045E-47 0.1342

surface  2007
segment:       -1219     1209    -1201    -1205
                8.67744E-48 0.2224

surface  2007
segment:       -1219     1209    -1201     1205     1206
                9.22910E-48 0.1714

surface  2007
segment:       -1219     1209    -1201     1205    -1206
                2.91678E-05 0.3656

surface  2008
segment:        1219
                4.39202E-45 0.0185

surface  2008
segment:       -1219    -1209
                6.39240E-49 0.4734

surface  2008
segment:       -1219     1209     1201
                8.08012E-48 0.1964
```

```
surface  2008
segment:       -1219     1209    -1201    -1205
                2.31454E-48 0.1897

surface  2008
segment:       -1219     1209    -1201     1205     1206
                2.86381E-48 0.2092

surface  2008
segment:       -1219     1209    -1201     1205    -1206
                9.34656E-06 0.6545

surface  2009
segment:        1219
                2.96956E-45 0.0348

surface  2009
segment:       -1219    -1209
                3.27475E-50 1.0000

surface  2009
segment:       -1219     1209     1201
                1.60713E-48 0.2204

surface  2009
segment:       -1219     1209    -1201    -1205
                1.40770E-48 0.2341

surface  2009
segment:       -1219     1209    -1201     1205     1206
                1.76603E-48 0.3214

surface  2009
segment:       -1219     1209    -1201     1205    -1206
                7.87420E-06 0.7540

surface  2010
segment:        1219
                1.78466E-45 0.0310

surface  2010
segment:       -1219    -1209
                1.31714E-48 1.0000

surface  2010
segment:       -1219     1209     1201
                2.58776E-48 0.6371

surface  2010
segment:       -1219     1209    -1201    -1205
                3.96112E-48 0.9339

surface  2010
segment:       -1219     1209    -1201     1205     1206
                4.90494E-49 0.4885

surface  2010
segment:       -1219     1209    -1201     1205    -1206
                0.00000E+00 0.0000

surface  2011
segment:        1219
                1.04375E-45 0.0453

surface  2011
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209     1201
                3.21197E-49 0.5293

surface  2011
segment:       -1219     1209    -1201    -1205
                1.54937E-49 0.7981

surface  2011
```

```
 segment:       -1219     1209    -1201     1205     1206
                 3.50312E-49 0.6287

 surface  2011
 segment:       -1219     1209    -1201     1205    -1206
                 1.13318E-06 1.0000

 surface  2012
 segment:        1219
                 5.59611E-46 0.0574

 surface  2012
 segment:       -1219    -1209
                 4.77828E-50 1.0000

 surface  2012
 segment:       -1219     1209     1201
                 1.64789E-49 0.8460

 surface  2012
 segment:       -1219     1209    -1201    -1205
                 0.00000E+00 0.0000

 surface  2012
 segment:       -1219     1209    -1201     1205     1206
                 0.00000E+00 0.0000

 surface  2012
 segment:       -1219     1209    -1201     1205    -1206
                 0.00000E+00 0.0000

 surface  2013
 segment:        1219
                 3.63453E-46 0.1415

 surface  2013
 segment:       -1219    -1209
                 0.00000E+00 0.0000

 surface  2013
 segment:       -1219     1209     1201
                 0.00000E+00 0.0000

 surface  2013
 segment:       -1219     1209    -1201    -1205
                 0.00000E+00 0.0000

 surface  2013
 segment:       -1219     1209    -1201     1205     1206
                 1.62478E-49 0.7076

 surface  2013
 segment:       -1219     1209    -1201     1205    -1206
                 0.00000E+00 0.0000


================================================================================================================================
==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  42

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value   decrease   decrease rate      value   decrease   decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.16      yes          yes            0.26      yes         yes            constant
random       0.00
 passed?        yes           no      yes          yes              no      yes         yes               yes
yes          no


================================================================================================================================
==================
```

warning. the tally in the tally fluctuation chart bin did not pass 3 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 42 with nps = 70000000 print table 160

normed average tally per history	= 7.58109E-04	unnormed average tally per history	= 2.27433E+03
estimated tally relative error	= 0.1644	estimated variance of the variance	= 0.2619
relative error from zero tallies	= 0.0743	relative error from nonzero scores	= 0.1467
number of nonzero history tallies	= 181	efficiency for the nonzero tallies	= 0.0000
history number of largest tally	= 7324116	largest unnormalized history tally	= 1.80792E+10
(largest tally)/(average tally)	= 7.94925E+06	(largest tally)/(avg nonzero tally)	= 2.05545E+01
(confidence interval shift)/mean	= 0.0368	shifted confidence interval center	= 7.86001E-04

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	7.58109E-04	8.44200E-04	0.113561
relative error	1.64413E-01	1.79442E-01	0.091407
variance of the variance	2.61949E-01	2.24383E-01	-0.143409
shifted center	7.86001E-04	7.90895E-04	0.006227
figure of merit	6.11913E-02	5.13708E-02	-0.160489

there is not enough information in the largest history scores (usually less than 500 scores) for a reliable estimate of the slope.
the history score probability density function appears to have an unsampled region at the largest history scores:
please examine. see print table 161.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.158E+05)*(7.270E-04)**2 = (1.158E+05)*(5.285E-07) = 6.119E-02

1unnormed tally density for tally 42 nonzero tally mean(m) = 8.796E+08 nps = 70000000 print table 161

abscissa ordinate log plot of tally probability density function in tally fluctuation chart bin(d=decade,slope= 0.0)

tally	number	num den	log den	d	d	d
2.00+08	4	1.39-15	-14.856	**********	**********	**********
2.51+08	22	6.08-15	-14.216	**********	**********	********
3.16+08	27	5.93-15	-14.227	**********	**********	********
3.98+08	22	3.84-15	-14.416	**********	**********	**
5.01+08	20	2.77-15	-14.557	**********	**********	
6.31+08	18	1.98-15	-14.703	**********	**********	
7.94+08	15	1.31-15	-14.882	**********	**********	**********
1.00+09	21	1.46-15	-14.836	mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm	mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm	mmmmmmmmmmmmmmmmmmmm
1.26+09	16	8.83-16	-15.054	**********	**********	**********
1.58+09	7	3.07-16	-15.513	**********	**********	
2.00+09	1	3.48-17	-16.458	**********	*	
2.51+09	0	0.00+00	0.000			
3.16+09	0	0.00+00	0.000			
3.98+09	0	0.00+00	0.000			
5.01+09	3	4.16-17	-16.381	**********	***	
6.31+09	1	1.10-17	-16.958	**********		

```
 7.94+09      2 1.75-17 -16.757 **********************        |                            |
|
 1.00+10      1 6.95-18 -17.158 **********                     |                            |
|
 1.26+10      0 0.00+00   0.000                                |                            |
|
 1.58+10      0 0.00+00   0.000                                |                            |
|
 2.00+10      1 3.48-18 -17.458 *                              |                            |
|
  total     181 2.59-06         d------------------------------d----------------------------d------------------
-----------d--------

1tally  52        nps =    70000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
3.00000E+06
                surface:     2010         2011         2012         2013
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:        1219
                 1.28676E-44 0.0110

 surface  2003
 segment:       -1219    -1209
                 1.97387E-47 0.2078

 surface  2003
 segment:       -1219     1209    -1201
                 1.56015E-46 0.1148

 surface  2003
 segment:       -1219     1209     1201    -1205
                 6.99437E-47 0.1121

 surface  2003
 segment:       -1219     1209     1201     1205     1206
                 5.98522E-47 0.1856

 surface  2003
 segment:       -1219     1209     1201     1205    -1206
                 3.70611E-04 0.2445

 surface  2004
 segment:        1219
                 1.13946E-44 0.0133

 surface  2004
 segment:       -1219    -1209
                 1.19156E-47 0.2496

 surface  2004
 segment:       -1219     1209    -1201
                 7.90786E-47 0.0791
```

```
surface  2004
segment:       -1219     1209     1201    -1205
                3.73527E-47 0.1156

surface  2004
segment:       -1219     1209     1201     1205     1206
                3.21028E-47 0.1572

surface  2004
segment:       -1219     1209     1201     1205    -1206
                2.06381E-04 0.4231

surface  2005
segment:        1219
                9.90581E-45 0.0162

surface  2005
segment:       -1219    -1209
                5.01108E-48 0.2527

surface  2005
segment:       -1219     1209    -1201
                5.09006E-47 0.1324

surface  2005
segment:       -1219     1209     1201    -1205
                2.28088E-47 0.1599

surface  2005
segment:       -1219     1209     1201     1205     1206
                1.78191E-47 0.1682

surface  2005
segment:       -1219     1209     1201     1205    -1206
                3.55786E-05 0.3405

surface  2006
segment:        1219
                8.05487E-45 0.0147

surface  2006
segment:       -1219    -1209
                3.15306E-48 0.2129

surface  2006
segment:       -1219     1209    -1201
                3.15367E-47 0.1478

surface  2006
segment:       -1219     1209     1201    -1205
                1.66809E-47 0.1532

surface  2006
segment:       -1219     1209     1201     1205     1206
                1.03180E-47 0.2021

surface  2006
segment:       -1219     1209     1201     1205    -1206
                2.73892E-05 0.3933

surface  2007
segment:        1219
                6.43815E-45 0.0183

surface  2007
segment:       -1219    -1209
                3.34775E-48 0.3327

surface  2007
segment:       -1219     1209    -1201
                1.87816E-47 0.1340

surface  2007
segment:       -1219     1209     1201    -1205
                9.60265E-48 0.1858

surface  2007
```

```
segment:       -1219     1209     1201     1205     1206
                5.82535E-48 0.1975

surface  2007
segment:       -1219     1209     1201     1205    -1206
                1.92175E-05 0.5779

surface  2008
segment:        1219
                4.39202E-45 0.0185

surface  2008
segment:       -1219    -1209
                6.39240E-49 0.4734

surface  2008
segment:       -1219     1209    -1201
                5.45875E-48 0.1402

surface  2008
segment:       -1219     1209     1201    -1205
                4.95312E-48 0.2752

surface  2008
segment:       -1219     1209     1201     1205     1206
                2.72428E-48 0.2821

surface  2008
segment:       -1219     1209     1201     1205    -1206
                1.34237E-05 0.6549

surface  2009
segment:        1219
                2.96956E-45 0.0348

surface  2009
segment:       -1219    -1209
                3.27475E-50 1.0000

surface  2009
segment:       -1219     1209    -1201
                3.40996E-48 0.1994

surface  2009
segment:       -1219     1209     1201    -1205
                8.01327E-49 0.3085

surface  2009
segment:       -1219     1209     1201     1205     1206
                7.29129E-49 0.3316

surface  2009
segment:       -1219     1209     1201     1205    -1206
                2.55591E-06 1.0000

surface  2010
segment:        1219
                1.78466E-45 0.0310

surface  2010
segment:       -1219    -1209
                1.31714E-48 1.0000

surface  2010
segment:       -1219     1209    -1201
                4.45161E-48 0.8328

surface  2010
segment:       -1219     1209     1201    -1205
                1.98080E-48 0.8240

surface  2010
segment:       -1219     1209     1201     1205     1206
                6.06963E-49 0.3826

surface  2010
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000
```

```
surface  2011
segment:        1219
                1.04375E-45 0.0453

surface  2011
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209    -1201
                5.39245E-49 0.4726

surface  2011
segment:       -1219     1209     1201    -1205
                2.39343E-49 0.6226

surface  2011
segment:       -1219     1209     1201     1205     1206
                8.18546E-50 1.0000

surface  2011
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2012
segment:        1219
                5.59611E-46 0.0574

surface  2012
segment:       -1219    -1209
                4.77828E-50 1.0000

surface  2012
segment:       -1219     1209    -1201
                0.00000E+00 0.0000

surface  2012
segment:       -1219     1209     1201    -1205
                0.00000E+00 0.0000

surface  2012
segment:       -1219     1209     1201     1205     1206
                1.64789E-49 0.8460

surface  2012
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2013
segment:        1219
                3.63453E-46 0.1415

surface  2013
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2013
segment:       -1219     1209    -1201
                1.62478E-49 0.7076

surface  2013
segment:       -1219     1209     1201    -1205
                0.00000E+00 0.0000

surface  2013
segment:       -1219     1209     1201     1205     1206
                0.00000E+00 0.0000

surface  2013
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000
```

==========
==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 52

tfc bin	--mean--	---------relative error---------			----variance of the variance----			--figure of merit--	-pdf-
behavior	behavior	value	decrease	decrease rate	value	decrease	decrease rate	value	behavior slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random >3.00
observed	random	0.24	yes	yes	0.48	yes	yes	constant	random 0.00
passed?	yes	no	yes	yes	no	yes	yes	yes	yes no

==========

warning. the tally in the tally fluctuation chart bin did not pass 3 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 52 with nps = 70000000 print table 160

normed average tally per history	= 3.70611E-04	unnormed average tally per history	= 1.11183E+03
estimated tally relative error	= 0.2445	estimated variance of the variance	= 0.4834
relative error from zero tallies	= 0.1021	relative error from nonzero scores	= 0.2222
number of nonzero history tallies	= 96	efficiency for the nonzero tallies	= 0.0000
history number of largest tally	= 10743904	largest unnormalized history tally	= 1.56208E+10
(largest tally)/(average tally)	= 1.40496E+07	(largest tally)/(avg nonzero tally)	= 1.92680E+01
(confidence interval shift)/mean	= 0.0779	shifted confidence interval center	= 3.99496E-04

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	3.70611E-04	4.44996E-04	0.200708
relative error	2.44521E-01	2.63465E-01	0.077477
variance of the variance	4.83372E-01	3.34582E-01	-0.307817
shifted center	3.99496E-04	4.02840E-04	0.008371
figure of merit	2.76651E-02	2.38296E-02	-0.138641

there is not enough information in the largest history scores (usually less than 500 scores) for a reliable estimate of the slope.
the history score probability density function appears to have an unsampled region at the largest history scores:
please examine. see print table 161.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.158E+05)*(4.888E-04)**2 = (1.158E+05)*(2.389E-07) = 2.767E-02

1unnormed tally density for tally 52 nonzero tally mean(m) = 8.107E+08 nps = 70000000 print table 161

abscissa ordinate log plot of tally probability density function in tally fluctuation chart bin(d=decade,slope= 0.0)

tally	number	num den	log den	d	d	d
2.00+08	2	6.96-16	-15.157	**********	**********	********
2.51+08	12	3.32-15	-14.479	**********	**********	**********
3.16+08	16	3.51-15	-14.454	**********	**********	**********
3.98+08	16	2.79-15	-14.554	**********	**********	**********
5.01+08	11	1.52-15	-14.817	**********	**********	**********
6.31+08	11	1.21-15	-14.917	**********	**********	**********
7.94+08	7	6.12-16	-15.213	**********	**********	******
1.00+09	6	4.17-16	-15.380	mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm	mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm	
1.26+09	6	3.31-16	-15.480	**********	**********	

```
 1.58+09      5 2.19-16 -15.659 **********************************|************************         |
 2.00+09      1 3.48-17 -16.458 ********************************** |                                  |
 2.51+09      0 0.00+00   0.000                                    |                                  |
 3.16+09      0 0.00+00   0.000                                    |                                  |
 3.98+09      0 0.00+00   0.000                                    |                                  |
 5.01+09      1 1.39-17 -16.858 ******************                 |                                  |
 6.31+09      0 0.00+00   0.000                                    |                                  |
 7.94+09      1 8.74-18 -17.058 ***********                        |                                  |
 1.00+10      0 0.00+00   0.000                                    |                                  |
 1.26+10      0 0.00+00   0.000                                    |                                  |
 1.58+10      1 4.38-18 -17.358 *                                  |                                  |
  total      96 1.37-06         d---------------------------------d----------------------------------d------------
--------------------

1tally  62        nps =    70000000
          tally type 2    particle flux averaged over a surface.
          tally for  photons

          this tally is modified by a dose function.

          areas
               surface:     1219
              segment
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       1.00000E+50
                5       5.30000E+06

 surface  1219
 segment:       -1205
                5.01880E-45 0.0222

 surface  1219
 segment:        1205     1206
                4.11974E-44 0.0072

 surface  1219
 segment:        1205    -1206     1203
                8.31492E-45 0.0153

 surface  1219
 segment:        1205    -1206    -1203    -1202
                8.10033E-45 0.0144

 surface  1219
 segment:        1205    -1206    -1203     1202
                4.89797E+01 0.0008


================================================================================================================
==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  62

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--      -pdf-
 behavior    behavior      value    decrease   decrease rate      value    decrease   decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.00      yes          yes            0.00      yes         yes            constant
random      10.00
 passed?       yes          yes      yes          yes             yes      yes         yes               yes
yes         yes


================================================================================================================
==================


 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart
to verify.
 the results in other bins associated with this tally may not meet these statistical criteria.
```

```
 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 4.8939E+01 to 4.9021E+01; 4.8898E+01 to 4.9061E+01;
4.8857E+01 to 4.9102E+01
 estimated  symmetric confidence interval(1,2,3 sigma): 4.8939E+01 to 4.9021E+01; 4.8898E+01 to 4.9061E+01;
4.8857E+01 to 4.9102E+01

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  62 with nps =    70000000  print
table 160


 normed average tally per history  = 4.89797E+01          unnormed average tally per history  = 2.59592E+08
 estimated tally relative error    = 0.0008              estimated variance of the variance  = 0.0000
 relative error from zero tallies  = 0.0003              relative error from nonzero scores  = 0.0008

 number of nonzero history tallies =     9737930         efficiency for the nonzero tallies  = 0.1391
 history number of largest  tally  =     4352810         largest  unnormalized history tally = 4.73544E+11
 (largest  tally)/(average tally)  = 1.82418E+03         (largest  tally)/(avg nonzero tally)= 2.53768E+02

 (confidence interval shift)/mean  = 0.0000              shifted confidence interval center  = 4.89798E+01


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities          value at nps          value at nps+1          value(nps+1)/value(nps)-1.

      mean                          4.89797E+01           4.89810E+01                   0.000026
      relative error                8.33095E-04           8.33480E-04                   0.000463
      variance of the variance      2.21679E-05           2.30780E-05                   0.041057
      shifted center                4.89798E+01           4.89798E+01                   0.000000
      figure of merit               2.38328E+03           2.38108E+03                  -0.000924

 the estimated slope of the 200 largest  tallies starting at  1.45497E+11 appears to be decreasing at least
exponentially.
 the large score tail of the empirical history score probability density function appears to have no unsampled
regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.158E+05)*( 1.435E-01)**2 = (1.158E+05)*(2.058E-
02) = 2.383E+03

1status of the statistical checks used to form confidence intervals for the mean for each tally bin


 tally   result of statistical checks for the tfc bin (the first check not passed is listed) and error magnitude
check for all bins

     2   passed the 10 statistical checks for the tally fluctuation chart bin result
         passed all bin error check:     1 tally bins all have relative errors less than 0.10 with no zero bins

    12   missed  3 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint
detector tallies
         missed all bin error check:    16 tally bins had     0 bins with zeros and     9 bins with relative
errors exceeding 0.10

    22   missed  5 of 10 tfc bin checks: the variance of the variance exceeds the recommended value of 0.1
         missed all bin error check:    22 tally bins had     0 bins with zeros and    18 bins with relative
errors exceeding 0.10

    32   missed  3 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint
detector tallies
         missed all bin error check:     5 tally bins had     1 bins with zeros and     3 bins with relative
errors exceeding 0.10

    42   missed  3 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint
detector tallies
         missed all bin error check:    66 tally bins had     9 bins with zeros and    46 bins with relative
errors exceeding 0.10

    52   missed  3 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint
detector tallies
         missed all bin error check:    66 tally bins had    10 bins with zeros and    45 bins with relative
errors exceeding 0.10

    62   passed the 10 statistical checks for the tally fluctuation chart bin result
         passed all bin error check:     5 tally bins all have relative errors less than 0.10 with no zero bins
```

the 10 statistical checks are only for the tally fluctuation chart bin and do not apply to other tally bins.

the tally bins with zeros may or may not be correct: compare the source, cutoffs, multipliers, et cetera with the tally bins.

warning. 5 of the 7 tally fluctuation chart bins did not pass all 10 statistical checks.
warning. 5 of the 7 tallies had bins with relative errors greater than recommended.
1tally fluctuation charts

	tally 2					tally 12					tally 22				
nps	mean	error	vov	slope	fom	mean	error	vov	slope	fom	mean	error	vov	slope	fom
4096000	2.4759E-01	0.0551	0.0562	4.4	9.5E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.3513E-46	0.1893	0.1323	0.0	8.0E-01
8192000	2.3704E-01	0.0376	0.0273	7.4	10	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.1996E-46	0.1411	0.0887	0.0	7.2E-01
12288000	2.3806E-01	0.0299	0.0160	5.0	11	3.6583E-09	1.0000	1.0000	0.0	9.5E-03	1.5415E-46	0.1385	0.1802	0.0	4.9E-01
16384000	2.3453E-01	0.0256	0.0126	4.6	11	2.7437E-09	1.0000	1.0000	0.0	7.1E-03	1.7065E-46	0.1272	0.1439	0.0	4.4E-01
20480000	2.3485E-01	0.0225	0.0092	10.0	11	2.1950E-09	1.0000	1.0000	0.0	5.7E-03	1.8096E-46	0.1289	0.1479	0.0	3.4E-01
24576000	2.3966E-01	0.0227	0.0389	5.7	9.2E+00	1.8291E-09	1.0000	1.0000	0.0	4.7E-03	1.7588E-46	0.1151	0.1270	0.0	3.6E-01
28672000	2.3697E-01	0.0208	0.0319	6.6	9.4E+00	1.5678E-09	1.0000	1.0000	0.0	4.1E-03	1.6975E-46	0.1044	0.1169	0.0	3.7E-01
32768000	2.3604E-01	0.0195	0.0256	6.5	9.4E+00	1.3719E-09	1.0000	1.0000	0.0	3.5E-03	1.7579E-46	0.0980	0.0956	2.8	3.7E-01
36864000	2.3906E-01	0.0188	0.0205	5.1	8.9E+00	1.2194E-09	1.0000	1.0000	0.0	3.1E-03	1.8997E-46	0.0943	0.0797	3.2	3.5E-01
40960000	2.3844E-01	0.0175	0.0180	4.7	9.2E+00	1.7033E-09	0.7360	0.6420	0.0	5.2E-03	1.9099E-46	0.0875	0.0702	3.3	3.7E-01
45056000	2.3937E-01	0.0166	0.0153	4.5	9.3E+00	2.0310E-09	0.6093	0.4847	0.0	6.9E-03	2.0717E-46	0.0971	0.1153	2.7	2.7E-01
49152000	2.3917E-01	0.0158	0.0136	4.5	9.5E+00	1.8617E-09	0.6093	0.4847	0.0	6.3E-03	2.2214E-46	0.0891	0.0921	2.9	3.0E-01
53248000	2.3852E-01	0.0150	0.0124	4.7	9.7E+00	1.7185E-09	0.6093	0.4847	0.0	5.9E-03	2.1670E-46	0.0850	0.0891	2.7	3.0E-01
57344000	2.3746E-01	0.0144	0.0113	4.9	9.7E+00	1.5958E-09	0.6093	0.4847	0.0	5.4E-03	2.2961E-46	0.0986	0.1968	2.5	2.1E-01
61440000	2.3815E-01	0.0139	0.0101	5.1	9.8E+00	1.4894E-09	0.6093	0.4847	0.0	5.1E-03	2.3088E-46	0.0925	0.1879	2.7	2.2E-01
65536000	2.3809E-01	0.0134	0.0091	4.7	9.8E+00	1.3963E-09	0.6093	0.4847	0.0	4.8E-03	2.2695E-46	0.0888	0.1834	2.7	2.2E-01
69632000	2.3892E-01	0.0134	0.0130	4.4	9.2E+00	1.3142E-09	0.6093	0.4847	0.0	4.5E-03	2.2406E-46	0.0851	0.1799	2.5	2.3E-01
70000000	2.3875E-01	0.0134	0.0129	4.4	9.2E+00	1.3073E-09	0.6093	0.4847	0.0	4.5E-03	2.2314E-46	0.0850	0.1799	2.5	2.3E-01

	tally 32					tally 42					tally 52				
nps	mean	error	vov	slope	fom	mean	error	vov	slope	fom	mean	error	vov	slope	fom
4096000	9.4884E-04	0.6747	0.7184	0.0	6.3E-02	4.2783E-04	0.3668	0.2304	0.0	2.1E-01	2.2433E-04	0.5250	0.5771	0.0	1.0E-01
8192000	7.9322E-04	0.4437	0.4986	0.0	7.2E-02	1.4042E-03	0.5543	0.8052	0.0	4.6E-02	1.8123E-04	0.4035	0.3112	0.0	8.8E-02
12288000	4.9741E-03	0.8586	0.9923	0.0	1.3E-02	1.1981E-03	0.4461	0.7174	0.0	4.8E-02	6.1549E-04	0.6961	0.9571	0.0	2.0E-02
16384000	3.8845E-03	0.8250	0.9902	0.0	1.0E-02	9.9695E-04	0.4036	0.7065	0.0	4.4E-02	5.4948E-04	0.5876	0.9390	0.0	2.1E-02
20480000	6.9550E-03	0.5168	0.3854	0.0	2.1E-02	8.8138E-04	0.3673	0.6910	0.0	4.2E-02	5.0751E-04	0.5115	0.9202	0.0	2.2E-02
24576000	6.2246E-03	0.4842	0.3759	0.0	2.0E-02	7.8635E-04	0.3445	0.6797	0.0	4.0E-02	4.7110E-04	0.4610	0.9061	0.0	2.2E-02
28672000	5.4115E-03	0.4775	0.3755	0.0	1.8E-02	7.7514E-04	0.3096	0.5988	0.0	4.2E-02	4.6054E-04	0.4079	0.8739	0.0	2.4E-02
32768000	4.8039E-03	0.4708	0.3753	0.0	1.6E-02	7.1939E-04	0.2926	0.5933	0.0	4.1E-02	4.2120E-04	0.3914	0.8637	0.0	2.3E-02
36864000	4.2922E-03	0.4684	0.3752	0.0	1.4E-02	7.0828E-04	0.2662	0.5753	0.0	4.4E-02	4.1636E-04	0.3548	0.8361	0.0	2.5E-02
40960000	4.0727E-03	0.4467	0.3671	0.0	1.4E-02	7.0577E-04	0.2423	0.5583	0.0	4.8E-02	4.0357E-04	0.3308	0.8226	0.0	2.6E-02
45056000	3.7025E-03	0.4467	0.3671	0.0	1.3E-02	8.0168E-04	0.2229	0.3514	0.0	5.2E-02	4.2980E-04	0.3112	0.5881	0.0	2.7E-02
49152000	4.4484E-03	0.4090	0.2702	0.0	1.4E-02	7.6783E-04	0.2139	0.3483	0.0	5.1E-02	4.1619E-04	0.2957	0.5799	0.0	2.7E-02
53248000	4.1558E-03	0.4043	0.2698	0.0	1.3E-02	7.5758E-04	0.2014	0.3396	0.0	5.4E-02	3.9767E-04	0.2866	0.5720	0.0	2.6E-02
57344000	3.8589E-03	0.4043	0.2698	0.0	1.2E-02	7.4234E-04	0.1918	0.3323	0.0	5.5E-02	4.0944E-04	0.2684	0.4961	0.0	2.8E-02
61440000	3.7799E-03	0.3874	0.2640	0.0	1.3E-02	7.6130E-04	0.1827	0.2841	0.0	5.6E-02	3.8901E-04	0.2639	0.4946	0.0	2.7E-02
65536000	4.5133E-03	0.3397	0.1906	0.0	1.5E-02	7.4101E-04	0.1765	0.2806	0.0	5.7E-02	3.7221E-04	0.2588	0.4930	0.0	2.6E-02
69632000	4.8419E-03	0.3104	0.1663	0.0	1.7E-02	7.6082E-04	0.1647	0.2620	0.0	6.1E-02	3.7257E-04	0.2445	0.4834	0.0	2.8E-02

```
     70000000   4.8164E-03 0.3104 0.1663  0.0 1.7E-02   7.5811E-04 0.1644 0.2619  0.0 6.1E-02   3.7061E-04 0.2445 0.4834  0.0
2.8E-02
1tally fluctuation charts

                        tally   62
          nps      mean     error   vov  slope    fom
      4096000   4.8842E+01 0.0034 0.0003  3.6    2459
      8192000   4.8763E+01 0.0024 0.0002  3.6    2414
     12288000   4.8872E+01 0.0020 0.0001  4.3    2401
     16384000   4.8869E+01 0.0017 0.0001  4.5    2419
     20480000   4.8826E+01 0.0015 0.0001  4.8    2420
     24576000   4.8881E+01 0.0014 0.0001  5.5    2414
     28672000   4.8906E+01 0.0013 0.0001  4.8    2403
     32768000   4.8935E+01 0.0012 0.0000  6.9    2397
     36864000   4.8960E+01 0.0011 0.0000  8.6    2396
     40960000   4.8978E+01 0.0011 0.0000  7.8    2394
     45056000   4.8997E+01 0.0010 0.0000  7.0    2389
     49152000   4.8985E+01 0.0010 0.0000  8.1    2385
     53248000   4.8972E+01 0.0010 0.0000 10.0    2387
     57344000   4.9000E+01 0.0009 0.0000 10.0    2384
     61440000   4.8988E+01 0.0009 0.0000 10.0    2384
     65536000   4.8984E+01 0.0009 0.0000 10.0    2382
     69632000   4.8980E+01 0.0008 0.0000 10.0    2382
     70000000   4.8980E+01 0.0008 0.0000 10.0    2383


************************************************************************************************************
********************
 dump no.   12 on file runtpe       nps =    70000000     coll =      957835054     ctm =
604.56   nrn =       71376598071

 surface-source file wssa     with nps =    70000000 and    11882447 tracks was written for
     surface(s)   1220

        21 warning messages so far.


 run terminated when    70000000  particle histories were done.

 computer time =  606.75 minutes

mcnp     version 5     11112005                    03/19/09 05:31:56                    probid =
    03/18/09 19:23:01
```

MCNP Case With Translated Source Without Shield Bells
(With concrete floor)

```
         Thread Name & Version = mcnp5VE_RSICC, 1.40

         ._ _    _  ._   ._   |_
         |_|_|  (_  |_|  |_)   _)
                         |
 +-------------------------------------------------------------------+
 |   This program was prepared by the Regents of the University of    |
 |California at Los Alamos National Laboratory (the University) under |
 |  contract number W-7405-ENG-36 with the U.S. Department of Energy  |
 |(DoE).  The University has certain rights in the program pursuant to|
 |  the contract and the program should not be copied or distributed  |
 | outside your organization.  All rights in the program are reserved |
 |by the DoE and the University.  Neither the U.S. Government nor the |
 | University makes any warranty, express or implied, or assumes any  |
 |     liability or responsibility for the use of this software.      |
 +-------------------------------------------------------------------+

1mcnp     version 5     ld=11112005                    03/19/09 16:00:05
 ************************************************************************                probid =  03/19/09
16:00:05
  inp = NSBTR.i outp = NSBTR.o rssa = NSBwssa

    1-       c     Created on: Tuesday, November 11, 2008 at 09:35
    2-       c     Canister Cells
    3-          11     5      -1 -11 1209 -1212
    4-          12     5      -1 -12 1209 -1212
    5-          13     5      -1 -13 1209 -1212
    6-          14     5      -1 -14 1209 -1212
    7-          15     5      -1 -15 1209 -1212
    8-          16     5      -1 -16 1209 -1212
    9-          17     5      -1 -17 1209 -1212
   10-          18     5      -1 -18 1209 -1212
   11-          19     5      -1 -19 1209 -1212
   12-          21     5      -1 -21 1209 -1212
   13-          22     5      -1 -22 1209 -1212
   14-          23     5      -1 -23 1209 -1212
   15-          24     5      -1 -24 1209 -1212
   16-          25     5      -1 -25 1209 -1212
   17-          26     5      -1 -26 1209 -1212
   18-          27     5      -1 -27 1209 -1212
   19-          28     5      -1 -28 1209 -1212
   20-          29     5      -1 -29 1209 -1212
   21-          31     5      -1 -31 1209 -1212
   22-          32     5      -1 -32 1209 -1212
   23-          33     5      -1 -33 1209 -1212
   24-          34     5      -1 -34 1209 -1212
   25-          35     5      -1 -35 1209 -1212
   26-          36     5      -1 -36 1209 -1212
   27-          37     5      -1 -37 1209 -1212
   28-          38     5      -1 -38 1209 -1212
   29-          39     5      -1 -39 1209 -1212
   30-          41     5      -1 -41 1209 -1212
   31-          42     5      -1 -42 1209 -1212
   32-          43     5      -1 -43 1209 -1212
   33-          44     5      -1 -44 1209 -1212
   34-          45     5      -1 -45 1209 -1212
   35-          46     5      -1 -46 1209 -1212
   36-          47     5      -1 -47 1209 -1212
   37-          48     5      -1 -48 1209 -1212
   38-          49     5      -1 -49 1209 -1212
   39-          51     5      -1 -51 1209 -1212
   40-          52     5      -1 -52 1209 -1212
   41-          53     5      -1 -53 1209 -1212
   42-          54     5      -1 -54 1209 -1212
   43-          55     5      -1 -55 1209 -1212
   44-          56     5      -1 -56 1209 -1212
   45-          57     5      -1 -57 1209 -1212
   46-          58     5      -1 -58 1209 -1212
   47-          59     5      -1 -59 1209 -1212
   48-          61     5      -1 -61 1209 -1212
   49-          62     5      -1 -62 1209 -1212
   50-          63     5      -1 -63 1209 -1212
```

```
  51-          64      5       -1 -64 1209 -1212
  52-          65      5       -1 -65 1209 -1212
  53-          66      5       -1 -66 1209 -1212
  54-          67      5       -1 -67 1209 -1212
  55-          68      5       -1 -68 1209 -1212
  56-          69      5       -1 -69 1209 -1212
  57-          71      5       -1 -71 1209 -1212
  58-          72      5       -1 -72 1209 -1212
  59-          73      5       -1 -73 1209 -1212
  60-          74      5       -1 -74 1209 -1212
  61-          75      5       -1 -75 1209 -1212
  62-          76      5       -1 -76 1209 -1212
  63-          77      5       -1 -77 1209 -1212
  64-          78      5       -1 -78 1209 -1212
  65-          79      5       -1 -79 1209 -1212
  66-          81      5       -1 -81 1209 -1212
  67-          82      5       -1 -82 1209 -1212
  68-          83      5       -1 -83 1209 -1212
  69-          84      5       -1 -84 1209 -1212
  70-          85      5       -1 -85 1209 -1212
  71-          86      5       -1 -86 1209 -1212
  72-          87      5       -1 -87 1209 -1212
  73-          88      5       -1 -88 1209 -1212
  74-          89      5       -1 -89 1209 -1212
  75-          91      5       -1 -91 1209 -1212
  76-          92      5       -1 -92 1209 -1212
  77-          93      5       -1 -93 1209 -1212
  78-          94      5       -1 -94 1209 -1212
  79-          95      5       -1 -95 1209 -1212
  80-          96      5       -1 -96 1209 -1212
  81-          97      5       -1 -97 1209 -1212
  82-          98      5       -1 -98 1209 -1212
  83-          99      5       -1 -99 1209 -1212
  84-         101      5       -1 -101 1209 -1212
  85-         102      5       -1 -102 1209 -1212
  86-         103      5       -1 -103 1209 -1212
  87-         104      5       -1 -104 1209 -1212
  88-         105      5       -1 -105 1209 -1212
  89-         106      5       -1 -106 1209 -1212
  90-         107      5       -1 -107 1209 -1212
  91-         108      5       -1 -108 1209 -1212
  92-         109      5       -1 -109 1209 -1212
  93-         111      5       -1 -111 1209 -1212
  94-         112      5       -1 -112 1209 -1212
  95-         113      5       -1 -113 1209 -1212
  96-         114      5       -1 -114 1209 -1212
  97-         115      5       -1 -115 1209 -1212
  98-         116      5       -1 -116 1209 -1212
  99-         117      5       -1 -117 1209 -1212
 100-         118      5       -1 -118 1209 -1212
 101-         119      5       -1 -119 1209 -1212
 102-         121      5       -1 -121 1209 -1212
 103-         122      5       -1 -122 1209 -1212
 104-         123      5       -1 -123 1209 -1212
 105-         124      5       -1 -124 1209 -1212
 106-         125      5       -1 -125 1209 -1212
 107-         126      5       -1 -126 1209 -1212
 108-         127      5       -1 -127 1209 -1212
 109-         128      5       -1 -128 1209 -1212
 110-         129      5       -1 -129 1209 -1212
 111-         131      5       -1 -131 1209 -1212
 112-         132      5       -1 -132 1209 -1212
 113-         133      5       -1 -133 1209 -1212
 114-         134      5       -1 -134 1209 -1212
 115-         135      5       -1 -135 1209 -1212
 116-         136      5       -1 -136 1209 -1212
 117-         137      5       -1 -137 1209 -1212
 118-         138      5       -1 -138 1209 -1212
 119-         139      5       -1 -139 1209 -1212
 120-         141      5       -1 -141 1209 -1212
 121-         142      5       -1 -142 1209 -1212
 122-         143      5       -1 -143 1209 -1212
 123-         144      5       -1 -144 1209 -1212
 124-         145      5       -1 -145 1209 -1212
 125-         146      5       -1 -146 1209 -1212
 126-         147      5       -1 -147 1209 -1212
 127-         148      5       -1 -148 1209 -1212
 128-         149      5       -1 -149 1209 -1212
```

```
c     Air  Gap Cells
  211     3 -0.001225 -211 1209 -1213 #11
  212     3 -0.001225 -212 1209 -1213 #12
  213     3 -0.001225 -213 1209 -1213 #13
  214     3 -0.001225 -214 1209 -1213 #14
  215     3 -0.001225 -215 1209 -1213 #15
  216     3 -0.001225 -216 1209 -1213 #16
  217     3 -0.001225 -217 1209 -1213 #17
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  229     3 -0.001225 -229 1209 -1213 #29
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  233     3 -0.001225 -233 1209 -1213 #33
  234     3 -0.001225 -234 1209 -1213 #34
  235     3 -0.001225 -235 1209 -1213 #35
  236     3 -0.001225 -236 1209 -1213 #36
  237     3 -0.001225 -237 1209 -1213 #37
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  239     3 -0.001225 -239 1209 -1213 #39
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  242     3 -0.001225 -242 1209 -1213 #42
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  244     3 -0.001225 -244 1209 -1213 #44
  245     3 -0.001225 -245 1209 -1213 #45
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  294     3 -0.001225 -294 1209 -1213 #94
  295     3 -0.001225 -295 1209 -1213 #95
```

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209-         298      3 -0.001225 -298 1209 -1213 #98
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211-         301      3 -0.001225 -301 1209 -1213 #101
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213-         303      3 -0.001225 -303 1209 -1213 #103
214-         304      3 -0.001225 -304 1209 -1213 #104
215-         305      3 -0.001225 -305 1209 -1213 #105
216-         306      3 -0.001225 -306 1209 -1213 #106
217-         307      3 -0.001225 -307 1209 -1213 #107
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221-         312      3 -0.001225 -312 1209 -1213 #112
222-         313      3 -0.001225 -313 1209 -1213 #113
223-         314      3 -0.001225 -314 1209 -1213 #114
224-         315      3 -0.001225 -315 1209 -1213 #115
225-         316      3 -0.001225 -316 1209 -1213 #116
226-         317      3 -0.001225 -317 1209 -1213 #117
227-         318      3 -0.001225 -318 1209 -1213 #118
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229-         321      3 -0.001225 -321 1209 -1213 #121
230-         322      3 -0.001225 -322 1209 -1213 #122
231-         323      3 -0.001225 -323 1209 -1213 #123
232-         324      3 -0.001225 -324 1209 -1213 #124
233-         325      3 -0.001225 -325 1209 -1213 #125
234-         326      3 -0.001225 -326 1209 -1213 #126
235-         327      3 -0.001225 -327 1209 -1213 #127
236-         328      3 -0.001225 -328 1209 -1213 #128
237-         329      3 -0.001225 -329 1209 -1213 #129
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239-         332      3 -0.001225 -332 1209 -1213 #132
240-         333      3 -0.001225 -333 1209 -1213 #133
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242-         335      3 -0.001225 -335 1209 -1213 #135
243-         336      3 -0.001225 -336 1209 -1213 #136
244-         337      3 -0.001225 -337 1209 -1213 #137
245-         338      3 -0.001225 -338 1209 -1213 #138
246-         339      3 -0.001225 -339 1209 -1213 #139
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248-         342      3 -0.001225 -342 1209 -1213 #142
249-         343      3 -0.001225 -343 1209 -1213 #143
250-         344      3 -0.001225 -344 1209 -1213 #144
251-         345      3 -0.001225 -345 1209 -1213 #145
252-         346      3 -0.001225 -346 1209 -1213 #146
253-         347      3 -0.001225 -347 1209 -1213 #147
254-         348      3 -0.001225 -348 1209 -1213 #148
255-         349      3 -0.001225 -349 1209 -1213 #149
256-       c     Bell Cells
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259-         413      3 -0.001225 -413 1209 -1214 #213 #13
260-         414      3 -0.001225 -414 1209 -1214 #214 #14
261-         415      3 -0.001225 -415 1209 -1214 #215 #15
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267-         422      3 -0.001225 -422 1209 -1214 #222 #22
268-         423      3 -0.001225 -423 1209 -1214 #223 #23
269-         424      3 -0.001225 -424 1209 -1214 #224 #24
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276-         432      3 -0.001225 -432 1209 -1214 #232 #32
277-         433      3 -0.001225 -433 1209 -1214 #233 #33
278-         434      3 -0.001225 -434 1209 -1214 #234 #34
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280-         436      3 -0.001225 -436 1209 -1214 #236 #36
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303-         462      3 -0.001225 -462 1209 -1214 #262 #62
304-         463      3 -0.001225 -463 1209 -1214 #263 #63
305-         464      3 -0.001225 -464 1209 -1214 #264 #64
306-         465      3 -0.001225 -465 1209 -1214 #265 #65
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309-         468      3 -0.001225 -468 1209 -1214 #268 #68
310-         469      3 -0.001225 -469 1209 -1214 #269 #69
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312-         472      3 -0.001225 -472 1209 -1214 #272 #72
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342-         505      3 -0.001225 -505 1209 -1214 #305 #105
343-         506      3 -0.001225 -506 1209 -1214 #306 #106
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346-         509      3 -0.001225 -509 1209 -1214 #309 #109
347-         511      3 -0.001225 -511 1209 -1214 #311 #111
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374-         541     3 -0.001225 -541 1209 -1214 #341 #141
375-         542     3 -0.001225 -542 1209 -1214 #342 #142
376-         543     3 -0.001225 -543 1209 -1214 #343 #143
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378-         545     3 -0.001225 -545 1209 -1214 #345 #145
379-         546     3 -0.001225 -546 1209 -1214 #346 #146
380-         547     3 -0.001225 -547 1209 -1214 #347 #147
381-         548     3 -0.001225 -548 1209 -1214 #348 #148
382-         549     3 -0.001225 -549 1209 -1214 #349 #149
383-       c Walls
384-        1200     3 -0.001225 1222 -1221 1206 -1208 1220 -1219  $Notch
385-        1201     1  -2.365 1206 -1208 1202 -1203 -1219 1209 #1200  $Inner Wall
386-        1202     1  -2.365 1207 -1233 1219 -1215 -1225 1226  $Top of Back Wall
387-       12021     1  -2.365 1233 -1223 1219 -1215 1226 -1225  $Split in Back Wall
388-        1203     1  -2.365 1207 -1205 -1219 1209 -1203 1202  $Bottom of Back Wall
389-        1204     1  -2.365 1225 -1234 1207 -1218 1219 -1215  $Top Of Right Wall
390-       12041     1  -2.365 1234 -1204 1207 -1218 1219 -1215  $Split in Right Wall
391-        1205     1  -2.365 1203 -1204 1207 -1218 -1219 1209  $Bottom of Right Wall
392-        1206     1  -2.365 1235 -1218 -1225 1226 1219 -1215  $Top of Front Wall
393-       12061     1  -2.365 1224 -1235 -1225 1226 1219 -1215  $Split in Front Wall
394-        1207     1  -2.365 1217 -1218 -1203 1202 -1219 1209  $Bottom of Front Wall
395-        1208     1  -2.365 1201 -1236 -1218 1207 1219 -1215 #10000 $Top of Left Wall
396-                   #10001 #10002 #10003 #10004 #10005
397-       12081     1  -2.365 -1226 1236 -1218 1207 1219 -1215 #10000 $Split in Left Wall
398-                   #10001 #10002 #10003 #10004 #10005
399-        1209     1  -2.365 -1202 1201 -1218 1207 -1219 1209  $Bottom of Left Wall
400-        1210     1  -2.365 -1209 1227 1207 -1218 -1204 1201  $Floor
401-        1211     1  -2.328 1215 -1237 1207 -1218 -1204 1201  $Roof
402-       12111     1  -2.328 1237 -1216 1207 -1218 -1204 1201  $Split in Roof
403-       c   Air
404-        9999     0         2015  $Outside Model
405-        9998     3 -0.001225 1205 -1228 -1220 1209 -1203 1202 #(-414 1209 -1214 )#
406-                   (-415 1209 -1214 )#(-416 1209 -1214 )#(-417 1209 -1214 )#
407-                   (-418 1209 -1214 )#(-419 1209 -1214 )#(-421 1209 -1214 )#
408-                   (-422 1209 -1214 )#(-423 1209 -1214 )#(-424 1209 -1214 )#
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410-                   (-428 1209 -1214 )#(-429 1209 -1214 )#(-431 1209 -1214 )#
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413-                   (-438 1209 -1214 )#(-439 1209 -1214 )#(-441 1209 -1214 )#
414-                   (-442 1209 -1214 )#(-443 1209 -1214 )#(-444 1209 -1214 )#
415-                   (-445 1209 -1214 )#(-446 1209 -1214 )#(-447 1209 -1214 )#
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417-                   (-452 1209 -1214 )#(-453 1209 -1214 )#(-454 1209 -1214 )#
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420-                   (-412 1209 -1214 )#(-413 1209 -1214 )
421-        9997     3 -0.001225 1228 -1229 -1220 1209 -1203 1202 #(-466 1209 -1214 )#
422-                   (-467 1209 -1214 )#(-468 1209 -1214 )#(-469 1209 -1214 )#
423-                   (-471 1209 -1214 )#(-472 1209 -1214 )#(-473 1209 -1214 )#
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428-                   (-487 1209 -1214 )#(-488 1209 -1214 )#(-489 1209 -1214 )#
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433-                   (-504 1209 -1214 )#(-505 1209 -1214 )#(-506 1209 -1214 )#
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435-                   (-461 1209 -1214 )#(-462 1209 -1214 )#(-463 1209 -1214 )#
436-                   (-464 1209 -1214 )#(-465 1209 -1214 )
437-        9996     3 -0.001225 1229 -1206 -1220 1209 -1203 1202 #(-517 1209 -1214 )#
438-                   (-518 1209 -1214 )#(-519 1209 -1214 )#(-521 1209 -1214 )#
439-                   (-522 1209 -1214 )#(-523 1209 -1214 )#(-524 1209 -1214 )#
440-                   (-525 1209 -1214 )#(-526 1209 -1214 )#(-527 1209 -1214 )#
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                  (-512 1209 -1214 )#(-513 1209 -1214 )#(-514 1209 -1214 )#
                  (-515 1209 -1214 )#(-516 1209 -1214 )
        9995      3 -0.001225 1220 -1219 1205 -1206 -1203 1202  $Notch Air Side A
        9994      3 -0.001225 -1215 1219 1223 -1208 -1225 1226  $Air Above Crane Rail
        9993      3 -0.001225 1209 -1231 1208 -1217 -1203 1202  $Bottom Air Side B
        9992      3 -0.001225 -1230 1231 1208 -1217 -1203 1202  $Air Up to Shield Side B
        9991      1  -2.365 -1220 1230 1208 -1217 -1203 1202  $Truck Bay Shield
        9990      3 -0.001225 1220 -1219 1208 -1217 -1203 1202  $Notch Air Side B
        9989      3 -0.001225 -1215 1219 1208 -1224 -1225 1226  $Notch Air Side B
        9988      3 -0.001225 (-2000 -1207 1201 -1204 1227 -1216 ):
                  (1218 -2000 1201 -1204 1227 -1216 ):(-2000 -1201 1227 -1216 ):
                  (1204 -2000 1227 -1216 ):(1216 -2000 )
        9987      0          -1232 -2015  $Bottom Void
        9986      3 -0.001225 1232 -1227 -2015  $6 in Ground Air
c       Ductwork Penetrations
       10000      3 -0.001225 12441 -12451 12321 -12331 1201 -1226
       10001      3 -0.001225 12441 -12451 12341 -12351 1201 -1226
       10002      3 -0.001225 12461 -12471 12361 -12371 1201 -1226
       10003      3 -0.001225 12441 -12451 12381 -12391 1201 -1226
       10004      3 -0.001225 12401 -12411 12441 -12451 1201 -1226
       10005      3 -0.001225 12441 -12451 12421 -12431 1201 -1226
c Sphere Detector Cells
        2001      3 -0.001225 2000 -2001 1227
        2002      3 -0.001225 2001 -2002 1227
        2003      3 -0.001225 -2003 2002 1227
        2004      3 -0.001225 2003 -2004 1227
        2005      3 -0.001225 2004 -2005 1227
        2006      3 -0.001225 2005 -2006 1227
        2007      3 -0.001225 2006 -2007 1227
        2008      3 -0.001225 2007 -2008 1227
        2009      3 -0.001225 2008 -2009 1227
        2010      3 -0.001225 2009 -2010 1227
        2011      3 -0.001225 2010 -2011 1227
        2012      3 -0.001225 2011 -2012 1227
        2013      3 -0.001225 2012 -2013 1227
        2014      3 -0.001225 2013 -2014 1227
        2015      3 -0.001225 2014 -2015 1227

c     Source Canisters
          11        c/z 198.12 121.92 77.47
          12        c/z 198.12 320.04 77.47
          13        c/z 198.12 518.16 77.47
          14        c/z 198.12 716.28 77.47
          15        c/z 198.12 914.4 77.47
          16        c/z 198.12 1112.52 77.47
          17        c/z 198.12 1310.64 77.47
          18        c/z 198.12 1508.76 77.47
          19        c/z 198.12 1706.88 77.47
          21        c/z 396.24 121.92 77.47
          22        c/z 396.24 320.04 77.47
          23        c/z 396.24 518.16 77.47
          24        c/z 396.24 716.28 77.47
          25        c/z 396.24 914.4 77.47
          26        c/z 396.24 1112.52 77.47
          27        c/z 396.24 1310.64 77.47
          28        c/z 396.24 1508.76 77.47
          29        c/z 396.24 1706.88 77.47
          31        c/z 594.36 121.92 77.47
          32        c/z 594.36 320.04 77.47
          33        c/z 594.36 518.16 77.47
          34        c/z 594.36 716.28 77.47
          35        c/z 594.36 914.4 77.47
          36        c/z 594.36 1112.52 77.47
          37        c/z 594.36 1310.64 77.47
          38        c/z 594.36 1508.76 77.47
          39        c/z 594.36 1706.88 77.47
          41        c/z 792.48 121.92 77.47
          42        c/z 792.48 320.04 77.47
          43        c/z 792.48 518.16 77.47
          44        c/z 792.48 716.28 77.47
          45        c/z 792.48 914.4 77.47
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519-          46       c/z 792.48 1112.52 77.47
520-          47       c/z 792.48 1310.64 77.47
521-          48       c/z 792.48 1508.76 77.47
522-          49       c/z 792.48 1706.88 77.47
523-          51       c/z 990.6 121.92 77.47
524-          52       c/z 990.6 320.04 77.47
525-          53       c/z 990.6 518.16 77.47
526-          54       c/z 990.6 716.28 77.47
527-          55       c/z 990.6 914.4 77.47
528-          56       c/z 990.6 1112.52 77.47
529-          57       c/z 990.6 1310.64 77.47
530-          58       c/z 990.6 1508.76 77.47
531-          59       c/z 990.6 1706.88 77.47
532-          61       c/z 1188.72 121.92 77.47
533-          62       c/z 1188.72 320.04 77.47
534-          63       c/z 1188.72 518.16 77.47
535-          64       c/z 1188.72 716.28 77.47
536-          65       c/z 1188.72 914.4 77.47
537-          66       c/z 1188.72 1112.52 77.47
538-          67       c/z 1188.72 1310.64 77.47
539-          68       c/z 1188.72 1508.76 77.47
540-          69       c/z 1188.72 1706.88 77.47
541-          71       c/z 1386.84 121.92 77.47
542-          72       c/z 1386.84 320.04 77.47
543-          73       c/z 1386.84 518.16 77.47
544-          74       c/z 1386.84 716.28 77.47
545-          75       c/z 1386.84 914.4 77.47
546-          76       c/z 1386.84 1112.52 77.47
547-          77       c/z 1386.84 1310.64 77.47
548-          78       c/z 1386.84 1508.76 77.47
549-          79       c/z 1386.84 1706.88 77.47
550-          81       c/z 1584.96 121.92 77.47
551-          82       c/z 1584.96 320.04 77.47
552-          83       c/z 1584.96 518.16 77.47
553-          84       c/z 1584.96 716.28 77.47
554-          85       c/z 1584.96 914.4 77.47
555-          86       c/z 1584.96 1112.52 77.47
556-          87       c/z 1584.96 1310.64 77.47
557-          88       c/z 1584.96 1508.76 77.47
558-          89       c/z 1584.96 1706.88 77.47
559-          91       c/z 1783.08 121.92 77.47
560-          92       c/z 1783.08 320.04 77.47
561-          93       c/z 1783.08 518.16 77.47
562-          94       c/z 1783.08 716.28 77.47
563-          95       c/z 1783.08 914.4 77.47
564-          96       c/z 1783.08 1112.52 77.47
565-          97       c/z 1783.08 1310.64 77.47
566-          98       c/z 1783.08 1508.76 77.47
567-          99       c/z 1783.08 1706.88 77.47
568-         101       c/z 1981.2 121.92 77.47
569-         102       c/z 1981.2 320.04 77.47
570-         103       c/z 1981.2 518.16 77.47
571-         104       c/z 1981.2 716.28 77.47
572-         105       c/z 1981.2 914.4 77.47
573-         106       c/z 1981.2 1112.52 77.47
574-         107       c/z 1981.2 1310.64 77.47
575-         108       c/z 1981.2 1508.76 77.47
576-         109       c/z 1981.2 1706.88 77.47
577-         111       c/z 2179.32 121.92 77.47
578-         112       c/z 2179.32 320.04 77.47
579-         113       c/z 2179.32 518.16 77.47
580-         114       c/z 2179.32 716.28 77.47
581-         115       c/z 2179.32 914.4 77.47
582-         116       c/z 2179.32 1112.52 77.47
583-         117       c/z 2179.32 1310.64 77.47
584-         118       c/z 2179.32 1508.76 77.47
585-         119       c/z 2179.32 1706.88 77.47
586-         121       c/z 2377.44 121.92 77.47
587-         122       c/z 2377.44 320.04 77.47
588-         123       c/z 2377.44 518.16 77.47
589-         124       c/z 2377.44 716.28 77.47
590-         125       c/z 2377.44 914.4 77.47
591-         126       c/z 2377.44 1112.52 77.47
592-         127       c/z 2377.44 1310.64 77.47
593-         128       c/z 2377.44 1508.76 77.47
594-         129       c/z 2377.44 1706.88 77.47
595-         131       c/z 2575.56 121.92 77.47
596-         132       c/z 2575.56 320.04 77.47
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597-         133       c/z 2575.56 518.16 77.47
598-         134       c/z 2575.56 716.28 77.47
599-         135       c/z 2575.56 914.4 77.47
600-         136       c/z 2575.56 1112.52 77.47
601-         137       c/z 2575.56 1310.64 77.47
602-         138       c/z 2575.56 1508.76 77.47
603-         139       c/z 2575.56 1706.88 77.47
604-         141       c/z 2773.68 121.92 77.47
605-         142       c/z 2773.68 320.04 77.47
606-         143       c/z 2773.68 518.16 77.47
607-         144       c/z 2773.68 716.28 77.47
608-         145       c/z 2773.68 914.4 77.47
609-         146       c/z 2773.68 1112.52 77.47
610-         147       c/z 2773.68 1310.64 77.47
611-         148       c/z 2773.68 1508.76 77.47
612-         149       c/z 2773.68 1706.88 77.47
613-       c     Inside of Shield Bell
614-         211       c/z 198.12 121.92 86.36
615-         212       c/z 198.12 320.04 86.36
616-         213       c/z 198.12 518.16 86.36
617-         214       c/z 198.12 716.28 86.36
618-         215       c/z 198.12 914.4 86.36
619-         216       c/z 198.12 1112.52 86.36
620-         217       c/z 198.12 1310.64 86.36
621-         218       c/z 198.12 1508.76 86.36
622-         219       c/z 198.12 1706.88 86.36
623-         221       c/z 396.24 121.92 86.36
624-         222       c/z 396.24 320.04 86.36
625-         223       c/z 396.24 518.16 86.36
626-         224       c/z 396.24 716.28 86.36
627-         225       c/z 396.24 914.4 86.36
628-         226       c/z 396.24 1112.52 86.36
629-         227       c/z 396.24 1310.64 86.36
630-         228       c/z 396.24 1508.76 86.36
631-         229       c/z 396.24 1706.88 86.36
632-         231       c/z 594.36 121.92 86.36
633-         232       c/z 594.36 320.04 86.36
634-         233       c/z 594.36 518.16 86.36
635-         234       c/z 594.36 716.28 86.36
636-         235       c/z 594.36 914.4 86.36
637-         236       c/z 594.36 1112.52 86.36
638-         237       c/z 594.36 1310.64 86.36
639-         238       c/z 594.36 1508.76 86.36
640-         239       c/z 594.36 1706.88 86.36
641-         241       c/z 792.48 121.92 86.36
642-         242       c/z 792.48 320.04 86.36
643-         243       c/z 792.48 518.16 86.36
644-         244       c/z 792.48 716.28 86.36
645-         245       c/z 792.48 914.4 86.36
646-         246       c/z 792.48 1112.52 86.36
647-         247       c/z 792.48 1310.64 86.36
648-         248       c/z 792.48 1508.76 86.36
649-         249       c/z 792.48 1706.88 86.36
650-         251       c/z 990.6 121.92 86.36
651-         252       c/z 990.6 320.04 86.36
652-         253       c/z 990.6 518.16 86.36
653-         254       c/z 990.6 716.28 86.36
654-         255       c/z 990.6 914.4 86.36
655-         256       c/z 990.6 1112.52 86.36
656-         257       c/z 990.6 1310.64 86.36
657-         258       c/z 990.6 1508.76 86.36
658-         259       c/z 990.6 1706.88 86.36
659-         261       c/z 1188.72 121.92 86.36
660-         262       c/z 1188.72 320.04 86.36
661-         263       c/z 1188.72 518.16 86.36
662-         264       c/z 1188.72 716.28 86.36
663-         265       c/z 1188.72 914.4 86.36
664-         266       c/z 1188.72 1112.52 86.36
665-         267       c/z 1188.72 1310.64 86.36
666-         268       c/z 1188.72 1508.76 86.36
667-         269       c/z 1188.72 1706.88 86.36
668-         271       c/z 1386.84 121.92 86.36
669-         272       c/z 1386.84 320.04 86.36
670-         273       c/z 1386.84 518.16 86.36
671-         274       c/z 1386.84 716.28 86.36
672-         275       c/z 1386.84 914.4 86.36
673-         276       c/z 1386.84 1112.52 86.36
674-         277       c/z 1386.84 1310.64 86.36
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675-         278       c/z 1386.84 1508.76 86.36
676-         279       c/z 1386.84 1706.88 86.36
677-         281       c/z 1584.96 121.92 86.36
678-         282       c/z 1584.96 320.04 86.36
679-         283       c/z 1584.96 518.16 86.36
680-         284       c/z 1584.96 716.28 86.36
681-         285       c/z 1584.96 914.4 86.36
682-         286       c/z 1584.96 1112.52 86.36
683-         287       c/z 1584.96 1310.64 86.36
684-         288       c/z 1584.96 1508.76 86.36
685-         289       c/z 1584.96 1706.88 86.36
686-         291       c/z 1783.08 121.92 86.36
687-         292       c/z 1783.08 320.04 86.36
688-         293       c/z 1783.08 518.16 86.36
689-         294       c/z 1783.08 716.28 86.36
690-         295       c/z 1783.08 914.4 86.36
691-         296       c/z 1783.08 1112.52 86.36
692-         297       c/z 1783.08 1310.64 86.36
693-         298       c/z 1783.08 1508.76 86.36
694-         299       c/z 1783.08 1706.88 86.36
695-         301       c/z 1981.2 121.92 86.36
696-         302       c/z 1981.2 320.04 86.36
697-         303       c/z 1981.2 518.16 86.36
698-         304       c/z 1981.2 716.28 86.36
699-         305       c/z 1981.2 914.4 86.36
700-         306       c/z 1981.2 1112.52 86.36
701-         307       c/z 1981.2 1310.64 86.36
702-         308       c/z 1981.2 1508.76 86.36
703-         309       c/z 1981.2 1706.88 86.36
704-         311       c/z 2179.32 121.92 86.36
705-         312       c/z 2179.32 320.04 86.36
706-         313       c/z 2179.32 518.16 86.36
707-         314       c/z 2179.32 716.28 86.36
708-         315       c/z 2179.32 914.4 86.36
709-         316       c/z 2179.32 1112.52 86.36
710-         317       c/z 2179.32 1310.64 86.36
711-         318       c/z 2179.32 1508.76 86.36
712-         319       c/z 2179.32 1706.88 86.36
713-         321       c/z 2377.44 121.92 86.36
714-         322       c/z 2377.44 320.04 86.36
715-         323       c/z 2377.44 518.16 86.36
716-         324       c/z 2377.44 716.28 86.36
717-         325       c/z 2377.44 914.4 86.36
718-         326       c/z 2377.44 1112.52 86.36
719-         327       c/z 2377.44 1310.64 86.36
720-         328       c/z 2377.44 1508.76 86.36
721-         329       c/z 2377.44 1706.88 86.36
722-         331       c/z 2575.56 121.92 86.36
723-         332       c/z 2575.56 320.04 86.36
724-         333       c/z 2575.56 518.16 86.36
725-         334       c/z 2575.56 716.28 86.36
726-         335       c/z 2575.56 914.4 86.36
727-         336       c/z 2575.56 1112.52 86.36
728-         337       c/z 2575.56 1310.64 86.36
729-         338       c/z 2575.56 1508.76 86.36
730-         339       c/z 2575.56 1706.88 86.36
731-         341       c/z 2773.68 121.92 86.36
732-         342       c/z 2773.68 320.04 86.36
733-         343       c/z 2773.68 518.16 86.36
734-         344       c/z 2773.68 716.28 86.36
735-         345       c/z 2773.68 914.4 86.36
736-         346       c/z 2773.68 1112.52 86.36
737-         347       c/z 2773.68 1310.64 86.36
738-         348       c/z 2773.68 1508.76 86.36
739-         349       c/z 2773.68 1706.88 86.36
740-       c     Outside of Shield Bell
741-         411       c/z 198.12 121.92 92.71
742-         412       c/z 198.12 320.04 92.71
743-         413       c/z 198.12 518.16 92.71
744-         414       c/z 198.12 716.28 92.71
745-         415       c/z 198.12 914.4 92.71
746-         416       c/z 198.12 1112.52 92.71
747-         417       c/z 198.12 1310.64 92.71
748-         418       c/z 198.12 1508.76 92.71
749-         419       c/z 198.12 1706.88 92.71
750-         421       c/z 396.24 121.92 92.71
751-         422       c/z 396.24 320.04 92.71
752-         423       c/z 396.24 518.16 92.71
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753-         424       c/z 396.24 716.28 92.71
754-         425       c/z 396.24 914.4 92.71
755-         426       c/z 396.24 1112.52 92.71
756-         427       c/z 396.24 1310.64 92.71
757-         428       c/z 396.24 1508.76 92.71
758-         429       c/z 396.24 1706.88 92.71
759-         431       c/z 594.36 121.92 92.71
760-         432       c/z 594.36 320.04 92.71
761-         433       c/z 594.36 518.16 92.71
762-         434       c/z 594.36 716.28 92.71
763-         435       c/z 594.36 914.4 92.71
764-         436       c/z 594.36 1112.52 92.71
765-         437       c/z 594.36 1310.64 92.71
766-         438       c/z 594.36 1508.76 92.71
767-         439       c/z 594.36 1706.88 92.71
768-         441       c/z 792.48 121.92 92.71
769-         442       c/z 792.48 320.04 92.71
770-         443       c/z 792.48 518.16 92.71
771-         444       c/z 792.48 716.28 92.71
772-         445       c/z 792.48 914.4 92.71
773-         446       c/z 792.48 1112.52 92.71
774-         447       c/z 792.48 1310.64 92.71
775-         448       c/z 792.48 1508.76 92.71
776-         449       c/z 792.48 1706.88 92.71
777-         451       c/z 990.6 121.92 92.71
778-         452       c/z 990.6 320.04 92.71
779-         453       c/z 990.6 518.16 92.71
780-         454       c/z 990.6 716.28 92.71
781-         455       c/z 990.6 914.4 92.71
782-         456       c/z 990.6 1112.52 92.71
783-         457       c/z 990.6 1310.64 92.71
784-         458       c/z 990.6 1508.76 92.71
785-         459       c/z 990.6 1706.88 92.71
786-         461       c/z 1188.72 121.92 92.71
787-         462       c/z 1188.72 320.04 92.71
788-         463       c/z 1188.72 518.16 92.71
789-         464       c/z 1188.72 716.28 92.71
790-         465       c/z 1188.72 914.4 92.71
791-         466       c/z 1188.72 1112.52 92.71
792-         467       c/z 1188.72 1310.64 92.71
793-         468       c/z 1188.72 1508.76 92.71
794-         469       c/z 1188.72 1706.88 92.71
795-         471       c/z 1386.84 121.92 92.71
796-         472       c/z 1386.84 320.04 92.71
797-         473       c/z 1386.84 518.16 92.71
798-         474       c/z 1386.84 716.28 92.71
799-         475       c/z 1386.84 914.4 92.71
800-         476       c/z 1386.84 1112.52 92.71
801-         477       c/z 1386.84 1310.64 92.71
802-         478       c/z 1386.84 1508.76 92.71
803-         479       c/z 1386.84 1706.88 92.71
804-         481       c/z 1584.96 121.92 92.71
805-         482       c/z 1584.96 320.04 92.71
806-         483       c/z 1584.96 518.16 92.71
807-         484       c/z 1584.96 716.28 92.71
808-         485       c/z 1584.96 914.4 92.71
809-         486       c/z 1584.96 1112.52 92.71
810-         487       c/z 1584.96 1310.64 92.71
811-         488       c/z 1584.96 1508.76 92.71
812-         489       c/z 1584.96 1706.88 92.71
813-         491       c/z 1783.08 121.92 92.71
814-         492       c/z 1783.08 320.04 92.71
815-         493       c/z 1783.08 518.16 92.71
816-         494       c/z 1783.08 716.28 92.71
817-         495       c/z 1783.08 914.4 92.71
818-         496       c/z 1783.08 1112.52 92.71
819-         497       c/z 1783.08 1310.64 92.71
820-         498       c/z 1783.08 1508.76 92.71
821-         499       c/z 1783.08 1706.88 92.71
822-         501       c/z 1981.2 121.92 92.71
823-         502       c/z 1981.2 320.04 92.71
824-         503       c/z 1981.2 518.16 92.71
825-         504       c/z 1981.2 716.28 92.71
826-         505       c/z 1981.2 914.4 92.71
827-         506       c/z 1981.2 1112.52 92.71
828-         507       c/z 1981.2 1310.64 92.71
829-         508       c/z 1981.2 1508.76 92.71
830-         509       c/z 1981.2 1706.88 92.71
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831-         511       c/z 2179.32 121.92 92.71
832-         512       c/z 2179.32 320.04 92.71
833-         513       c/z 2179.32 518.16 92.71
834-         514       c/z 2179.32 716.28 92.71
835-         515       c/z 2179.32 914.4 92.71
836-         516       c/z 2179.32 1112.52 92.71
837-         517       c/z 2179.32 1310.64 92.71
838-         518       c/z 2179.32 1508.76 92.71
839-         519       c/z 2179.32 1706.88 92.71
840-         521       c/z 2377.44 121.92 92.71
841-         522       c/z 2377.44 320.04 92.71
842-         523       c/z 2377.44 518.16 92.71
843-         524       c/z 2377.44 716.28 92.71
844-         525       c/z 2377.44 914.4 92.71
845-         526       c/z 2377.44 1112.52 92.71
846-         527       c/z 2377.44 1310.64 92.71
847-         528       c/z 2377.44 1508.76 92.71
848-         529       c/z 2377.44 1706.88 92.71
849-         531       c/z 2575.56 121.92 92.71
850-         532       c/z 2575.56 320.04 92.71
851-         533       c/z 2575.56 518.16 92.71
852-         534       c/z 2575.56 716.28 92.71
853-         535       c/z 2575.56 914.4 92.71
854-         536       c/z 2575.56 1112.52 92.71
855-         537       c/z 2575.56 1310.64 92.71
856-         538       c/z 2575.56 1508.76 92.71
857-         539       c/z 2575.56 1706.88 92.71
858-         541       c/z 2773.68 121.92 92.71
859-         542       c/z 2773.68 320.04 92.71
860-         543       c/z 2773.68 518.16 92.71
861-         544       c/z 2773.68 716.28 92.71
862-         545       c/z 2773.68 914.4 92.71
863-         546       c/z 2773.68 1112.52 92.71
864-         547       c/z 2773.68 1310.64 92.71
865-         548       c/z 2773.68 1508.76 92.71
866-         549       c/z 2773.68 1706.88 92.71
867-       c    Planes
868-        1201        py -76.2  $Outside Left Wall
869-        1202        py 0  $Inside Left Thick Wall
870-        1203        py 1828.8  $Inside Right Thick Wall
871-        1204        py 1905  $Outside Right Wall
872-        1205        px 0  $Inside Back Thick Wall
873-        1206        px 2895.6  $Front of Inner Wall
874-        1207        px -76.2  $Outside Back Wall
875-        1208        px 2971.8  $Back of Inner Wall
876-        1209        pz 0  $Top of Floor
877-        c 1211        pz 190.5  $Top of Bot HIC
878-        1212        pz 381  $Top of Top HIC
879-        1213        pz 388.62  $Bot of Bell Top
880-        1214        pz 396.24  $Top of Bell Top
881-        1215        pz 1455.42  $Bottom of Roof
882-        1216        pz 1493.52  $Top of Roof
883-        1217        px 3947.16  $Inner Truck Bay Wall
884-        1218        px 4023.36  $Outer Truck Bay Wall
885-        1219        pz 1036.32  $Top of Inner Wall
886-        1220        pz 822.96  $Bottom of Notch
887-        1221        py 1760.22  $Right of notch
888-        1222        py 1546.86  $Left of notch
889-        1223        px -38.1  $Inside Back Thin Wall
890-        1224        px 3985.26  $Inside Front Thin Wall
891-        1225        py 1866.9  $Inside Right Thin Wall
892-        1226        py -38.1  $Inside Left Thin Wall
893-        1227        pz -76.2  $Bottom of Floor
894-        1228        px 1089.66  $Zone 1 Air
895-        1229        px 2080.26  $Zone 2 Air
896-        1230        pz 807.72  $Bottom of Truck Bay Shield
897-        1231        pz 213.36  $7ft Detector Surface
898-        1232        pz -91.44  $Bottom Void
899-        1233        px -57.15  $Split for Back Wall
900-        1234        py 1885.95  $Split for Right Wall
901-        1235        px 4004.31  $Split for Front Wall
902-        1236        py -57.15  $Split for Left Wall
903-        1237        pz 1474.47  $Split for Roof
904-       c    HVAC Duct Openings
905-       12321        px 68.58  $Duct1S1
906-       12331        px 170.18  $Duct1 S2
907-       12341        px 871.22  $Duct2 S1
908-       12351        px 972.82  $Duct2 S2
```

```
 909-       12361        px 1595.12  $Duct3 S1
 910-       12371        px 1747.52  $Duct3 S2
 911-       12381        px 1856.74  $Duct4 S1
 912-       12391        px 1958.34  $Duct4 S2
 913-       12401        px 2720.34  $Duct5 S1
 914-       12411        px 2821.94  $Duct5 S2
 915-       12421        px 3776.98  $Duct6 S1
 916-       12431        px 3878.58  $Duct6 S2
 917-       12441        pz 1397  $Small Ducts Bottom
 918-       12451        pz 1437.64  $Small Duct Top
 919-       12461        pz 1369.06  $Large Ducts Bottom
 920-       12471        pz 1445.26  $Large Duct Top
 921-       c   Spheres for detectors
 922-        2000         s 1973.58 914.4 -72.6 2800  $Closest Sphere
 923-        2001         s 1973.58 914.4 -72.6 4000
 924-        2002         s 1973.58 914.4 -72.6 7000
 925-        2003         s 1973.58 914.4 -72.6 10000
 926-        2004         s 1973.58 914.4 -72.6 15000
 927-        2005         s 1973.58 914.4 -72.6 20000
 928-        2006         s 1973.58 914.4 -72.6 25000
 929-        2007         s 1973.58 914.4 -72.6 30000
 930-        2008         s 1973.58 914.4 -72.6 37500
 931-        2009         s 1973.58 914.4 -72.6 45000
 932-        2010         s 1973.58 914.4 -72.6 55000
 933-        2011         s 1973.58 914.4 -72.6 65000
 934-        2012         s 1973.58 914.4 -72.6 75000
 935-        2013         s 1973.58 914.4 -72.6 85000
 936-        2014         s 1973.58 914.4 -72.6 95000
 937-        2015         s 1973.58 914.4 -72.6 120000
 938-        2016        py -276.2
 939-        2017        py -476.2
 940-        2018        py -676.2
 941-        2019        py -876.2
 942-        2020        py -1076.2
 943-        2021        py -1276.2
 944-        2022        py -1476.2
 945-        2023        py -1676.2
 946-        2024        py -1876.2
 947-        2025        py -2076.2
 948-        2026        px 359.054
 949-        2027        px 2535.94
 950-        2028        py -2276.2
 951-        2029        py -2476.2
 952-        2030        py -2676.2
 953-        2031        py -2876.2
 954-        2032        py -3076.2
 955-        2033        py -3276.2
 956-        2034        py -3476.2
 957-        2035        py -3676.2
 958-
 959-       mode  p
 960-       c  Materials
 961-       m1    1000.            -0.015  $ Concrete from 6.4
 962-             8000.            -1.057 11000.           -0.041 12000.           -0.085
 963-             13000.           -0.137 14000.           -0.487 15000.           -0.002
 964-             16000.           -0.002 19000.           -0.015 20000.           -0.295
 965-             22000.           -0.011 25000.           -0.003 26000.           -0.178
 966-       m2    13000.                1  $ Aluminum
warning. material   2 is not used in the problem.
 967-       m3    7000.           0.78969  $ Air
 968-             8000.           0.21019 6000.           0.00012
 969-       m4    26000.                1  $ Iron
warning. material   4 is not used in the problem.
 970-       m5    1000.                 2  $ Water
 971-             8000.                 1
 972-       imp:p             1 379r                   9           3 2r            $ 11, 1
 973-                         9            3           9           3 1r            $ 12041
 974-                         9            3 1r                    1            3  $ 1208,
 975-                         9            0           1 4r                     9  $ 12111
 976-              1r                      3           1 1r                    27  $ 9992,
 977-                         0            1 6r                   81 1r            $ 9987,
 978-                       162 1r                   324 1r                   648  $ 2003,
 979-              1r                    1296 1r                  2592 1r            $ 2008,
 980-                      5184 2r            $ 2013, 2015
 981-       phys:p  100 1 0
 982-       c sdef erg=d5 x=d1 y=d2 z=d3 cel=d4 eff=0.0001 wgt=3.045E+15
 983-       c si1  0 2895.6
 984-       c sp1  0.0 1.0
```

```
 985-       c si2  0 1828.8
 986-       c sp2  0.0 1.0
 987-       c si3  0.01 304.8 381.00
 988-       c sp3  0.0 0.8 0.2
 989-       c sb3  0.0 0.2 1.0
 990-       c si4  L 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 31 32
 991-       c      33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 51 52 53 54 55
 992-       c      56 57 58 59 61 62 63 64 65 66 67 68 69 71 72 73 74 75 76 77 78
 993-       c      79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96 97 98 99 101
 994-       c      102 103 104 105 106 107 108 109 111 112 113 114 115 116 117 118
 995-       c      119 121 122 123 124 125 126 127 128 129 131 132 133 134 135 136
 996-       c      137 138 139 141 142 143 144 145 146 147 148 149
 997-       c sp4  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 998-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 999-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1000-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1001-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1002-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1003-       c      1  1  1  1  1  1  1  1  1  1  1  1  1
1004-       c si5 l 1.1730 1.3325
1005-       c sp5   1      1
1006-       c ssw 1220(9995)
1007-       ssr
1008-       c ===========================================================================
1009-       c ===========================================================================
1010-       c Truck bay dose rate
1011-       f2:p 1231
warning. without bremsstrahlung, flux estimates will be low.
1012-       c ===========================================================================
1013-       c ===========================================================================
1014-       c Rings outside the building
1015-       f12:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1016-       fs12 -2000 -2001 -2002 -2003 -2004 -2005 -2006 -2007 -2008 -2009
1017-            -2010 -2011 -2012 -2013 -2014
1018-       sd12 1e50 2.564E+07 1.037e8 1.602e8 3.927e8 5.498e8 7.069e8 8.639e8 1.590e9
1019-            1.944e9 3.142e9 3.770e9 4.398e9 5.027e9 5.655e9 1.689e10
1020-       c ===========================================================================
1021-       c ===========================================================================
1022-       c Slabs Ajacent to Ventilation Penetration Side
1023-       f22:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1024-       fs22 1201 -2026 2027
1025-            2016 2017 2018 2019 2020
1026-            2021 2022 2023 2024 2025
1027-            2028 2029 2030 2031 2032
1028-            2033 2034 2035
1029-       sd22 1e50 1e50 1e50
1030-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1031-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1032-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1033-            4.35376e5 4.35376e5 4.35376e5 1e50
1034-       c ===========================================================================
1035-       c ===========================================================================
1036-       c Dose Rate on Vent Side Wall 7ft up avg
1037-       f32:p 1201
warning. without bremsstrahlung, flux estimates will be low.
1038-       fs32 1231 -2026 2027 -1227
1039-       sd32 1e50 1e50 1e50 1e50 6.30E+05
1040-       c ===========================================================================
1041-       c ===========================================================================
1042-       c detectors toward north, with HVAC effects
1043-       f42:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1044-       fs42 1219 -1209 1201 -1205 1206
1045-       sd42 1e50 1e50 1e50 1e50 1e50 3.00e06
1046-            1e50 1e50 1e50 1e50 1e50 3.00e06
1047-            1e50 1e50 1e50 1e50 1e50 3.00e06
1048-            1e50 1e50 1e50 1e50 1e50 3.00e06
1049-            1e50 1e50 1e50 1e50 1e50 3.00e06
1050-            1e50 1e50 1e50 1e50 1e50 3.00e06
1051-            1e50 1e50 1e50 1e50 1e50 3.00e06
1052-            1e50 1e50 1e50 1e50 1e50 3.00e06
1053-            1e50 1e50 1e50 1e50 1e50 3.00e06
1054-            1e50 1e50 1e50 1e50 1e50 3.00e06
1055-            1e50 1e50 1e50 1e50 1e50 3.00e06
1056-       c detectors toward sorth, with no HVAC effects
1057-       f52:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
```

```
 warning. without bremsstrahlung, flux estimates will be low.
 1058-       fs52 1219 -1209 -1201 -1205 1206
 1059-       sd52 1e50 1e50 1e50 1e50 1e50 3.00e06
 1060-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1061-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1062-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1063-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1064-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1065-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1066-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1067-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1068-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1069-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1070-       c ===================================================================
 1071-       c ===================================================================
 1072-       c Detector above the HICS (used as a source check)
 1073-       f62:p 1219
 warning. without bremsstrahlung, flux estimates will be low.
 1074-       fs62 -1205 1206 1203 -1202
 1075-       sd62  1e50 1e50 1e50  1e50 5.30E+06
 1076-       c ===================================================================
 1077-       c ===================================================================
 1078-       c Photon Flux to Dose Rate Conversion Factors
 1079-       de0 0.01 0.03 0.05 0.07 0.10 0.15 0.20
 1080-            0.25 0.30 0.35 0.40 0.45 0.50 0.55
 1081-            0.60 0.65 0.70 0.80 1.00 1.40 1.80
 1082-            2.20 2.60 2.80 3.25 3.75 4.25 4.75
 1083-            5.00 5.25 5.75 6.25 6.75 7.50 9.00
 1084-            11.0 13.0 15.0
 1085-       df0 LIN 3.96E-06 5.82E-07 2.90E-07 2.58E-07 2.83E-07 3.79E-07 5.01E-07
 1086-            6.31e-07 7.59E-07 8.78E-07 9.85E-07 1.08E-06 1.17E-06 1.27E-06
 1087-            1.36e-06 1.44E-06 1.52E-06 1.68E-06 1.98E-06 2.51E-06 2.99E-06
 1088-            3.42e-06 3.82E-06 4.01E-06 4.41E-06 4.83E-06 5.23E-06 5.60E-06
 1089-            5.80e-06 6.01E-06 6.37E-06 6.74E-06 7.11E-06 7.66E-06 8.77E-06
 1090-            1.03e-05 1.18E-05 1.33E-05
 1091-       nps 8.00e+08


 information from the header of surface-source file NSBwssa

 the file was written by mcnp     version 5     with probid =  03/18/09 19:23:01  and ending with dump no.    12
 the title of the creation run was     c     Created on: Tuesday, November 11, 2008 at 09:35
 the original number of histories was    70000000
 the total number of tracks recorded was    11882447 from    11558540 independent histories.

 this ssr problem will use the following particles if available: photon

 warning.   2 materials had unnormalized fractions. print table 40.

 warning.   1 of the materials appear at more than one density.

 warning. sum of segment sizes differs from total in  25 cases.
1cells                                                                                                  print
table 60

                      atom        gram                                        photon
        cell  mat    density     density     volume        mass     pieces importance

     1    11    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     2    12    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     3    13    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     4    14    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     5    15    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     6    16    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     7    17    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     8    18    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     9    19    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    10    21    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    11    22    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    12    23    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    13    24    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    14    25    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    15    26    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    16    27    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    17    28    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    18    29    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    19    31    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    20    32    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
```

21	33	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
22	34	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
23	35	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
24	36	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
25	37	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
26	38	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
27	39	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
28	41	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
29	42	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
30	43	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
31	44	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
32	45	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
33	46	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
34	47	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
35	48	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
36	49	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
37	51	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
38	52	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
39	53	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
40	54	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
41	55	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
42	56	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
43	57	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
44	58	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
45	59	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
46	61	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
47	62	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
48	63	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
49	64	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
50	65	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
51	66	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
52	67	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
53	68	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
54	69	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
55	71	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
56	72	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
57	73	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
58	74	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
59	75	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
60	76	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
61	77	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
62	78	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
63	79	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
64	81	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
65	82	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
66	83	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
67	84	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
68	85	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
69	86	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
70	87	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
71	88	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
72	89	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
73	91	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
74	92	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
75	93	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
76	94	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
77	95	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
78	96	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
79	97	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
80	98	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
81	99	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
82	101	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
83	102	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
84	103	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
85	104	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
86	105	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
87	106	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
88	107	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
89	108	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
90	109	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
91	111	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
92	112	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
93	113	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
94	114	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
95	115	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
96	116	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
97	117	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
98	118	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

99	119	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
100	121	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
101	122	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
102	123	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
103	124	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
104	125	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
105	126	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
106	127	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
107	128	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
108	129	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
109	131	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
110	132	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
111	133	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
112	134	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
113	135	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
114	136	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
115	137	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
116	138	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
117	139	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
118	141	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
119	142	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
120	143	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
121	144	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
122	145	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
123	146	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
124	147	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
125	148	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
126	149	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
127	211	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
128	212	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
129	213	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
130	214	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
131	215	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
132	216	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
133	217	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
134	218	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
135	219	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
136	221	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
137	222	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
138	223	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
139	224	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
140	225	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
141	226	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
142	227	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
143	228	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
144	229	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
145	231	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
146	232	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
147	233	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
148	234	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
149	235	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
150	236	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
151	237	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
152	238	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
153	239	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
154	241	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
155	242	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
156	243	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
157	244	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
158	245	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
159	246	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
160	247	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
161	248	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
162	249	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
163	251	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
164	252	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
165	253	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
166	254	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
167	255	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
168	256	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
169	257	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
170	258	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
171	259	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
172	261	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
173	262	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
174	263	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
175	264	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
176	265	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00

177	266	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
178	267	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
179	268	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
180	269	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
181	271	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
182	272	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
183	273	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
184	274	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
185	275	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
186	276	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
187	277	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
188	278	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
189	279	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
190	281	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
191	282	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
192	283	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
193	284	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
194	285	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
195	286	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
196	287	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
197	288	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
198	289	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
199	291	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
200	292	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
201	293	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
202	294	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
203	295	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
204	296	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
205	297	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
206	298	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
207	299	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
208	301	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
209	302	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
210	303	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
211	304	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
212	305	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
213	306	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
214	307	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
215	308	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
216	309	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
217	311	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
218	312	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
219	313	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
220	314	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
221	315	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
222	316	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
223	317	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
224	318	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
225	319	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
226	321	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
227	322	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
228	323	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
229	324	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
230	325	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
231	326	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
232	327	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
233	328	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
234	329	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
235	331	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
236	332	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
237	333	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
238	334	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
239	335	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
240	336	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
241	337	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
242	338	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
243	339	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
244	341	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
245	342	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
246	343	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
247	344	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
248	345	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
249	346	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
250	347	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
251	348	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
252	349	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
253	411	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
254	412	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00

255	413	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
256	414	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
257	415	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
258	416	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
259	417	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
260	418	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
261	419	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
262	421	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
263	422	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
264	423	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
265	424	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
266	425	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
267	426	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
268	427	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
269	428	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
270	429	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
271	431	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
272	432	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
273	433	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
274	434	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
275	435	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
276	436	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
277	437	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
278	438	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
279	439	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
280	441	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
281	442	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
282	443	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
283	444	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
284	445	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
285	446	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
286	447	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
287	448	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
288	449	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
289	451	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
290	452	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
291	453	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
292	454	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
293	455	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
294	456	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
295	457	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
296	458	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
297	459	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
298	461	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
299	462	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
300	463	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
301	464	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
302	465	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
303	466	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
304	467	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
305	468	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
306	469	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
307	471	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
308	472	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
309	473	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
310	474	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
311	475	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
312	476	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
313	477	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
314	478	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
315	479	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
316	481	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
317	482	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
318	483	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
319	484	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
320	485	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
321	486	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
322	487	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
323	488	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
324	489	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
325	491	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
326	492	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
327	493	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
328	494	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
329	495	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
330	496	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
331	497	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
332	498	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00

333	499	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
334	501	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
335	502	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
336	503	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
337	504	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
338	505	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
339	506	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
340	507	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
341	508	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
342	509	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
343	511	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
344	512	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
345	513	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
346	514	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
347	515	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
348	516	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
349	517	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
350	518	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
351	519	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
352	521	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
353	522	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
354	523	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
355	524	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
356	525	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
357	526	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
358	527	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
359	528	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
360	529	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
361	531	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
362	532	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
363	533	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
364	534	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
365	535	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
366	536	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
367	537	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
368	538	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
369	539	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
370	541	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
371	542	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
372	543	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
373	544	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
374	545	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
375	546	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
376	547	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
377	548	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
378	549	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
379	1200	3	5.11393E-05	1.22500E-03	3.46881E+06	4.24930E+03	0	1.0000E+00
380	1201	1	7.34055E-02	2.36500E+00	1.40947E+08	3.33340E+08	0	1.0000E+00
381	1202	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	9.0000E+00
382	12021	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	3.0000E+00
383	1203	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	3.0000E+00
384	1204	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	3.0000E+00
385	12041	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	9.0000E+00
386	1205	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	3.0000E+00
387	1206	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	9.0000E+00
388	12061	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	3.0000E+00
389	1207	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	3.0000E+00
390	1208	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	9.0000E+00
391	12081	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	3.0000E+00
392	1209	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	3.0000E+00
393	1210	1	7.34055E-02	2.36500E+00	6.18900E+08	1.46370E+09	0	1.0000E+00
394	1211	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	3.0000E+00
395	12111	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	9.0000E+00
396	9999	0	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0	0.0000E+00
397	9998	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
398	9997	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
399	9996	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
400	9995	3	5.11393E-05	1.22500E-03	1.12984E+09	1.38406E+06	0	1.0000E+00
401	9994	3	5.11393E-05	1.22500E-03	2.40306E+09	2.94375E+06	0	1.0000E+00
402	9993	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	9.0000E+00
403	9992	3	5.11393E-05	1.22500E-03	1.06018E+09	1.29872E+06	0	9.0000E+00
404	9991	1	7.34055E-02	2.36500E+00	2.71842E+07	6.42906E+07	0	3.0000E+00
405	9990	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	1.0000E+00
406	9989	3	5.11393E-05	1.22500E-03	8.09132E+08	9.91186E+05	0	1.0000E+00
407	9988	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	2.7000E+01
408	9987	0	0.00000E+00	0.00000E+00	3.61826E+15	0.00000E+00	1	0.0000E+00
409	9986	3	5.11393E-05	1.22500E-03	6.89441E+11	8.44566E+08	1	1.0000E+00
410	10000	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00

```
   411 10001    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  1.0000E+00
   412 10002    3  5.11393E-05 1.22500E-03 4.42451E+05 5.42002E+02     0  1.0000E+00
   413 10003    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  1.0000E+00
   414 10004    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  1.0000E+00
   415 10005    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  1.0000E+00
   416  2001    3  5.11393E-05 1.22500E-03 8.81574E+10 1.07993E+08     1  8.1000E+01
   417  2002    3  5.11393E-05 1.22500E-03 5.84709E+11 7.16269E+08     1  8.1000E+01
   418  2003    3  5.11393E-05 1.22500E-03 1.37659E+12 1.68633E+09     1  1.6200E+02
   419  2004    3  5.11393E-05 1.22500E-03 4.97560E+12 6.09511E+09     1  1.6200E+02
   420  2005    3  5.11393E-05 1.22500E-03 9.68856E+12 1.18685E+10     1  3.2400E+02
   421  2006    3  5.11393E-05 1.22500E-03 1.59723E+13 1.95661E+10     1  3.2400E+02
   422  2007    3  5.11393E-05 1.22500E-03 2.38269E+13 2.91879E+10     1  6.4800E+02
   423  2008    3  5.11393E-05 1.22500E-03 5.39037E+13 6.60320E+10     1  6.4800E+02
   424  2009    3  5.11393E-05 1.22500E-03 8.04121E+13 9.85049E+10     1  1.2960E+03
   425  2010    3  5.11393E-05 1.22500E-03 1.57615E+14 1.93078E+11     1  1.2960E+03
   426  2011    3  5.11393E-05 1.22500E-03 2.26732E+14 2.77747E+11     1  2.5920E+03
   427  2012    3  5.11393E-05 1.22500E-03 3.08416E+14 3.77809E+11     1  2.5920E+03
   428  2013    3  5.11393E-05 1.22500E-03 4.02666E+14 4.93265E+11     1  5.1840E+03
   429  2014    3  5.11393E-05 1.22500E-03 5.09482E+14 6.24115E+11     1  5.1840E+03
   430  2015    3  5.11393E-05 1.22500E-03 1.82349E+15 2.23378E+12     1  5.1840E+03

 total                                    7.23819E+15 4.44056E+12

 ************************************************
 * Random Number Generator  =                   1 *
 * Random Number Seed       =       19073486328125 *
 * Random Number Multiplier =       19073486328125 *
 * Random Number Adder      =                   0 *
 * Random Number Bits Used  =                  48 *
 * Random Number Stride     =              152917 *
 ************************************************


        12 warning messages so far.
1cross-section tables                                                                    print
table 100

     table    length

                        tables from file mcplib04

   1000.04p    1898  ENDF/B-VI Release 8 Photoatomic Data for 1-H                        mat 100
02/07/03
   6000.04p    3152  ENDF/B-VI Release 8 Photoatomic Data for 6-C                        mat 600
02/07/03
   7000.04p    3194  ENDF/B-VI Release 8 Photoatomic Data for 7-N                        mat 700
02/07/03
   8000.04p    3272  ENDF/B-VI Release 8 Photoatomic Data for 8-O                        mat 800
02/07/03
  11000.04p    3995  ENDF/B-VI Release 8 Photoatomic Data for 11-NA                      mat1100
02/07/03
  12000.04p    3781  ENDF/B-VI Release 8 Photoatomic Data for 12-MG                      mat1200
02/07/03
  13000.04p    4846  ENDF/B-VI Release 8 Photoatomic Data for 13-AL                      mat1300
02/07/03
  14000.04p    4792  ENDF/B-VI Release 8 Photoatomic Data for 14-SI                      mat1400
02/07/03
  15000.04p    4498  ENDF/B-VI Release 8 Photoatomic Data for 15-P                       mat1500
02/07/03
  16000.04p    4654  ENDF/B-VI Release 8 Photoatomic Data for 16-S                       mat1600
02/07/03
  19000.04p    5047  ENDF/B-VI Release 8 Photoatomic Data for 19-K                       mat1900
02/07/03
  20000.04p    5013  ENDF/B-VI Release 8 Photoatomic Data for 20-CA                      mat2000
02/07/03
  22000.04p    5742  ENDF/B-VI Release 8 Photoatomic Data for 22-TI                      mat2200
02/07/03
  25000.04p    5598  ENDF/B-VI Release 8 Photoatomic Data for 25-MN                      mat2500
02/07/03
  26000.04p    5718  ENDF/B-VI Release 8 Photoatomic Data for 26-FE                      mat2600
02/07/03

  total       65200

 warning. simple physics turned on for photons > 100 mev.
```

```
**********************************************************************************************************
*******
 dump no.    1 on file runtpe       nps =           0     coll =              0     ctm =        0.00   nrn =
0

        13 warning messages so far.

**********************************************************************************************************
*******
 dump no.    2 on file runtpe       nps =      379825     coll =      316910999     ctm =       60.00   nrn =
4011472695


**********************************************************************************************************
*******
 dump no.    3 on file runtpe       nps =      757235     coll =      633134814     ctm =      120.00   nrn =
8015077464


**********************************************************************************************************
*******
 dump no.    4 on file runtpe       nps =     1136405     coll =      948752384     ctm =      180.01   nrn =
12009911782


**********************************************************************************************************
*******
 dump no.    5 on file runtpe       nps =     1515310     coll =     1265121094     ctm =      240.02   nrn =
16014864519


**********************************************************************************************************
*******
 dump no.    6 on file runtpe       nps =     1897000     coll =     1582120634     ctm =      300.02   nrn =
20026791687


**********************************************************************************************************
*******
 dump no.    7 on file runtpe       nps =     2273755     coll =     1898610920     ctm =      360.03   nrn =
24033986060


**********************************************************************************************************
*******
 dump no.    8 on file runtpe       nps =     2651455     coll =     2215455205     ctm =      420.03   nrn =
28045069048


**********************************************************************************************************
*******
 dump no.    9 on file runtpe       nps =     3029675     coll =     2531693698     ctm =      480.05   nrn =
32048295444


**********************************************************************************************************
*******
 dump no.   10 on file runtpe       nps =     3407275     coll =     2848655649     ctm =      540.06   nrn =
36061073270


**********************************************************************************************************
*******
 dump no.   11 on file runtpe       nps =     3787175     coll =     3165748505     ctm =      600.07   nrn =
40074663897
```

```
**************************************************************************************************************
*******
 dump no.   12 on file runtpe       nps =     4164670     coll =     3483126142     ctm =      660.07   nrn =
44092990227


**************************************************************************************************************
*******
 dump no.   13 on file runtpe       nps =     4543310     coll =     3799387100     ctm =      720.08   nrn =
48096119475


**************************************************************************************************************
*******
 dump no.   14 on file runtpe       nps =     4922275     coll =     4115755011     ctm =      780.10   nrn =
52100758969


**************************************************************************************************************
*******
 dump no.   15 on file runtpe       nps =     5302070     coll =     4432458888     ctm =      840.11   nrn =
56109401735


**************************************************************************************************************
*******
 dump no.   16 on file runtpe       nps =     5681140     coll =     4750209658     ctm =      900.12   nrn =
60132213016


**************************************************************************************************************
*******
 dump no.   17 on file runtpe       nps =     6060400     coll =     5065535620     ctm =      960.13   nrn =
64122862693


**************************************************************************************************************
*******
 dump no.   18 on file runtpe       nps =     6441045     coll =     5383603248     ctm =     1020.14   nrn =
68148767790


**************************************************************************************************************
*******
 dump no.   19 on file runtpe       nps =     6822635     coll =     5703802952     ctm =     1080.15   nrn =
72202560564


**************************************************************************************************************
*******
 dump no.   20 on file runtpe       nps =     7206430     coll =     6025774972     ctm =     1140.16   nrn =
76278783190


**************************************************************************************************************
*******
 dump no.   21 on file runtpe       nps =     7585795     coll =     6345596569     ctm =     1200.17   nrn =
80328468567


**************************************************************************************************************
*******
 dump no.   22 on file runtpe       nps =     7967280     coll =     6665402571     ctm =     1260.17   nrn =
84377750066
```

```
************************************************************************************************************************
*******
 dump no.   23 on file runtpe       nps =     8344775     coll =     6984204951     ctm =     1320.18   nrn =
88414898317


************************************************************************************************************************
*******
 dump no.   24 on file runtpe       nps =     8723425     coll =     7302320078     ctm =     1380.19   nrn =
92442418742


************************************************************************************************************************
*******
 dump no.   25 on file runtpe       nps =     9101320     coll =     7618952515     ctm =     1440.20   nrn =
96450917463


************************************************************************************************************************
*******
 dump no.   26 on file runtpe       nps =     9477870     coll =     7933686646     ctm =     1500.20   nrn =
100434991409


************************************************************************************************************************
*******
 dump no.   27 on file runtpe       nps =     9858935     coll =     8250204655     ctm =     1560.21   nrn =
104440927845


************************************************************************************************************************
*******
 dump no.   28 on file runtpe       nps =    10239140     coll =     8567229935     ctm =     1620.22   nrn =
108453910519


************************************************************************************************************************
*******
 dump no.   29 on file runtpe       nps =    10615585     coll =     8881384208     ctm =     1680.22   nrn =
112430625819


************************************************************************************************************************
*******
 dump no.   30 on file runtpe       nps =    10995055     coll =     9197881284     ctm =     1740.24   nrn =
116436792476


************************************************************************************************************************
*******
 dump no.   31 on file runtpe       nps =    11371625     coll =     9513850731     ctm =     1800.24   nrn =
120436937678

1problem summary                                  source particle weight for summary table normalization =
70000000.00

      run terminated at end of surface-source input file.
+                                                                                                    03/20/09
22:31:18
      c     Created on: Tuesday, November 11, 2008 at 09:35                                probid =  03/19/09
16:00:05
0
 photon creation     tracks      weight        energy            photon loss         tracks      weight
energy
                                (per source particle)                                             (per source
particle)

 source           135800243    1.9319E+14    4.9119E-01          escape             8997449    4.8330E+11
3.6588E-04
```

					energy cutoff	0	0.	0.
					time cutoff	0	0.	0.
weight window	0	0.	0.		weight window	0	0.	0.
cell importance	1225668005	3.8589E+13	3.1070E-02		cell importance	406074795	3.8573E+13	3.1073E-02
weight cutoff	0	0.	0.		weight cutoff	0	0.	0.
e or t importance	0	0.	0.		e or t importance	0	0.	0.
dxtran	0	0.	0.		dxtran	0	0.	0.
forced collisions	0	0.	0.		forced collisions	0	0.	0.
exp. transform	0	0.	0.		exp. transform	0	0.	0.
from neutrons	0	0.	0.		compton scatter	0	0.	4.1082E-01
bremsstrahlung	0	0.	0.		capture	1024620144	2.2745E+14	8.0919E-02
p-annihilation	197752	6.3089E+10	1.6688E-04		pair production	98876	3.1544E+10	2.1290E-04
photonuclear	0	0.	0.		photonuclear abs	0	0.	0.
electron x-rays	0	0.	0.					
1st fluorescence	78125264	3.4697E+13	9.6104E-04					
2nd fluorescence	0	0.	0.					
total	1439791264	2.6654E+14	5.2339E-01		total	1439791264	2.6654E+14	5.2339E-01

number of photons banked	1010318023	average time of (shakes)		cutoffs	
photon tracks per source particle	2.0568E+01	escape	9.6838E+01	tco	1.0000E+33
photon collisions per source particle	1.3816E+02	capture	6.6630E+00	eco	1.0000E-03
total photon collisions	9671008044	capture or escape	6.8542E+00	wc1 -	5.0000E-01
		any termination	7.1361E+00	wc2 -	2.5000E-01

computer time so far in this run	1829.90 minutes	maximum number ever in bank	15
computer time in mcrun	1829.75 minutes	bank overflows to backup file	0
source particles per minute	6.3170E+03		
random numbers generated	122426683506	most random numbers used was	3031845 in history 4648450

warning. random number stride 152917 exceeded 20276 times.

range of sampled source weights = 6.0900E+13 to 1.3287E+15

warning. importance function may be poor. see print table 120.

1photon activity in each cell print table 126

	cell	tracks entering	population	collisions	collisions * weight (per history)	number weighted energy	flux weighted energy	average track weight (relative)	average track mfp (cm)
1	11	74342	72416	397416	5.3691E+11	9.1282E-02	9.1282E-02	9.4680E+13	5.3506E+00
2	12	92683	89961	491881	6.6415E+11	9.0148E-02	9.0148E-02	9.3848E+13	5.3173E+00
3	13	102050	98875	537975	7.3822E+11	9.0447E-02	9.0447E-02	9.5890E+13	5.3299E+00
4	14	106628	103339	563172	7.8277E+11	8.9555E-02	8.9555E-02	9.6609E+13	5.3107E+00
5	15	107858	104574	568711	7.7305E+11	8.9334E-02	8.9334E-02	9.4775E+13	5.3089E+00
6	16	106472	103254	560639	7.6324E+11	8.9456E-02	8.9456E-02	9.4666E+13	5.3052E+00
7	17	101485	98407	536213	7.2973E+11	8.9808E-02	8.9808E-02	9.4666E+13	5.3187E+00
8	18	93001	90209	491211	6.7986E+11	9.0293E-02	9.0293E-02	9.6338E+13	5.3222E+00
9	19	73822	71868	396429	5.4302E+11	9.1681E-02	9.1681E-02	9.4668E+13	5.3527E+00
10	21	87193	84503	458127	6.2544E+11	9.0484E-02	9.0484E-02	9.4856E+13	5.3285E+00
11	22	110666	106511	576188	7.7784E+11	8.9033E-02	8.9033E-02	9.3857E+13	5.2930E+00
12	23	121694	117059	630853	8.6703E+11	8.8626E-02	8.8626E-02	9.5638E+13	5.2878E+00
13	24	127123	122180	660313	9.0040E+11	8.8236E-02	8.8236E-02	9.4560E+13	5.2830E+00
14	25	128570	123725	665498	9.0754E+11	8.8165E-02	8.8165E-02	9.4640E+13	5.2834E+00
15	26	127020	122075	657282	8.9296E+11	8.8001E-02	8.8001E-02	9.4825E+13	5.2762E+00
16	27	122021	117414	635209	8.6953E+11	8.7789E-02	8.7789E-02	9.5234E+13	5.2692E+00
17	28	110914	106587	578414	7.9513E+11	8.9317E-02	8.9317E-02	9.5865E+13	5.2991E+00
18	29	87030	84206	460475	6.2647E+11	9.0950E-02	9.0950E-02	9.4617E+13	5.3368E+00
19	31	95161	92155	503594	6.8311E+11	9.0110E-02	9.0110E-02	9.4227E+13	5.3178E+00
20	32	121688	117034	633013	8.6585E+11	8.8291E-02	8.8291E-02	9.4966E+13	5.2808E+00
21	33	132518	127619	690748	9.5306E+11	8.8164E-02	8.8164E-02	9.6114E+13	5.2815E+00
22	34	139064	133752	720587	9.9203E+11	8.7542E-02	8.7542E-02	9.5957E+13	5.2661E+00
23	35	140442	135216	730254	1.0031E+12	8.7558E-02	8.7558E-02	9.5507E+13	5.2685E+00
24	36	137649	132423	714825	9.8825E+11	8.7357E-02	8.7357E-02	9.5939E+13	5.2657E+00
25	37	133121	128084	690490	9.4405E+11	8.7824E-02	8.7824E-02	9.4904E+13	5.2721E+00
26	38	121194	116586	630408	8.6389E+11	8.7962E-02	8.7962E-02	9.5236E+13	5.2728E+00
27	39	94402	91465	499451	6.7539E+11	9.0064E-02	9.0064E-02	9.3899E+13	5.3201E+00
28	41	100195	96965	528595	7.3838E+11	8.9660E-02	8.9660E-02	9.7000E+13	5.3136E+00
29	42	127431	122580	660166	9.1190E+11	8.8143E-02	8.8143E-02	9.5488E+13	5.2773E+00
30	43	140623	135333	728111	1.0044E+12	8.7534E-02	8.7534E-02	9.6043E+13	5.2680E+00
31	44	146247	140867	754976	1.0559E+12	8.7212E-02	8.7212E-02	9.7174E+13	5.2630E+00
32	45	147881	142304	763060	1.0446E+12	8.7082E-02	8.7082E-02	9.5333E+13	5.2638E+00

33	46	144960	139565	750031	1.0287E+12	8.7015E-02	8.7015E-02	9.5344E+13	5.2586E+00
34	47	140451	134962	729090	9.9893E+11	8.7682E-02	8.7682E-02	9.5447E+13	5.2729E+00
35	48	127959	123047	665772	9.1654E+11	8.7813E-02	8.7813E-02	9.5596E+13	5.2743E+00
36	49	100342	97179	528987	7.3060E+11	8.9495E-02	8.9495E-02	9.5678E+13	5.3101E+00
37	51	103241	100124	544234	7.5046E+11	8.9507E-02	8.9507E-02	9.6015E+13	5.3151E+00
38	52	132027	127015	685315	9.2786E+11	8.7933E-02	8.7933E-02	9.4788E+13	5.2782E+00
39	53	145415	139872	753653	1.0380E+12	8.7396E-02	8.7396E-02	9.6229E+13	5.2662E+00
40	54	152174	146389	786760	1.0898E+12	8.6956E-02	8.6956E-02	9.6155E+13	5.2558E+00
41	55	153177	147446	791106	1.0901E+12	8.7016E-02	8.7016E-02	9.5227E+13	5.2610E+00
42	56	151931	146192	789027	1.0928E+12	8.6653E-02	8.6653E-02	9.6039E+13	5.2507E+00
43	57	145497	140004	753412	1.0424E+12	8.7069E-02	8.7069E-02	9.6034E+13	5.2608E+00
44	58	132656	127680	687776	9.5979E+11	8.7501E-02	8.7501E-02	9.7080E+13	5.2665E+00
45	59	103963	100724	547586	7.6051E+11	8.9066E-02	8.9066E-02	9.6788E+13	5.3030E+00
46	61	105706	102382	556247	7.7409E+11	8.8697E-02	8.8697E-02	9.5938E+13	5.2987E+00
47	62	135055	130032	701419	9.5598E+11	8.8057E-02	8.8057E-02	9.5056E+13	5.2774E+00
48	63	149260	143579	771186	1.0507E+12	8.6920E-02	8.6920E-02	9.4470E+13	5.2573E+00
49	64	155360	149589	805058	1.1135E+12	8.7063E-02	8.7063E-02	9.6310E+13	5.2630E+00
50	65	155741	149875	804826	1.1121E+12	8.6941E-02	8.6941E-02	9.6004E+13	5.2606E+00
51	66	154586	148601	795492	1.0941E+12	8.6656E-02	8.6656E-02	9.5721E+13	5.2564E+00
52	67	148643	143062	770693	1.0449E+12	8.7276E-02	8.7276E-02	9.4071E+13	5.2649E+00
53	68	134437	129408	696790	9.3898E+11	8.7517E-02	8.7517E-02	9.3567E+13	5.2674E+00
54	69	105559	102265	553710	7.6694E+11	8.9384E-02	8.9384E-02	9.6178E+13	5.3122E+00
55	71	106579	103305	561718	7.7596E+11	8.9093E-02	8.9093E-02	9.5836E+13	5.3043E+00
56	72	136336	131318	705997	9.7254E+11	8.7787E-02	8.7787E-02	9.5795E+13	5.2734E+00
57	73	149786	144062	775570	1.0570E+12	8.6892E-02	8.6892E-02	9.4641E+13	5.2578E+00
58	74	156233	150310	809824	1.1163E+12	8.6772E-02	8.6772E-02	9.5795E+13	5.2571E+00
59	75	157940	151962	818318	1.1327E+12	8.7222E-02	8.7222E-02	9.6309E+13	5.2656E+00
60	76	155430	149485	803709	1.1116E+12	8.6903E-02	8.6903E-02	9.5928E+13	5.2593E+00
61	77	149638	143941	776351	1.0573E+12	8.7025E-02	8.7025E-02	9.4930E+13	5.2625E+00
62	78	135546	130455	702589	9.6423E+11	8.7435E-02	8.7435E-02	9.5581E+13	5.2696E+00
63	79	106154	102819	560174	7.6681E+11	8.9072E-02	8.9072E-02	9.5270E+13	5.3013E+00
64	81	106809	103404	562969	7.8097E+11	8.9216E-02	8.9216E-02	9.6477E+13	5.3083E+00
65	82	135431	130266	702181	9.6747E+11	8.7161E-02	8.7161E-02	9.5671E+13	5.2641E+00
66	83	149274	143698	770822	1.0662E+12	8.7176E-02	8.7176E-02	9.6095E+13	5.2627E+00
67	84	155186	149283	799611	1.1006E+12	8.6888E-02	8.6888E-02	9.5692E+13	5.2597E+00
68	85	157444	151428	812010	1.1184E+12	8.6299E-02	8.6299E-02	9.5664E+13	5.2461E+00
69	86	155296	149356	800853	1.1077E+12	8.6615E-02	8.6615E-02	9.5750E+13	5.2509E+00
70	87	149522	143864	774263	1.0679E+12	8.6849E-02	8.6849E-02	9.5764E+13	5.2539E+00
71	88	136527	131301	706323	9.7257E+11	8.7844E-02	8.7844E-02	9.5852E+13	5.2769E+00
72	89	106096	102766	557124	7.5575E+11	8.9340E-02	8.9340E-02	9.4569E+13	5.3128E+00
73	91	105426	102155	554908	7.6345E+11	8.9321E-02	8.9321E-02	9.6024E+13	5.3136E+00
74	92	134548	129429	696064	9.5644E+11	8.8091E-02	8.8091E-02	9.5681E+13	5.2826E+00
75	93	147732	142019	763976	1.0486E+12	8.7253E-02	8.7253E-02	9.5458E+13	5.2647E+00
76	94	153471	147573	793900	1.0931E+12	8.6911E-02	8.6911E-02	9.5874E+13	5.2576E+00
77	95	155182	149264	799996	1.0956E+12	8.6985E-02	8.6985E-02	9.5192E+13	5.2607E+00
78	96	153461	147623	789454	1.0880E+12	8.6956E-02	8.6956E-02	9.5636E+13	5.2596E+00
79	97	146982	141480	763527	1.0400E+12	8.6776E-02	8.6776E-02	9.4708E+13	5.2566E+00
80	98	133603	128627	693051	9.4769E+11	8.7222E-02	8.7222E-02	9.5165E+13	5.2627E+00
81	99	104786	101416	548346	7.3721E+11	8.9307E-02	8.9307E-02	9.3185E+13	5.3097E+00
82	101	101626	98413	534987	7.3510E+11	8.9726E-02	8.9726E-02	9.5764E+13	5.3234E+00
83	102	130478	125589	674622	9.2563E+11	8.8067E-02	8.8067E-02	9.5834E+13	5.2809E+00
84	103	143522	138011	741418	1.0084E+12	8.7644E-02	8.7644E-02	9.4767E+13	5.2717E+00
85	104	148818	143178	766446	1.0682E+12	8.7013E-02	8.7013E-02	9.6860E+13	5.2558E+00
86	105	150854	145077	781537	1.0813E+12	8.6841E-02	8.6841E-02	9.6369E+13	5.2580E+00
87	106	148172	142533	767941	1.0468E+12	8.6863E-02	8.6863E-02	9.4488E+13	5.2564E+00
88	107	142189	136982	737715	1.0224E+12	8.7515E-02	8.7515E-02	9.6291E+13	5.2713E+00
89	108	129505	124680	669897	9.2827E+11	8.7983E-02	8.7983E-02	9.6043E+13	5.2763E+00
90	109	101566	98287	534439	7.3582E+11	8.9283E-02	8.9283E-02	9.5539E+13	5.3058E+00
91	111	97211	94058	512638	6.9731E+11	9.0041E-02	9.0041E-02	9.4498E+13	5.3194E+00
92	112	124675	119874	648353	8.8895E+11	8.7849E-02	8.7849E-02	9.5215E+13	5.2705E+00
93	113	136899	131726	709275	9.6028E+11	8.7721E-02	8.7721E-02	9.4073E+13	5.2725E+00
94	114	142491	137082	737934	1.0165E+12	8.7695E-02	8.7695E-02	9.5951E+13	5.2703E+00
95	115	143848	138363	744905	1.0250E+12	8.6980E-02	8.6980E-02	9.5786E+13	5.2561E+00
96	116	141395	136030	733880	1.0060E+12	8.7035E-02	8.7035E-02	9.5003E+13	5.2578E+00
97	117	135517	130268	698884	9.5950E+11	8.7679E-02	8.7679E-02	9.5385E+13	5.2762E+00
98	118	123732	118998	639854	8.7884E+11	8.8238E-02	8.8238E-02	9.5320E+13	5.2788E+00
99	119	97033	93918	511399	7.0115E+11	8.9841E-02	8.9841E-02	9.5202E+13	5.3165E+00
100	121	91404	88452	481804	6.5248E+11	9.0456E-02	9.0456E-02	9.4525E+13	5.3291E+00
101	122	117225	112682	607627	8.2745E+11	8.8936E-02	8.8936E-02	9.4797E+13	5.2960E+00
102	123	128383	123610	666941	9.1622E+11	8.7892E-02	8.7892E-02	9.5083E+13	5.2734E+00
103	124	133767	128671	692302	9.5359E+11	8.7807E-02	8.7807E-02	9.5572E+13	5.2730E+00
104	125	135136	130086	699675	9.5176E+11	8.7848E-02	8.7848E-02	9.4669E+13	5.2758E+00
105	126	133127	128075	690470	9.3605E+11	8.7658E-02	8.7658E-02	9.4363E+13	5.2699E+00
106	127	127647	122827	661759	8.8974E+11	8.8547E-02	8.8547E-02	9.3813E+13	5.2882E+00
107	128	116123	111698	604272	8.2848E+11	8.8714E-02	8.8714E-02	9.5496E+13	5.2878E+00
108	129	90885	88050	479065	6.5712E+11	9.0502E-02	9.0502E-02	9.4992E+13	5.3228E+00
109	131	82339	79663	435302	5.9253E+11	9.1229E-02	9.1229E-02	9.4748E+13	5.3429E+00
110	132	105491	101545	551964	7.4721E+11	8.9733E-02	8.9733E-02	9.4528E+13	5.3064E+00
111	133	115141	110784	599275	8.1764E+11	8.8671E-02	8.8671E-02	9.4981E+13	5.2927E+00
112	134	120445	115810	627562	8.5802E+11	8.8290E-02	8.8290E-02	9.5535E+13	5.2795E+00
113	135	121342	116740	630560	8.5958E+11	8.8312E-02	8.8312E-02	9.4850E+13	5.2832E+00
114	136	120101	115532	625292	8.5462E+11	8.9089E-02	8.9089E-02	9.5254E+13	5.2987E+00
115	137	115142	110692	599327	8.0964E+11	8.8935E-02	8.8935E-02	9.3541E+13	5.2912E+00
116	138	104615	100517	544479	7.4226E+11	8.9106E-02	8.9106E-02	9.4667E+13	5.2916E+00
117	139	81995	79426	432480	5.8941E+11	9.1061E-02	9.1061E-02	9.4414E+13	5.3367E+00
118	141	65723	63820	352505	4.7861E+11	9.3949E-02	9.3949E-02	9.4706E+13	5.4006E+00
119	142	82939	80063	438405	5.9376E+11	9.2303E-02	9.2303E-02	9.4977E+13	5.3612E+00
120	143	90710	87504	480430	6.6010E+11	9.0965E-02	9.0965E-02	9.5190E+13	5.3373E+00
121	144	94563	91280	500425	6.9090E+11	9.0190E-02	9.0190E-02	9.5996E+13	5.3214E+00
122	145	96221	92746	507557	6.9397E+11	9.0006E-02	9.0006E-02	9.5190E+13	5.3249E+00

123	146	94898	91416	500797	6.8528E+11	9.0339E-02	9.0339E-02	9.5228E+13	5.3252E+00
124	147	90490	87270	478011	6.4523E+11	9.0866E-02	9.0866E-02	9.3605E+13	5.3343E+00
125	148	82376	79465	433139	5.9762E+11	9.1250E-02	9.1250E-02	9.6105E+13	5.3376E+00
126	149	65422	63408	353112	4.8343E+11	9.2628E-02	9.2628E-02	9.5929E+13	5.3698E+00
127	211	127747	85720	485	6.4902E+08	1.1103E-01	1.1103E-01	9.6858E+13	5.2718E+03
128	212	158247	105575	565	8.2500E+08	1.1091E-01	1.1091E-01	9.4425E+13	5.2625E+03
129	213	174155	115955	654	8.7617E+08	1.1049E-01	1.1049E-01	9.7303E+13	5.2564E+03
130	214	181731	121089	648	9.4039E+08	1.0916E-01	1.0916E-01	9.6597E+13	5.2334E+03
131	215	183800	122472	665	8.8416E+08	1.0874E-01	1.0874E-01	9.5904E+13	5.2251E+03
132	216	181479	120934	668	8.8724E+08	1.0938E-01	1.0938E-01	9.6619E+13	5.2386E+03
133	217	172797	115061	680	9.7756E+08	1.0894E-01	1.0894E-01	9.6048E+13	5.2347E+03
134	218	158887	105762	595	8.8977E+08	1.1002E-01	1.1002E-01	9.8434E+13	5.2490E+03
135	219	126801	85163	475	6.4388E+08	1.1269E-01	1.1269E-01	9.6860E+13	5.2957E+03
136	221	149475	99282	543	6.8920E+08	1.1062E-01	1.1062E-01	9.6376E+13	5.2588E+03
137	222	188209	123773	721	9.6878E+08	1.0776E-01	1.0776E-01	9.4735E+13	5.1969E+03
138	223	206438	135794	773	1.0570E+09	1.0728E-01	1.0728E-01	9.6064E+13	5.1983E+03
139	224	215402	141521	814	1.0593E+09	1.0604E-01	1.0604E-01	9.6315E+13	5.1747E+03
140	225	218281	143442	812	1.1440E+09	1.0643E-01	1.0643E-01	9.6327E+13	5.1810E+03
141	226	215455	141392	817	1.1614E+09	1.0649E-01	1.0649E-01	9.6248E+13	5.1814E+03
142	227	206915	136005	737	1.1444E+09	1.0694E-01	1.0694E-01	9.7732E+13	5.1932E+03
143	228	188302	123720	719	9.9235E+08	1.0756E-01	1.0756E-01	9.6680E+13	5.1980E+03
144	229	148959	98796	566	7.6283E+08	1.1093E-01	1.1093E-01	9.6385E+13	5.2598E+03
145	231	162626	108104	613	8.9104E+08	1.0999E-01	1.0999E-01	9.5365E+13	5.2443E+03
146	232	206091	135627	794	1.1111E+09	1.0671E-01	1.0671E-01	9.6373E+13	5.1826E+03
147	233	224428	148001	903	1.3988E+09	1.0657E-01	1.0657E-01	9.8152E+13	5.1863E+03
148	234	235679	154960	960	1.3298E+09	1.0485E-01	1.0485E-01	9.7738E+13	5.1529E+03
149	235	237961	156942	868	1.3544E+09	1.0568E-01	1.0568E-01	9.6993E+13	5.1702E+03
150	236	233076	153641	931	1.4383E+09	1.0536E-01	1.0536E-01	9.8022E+13	5.1621E+03
151	237	225518	148435	843	1.0273E+09	1.0605E-01	1.0605E-01	9.7538E+13	5.1733E+03
152	238	205923	135193	827	1.1121E+09	1.0675E-01	1.0675E-01	9.6233E+13	5.1904E+03
153	239	161357	107361	601	7.7509E+08	1.1068E-01	1.1068E-01	9.7047E+13	5.2616E+03
154	241	171118	113736	619	9.3003E+08	1.0887E-01	1.0887E-01	9.8869E+13	5.2285E+03
155	242	215708	141930	854	1.1433E+09	1.0719E-01	1.0719E-01	9.7891E+13	5.1932E+03
156	243	237753	156635	924	1.3810E+09	1.0573E-01	1.0573E-01	9.7247E+13	5.1743E+03
157	244	247813	163268	982	1.3717E+09	1.0547E-01	1.0547E-01	9.8077E+13	5.1644E+03
158	245	250234	164723	927	1.3449E+09	1.0490E-01	1.0490E-01	9.7062E+13	5.1581E+03
159	246	245436	161850	910	1.2525E+09	1.0557E-01	1.0557E-01	9.6766E+13	5.1701E+03
160	247	237327	156048	922	1.4444E+09	1.0585E-01	1.0585E-01	9.7216E+13	5.1770E+03
161	248	217053	142790	830	1.1398E+09	1.0654E-01	1.0654E-01	9.7616E+13	5.1868E+03
162	249	170828	113775	680	8.6628E+08	1.0902E-01	1.0902E-01	9.6787E+13	5.2329E+03
163	251	176261	117306	641	8.6312E+08	1.0912E-01	1.0912E-01	9.7236E+13	5.2335E+03
164	252	223728	147211	902	1.4187E+09	1.0558E-01	1.0558E-01	9.7390E+13	5.1659E+03
165	253	246167	162038	936	1.1267E+09	1.0495E-01	1.0495E-01	9.7473E+13	5.1588E+03
166	254	256914	169241	923	1.2280E+09	1.0518E-01	1.0518E-01	9.7906E+13	5.1610E+03
167	255	258874	170678	1070	1.6657E+09	1.0553E-01	1.0553E-01	9.8118E+13	5.1698E+03
168	256	256316	169224	983	1.5058E+09	1.0536E-01	1.0536E-01	9.7922E+13	5.1647E+03
169	257	246427	162272	916	1.5306E+09	1.0577E-01	1.0577E-01	9.6937E+13	5.1746E+03
170	258	225032	148271	905	1.2303E+09	1.0543E-01	1.0543E-01	9.7475E+13	5.1642E+03
171	259	177211	117784	704	9.7282E+08	1.0837E-01	1.0837E-01	9.7694E+13	5.2200E+03
172	261	180660	120208	697	1.0734E+09	1.0846E-01	1.0846E-01	9.8361E+13	5.2266E+03
173	262	229332	151097	845	1.2277E+09	1.0599E-01	1.0599E-01	9.7731E+13	5.1778E+03
174	263	252820	166083	917	1.3399E+09	1.0490E-01	1.0490E-01	9.7147E+13	5.1596E+03
175	264	263114	173434	1013	1.4063E+09	1.0501E-01	1.0501E-01	9.8517E+13	5.1607E+03
176	265	263718	173831	1043	1.4427E+09	1.0547E-01	1.0547E-01	9.8073E+13	5.1681E+03
177	266	261878	172384	1059	1.5651E+09	1.0420E-01	1.0420E-01	9.8143E+13	5.1480E+03
178	267	251422	165621	951	1.4788E+09	1.0557E-01	1.0557E-01	9.7514E+13	5.1700E+03
179	268	227954	150153	872	1.2114E+09	1.0700E-01	1.0700E-01	9.6737E+13	5.1896E+03
180	269	180376	119993	645	9.0464E+08	1.0892E-01	1.0892E-01	9.7653E+13	5.2310E+03
181	271	181559	121037	717	1.0683E+09	1.0888E-01	1.0888E-01	9.8518E+13	5.2350E+03
182	272	231043	152241	880	1.2424E+09	1.0638E-01	1.0638E-01	9.7901E+13	5.1818E+03
183	273	253669	166834	932	1.3354E+09	1.0472E-01	1.0472E-01	9.7150E+13	5.1561E+03
184	274	264211	174097	1009	1.5991E+09	1.0514E-01	1.0514E-01	9.6503E+13	5.1645E+03
185	275	267051	175966	1039	1.3825E+09	1.0485E-01	1.0485E-01	9.8134E+13	5.1580E+03
186	276	263344	173463	996	1.3380E+09	1.0534E-01	1.0534E-01	9.6564E+13	5.1646E+03
187	277	252645	166568	1020	1.4398E+09	1.0499E-01	1.0499E-01	9.6668E+13	5.1617E+03
188	278	229791	151395	891	1.2900E+09	1.0540E-01	1.0540E-01	9.7284E+13	5.1655E+03
189	279	181272	120612	686	9.3580E+08	1.0760E-01	1.0760E-01	9.6640E+13	5.2123E+03
190	281	182587	121418	650	9.0836E+08	1.0890E-01	1.0890E-01	9.6718E+13	5.2330E+03
191	282	229542	150990	903	1.1864E+09	1.0630E-01	1.0630E-01	9.7517E+13	5.1819E+03
192	283	252969	166217	984	1.3197E+09	1.0494E-01	1.0494E-01	9.7472E+13	5.1570E+03
193	284	263081	173079	1034	1.2814E+09	1.0500E-01	1.0500E-01	9.8331E+13	5.1577E+03
194	285	266420	175362	996	1.4805E+09	1.0450E-01	1.0450E-01	9.7283E+13	5.1513E+03
195	286	263026	173155	1001	1.3584E+09	1.0469E-01	1.0469E-01	9.7473E+13	5.1549E+03
196	287	253051	166682	987	1.4433E+09	1.0480E-01	1.0480E-01	9.7651E+13	5.1568E+03
197	288	231221	152169	870	1.2611E+09	1.0595E-01	1.0595E-01	9.7886E+13	5.1769E+03
198	289	181078	120403	651	7.8719E+08	1.0893E-01	1.0893E-01	9.5846E+13	5.2374E+03
199	291	179727	119634	704	8.4683E+08	1.0871E-01	1.0871E-01	9.7224E+13	5.2333E+03
200	292	228607	150305	891	1.2127E+09	1.0642E-01	1.0642E-01	9.8165E+13	5.1854E+03
201	293	249422	164307	956	1.3302E+09	1.0523E-01	1.0523E-01	9.7330E+13	5.1644E+03
202	294	259157	170705	1036	1.3597E+09	1.0505E-01	1.0505E-01	9.8194E+13	5.1599E+03
203	295	262716	172713	982	1.3666E+09	1.0464E-01	1.0464E-01	9.8133E+13	5.1523E+03
204	296	260084	171011	1018	1.4957E+09	1.0496E-01	1.0496E-01	9.8747E+13	5.1596E+03
205	297	248062	163452	986	1.3133E+09	1.0440E-01	1.0440E-01	9.7904E+13	5.1479E+03
206	298	226274	149252	849	1.2092E+09	1.0623E-01	1.0623E-01	9.6848E+13	5.1803E+03
207	299	179234	118860	695	1.1375E+09	1.0824E-01	1.0824E-01	9.6322E+13	5.2209E+03
208	301	173362	115364	655	8.5679E+08	1.0925E-01	1.0925E-01	9.7479E+13	5.2379E+03
209	302	221344	145672	890	1.3153E+09	1.0669E-01	1.0669E-01	9.7187E+13	5.1905E+03
210	303	243184	159751	950	1.2655E+09	1.0593E-01	1.0593E-01	9.7860E+13	5.1736E+03
211	304	252000	166026	1043	1.4600E+09	1.0508E-01	1.0508E-01	9.8281E+13	5.1627E+03
212	305	254610	167755	952	1.2211E+09	1.0499E-01	1.0499E-01	9.7728E+13	5.1596E+03

213	306	250625	165287	924	1.2265E+09	1.0451E-01	1.0451E-01	9.7055E+13	5.1548E+03
214	307	240665	158712	946	1.3609E+09	1.0585E-01	1.0585E-01	9.8387E+13	5.1729E+03
215	308	219664	144572	869	1.2614E+09	1.0588E-01	1.0588E-01	9.7632E+13	5.1703E+03
216	309	173591	115305	636	7.6853E+08	1.0889E-01	1.0889E-01	9.5383E+13	5.2308E+03
217	311	165943	110437	616	8.6106E+08	1.0958E-01	1.0958E-01	9.7456E+13	5.2397E+03
218	312	211732	139237	834	1.2201E+09	1.0686E-01	1.0686E-01	9.7631E+13	5.1841E+03
219	313	231977	152779	882	1.2559E+09	1.0567E-01	1.0567E-01	9.7940E+13	5.1703E+03
220	314	241287	158944	898	1.2789E+09	1.0588E-01	1.0588E-01	9.8332E+13	5.1728E+03
221	315	243787	160411	987	1.2723E+09	1.0475E-01	1.0475E-01	9.7423E+13	5.1543E+03
222	316	239114	157446	978	1.4678E+09	1.0537E-01	1.0537E-01	9.8149E+13	5.1656E+03
223	317	230205	151162	825	1.1002E+09	1.0652E-01	1.0652E-01	9.7748E+13	5.1816E+03
224	318	209972	138061	825	1.2229E+09	1.0633E-01	1.0633E-01	9.7602E+13	5.1788E+03
225	319	165625	110147	615	9.3683E+08	1.0990E-01	1.0990E-01	9.5695E+13	5.2397E+03
226	321	156414	103778	574	6.9695E+08	1.1100E-01	1.1100E-01	9.6461E+13	5.2590E+03
227	322	198662	130614	754	9.1951E+08	1.0744E-01	1.0744E-01	9.6586E+13	5.2001E+03
228	323	217840	143322	797	1.1414E+09	1.0741E-01	1.0741E-01	9.6813E+13	5.1940E+03
229	324	226645	149094	907	1.2303E+09	1.0618E-01	1.0618E-01	9.7491E+13	5.1758E+03
230	325	228788	150609	861	1.1525E+09	1.0627E-01	1.0627E-01	9.7360E+13	5.1788E+03
231	326	225300	148302	909	1.1947E+09	1.0626E-01	1.0626E-01	9.5983E+13	5.1809E+03
232	327	216694	142633	794	1.2141E+09	1.0682E-01	1.0682E-01	9.6277E+13	5.1885E+03
233	328	197272	129698	748	1.0480E+09	1.0715E-01	1.0715E-01	9.6773E+13	5.1941E+03
234	329	155480	103329	614	8.3607E+08	1.1036E-01	1.1036E-01	9.8162E+13	5.2513E+03
235	331	141124	93791	558	6.7963E+08	1.1079E-01	1.1079E-01	9.6664E+13	5.2537E+03
236	332	178776	117739	688	9.5827E+08	1.0854E-01	1.0854E-01	9.7785E+13	5.2137E+03
237	333	195183	128489	775	1.0362E+09	1.0758E-01	1.0758E-01	9.6232E+13	5.1998E+03
238	334	204362	134451	783	1.0809E+09	1.0677E-01	1.0677E-01	9.6070E+13	5.1883E+03
239	335	206108	135379	828	1.0710E+09	1.0668E-01	1.0668E-01	9.7046E+13	5.1829E+03
240	336	203668	134174	749	1.1307E+09	1.0769E-01	1.0769E-01	9.6822E+13	5.1992E+03
241	337	195603	128417	762	1.0255E+09	1.0738E-01	1.0738E-01	9.7146E+13	5.1988E+03
242	338	177863	116818	666	9.5455E+08	1.0850E-01	1.0850E-01	9.7299E+13	5.2168E+03
243	339	140338	93137	529	6.7520E+08	1.1088E-01	1.1088E-01	9.8986E+13	5.2582E+03
244	341	113104	75224	412	6.1462E+08	1.1429E-01	1.1429E-01	9.7099E+13	5.3224E+03
245	342	141980	93450	544	9.0021E+08	1.1240E-01	1.1240E-01	9.6625E+13	5.2840E+03
246	343	155178	102406	595	9.1152E+08	1.1134E-01	1.1134E-01	9.7604E+13	5.2676E+03
247	344	161504	106512	622	9.2908E+08	1.1000E-01	1.1000E-01	9.7383E+13	5.2439E+03
248	345	164440	108029	590	6.4388E+08	1.0987E-01	1.0987E-01	9.6474E+13	5.2466E+03
249	346	162189	106718	591	7.6370E+08	1.0977E-01	1.0977E-01	9.6218E+13	5.2429E+03
250	347	154862	101977	614	8.0483E+08	1.1023E-01	1.1023E-01	9.5705E+13	5.2468E+03
251	348	141172	92805	512	7.2700E+08	1.1240E-01	1.1240E-01	9.6506E+13	5.2822E+03
252	349	112376	74706	395	6.3352E+08	1.1396E-01	1.1396E-01	9.6935E+13	5.3147E+03
253	411	153151	96645	443	6.4918E+08	1.1348E-01	1.1348E-01	9.6697E+13	5.3133E+03
254	412	189340	118450	524	7.5469E+08	1.1299E-01	1.1299E-01	9.5518E+13	5.2993E+03
255	413	208310	130191	605	7.4425E+08	1.1232E-01	1.1232E-01	9.7935E+13	5.2883E+03
256	414	216996	135899	636	8.3868E+08	1.1198E-01	1.1198E-01	9.6551E+13	5.2849E+03
257	415	219546	137315	644	8.3488E+08	1.1128E-01	1.1128E-01	9.6240E+13	5.2741E+03
258	416	216715	135633	657	8.4532E+08	1.1092E-01	1.1092E-01	9.6288E+13	5.2662E+03
259	417	206240	129058	615	9.4197E+08	1.1134E-01	1.1134E-01	9.6647E+13	5.2757E+03
260	418	189684	118523	556	9.1018E+08	1.1201E-01	1.1201E-01	9.7809E+13	5.2825E+03
261	419	152270	96129	480	7.8996E+08	1.1470E-01	1.1470E-01	9.6059E+13	5.3313E+03
262	421	179184	111464	542	6.8825E+08	1.1280E-01	1.1280E-01	9.6742E+13	5.2967E+03
263	422	224721	137776	697	8.4437E+08	1.1066E-01	1.1066E-01	9.4618E+13	5.2525E+03
264	423	246395	151385	743	1.1284E+09	1.0909E-01	1.0909E-01	9.6207E+13	5.2288E+03
265	424	256910	157617	783	1.0862E+09	1.0826E-01	1.0826E-01	9.5949E+13	5.2122E+03
266	425	260383	159811	804	1.1032E+09	1.0869E-01	1.0869E-01	9.6122E+13	5.2204E+03
267	426	256799	157417	787	1.1027E+09	1.0905E-01	1.0905E-01	9.6682E+13	5.2265E+03
268	427	246560	151281	750	9.4790E+08	1.0930E-01	1.0930E-01	9.6863E+13	5.2340E+03
269	428	224881	137893	696	9.1421E+08	1.1036E-01	1.1036E-01	9.6847E+13	5.2492E+03
270	429	178559	111038	539	6.3233E+08	1.1322E-01	1.1322E-01	9.7166E+13	5.3018E+03
271	431	194676	121182	605	8.2658E+08	1.1195E-01	1.1195E-01	9.6140E+13	5.2834E+03
272	432	245878	151035	746	1.2159E+09	1.0889E-01	1.0889E-01	9.5669E+13	5.2239E+03
273	433	267943	164833	797	1.1640E+09	1.0864E-01	1.0864E-01	9.7865E+13	5.2212E+03
274	434	280960	172524	810	1.1908E+09	1.0762E-01	1.0762E-01	9.8399E+13	5.2034E+03
275	435	283844	174590	851	1.0877E+09	1.0826E-01	1.0826E-01	9.7171E+13	5.2145E+03
276	436	278152	171124	857	1.3230E+09	1.0739E-01	1.0739E-01	9.8100E+13	5.2008E+03
277	437	268798	165258	799	1.2193E+09	1.0809E-01	1.0809E-01	9.7391E+13	5.2123E+03
278	438	245796	150785	738	9.9093E+08	1.0890E-01	1.0890E-01	9.7560E+13	5.2244E+03
279	439	193460	120603	561	7.0201E+08	1.1230E-01	1.1230E-01	9.6859E+13	5.2899E+03
280	441	205411	128120	611	7.8553E+08	1.1127E-01	1.1127E-01	9.7402E+13	5.2712E+03
281	442	257397	158337	788	1.1562E+09	1.0824E-01	1.0824E-01	9.7655E+13	5.2156E+03
282	443	283289	174313	826	1.1040E+09	1.0785E-01	1.0785E-01	9.7818E+13	5.2123E+03
283	444	295254	181662	937	1.2240E+09	1.0774E-01	1.0774E-01	9.8221E+13	5.2078E+03
284	445	297963	183244	866	1.1553E+09	1.0756E-01	1.0756E-01	9.6791E+13	5.2068E+03
285	446	292554	180060	856	1.1482E+09	1.0739E-01	1.0739E-01	9.6425E+13	5.2012E+03
286	447	282840	173842	876	1.1141E+09	1.0847E-01	1.0847E-01	9.6814E+13	5.2237E+03
287	448	259295	159172	756	1.2602E+09	1.0894E-01	1.0894E-01	9.6491E+13	5.2304E+03
288	449	204392	127646	621	8.4200E+08	1.1086E-01	1.1086E-01	9.6703E+13	5.2645E+03
289	451	211051	131685	592	9.0694E+08	1.1126E-01	1.1126E-01	9.7734E+13	5.2728E+03
290	452	267033	163990	803	1.1330E+09	1.0772E-01	1.0772E-01	9.8302E+13	5.2075E+03
291	453	293312	180297	839	1.1477E+09	1.0727E-01	1.0727E-01	9.7842E+13	5.1996E+03
292	454	305978	188391	965	1.3464E+09	1.0718E-01	1.0718E-01	9.8328E+13	5.1983E+03
293	455	308592	190162	926	1.4131E+09	1.0767E-01	1.0767E-01	9.8114E+13	5.2106E+03
294	456	305464	188413	917	1.2224E+09	1.0677E-01	1.0677E-01	9.7845E+13	5.1916E+03
295	457	293647	180651	861	1.1314E+09	1.0775E-01	1.0775E-01	9.6943E+13	5.2094E+03
296	458	268799	165188	773	1.1976E+09	1.0805E-01	1.0805E-01	9.8373E+13	5.2082E+03
297	459	211736	132231	618	9.1374E+08	1.1078E-01	1.1078E-01	9.8453E+13	5.2663E+03
298	461	216377	134901	628	9.5763E+08	1.1065E-01	1.1065E-01	9.8256E+13	5.2648E+03
299	462	273985	168287	883	1.2609E+09	1.0770E-01	1.0770E-01	9.6900E+13	5.2120E+03
300	463	300985	184740	910	1.2514E+09	1.0745E-01	1.0745E-01	9.7993E+13	5.2055E+03
301	464	313315	192705	902	1.4027E+09	1.0722E-01	1.0722E-01	9.8067E+13	5.2031E+03
302	465	314348	193433	957	1.2916E+09	1.0720E-01	1.0720E-01	9.8040E+13	5.2000E+03

303	466	312103	191738	985	1.3631E+09	1.0724E-01	1.0724E-01	9.7665E+13	5.2014E+03
304	467	299456	184124	871	9.8745E+08	1.0739E-01	1.0739E-01	9.7047E+13	5.2019E+03
305	468	272240	167436	873	1.2136E+09	1.0893E-01	1.0893E-01	9.6633E+13	5.2237E+03
306	469	215928	134627	620	9.1303E+08	1.1071E-01	1.1071E-01	9.7177E+13	5.2656E+03
307	471	217338	135847	659	9.5921E+08	1.1167E-01	1.1167E-01	9.8338E+13	5.2804E+03
308	472	275696	169418	841	1.0824E+09	1.0820E-01	1.0820E-01	9.6567E+13	5.2192E+03
309	473	302374	185719	905	1.3671E+09	1.0714E-01	1.0714E-01	9.8004E+13	5.1969E+03
310	474	314942	193684	922	1.3539E+09	1.0716E-01	1.0716E-01	9.7150E+13	5.2012E+03
311	475	317844	195768	1014	1.3529E+09	1.0683E-01	1.0683E-01	9.7422E+13	5.1955E+03
312	476	313666	192862	963	1.2738E+09	1.0662E-01	1.0662E-01	9.7118E+13	5.1915E+03
313	477	300948	185279	907	1.2549E+09	1.0757E-01	1.0757E-01	9.6387E+13	5.2074E+03
314	478	274203	168457	869	1.1958E+09	1.0726E-01	1.0726E-01	9.7355E+13	5.2000E+03
315	479	217045	135312	641	8.4975E+08	1.1054E-01	1.1054E-01	9.7336E+13	5.2631E+03
316	481	218531	136142	637	8.1124E+08	1.1130E-01	1.1130E-01	9.6845E+13	5.2769E+03
317	482	274103	168350	877	1.2314E+09	1.0803E-01	1.0803E-01	9.8328E+13	5.2105E+03
318	483	301237	185020	865	1.1695E+09	1.0656E-01	1.0656E-01	9.7491E+13	5.1876E+03
319	484	313731	192717	1013	1.4324E+09	1.0717E-01	1.0717E-01	9.8055E+13	5.2005E+03
320	485	317773	195233	909	1.2320E+09	1.0606E-01	1.0606E-01	9.7342E+13	5.1810E+03
321	486	313382	192534	976	1.4266E+09	1.0673E-01	1.0673E-01	9.7549E+13	5.1924E+03
322	487	301552	185351	911	1.2161E+09	1.0745E-01	1.0745E-01	9.8101E+13	5.2066E+03
323	488	275450	169212	809	1.0692E+09	1.0808E-01	1.0808E-01	9.8175E+13	5.2147E+03
324	489	216794	135335	685	9.3430E+08	1.1075E-01	1.1075E-01	9.6108E+13	5.2682E+03
325	491	214752	134041	605	9.3565E+08	1.1013E-01	1.1013E-01	9.6849E+13	5.2600E+03
326	492	272521	167192	806	1.2388E+09	1.0827E-01	1.0827E-01	9.7561E+13	5.2194E+03
327	493	297259	182781	900	1.1359E+09	1.0754E-01	1.0754E-01	9.7551E+13	5.2073E+03
328	494	308602	189877	942	1.4382E+09	1.0707E-01	1.0707E-01	9.8172E+13	5.1973E+03
329	495	312505	191955	990	1.3370E+09	1.0719E-01	1.0719E-01	9.7967E+13	5.1991E+03
330	496	309871	190397	935	1.3492E+09	1.0685E-01	1.0685E-01	9.8337E+13	5.1948E+03
331	497	295573	181946	911	1.2773E+09	1.0657E-01	1.0657E-01	9.7354E+13	5.1894E+03
332	498	269971	166094	814	1.2127E+09	1.0780E-01	1.0780E-01	9.7453E+13	5.2103E+03
333	499	214471	133417	633	8.4817E+08	1.0973E-01	1.0973E-01	9.7126E+13	5.2475E+03
334	501	207796	129702	621	7.7778E+08	1.1194E-01	1.1194E-01	9.7491E+13	5.2831E+03
335	502	264140	162257	792	1.0855E+09	1.0922E-01	1.0922E-01	9.7290E+13	5.2352E+03
336	503	289556	177650	932	1.2839E+09	1.0774E-01	1.0774E-01	9.7619E+13	5.2078E+03
337	504	300196	184671	920	1.4860E+09	1.0665E-01	1.0665E-01	9.8520E+13	5.1910E+03
338	505	303045	186632	926	1.2479E+09	1.0657E-01	1.0657E-01	9.7871E+13	5.1908E+03
339	506	298639	183787	836	1.2986E+09	1.0692E-01	1.0692E-01	9.7546E+13	5.1981E+03
340	507	286794	176470	847	1.1222E+09	1.0729E-01	1.0729E-01	9.7962E+13	5.2012E+03
341	508	261900	160812	788	9.9765E+08	1.0831E-01	1.0831E-01	9.7335E+13	5.2150E+03
342	509	207860	129526	609	8.9017E+08	1.1103E-01	1.1103E-01	9.5350E+13	5.2713E+03
343	511	198955	124165	591	7.9913E+08	1.1167E-01	1.1167E-01	9.7197E+13	5.2784E+03
344	512	252696	154939	718	1.1626E+09	1.0909E-01	1.0909E-01	9.6960E+13	5.2279E+03
345	513	276680	170087	747	1.0998E+09	1.0847E-01	1.0847E-01	9.8012E+13	5.2203E+03
346	514	287550	176721	885	1.3163E+09	1.0760E-01	1.0760E-01	9.8454E+13	5.2077E+03
347	515	290481	178417	853	1.2676E+09	1.0728E-01	1.0728E-01	9.7409E+13	5.1982E+03
348	516	284755	175211	848	1.2110E+09	1.0766E-01	1.0766E-01	9.7738E+13	5.2089E+03
349	517	274716	168337	860	1.0772E+09	1.0793E-01	1.0793E-01	9.7841E+13	5.2060E+03
350	518	250596	153814	742	1.2571E+09	1.0786E-01	1.0786E-01	9.6570E+13	5.2076E+03
351	519	198502	123707	608	7.9210E+08	1.1181E-01	1.1181E-01	9.6196E+13	5.2809E+03
352	521	187170	116445	545	7.5722E+08	1.1225E-01	1.1225E-01	9.6058E+13	5.2848E+03
353	522	237124	145635	720	1.0930E+09	1.0948E-01	1.0948E-01	9.6893E+13	5.2350E+03
354	523	259503	159251	750	1.1987E+09	1.0894E-01	1.0894E-01	9.6898E+13	5.2236E+03
355	524	270232	165981	796	1.1618E+09	1.0806E-01	1.0806E-01	9.7286E+13	5.2119E+03
356	525	272857	167705	838	1.1319E+09	1.0823E-01	1.0823E-01	9.6489E+13	5.2176E+03
357	526	268533	165105	783	1.0578E+09	1.0791E-01	1.0791E-01	9.7042E+13	5.2100E+03
358	527	258524	158692	798	1.0233E+09	1.0882E-01	1.0882E-01	9.6525E+13	5.2266E+03
359	528	235884	144747	759	1.0722E+09	1.1001E-01	1.1001E-01	9.6742E+13	5.2450E+03
360	529	186382	116134	559	7.8925E+08	1.1229E-01	1.1229E-01	9.7114E+13	5.2835E+03
361	531	169322	105315	520	7.0249E+08	1.1307E-01	1.1307E-01	9.6779E+13	5.2949E+03
362	532	213593	131430	686	1.0057E+09	1.1023E-01	1.1023E-01	9.7143E+13	5.2444E+03
363	533	232790	142971	705	9.4110E+08	1.0949E-01	1.0949E-01	9.6547E+13	5.2342E+03
364	534	243962	149790	745	1.0791E+09	1.0849E-01	1.0849E-01	9.6904E+13	5.2182E+03
365	535	246139	151073	762	9.2402E+08	1.0910E-01	1.0910E-01	9.7204E+13	5.2260E+03
366	536	243284	149538	721	1.0221E+09	1.0966E-01	1.0966E-01	9.7154E+13	5.2340E+03
367	537	233514	142969	721	9.6784E+08	1.0927E-01	1.0927E-01	9.5797E+13	5.2303E+03
368	538	212821	130535	649	9.8468E+08	1.1066E-01	1.1066E-01	9.7507E+13	5.2512E+03
369	539	168016	104654	497	7.1554E+08	1.1236E-01	1.1236E-01	9.7285E+13	5.2879E+03
370	541	135961	84690	415	5.5308E+08	1.1661E-01	1.1661E-01	9.7625E+13	5.3596E+03
371	542	170100	104549	518	6.6231E+08	1.1423E-01	1.1423E-01	9.6970E+13	5.3168E+03
372	543	186129	114583	573	8.6953E+08	1.1349E-01	1.1349E-01	9.7260E+13	5.3022E+03
373	544	193279	119131	545	8.2761E+08	1.1245E-01	1.1245E-01	9.7244E+13	5.2856E+03
374	545	196450	120701	606	7.7691E+08	1.1242E-01	1.1242E-01	9.5889E+13	5.2898E+03
375	546	194392	119447	568	7.5571E+08	1.1203E-01	1.1203E-01	9.6223E+13	5.2810E+03
376	547	185503	114014	546	6.3921E+08	1.1305E-01	1.1305E-01	9.6610E+13	5.2986E+03
377	548	169246	103966	516	7.4464E+08	1.1430E-01	1.1430E-01	9.8010E+13	5.3127E+03
378	549	135204	84220	390	5.1623E+08	1.1628E-01	1.1628E-01	9.7747E+13	5.3560E+03
379	1200	654650	609713	8657	1.2166E+10	3.8477E-01	3.8477E-01	9.1234E+13	7.6858E+03
380	1201	7040597	6916182	29589551	3.8223E+13	3.4800E-01	3.4800E-01	8.7554E+13	3.5881E+00
381	1202	3881686	3782292	19074053	2.4768E+12	3.6562E-01	3.6562E-01	8.1152E+13	3.7970E+00
382	12021	23016585	22756039	98398644	4.3066E+13	3.8284E-01	3.8284E-01	8.9314E+13	3.7839E+00
383	1203	21727164	21586244	93095824	4.0005E+13	3.5335E-01	3.5335E-01	8.7420E+13	3.6190E+00
384	1204	39017534	38606873	164677935	7.2157E+13	3.8187E-01	3.8187E-01	8.9318E+13	3.7738E+00
385	12041	5552855	5410824	27078874	3.5332E+12	3.5213E-01	3.5213E-01	8.1614E+13	3.7327E+00
386	1205	36096483	35859902	152679653	6.5731E+13	3.5857E-01	3.5857E-01	8.7516E+13	3.6396E+00
387	1206	271812	264919	1270436	1.5589E+11	3.1972E-01	3.1972E-01	7.6198E+13	3.5777E+00
388	12061	2271012	2248051	8996943	3.8036E+12	2.3661E-01	2.3661E-01	8.6112E+13	3.0622E+00
389	1207	963124	959301	3719691	1.6196E+12	1.7072E-01	1.7072E-01	9.0027E+13	2.7253E+00
390	1208	6389111	6232803	29346265	3.9292E+12	3.5861E-01	3.5861E-01	8.3710E+13	3.7521E+00
391	12081	38221961	37793072	160256327	7.0524E+13	3.8162E-01	3.8162E-01	8.9839E+13	3.7726E+00
392	1209	35987295	35750062	152225485	6.5787E+13	3.5754E-01	3.5754E-01	8.7990E+13	3.6360E+00

393	1210	1243757	1210373	4097479	5.6039E+12	1.2274E-01	1.2274E-01	9.4365E+13	2.3224E+00
394	1211	288107356	283505065	1287654929	6.0037E+14	4.0380E-01	4.0380E-01	9.5232E+13	3.9540E+00
395	12111	72602409	70745339	365259406	5.3520E+13	3.9488E-01	3.9488E-01	9.2092E+13	3.9976E+00
397	9998	14409585	9299032	1150664	1.6138E+12	1.1893E-01	1.1893E-01	9.7032E+13	5.3962E+03
398	9997	15896075	10011587	1197727	1.6929E+12	1.1624E-01	1.1624E-01	9.7539E+13	5.3547E+03
399	9996	11025957	6971734	812312	1.1368E+12	1.1970E-01	1.1970E-01	9.6759E+13	5.4054E+03
400	9995	165005078	151173596	7534142	1.0887E+13	4.0545E-01	4.0545E-01	9.7227E+13	7.8256E+03
401	9994	146825838	134567702	12080520	1.7694E+13	3.8220E-01	3.8220E-01	9.8922E+13	7.6554E+03
402	9993	152559	146556	6860	9.3558E+08	1.4938E-01	1.4938E-01	8.4665E+13	5.9039E+03
403	9992	265009	251016	27872	3.9014E+09	1.5544E-01	1.5544E-01	8.6383E+13	5.9781E+03
404	9991	3724750	3703713	13024272	5.6749E+12	1.4737E-01	1.4737E-01	8.9989E+13	2.5596E+00
405	9990	2436595	2241833	138317	1.8642E+11	1.6458E-01	1.6458E-01	9.2959E+13	5.9215E+03
406	9989	9242305	8474284	639938	8.7139E+11	3.0654E-01	3.0654E-01	9.2321E+13	7.0730E+03
407	9988	28985168	28377147	4910129	2.3744E+11	4.3650E-01	4.3650E-01	9.0869E+13	8.3758E+03
409	9986	375807	375805	2117	2.5394E+09	1.6441E-01	1.6441E-01	8.9486E+13	5.8667E+03
410	10000	42362	40604	200	3.1692E+08	3.5346E-01	3.5346E-01	9.8643E+13	7.4905E+03
411	10001	58328	56011	271	3.8762E+08	3.6362E-01	3.6362E-01	9.6143E+13	7.5515E+03
412	10002	154045	149646	988	1.3949E+09	3.8770E-01	3.8770E-01	1.0050E+14	7.7265E+03
413	10003	60488	58007	261	3.9664E+08	3.5697E-01	3.5697E-01	9.8931E+13	7.5235E+03
414	10004	41856	40149	206	2.5847E+08	3.7598E-01	3.7598E-01	9.2355E+13	7.6708E+03
415	10005	3386	3253	31	2.8315E+07	2.5556E-01	2.5556E-01	8.9191E+13	6.7148E+03
416	2001	86183761	80292601	17919949	2.8822E+11	4.2206E-01	4.2206E-01	9.0643E+13	8.2143E+03
417	2002	87397445	80105860	48192463	7.7549E+11	3.7461E-01	3.7461E-01	9.0748E+13	7.7611E+03
418	2003	169766512	144789734	107318057	8.6149E+11	3.2446E-01	3.2446E-01	9.0702E+13	7.2719E+03
419	2004	163660155	139237399	191479864	1.5351E+12	2.8123E-01	2.8123E-01	9.0634E+13	6.8336E+03
420	2005	292413648	235106020	378763287	1.5153E+12	2.4727E-01	2.4727E-01	9.0543E+13	6.4765E+03
421	2006	250446211	202621257	345505527	1.3808E+12	2.2634E-01	2.2634E-01	9.0481E+13	6.2488E+03
422	2007	414306797	319870700	595644780	1.1888E+12	2.1294E-01	2.1294E-01	9.0377E+13	6.0998E+03
423	2008	326713191	262264483	702526050	1.3996E+12	2.0264E-01	2.0264E-01	9.0258E+13	5.9834E+03
424	2009	452608505	348897848	996158233	9.9088E+11	1.9505E-01	1.9505E-01	9.0149E+13	5.8967E+03
425	2010	296796322	236648247	849666515	8.4435E+11	1.9046E-01	1.9046E-01	9.0046E+13	5.8442E+03
426	2011	337078813	264198867	974859183	4.8360E+11	1.8786E-01	1.8786E-01	8.9924E+13	5.8149E+03
427	2012	186959729	147716581	544059619	2.6954E+11	1.8694E-01	1.8694E-01	8.9813E+13	5.8048E+03
428	2013	204269124	157557554	596862031	1.4762E+11	1.8689E-01	1.8689E-01	8.9679E+13	5.8048E+03
429	2014	110372177	78071545	323333492	7.9831E+10	1.8747E-01	1.8747E-01	8.9546E+13	5.8118E+03
430	2015	49616179	41680888	278759848	6.8801E+10	1.9406E-01	1.9406E-01	8.9490E+13	5.8879E+03
total		4483660546	3720975229	9671008044	1.2335E+15				

```
1tally   2        nps =    11558540
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     70000000.00

           this tally is modified by a dose function.

           areas
                surface:     1231
                         1.78374E+06

 surface  1231
                6.11424E-03 0.0132


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           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally   2

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--      -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10       yes       1/sqrt(nps)       <0.10       yes         1/nps            constant
random       >3.00
 observed     random        0.01       yes           yes            0.01       yes          yes             constant
random       4.40
 passed?        yes          yes       yes           yes              yes       yes          yes                yes
yes          yes


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 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart
to verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----
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 estimated asymmetric confidence interval(1,2,3 sigma): 6.0358E-03 to 6.1977E-03; 5.9549E-03 to 6.2786E-03;
5.8739E-03 to 6.3596E-03
 estimated  symmetric confidence interval(1,2,3 sigma): 6.0333E-03 to 6.1951E-03; 5.9524E-03 to 6.2760E-03;
5.8715E-03 to 6.3570E-03

1analysis of the results in the tally fluctuation chart bin (tfc) for tally   2 with nps =    11558540  print
table 160


 normed average tally per history  = 6.11424E-03          unnormed average tally per history  = 1.09062E+04
 estimated tally relative error    = 0.0132               estimated variance of the variance  = 0.0064
 relative error from zero tallies  = 0.0050               relative error from nonzero scores  = 0.0122

 number of nonzero history tallies =       39292          efficiency for the nonzero tallies  = 0.0006
 history number of largest  tally  =    10930226          largest  unnormalized history tally = 1.98121E+09
 (largest  tally)/(average tally)  = 1.81659E+05          (largest  tally)/(avg nonzero tally)= 1.01968E+02

 (confidence interval shift)/mean  = 0.0004               shifted confidence interval center  = 6.11676E-03


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1           value(nps+1)/value(nps)-1.

      mean                            6.11424E-03             6.21033E-03                    0.015716
      relative error                  1.32323E-02             1.34468E-02                    0.016209
      variance of the variance        6.43204E-03             7.34062E-03                    0.141259
      shifted center                  6.11676E-03             6.13071E-03                    0.002281
      figure of merit                 3.12132E+00             3.02254E+00                   -0.031647

 the estimated inverse power slope of the 200 largest  tallies starting at 2.98875E+08 is 4.4027
 the large score tail of the empirical history score probability density function appears to have no unsampled
regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (3.826E+04)*( 9.033E-03)**2 = (3.826E+04)*(8.159E-
05) = 3.121E+00

1tally  12        nps =    11558540
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     70000000.00

           this tally is modified by a dose function.

           areas
                surface:     1227
               segment
                  1       1.00000E+50
                  2       2.56400E+07
                  3       1.03700E+08
                  4       1.60200E+08
                  5       3.92700E+08
                  6       5.49800E+08
                  7       7.06900E+08
                  8       8.63900E+08
                  9       1.59000E+09
                 10       1.94400E+09
                 11       3.14200E+09
                 12       3.77000E+09
                 13       4.39800E+09
                 14       5.02700E+09
                 15       5.65500E+09
                 16       1.68900E+10

 surface  1227
 segment:       -2000
                 2.33555E-46 0.0083

 surface  1227
 segment:        2000    -2001
                 1.49723E-03 0.0067

 surface  1227
 segment:        2000     2001    -2002
                 9.51574E-04 0.0050
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```
 surface  1227
 segment:        2000     2001     2002    -2003
                 4.69026E-04 0.0046

 surface  1227
 segment:        2000     2001     2002     2003    -2004
                 2.18907E-04 0.0051

 surface  1227
 segment:        2000     2001     2002     2003     2004    -2005
                 1.00595E-04 0.0058

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005    -2006
                 4.56250E-05 0.0061

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006    -2007
                 2.22240E-05 0.0045

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007    -2008
                 9.92918E-06 0.0042

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008    -2009
                 3.94639E-06 0.0045

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009    -2010
                 1.45627E-06 0.0049

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     -2011
                 4.80051E-07 0.0048

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011    -2012
                 1.69149E-07 0.0109

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012    -2013
                 5.99581E-08 0.0067

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013    -2014
                 2.28327E-08 0.0145

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013     2014
                 4.86420E-09 0.0086


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           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  12

 tfc bin      --mean--       ---------relative error---------       ----variance of the variance----       --figure
of merit--      -pdf-
 behavior     behavior       value    decrease    decrease rate       value    decrease    decrease rate        value
behavior     slope

 desired       random        <0.10       yes       1/sqrt(nps)        <0.10       yes         1/nps            constant
random       >3.00
 observed      random         0.01       yes           yes             0.01       yes          yes             constant
random        3.02
 passed?         yes            yes      yes           yes               yes      yes          yes                yes
yes          yes
```

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 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart
to verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 4.8240E-09 to 4.9076E-09; 4.7822E-09 to 4.9493E-09;
4.7405E-09 to 4.9911E-09
 estimated  symmetric confidence interval(1,2,3 sigma): 4.8224E-09 to 4.9060E-09; 4.7807E-09 to 4.9477E-09;
4.7389E-09 to 4.9895E-09

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  12 with nps =    11558540  print
table 160


 normed average tally per history  = 4.86420E-09          unnormed average tally per history  = 8.21563E+01
 estimated tally relative error    = 0.0086              estimated variance of the variance  = 0.0119
 relative error from zero tallies  = 0.0021              relative error from nonzero scores  = 0.0083

 number of nonzero history tallies =      230822         efficiency for the nonzero tallies  = 0.0033
 history number of largest  tally  =     9949141         largest  unnormalized history tally = 1.29301E+07
 (largest  tally)/(average tally)  = 1.57384E+05         (largest  tally)/(avg nonzero tally)= 5.18966E+02

 (confidence interval shift)/mean  = 0.0003              shifted confidence interval center  = 4.86579E-09


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            4.86420E-09             4.93043E-09                    0.013616
      relative error                  8.58634E-03             8.85183E-03                    0.030920
      variance of the variance        1.18734E-02             1.45397E-02                    0.224557
      shifted center                  4.86579E-09             4.87533E-09                    0.001961
      figure of merit                 7.41297E+00             6.97496E+00                   -0.059086

 the estimated inverse power slope of the 200 largest  tallies starting at 1.13450E+06 is 3.0191
 the large score tail of the empirical history score probability density function appears to have no unsampled
regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (3.826E+04)*( 1.392E-02)**2 = (3.826E+04)*(1.938E-
04) = 7.413E+00

1tally  22        nps =    11558540
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     70000000.00

           this tally is modified by a dose function.

           areas
                surface:     1227
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       4.35376E+05
                 5       4.35376E+05
                 6       4.35376E+05
                 7       4.35376E+05
                 8       4.35376E+05
                 9       4.35376E+05
                10       4.35376E+05
                11       4.35376E+05
                12       4.35376E+05
                13       4.35376E+05
                14       4.35376E+05
                15       4.35376E+05
                16       4.35376E+05
                17       4.35376E+05
                18       4.35376E+05
                19       4.35376E+05
```

```
              20       4.35376E+05
              21       4.35376E+05
              22       1.00000E+50

surface  1227
segment:        1201
                2.02922E-45 0.0025

surface  1227
segment:       -1201    -2026
                1.11455E-45 0.0052

surface  1227
segment:       -1201     2026     2027
                1.02327E-45 0.0063

surface  1227
segment:       -1201     2026    -2027     2016
                1.02533E-03 0.0374

surface  1227
segment:       -1201     2026    -2027    -2016     2017
                1.58094E-03 0.0363

surface  1227
segment:       -1201     2026    -2027    -2016    -2017     2018
                2.04249E-03 0.0337

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018     2019
                2.76035E-03 0.0395

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019     2020
                3.08498E-03 0.0341

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020     2021
                3.36671E-03 0.0338

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021     2022
                3.51156E-03 0.0364

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022     2023
                3.63387E-03 0.0336

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     2024
                3.41682E-03 0.0308

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024     2025
                3.65754E-03 0.0424

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025     2028
                3.53387E-03 0.0379

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028     2029
                3.28718E-03 0.0468

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029     2030
                3.07167E-03 0.0341

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030     2031
                2.77935E-03 0.0311
```

```
 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031     2032
                2.80378E-03 0.0453

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032     2033
                2.78772E-03 0.0557

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033     2034
                2.46937E-03 0.0497

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034     2035
                2.30697E-03 0.0436

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034    -2035
                2.04245E-46 0.0139
```

==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 22

tfc bin	--mean--	---------relative error---------			----variance of the variance----			--figure of merit--	-pdf-
behavior	behavior	value	decrease	decrease rate	value	decrease	decrease rate	value	behavior
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random
observed	increase	0.01	yes	yes	0.07	yes	yes	constant	>3.00 random
passed?	no	yes	yes	yes	yes	yes	yes	yes	2.80 yes
									no

==========

warning. the tally in the tally fluctuation chart bin did not pass 2 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 22 with nps =   11558540 print table 160

normed average tally per history	= 2.04245E-46	unnormed average tally per history	= 2.04245E+04
estimated tally relative error	= 0.0139	estimated variance of the variance	= 0.0657
relative error from zero tallies	= 0.0010	relative error from nonzero scores	= 0.0138
number of nonzero history tallies	= 933847	efficiency for the nonzero tallies	= 0.0133
history number of largest tally	= 3112164	largest unnormalized history tally	= 9.70114E+09
(largest tally)/(average tally)	= 4.74976E+05	(largest tally)/(avg nonzero tally)	= 6.33650E+03
(confidence interval shift)/mean	= 0.0013	shifted confidence interval center	= 2.04506E-46

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	2.04245E-46	2.12638E-46	0.041093
relative error	1.38792E-02	1.53426E-02	0.105437
variance of the variance	6.56936E-02	8.00502E-02	0.218538
shifted center	2.04506E-46	2.06331E-46	0.008925
figure of merit	2.83714E+00	2.32174E+00	-0.181664

```
 the estimated inverse power slope of the 200 largest  tallies starting at 3.38193E+08 is 2.7996
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (3.826E+04)*( 8.612E-03)**2 = (3.826E+04)*(7.416E-
05) = 2.837E+00

1unnormed tally density for tally  22            nonzero tally mean(m) = 1.531E+06   nps =    11558540  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 2.8)
  tally  number num den log den:d--------d---------d---------d---------d---------d---------d---------d---------
d---------d---------d
 3.98+03    310 3.01-09  -8.521
*********|*********|*********|*********|*********|*********|*********|*********|*********|         |
 6.31+03    820 5.03-09  -8.298
*********|*********|*********|*********|*********|*********|*********|*********|*********|**       |
 1.00+04   3294 1.28-08  -7.894
*********|*********|*********|*********|*********|*********|*********|*********|*********|******   |
 1.58+04   7631 1.86-08  -7.730
*********|*********|*********|*********|*********|*********|*********|*********|*********|******** |
 2.51+04  13596 2.10-08  -7.679
*********|*********|*********|*********|*********|*********|*********|*********|*********|******** |
 3.98+04  32810 3.19-08  -7.496
*********|*********|*********|*********|*********|*********|*********|*********|*********|*********|
 6.31+04  47066 2.89-08  -7.539
*********|*********|*********|*********|*********|*********|*********|*********|*********|*********|
 1.00+05  69509 2.69-08  -7.570
*********|*********|*********|*********|*********|*********|*********|*********|*********|*********|
 1.58+05 126361 3.09-08  -7.511
*********|*********|*********|*********|*********|*********|*********|*********|*********|*********|
 2.51+05 136722 2.11-08  -7.676
*********|*********|*********|*********|*********|*********|*********|*********|*********|******** |
 3.98+05 145967 1.42-08  -7.848
*********|*********|*********|*********|*********|*********|*********|*********|*********|******   |
 6.31+05 122438 7.51-09  -8.124
*********|*********|*********|*********|*********|*********|*********|*********|*********|****     |
 1.00+06  83535 3.23-09  -8.490
*********|*********|*********|*********|*********|*********|*********|*********|         |         |
 1.58+06  49816 1.22-09  -8.915
mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmm    |         |
 2.51+06  29261 4.51-10  -9.346
*********|*********|*********|*********|*********|*********|*********|*********|**       |         |
 3.98+06  19215 1.87-10  -9.729 *********|*********|*********|*********|*********|*********|*********|******** |
|         |
 6.31+06  13825 8.48-11 -10.072 *********|*********|*********|*********|*********|*********|*********|****     |
|         |
 1.00+07   9966 3.86-11 -10.414 *********|*********|*********|*********|*********|*********|*********|*        |
|         |
 1.58+07   7434 1.82-11 -10.741 *********|*********|*********|*********|*********|*********|******** |         |
|         |
 2.51+07   5869 9.04-12 -11.044 *********|*********|*********|*********|*********|*********|*****    |         |
|         |
 3.98+07   4165 4.05-12 -11.393 *********|*********|*********|*********|*********|*********|*        |         |
|         |
 6.31+07   1954 1.20-12 -11.921 *********|*********|*********|*********|*********|******   |         |         |
|         |
 1.00+08    986 3.82-13 -12.418 *********|*********|*********|*********|*********|*        |         |         |
|         |
 1.58+08    655 1.60-13 -12.796 *********|*********|*********|*********|*******  |         |         |         |
|         |
 2.51+08    342 5.27-14 -13.278 *********|*********|*********|*********|**       |         |         |         |
|         |
 3.98+08    138 1.34-14 -13.872 *********|*********|*********|******   |     s   |         |         |         |
|         |
 6.31+08     77 4.72-15 -14.326 *********|*********|*********|**       |   s     |         |         |         |
|         |
 1.00+09     36 1.39-15 -14.856 *********|*********|*******  |         |s        |         |         |         |
|         |
 1.58+09     21 5.13-16 -15.290 *********|*********|**       |      s  |         |         |         |         |
|         |
 2.51+09     16 2.47-16 -15.608 *********|*********|         |  s      |         |         |         |         |
|         |
 3.98+09     11 1.07-16 -15.971 *********|*****    |       s |         |         |         |         |         |
|         |
```

```
 6.31+09      0 0.00+00   0.000          |         |   s     |         |         |         |         |         |
|         |
 1.00+10      1 3.87-18 -17.412 *        |       s |         |         |         |         |         |         |
|         |
  total  933847 1.33-02         d--------d---------d---------d---------d---------d---------d---------d---------
d---------d---------d

1tally  32        nps =    11558540
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     70000000.00

           this tally is modified by a dose function.

           areas
                surface:     1201
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       1.00000E+50
                 5       6.30000E+05

 surface  1201
 segment:        1231
                 2.86774E-45 0.0148

 surface  1201
 segment:       -1231    -2026
                 1.04263E-48 0.0754

 surface  1201
 segment:       -1231     2026     2027
                 2.75111E-48 0.0365

 surface  1201
 segment:       -1231     2026    -2027    -1227
                 0.00000E+00 0.0000

 surface  1201
 segment:       -1231     2026    -2027     1227
                 1.08909E-03 0.0439


================================================================================================================
==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  32

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--      -pdf-
 behavior    behavior      value    decrease   decrease rate      value    decrease   decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.04      yes          yes            0.06      yes         yes            constant
random       2.29
 passed?        yes          yes      yes          yes              yes      yes         yes               yes
yes          no


================================================================================================================
==================


 warning.  the tally in the tally fluctuation chart bin did not pass  1 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  32 with nps =    11558540  print
table 160


 normed average tally per history  = 1.08909E-03          unnormed average tally per history  = 6.86130E+02
 estimated tally relative error    = 0.0439               estimated variance of the variance  = 0.0647
 relative error from zero tallies  = 0.0091               relative error from nonzero scores  = 0.0429
```

```
 number of nonzero history tallies =       12071          efficiency for the nonzero tallies  = 0.0002
 history number of largest  tally  =    10525523          largest  unnormalized history tally = 8.24999E+08
 (largest  tally)/(average tally)  = 1.20240E+06          (largest  tally)/(avg nonzero tally)= 2.07345E+02

 (confidence interval shift)/mean  = 0.0047               shifted confidence interval center  = 1.09419E-03


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1           value(nps+1)/value(nps)-1.

      mean                            1.08909E-03             1.20239E-03                    0.104027
      relative error                  4.38842E-02             4.63296E-02                    0.055723
      variance of the variance        6.46982E-02             6.63024E-02                    0.024796
      shifted center                  1.09419E-03             1.12340E-03                    0.026694
      figure of merit                 2.83786E-01             2.54619E-01                   -0.102777

 the estimated inverse power slope of the 200 largest  tallies starting at 2.98154E+07 is 2.2851
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (3.826E+04)*( 2.724E-03)**2 = (3.826E+04)*(7.418E-
06) = 2.838E-01

1unnormed tally density for tally  32            nonzero tally mean(m) = 3.979E+06   nps =    11558540  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 2.3)
  tally  number num den log den:d--------------d---------------d--------------d---------------d--------------
-d---------------d-
 6.31+05    119 1.31-11 -10.883
***************|****************|***************|***************|***************|*               |
 7.94+05   1560 1.36-10  -9.865
***************|****************|***************|***************|***************|****************|*
 1.00+06   2081 1.45-10  -9.840
***************|****************|***************|***************|***************|****************|*
 1.26+06   1774 9.79-11 -10.009
***************|****************|***************|***************|***************|*************** |
 1.58+06   1547 6.78-11 -10.169
***************|****************|***************|***************|***************|*************   |
 2.00+06   1225 4.26-11 -10.370
***************|****************|***************|***************|***************|*********       |
 2.51+06    901 2.49-11 -10.604
***************|****************|***************|***************|***************|*****           |
 3.16+06    724 1.59-11 -10.799
***************|****************|***************|***************|***************|**              |
 3.98+06    499 8.71-12 -11.060 mmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmm
|                |
 5.01+06    346 4.80-12 -11.319 ***************|***************|***************|****************|**********
|                |
 6.31+06    249 2.74-12 -11.562 ***************|***************|***************|****************|******
|                |
 7.94+06    176 1.54-12 -11.813 ***************|***************|***************|****************|**
|                |
 1.00+07     92 6.39-13 -12.194 ***************|***************|***************|*************    |
|                |
 1.26+07    112 6.18-13 -12.209 ***************|***************|***************|*************    |
|                |
 1.58+07    194 8.50-13 -12.070 ***************|***************|***************|**************   |
|                |
 2.00+07    110 3.83-13 -12.417 ***************|***************|***************|*********       |
|                |
 2.51+07    108 2.99-13 -12.525 ***************|***************|***************|*******         |
|                |
 3.16+07     74 1.63-13 -12.789 ***************|***************|***************|**         s    |
|                |
 3.98+07     48 8.37-14 -13.077 ***************|***************|************** |         s      |
|                |
 5.01+07     29 4.02-14 -13.396 ***************|***************|********       |       s        |
|                |
 6.31+07     30 3.30-14 -13.481 ***************|***************|*******        |    s           |
|                |
 7.94+07     14 1.22-14 -13.912 ***************|***************|               |  s             |
|                |
```

```
 1.00+08     16 1.11-14 -13.954 ***************|****************|               s                |
|                |
 1.26+08     12 6.62-15 -14.179 ***************|*************   |            s   |                |
|                |
 1.58+08      9 3.94-15 -14.404 ***************|*********       |         s      |                |
|                |
 2.00+08      2 6.96-16 -15.157 *************  |                |      s         |                |
|                |
 2.51+08      3 8.30-16 -15.081 ************** |                |   s            |                |
|                |
 3.16+08     10 2.20-15 -14.658 ***************|*****           s                |                |
|                |
 3.98+08      1 1.74-16 -15.758 ***            |              s  |                |                |
|                |
 5.01+08      2 2.77-16 -15.557 ******         |         s      |                |                |
|                |
 6.31+08      2 2.20-16 -15.657 ****           |      s         |                |                |
|                |
 7.94+08      0 0.00+00   0.000                |  s             |                |                |
|                |
 1.00+09      2 1.39-16 -15.857 *              s                |                |                |
|                |
  total   12071 1.72-04         d--------------d----------------d---------------d----------------d--------------
-d----------------d-

1tally  42        nps =    11558540
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     70000000.00

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
3.00000E+06
                surface:     2010         2011         2012         2013
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:        1219
                 1.29492E-44 0.0024

 surface  2003
 segment:       -1219    -1209
                 1.68928E-47 0.0116

 surface  2003
 segment:       -1219     1209     1201
                 1.22812E-46 0.0038

 surface  2003
 segment:       -1219     1209    -1201    -1205
                 6.96140E-47 0.0074

 surface  2003
 segment:       -1219     1209    -1201     1205     1206
                 6.02528E-47 0.0092

 surface  2003
 segment:       -1219     1209    -1201     1205    -1206
```

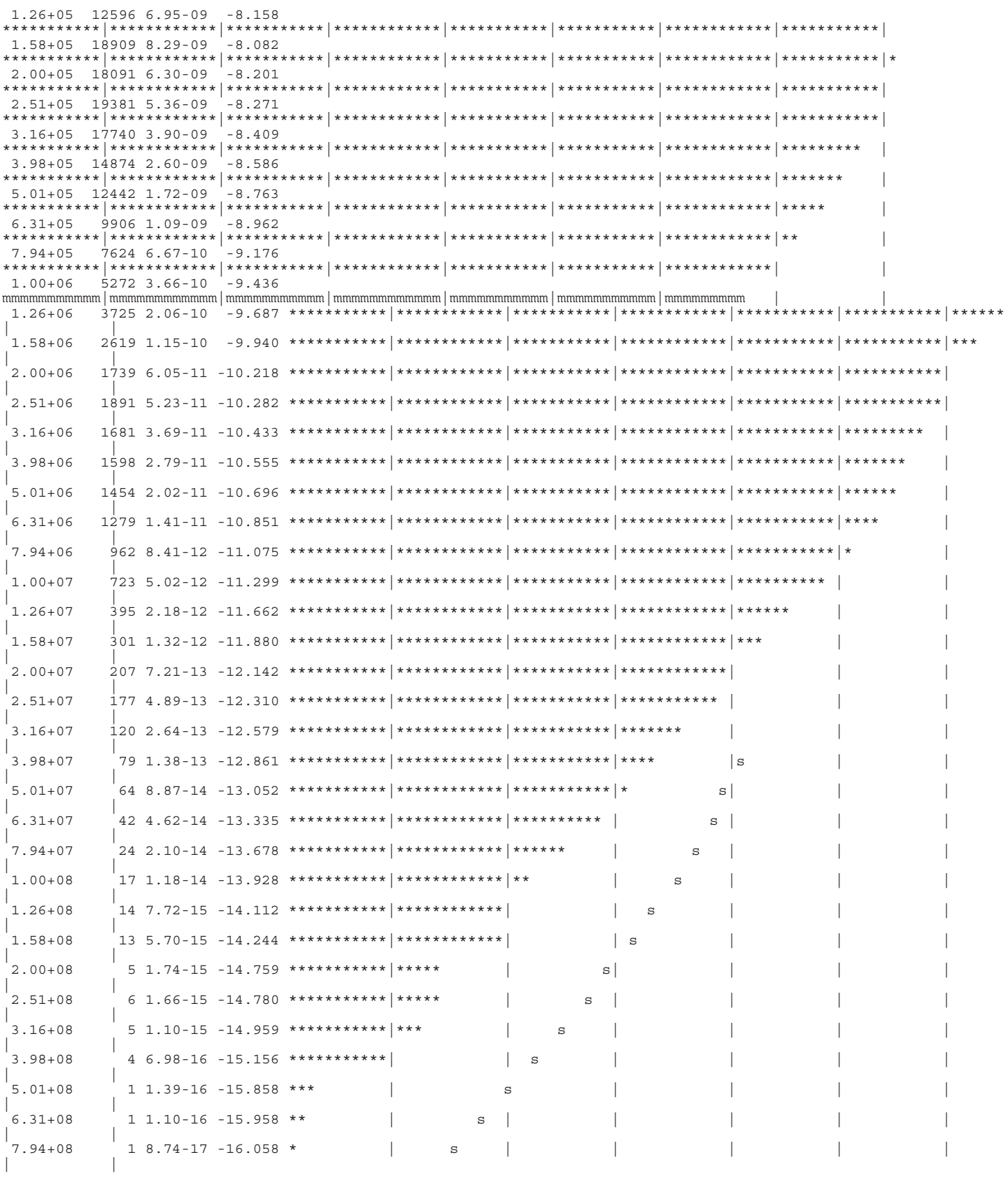
```
                6.49783E-04 0.0147

surface  2004
segment:        1219
                1.13872E-44 0.0024

surface  2004
segment:       -1219    -1209
                1.00061E-47 0.0094

surface  2004
segment:       -1219     1209     1201
                7.34017E-47 0.0040

surface  2004
segment:       -1219     1209    -1201    -1205
                4.24346E-47 0.0064

surface  2004
segment:       -1219     1209    -1201     1205     1206
                3.71338E-47 0.0081

surface  2004
segment:       -1219     1209    -1201     1205    -1206
                2.38085E-04 0.0169

surface  2005
segment:        1219
                9.67165E-45 0.0024

surface  2005
segment:       -1219    -1209
                5.96353E-48 0.0086

surface  2005
segment:       -1219     1209     1201
                4.47393E-47 0.0039

surface  2005
segment:       -1219     1209    -1201    -1205
                2.60543E-47 0.0061

surface  2005
segment:       -1219     1209    -1201     1205     1206
                2.28837E-47 0.0075

surface  2005
segment:       -1219     1209    -1201     1205    -1206
                1.02047E-04 0.0155

surface  2006
segment:        1219
                7.96702E-45 0.0025

surface  2006
segment:       -1219    -1209
                3.68613E-48 0.0095

surface  2006
segment:       -1219     1209     1201
                2.75883E-47 0.0048

surface  2006
segment:       -1219     1209    -1201    -1205
                1.60715E-47 0.0059

surface  2006
segment:       -1219     1209    -1201     1205     1206
                1.40940E-47 0.0069

surface  2006
segment:       -1219     1209    -1201     1205    -1206
                4.87468E-05 0.0199

surface  2007
segment:        1219
                6.40254E-45 0.0025
```

```
surface  2007
segment:       -1219    -1209
                2.29902E-48 0.0094

surface  2007
segment:       -1219     1209     1201
                1.68916E-47 0.0043

surface  2007
segment:       -1219     1209    -1201    -1205
                1.00017E-47 0.0076

surface  2007
segment:       -1219     1209    -1201     1205     1206
                8.69220E-48 0.0066

surface  2007
segment:       -1219     1209    -1201     1205    -1206
                2.55212E-05 0.0220

surface  2008
segment:        1219
                4.45700E-45 0.0026

surface  2008
segment:       -1219    -1209
                1.09110E-48 0.0111

surface  2008
segment:       -1219     1209     1201
                8.24549E-48 0.0049

surface  2008
segment:       -1219     1209    -1201    -1205
                4.98357E-48 0.0073

surface  2008
segment:       -1219     1209    -1201     1205     1206
                4.30106E-48 0.0076

surface  2008
segment:       -1219     1209    -1201     1205    -1206
                9.84831E-06 0.0282

surface  2009
segment:        1219
                3.00958E-45 0.0028

surface  2009
segment:       -1219    -1209
                5.56632E-49 0.0126

surface  2009
segment:       -1219     1209     1201
                4.01342E-48 0.0054

surface  2009
segment:       -1219     1209    -1201    -1205
                2.48425E-48 0.0077

surface  2009
segment:       -1219     1209    -1201     1205     1206
                2.14680E-48 0.0094

surface  2009
segment:       -1219     1209    -1201     1205    -1206
                3.91665E-06 0.0279

surface  2010
segment:        1219
                1.72658E-45 0.0029

surface  2010
segment:       -1219    -1209
                2.19002E-49 0.0169

surface  2010
segment:       -1219     1209     1201
```

```
                1.56927E-48 0.0071

surface  2010
segment:       -1219     1209    -1201    -1205
                1.00694E-48 0.0109

surface  2010
segment:       -1219     1209    -1201     1205     1206
                8.59236E-49 0.0110

surface  2010
segment:       -1219     1209    -1201     1205    -1206
                1.28596E-06 0.0360

surface  2011
segment:        1219
                9.66685E-46 0.0031

surface  2011
segment:       -1219    -1209
                8.60963E-50 0.0194

surface  2011
segment:       -1219     1209     1201
                6.31025E-49 0.0093

surface  2011
segment:       -1219     1209    -1201    -1205
                4.01616E-49 0.0107

surface  2011
segment:       -1219     1209    -1201     1205     1206
                3.52850E-49 0.0160

surface  2011
segment:       -1219     1209    -1201     1205    -1206
                4.55356E-07 0.0543

surface  2012
segment:        1219
                5.32809E-46 0.0033

surface  2012
segment:       -1219    -1209
                3.54119E-50 0.0273

surface  2012
segment:       -1219     1209     1201
                2.51150E-49 0.0131

surface  2012
segment:       -1219     1209    -1201    -1205
                1.68405E-49 0.0162

surface  2012
segment:       -1219     1209    -1201     1205     1206
                1.43367E-49 0.0175

surface  2012
segment:       -1219     1209    -1201     1205    -1206
                1.61416E-07 0.0711

surface  2013
segment:        1219
                2.90247E-46 0.0035

surface  2013
segment:       -1219    -1209
                1.52207E-50 0.0379

surface  2013
segment:       -1219     1209     1201
                1.02752E-49 0.0139

surface  2013
segment:       -1219     1209    -1201    -1205
                7.09009E-50 0.0165
```

```
 surface  2013
 segment:       -1219     1209    -1201     1205     1206
                 5.79463E-50 0.0196

 surface  2013
 segment:       -1219     1209    -1201     1205    -1206
                 6.20991E-08 0.0883
```

```
==========================================================================================================================
==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  42

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps            constant
random      >3.00
 observed     random        0.01      yes          yes            0.03      yes         yes             constant
random       2.56
 passed?        yes          yes      yes          yes              yes      yes         yes                yes
yes          no

==========================================================================================================================
==================


 warning.  the tally in the tally fluctuation chart bin did not pass  1 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  42 with nps =    11558540  print
table 160


 normed average tally per history  = 6.49783E-04          unnormed average tally per history  = 1.94935E+03
 estimated tally relative error    = 0.0147               estimated variance of the variance  = 0.0314
 relative error from zero tallies  = 0.0025               relative error from nonzero scores  = 0.0145

 number of nonzero history tallies =      156136          efficiency for the nonzero tallies  = 0.0022
 history number of largest  tally  =     8830911          largest  unnormalized history tally = 6.93617E+08
 (largest  tally)/(average tally)  = 3.55820E+05          (largest  tally)/(avg nonzero tally)= 7.93662E+02

 (confidence interval shift)/mean  = 0.0010               shifted confidence interval center  = 6.50440E-04


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities          value at nps          value at nps+1          value(nps+1)/value(nps)-1.

      mean                           6.49783E-04            6.69786E-04                  0.030784
      relative error                 1.47179E-02            1.54898E-02                  0.052452
      variance of the variance       3.13543E-02            3.64037E-02                  0.161043
      shifted center                 6.50440E-04            6.54405E-04                  0.006096
      figure of merit                2.52301E+00            2.27780E+00                 -0.097192

 the estimated inverse power slope of the 200 largest  tallies starting at 3.93489E+07 is 2.5599
 the large score tail of the empirical history score probability density function appears to have no unsampled
regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (3.826E+04)*( 8.121E-03)**2 = (3.826E+04)*(6.595E-
05) = 2.523E+00

1unnormed tally density for tally  42            nonzero tally mean(m) = 8.739E+05   nps =    11558540  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 2.6)
  tally  number num den log den:d----------d----------d----------d----------d----------d----------d------
------d----------d-
 1.00+05    154 1.07-10  -9.971 ***********|***********|***********|***********|***********|***********|***
|          |
```


1.26+05 12596 6.95-09 -8.158
1.58+05 18909 8.29-09 -8.082
2.00+05 18091 6.30-09 -8.201
2.51+05 19381 5.36-09 -8.271
3.16+05 17740 3.90-09 -8.409
3.98+05 14874 2.60-09 -8.586
5.01+05 12442 1.72-09 -8.763
6.31+05 9906 1.09-09 -8.962
7.94+05 7624 6.67-10 -9.176
1.00+06 5272 3.66-10 -9.436
1.26+06 3725 2.06-10 -9.687
1.58+06 2619 1.15-10 -9.940
2.00+06 1739 6.05-11 -10.218
2.51+06 1891 5.23-11 -10.282
3.16+06 1681 3.69-11 -10.433
3.98+06 1598 2.79-11 -10.555
5.01+06 1454 2.02-11 -10.696
6.31+06 1279 1.41-11 -10.851
7.94+06 962 8.41-12 -11.075
1.00+07 723 5.02-12 -11.299
1.26+07 395 2.18-12 -11.662
1.58+07 301 1.32-12 -11.880
2.00+07 207 7.21-13 -12.142
2.51+07 177 4.89-13 -12.310
3.16+07 120 2.64-13 -12.579
3.98+07 79 1.38-13 -12.861
5.01+07 64 8.87-14 -13.052
6.31+07 42 4.62-14 -13.335
7.94+07 24 2.10-14 -13.678
1.00+08 17 1.18-14 -13.928
1.26+08 14 7.72-15 -14.112
1.58+08 13 5.70-15 -14.244
2.00+08 5 1.74-15 -14.759
2.51+08 6 1.66-15 -14.780
3.16+08 5 1.10-15 -14.959
3.98+08 4 6.98-16 -15.156
5.01+08 1 1.39-16 -15.858
6.31+08 1 1.10-16 -15.958
7.94+08 1 8.74-17 -16.058

```
  total  156136 2.23-03         d----------d------------d-----------d------------d-----------d-----------d------
------d-----------d-

1tally  52        nps =    11558540
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     70000000.00

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
3.00000E+06
                surface:     2010         2011         2012         2013
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:        1219
                 1.29492E-44 0.0024

 surface  2003
 segment:       -1219    -1209
                 1.68928E-47 0.0116

 surface  2003
 segment:       -1219     1209    -1201
                 1.49360E-46 0.0059

 surface  2003
 segment:       -1219     1209     1201    -1205
                 6.26449E-47 0.0055

 surface  2003
 segment:       -1219     1209     1201     1205     1206
                 4.77380E-47 0.0049

 surface  2003
 segment:       -1219     1209     1201     1205    -1206
                 4.14317E-04 0.0105

 surface  2004
 segment:        1219
                 1.13872E-44 0.0024

 surface  2004
 segment:       -1219    -1209
                 1.00061E-47 0.0094

 surface  2004
 segment:       -1219     1209    -1201
                 8.67110E-47 0.0054

 surface  2004
 segment:       -1219     1209     1201    -1205
                 3.81292E-47 0.0060

 surface  2004
 segment:       -1219     1209     1201     1205     1206
                 3.04811E-47 0.0050
```

```
surface  2004
segment:       -1219     1209     1201     1205    -1206
                1.59712E-04 0.0126

surface  2005
segment:        1219
                9.67165E-45 0.0024

surface  2005
segment:       -1219    -1209
                5.96353E-48 0.0086

surface  2005
segment:       -1219     1209    -1201
                5.19994E-47 0.0051

surface  2005
segment:       -1219     1209     1201    -1205
                2.33614E-47 0.0058

surface  2005
segment:       -1219     1209     1201     1205     1206
                1.91874E-47 0.0050

surface  2005
segment:       -1219     1209     1201     1205    -1206
                7.30172E-05 0.0136

surface  2006
segment:        1219
                7.96702E-45 0.0025

surface  2006
segment:       -1219    -1209
                3.68613E-48 0.0095

surface  2006
segment:       -1219     1209    -1201
                3.16279E-47 0.0050

surface  2006
segment:       -1219     1209     1201    -1205
                1.46054E-47 0.0074

surface  2006
segment:       -1219     1209     1201     1205     1206
                1.19031E-47 0.0055

surface  2006
segment:       -1219     1209     1201     1205    -1206
                3.59926E-05 0.0178

surface  2007
segment:        1219
                6.40254E-45 0.0025

surface  2007
segment:       -1219    -1209
                2.29902E-48 0.0094

surface  2007
segment:       -1219     1209    -1201
                1.94596E-47 0.0055

surface  2007
segment:       -1219     1209     1201    -1205
                8.95014E-48 0.0062

surface  2007
segment:       -1219     1209     1201     1205     1206
                7.39516E-48 0.0057

surface  2007
segment:       -1219     1209     1201     1205    -1206
                1.82098E-05 0.0185

surface  2008
segment:        1219
```

```
                4.45700E-45 0.0026

surface  2008
segment:       -1219    -1209
                1.09110E-48 0.0111

surface  2008
segment:       -1219     1209    -1201
                9.58008E-48 0.0057

surface  2008
segment:       -1219     1209     1201    -1205
                4.40464E-48 0.0068

surface  2008
segment:       -1219     1209     1201     1205     1206
                3.61300E-48 0.0067

surface  2008
segment:       -1219     1209     1201     1205    -1206
                7.59528E-06 0.0249

surface  2009
segment:        1219
                3.00958E-45 0.0028

surface  2009
segment:       -1219    -1209
                5.56632E-49 0.0126

surface  2009
segment:       -1219     1209    -1201
                4.74855E-48 0.0065

surface  2009
segment:       -1219     1209     1201    -1205
                2.16654E-48 0.0074

surface  2009
segment:       -1219     1209     1201     1205     1206
                1.75283E-48 0.0071

surface  2009
segment:       -1219     1209     1201     1205    -1206
                3.13498E-06 0.0422

surface  2010
segment:        1219
                1.72658E-45 0.0029

surface  2010
segment:       -1219    -1209
                2.19002E-49 0.0169

surface  2010
segment:       -1219     1209    -1201
                1.90476E-48 0.0082

surface  2010
segment:       -1219     1209     1201    -1205
                8.42640E-49 0.0092

surface  2010
segment:       -1219     1209     1201     1205     1206
                6.98068E-49 0.0109

surface  2010
segment:       -1219     1209     1201     1205    -1206
                9.51992E-07 0.0429

surface  2011
segment:        1219
                9.66685E-46 0.0031

surface  2011
segment:       -1219    -1209
                8.60963E-50 0.0194
```

```
 surface  2011
 segment:       -1219     1209    -1201
                 7.68127E-49 0.0100

 surface  2011
 segment:       -1219     1209     1201    -1205
                 3.48401E-49 0.0125

 surface  2011
 segment:       -1219     1209     1201     1205     1206
                 2.72444E-49 0.0140

 surface  2011
 segment:       -1219     1209     1201     1205    -1206
                 3.39324E-07 0.0569

 surface  2012
 segment:        1219
                 5.32809E-46 0.0033

 surface  2012
 segment:       -1219    -1209
                 3.54119E-50 0.0273

 surface  2012
 segment:       -1219     1209    -1201
                 3.16614E-49 0.0123

 surface  2012
 segment:       -1219     1209     1201    -1205
                 1.36180E-49 0.0152

 surface  2012
 segment:       -1219     1209     1201     1205     1206
                 1.10874E-49 0.0225

 surface  2012
 segment:       -1219     1209     1201     1205    -1206
                 1.36515E-07 0.1015

 surface  2013
 segment:        1219
                 2.90247E-46 0.0035

 surface  2013
 segment:       -1219    -1209
                 1.52207E-50 0.0379

 surface  2013
 segment:       -1219     1209    -1201
                 1.30710E-49 0.0130

 surface  2013
 segment:       -1219     1209     1201    -1205
                 5.77943E-50 0.0186

 surface  2013
 segment:       -1219     1209     1201     1205     1206
                 4.38088E-50 0.0209

 surface  2013
 segment:       -1219     1209     1201     1205    -1206
                 3.82898E-08 0.0711


================================================================================================================
==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  52

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--      -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope
```

```
 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.01      yes          yes            0.01      yes         yes            constant
random       2.76
 passed?        yes          yes      yes          yes             yes      yes         yes               yes
yes          no

================================================================================================================
==================


 warning.  the tally in the tally fluctuation chart bin did not pass  1 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  52 with nps =    11558540  print
table 160


 normed average tally per history  = 4.14317E-04          unnormed average tally per history  = 1.24295E+03
 estimated tally relative error    = 0.0105               estimated variance of the variance  = 0.0108
 relative error from zero tallies  = 0.0028               relative error from nonzero scores  = 0.0101

 number of nonzero history tallies =      131498          efficiency for the nonzero tallies  = 0.0019
 history number of largest  tally  =     7651060          largest  unnormalized history tally = 2.16133E+08
 (largest  tally)/(average tally)  = 1.73887E+05          (largest  tally)/(avg nonzero tally)= 3.26655E+02

 (confidence interval shift)/mean  = 0.0004               shifted confidence interval center  = 4.14488E-04


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities          value at nps          value at nps+1          value(nps+1)/value(nps)-1.

      mean                           4.14317E-04            4.20550E-04                   0.015044
      relative error                 1.04953E-02            1.07552E-02                   0.024762
      variance of the variance       1.08300E-02            1.25389E-02                   0.157790
      shifted center                 4.14488E-04            4.15468E-04                   0.002362
      figure of merit                4.96157E+00            4.72468E+00                  -0.047744

 the estimated inverse power slope of the 200 largest  tallies starting at 1.72222E+07 is 2.7557
 the large score tail of the empirical history score probability density function appears to have no unsampled
regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (3.826E+04)*( 1.139E-02)**2 = (3.826E+04)*(1.297E-
04) = 4.962E+00

1unnormed tally density for tally  52            nonzero tally mean(m) = 6.617E+05   nps =    11558540  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 2.8)
  tally  number num den log den:d-----------d-------------d------------d------------d-------------d------------
d------------d-------
 1.00+05    141 9.79-11 -10.009 ************|*************|************|************|*************|********    |
|
 1.26+05  11117 6.13-09  -8.212
************|*************|************|************|*************|************|*************|******
 1.58+05  17435 7.64-09  -8.117
************|*************|************|************|*************|************|*************|*******
 2.00+05  16637 5.79-09  -8.237
************|*************|************|************|*************|************|*************|*****
 2.51+05  17358 4.80-09  -8.319
************|*************|************|************|*************|************|*************|****
 3.16+05  15735 3.46-09  -8.461
************|*************|************|************|*************|************|*************|**
 3.98+05  12902 2.25-09  -8.648
************|*************|************|************|*************|************|*************|
 5.01+05  10361 1.44-09  -8.843
************|*************|************|************|*************|************|***********  |
 6.31+05   8012 8.82-10  -9.055
************|*************|************|************|*************|************|********    |
 7.94+05   5767 5.04-10  -9.297
mmmmmmmmmmmmmm|mmmmmmmmmmmmmmm|mmmmmmmmmmmmmm|mmmmmmmmmmmmmm|mmmmmmmmmmmmmmm|mmmmmmmmmmmmmm|mmmm         |
 1.00+06   3684 2.56-10  -9.592 ************|*************|************|************|*************|************|
|
 1.26+06   2466 1.36-10  -9.866 ************|*************|************|************|*************|***********  |
|
```

```
 1.58+06   1506 6.60-11 -10.180 ************|*************|************|************|*************|******      |
|
 2.00+06    930 3.24-11 -10.490 ************|*************|************|************|*************|*           |
|
 2.51+06   1258 3.48-11 -10.459 ************|*************|************|************|*************|**          |
|
 3.16+06   1069 2.35-11 -10.629 ************|*************|************|************|*************|            |
|
 3.98+06   1054 1.84-11 -10.735 ************|*************|************|************|************ |            |
|
 5.01+06   1138 1.58-11 -10.802 ************|*************|************|************|************  |            |
|
 6.31+06   1000 1.10-11 -10.958 ************|*************|************|************|*********    |            |
|
 7.94+06    746 6.52-12 -11.186 ************|*************|************|************|******       |            |
|
 1.00+07    511 3.55-12 -11.450 ************|*************|************|************|***          |            |
|
 1.26+07    267 1.47-12 -11.832 ************|*************|************|************ |            |            |
|
 1.58+07    161 7.06-13 -12.151 ************|*************|************|******       |            |            |
|
 2.00+07     88 3.06-13 -12.514 ************|*************|************|*         s  |            |            |
|
 2.51+07     46 1.27-13 -12.896 ************|*************|*********   |        s   |            |            |
|
 3.16+07     25 5.49-14 -13.260 ************|*************|*****       |      s     |            |            |
|
 3.98+07     16 2.79-14 -13.554 ************|*************|*           |    s       |            |            |
|
 5.01+07     24 3.33-14 -13.478 ************|*************|**          |  s         |            |            |
|
 6.31+07      6 6.61-15 -14.180 ************|******       |            |s           |            |            |
|
 7.94+07     13 1.14-14 -13.944 ************|*********    |          s |            |            |            |
|
 1.00+08     10 6.95-15 -14.158 ************|*******      |       s    |            |            |            |
|
 1.26+08      7 3.86-15 -14.413 ************|***          |    s       |            |            |            |
|
 1.58+08      6 2.63-15 -14.580 ************|*            | s          |            |            |            |
|
 2.00+08      1 3.48-16 -15.458 **          |            s|            |            |            |            |
|
 2.51+08      1 2.77-16 -15.558 *           |        s    |            |            |            |            |
|
  total  131498 1.88-03         d-----------d-------------d------------d------------d-------------d------------
d------------d-------

1tally  62        nps =    11558540
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     70000000.00

           this tally is modified by a dose function.

           areas
                surface:     1219
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       1.00000E+50
                 5       5.30000E+06

 surface  1219
 segment:       -1205
                4.95194E-45 0.0121

 surface  1219
 segment:        1205     1206
                4.21306E-44 0.0038

 surface  1219
 segment:        1205    -1206     1203
                8.21603E-45 0.0087

 surface  1219
```

```
 segment:        1205    -1206    -1203    -1202
                 8.19783E-45 0.0086

 surface  1219
 segment:        1205    -1206    -1203     1202
                 4.94130E+01 0.0008
```

==========

```
          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  62

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--      -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.00      yes          yes            0.00      yes         yes            constant
random       9.53
 passed?        yes          yes      yes          yes             yes      yes         yes               yes
yes         yes
```

==========

```
 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart
to verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 4.9374E+01 to 4.9452E+01; 4.9335E+01 to 4.9491E+01;
4.9297E+01 to 4.9529E+01
 estimated  symmetric confidence interval(1,2,3 sigma): 4.9374E+01 to 4.9452E+01; 4.9335E+01 to 4.9491E+01;
4.9297E+01 to 4.9529E+01

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  62 with nps =    11558540  print
table 160


 normed average tally per history  = 4.94130E+01          unnormed average tally per history  = 2.61889E+08
 estimated tally relative error    = 0.0008              estimated variance of the variance  = 0.0000
 relative error from zero tallies  = 0.0003              relative error from nonzero scores  = 0.0007

 number of nonzero history tallies =    11144517         efficiency for the nonzero tallies  = 0.1592
 history number of largest  tally  =     5956920         largest  unnormalized history tally = 3.10384E+11
 (largest  tally)/(average tally)  = 1.18518E+03         (largest  tally)/(avg nonzero tally)= 1.88689E+02

 (confidence interval shift)/mean  = 0.0000              shifted confidence interval center  = 4.94131E+01


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities          value at nps          value at nps+1          value(nps+1)/value(nps)-1.

      mean                          4.94130E+01           4.94181E+01                  0.000102
      relative error                7.84884E-04           7.37616E-04                 -0.060223
      variance of the variance      9.56118E-06           1.12577E-05                  0.177442
      shifted center                4.94131E+01           4.94134E+01                  0.000006
      figure of merit               8.87151E+02           1.00449E+03                  0.132270

 the estimated inverse power slope of the 200 largest  tallies starting at 9.40656E+10 is 9.5314
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (3.826E+04)*( 1.523E-01)**2 = (3.826E+04)*(2.319E-
02) = 8.872E+02

1status of the statistical checks used to form confidence intervals for the mean for each tally bin
```

tally result of statistical checks for the tfc bin (the first check not passed is listed) and error magnitude check for all bins

2 passed the 10 statistical checks for the tally fluctuation chart bin result
passed all bin error check: 1 tally bins all have relative errors less than 0.10 with no zero bins

12 passed the 10 statistical checks for the tally fluctuation chart bin result
passed all bin error check: 16 tally bins all have relative errors less than 0.10 with no zero bins

22 missed 2 of 10 tfc bin checks: the estimated mean has a trend during the last half of the problem
passed all bin error check: 22 tally bins all have relative errors less than 0.10 with no zero bins

32 missed 1 of 10 tfc bin checks: the slope of decrease of largest tallies is less than the minimum acceptable value of 3.0
passed all bin error check: 5 tally bins had 1 bins with zeros and 0 bins with relative errors exceeding 0.10

42 missed 1 of 10 tfc bin checks: the slope of decrease of largest tallies is less than the minimum acceptable value of 3.0
passed all bin error check: 66 tally bins all have relative errors less than 0.10 with no zero bins

52 missed 1 of 10 tfc bin checks: the slope of decrease of largest tallies is less than the minimum acceptable value of 3.0
missed all bin error check: 66 tally bins had 0 bins with zeros and 1 bins with relative errors exceeding 0.10

62 passed the 10 statistical checks for the tally fluctuation chart bin result
passed all bin error check: 5 tally bins all have relative errors less than 0.10 with no zero bins

the 10 statistical checks are only for the tally fluctuation chart bin and do not apply to other tally bins.

the tally bins with zeros may or may not be correct: compare the source, cutoffs, multipliers, et cetera with the tally bins.

warning. 4 of the 7 tally fluctuation chart bins did not pass all 10 statistical checks.
warning. 1 of the 7 tallies had bins with relative errors greater than recommended.
1tally fluctuation charts

	tally 2					tally 12					tally 22				
nps	mean	error	vov	slope	fom	mean	error	vov	slope	fom	mean	error	vov	slope	fom
1024000	5.9842E-03	0.0473	0.0758	2.3	2.8E+00	4.8401E-09	0.0316	0.1212	3.2	6.2E+00	1.9902E-46	0.0399	0.3056	3.1	3.9E+00
2048000	6.3958E-03	0.0352	0.0282	3.4	2.5E+00	4.9123E-09	0.0219	0.0544	2.4	6.4E+00	2.0043E-46	0.0295	0.1063	2.6	3.6E+00
3072000	6.2098E-03	0.0271	0.0201	4.3	2.8E+00	4.9004E-09	0.0181	0.0312	2.5	6.3E+00	1.9676E-46	0.0230	0.0733	2.4	3.9E+00
4096000	6.1777E-03	0.0226	0.0139	6.9	3.0E+00	4.8882E-09	0.0155	0.0297	2.7	6.4E+00	1.9928E-46	0.0273	0.2801	2.3	2.1E+00
5120000	6.1143E-03	0.0198	0.0110	6.3	3.1E+00	4.9242E-09	0.0137	0.0231	2.4	6.5E+00	1.9920E-46	0.0232	0.2233	2.4	2.3E+00
6144000	6.1111E-03	0.0180	0.0102	4.7	3.2E+00	4.8834E-09	0.0121	0.0192	2.6	7.0E+00	2.0053E-46	0.0201	0.1851	2.4	2.5E+00
7168000	6.0903E-03	0.0167	0.0091	4.4	3.2E+00	4.8749E-09	0.0111	0.0156	2.7	7.2E+00	2.0139E-46	0.0180	0.1543	2.5	2.7E+00
8192000	6.0950E-03	0.0155	0.0078	4.1	3.2E+00	4.8805E-09	0.0102	0.0131	3.0	7.4E+00	2.0151E-46	0.0163	0.1364	2.6	2.9E+00
9216000	6.1306E-03	0.0147	0.0068	4.0	3.2E+00	4.8631E-09	0.0094	0.0116	3.3	7.7E+00	2.0152E-46	0.0152	0.1139	2.8	3.0E+00
10240000	6.1205E-03	0.0140	0.0062	4.0	3.1E+00	4.8750E-09	0.0093	0.0138	3.1	7.2E+00	2.0276E-46	0.0146	0.0866	2.8	2.9E+00
11264000	6.1337E-03	0.0135	0.0066	4.4	3.1E+00	4.8643E-09	0.0087	0.0123	3.0	7.4E+00	2.0302E-46	0.0138	0.0760	2.9	3.0E+00
11558540	6.1142E-03	0.0132	0.0064	4.4	3.1E+00	4.8642E-09	0.0086	0.0119	3.0	7.4E+00	2.0424E-46	0.0139	0.0657	2.8	2.8E+00

	tally 32					tally 42					tally 52				
nps	mean	error	vov	slope	fom	mean	error	vov	slope	fom	mean	error	vov	slope	fom
1024000	1.4495E-03	0.1922	0.3798	2.0	1.7E-01	6.6850E-04	0.0542	0.2846	2.3	2.1E+00	3.9344E-04	0.0275	0.0346	3.4	8.1E+00
2048000	1.2235E-03	0.1212	0.2993	2.2	2.1E-01	6.6978E-04	0.0416	0.1426	2.3	1.8E+00	4.0498E-04	0.0245	0.0487	2.3	5.2E+00
3072000	1.1012E-03	0.0924	0.2662	2.2	2.4E-01	6.6139E-04	0.0320	0.0963	2.6	2.0E+00	4.0294E-04	0.0190	0.0316	2.5	5.7E+00
4096000	1.0567E-03	0.0743	0.2378	2.4	2.8E-01	6.4838E-04	0.0261	0.0777	2.5	2.3E+00	4.0516E-04	0.0162	0.0215	2.5	5.8E+00
5120000	1.0307E-03	0.0625	0.2142	2.7	3.2E-01	6.3780E-04	0.0219	0.0686	2.5	2.6E+00	4.0662E-04	0.0149	0.0204	2.3	5.6E+00

```
      6144000   1.0758E-03 0.0597 0.1327  2.5 2.9E-01   6.3917E-04 0.0199 0.0542  2.4 2.6E+00   4.0821E-04 0.0135 0.0156  2.2
5.6E+00
      7168000   1.0759E-03 0.0534 0.1127  2.4 3.1E-01   6.3986E-04 0.0179 0.0451  2.6 2.7E+00   4.0796E-04 0.0126 0.0133  2.2
5.5E+00
      8192000   1.0968E-03 0.0500 0.0835  2.4 3.1E-01   6.4737E-04 0.0169 0.0353  2.6 2.7E+00   4.1099E-04 0.0124 0.0162  2.2
5.0E+00
      9216000   1.0865E-03 0.0471 0.0738  2.3 3.1E-01   6.5280E-04 0.0171 0.0407  2.5 2.3E+00   4.1130E-04 0.0116 0.0139  2.4
5.1E+00
     10240000   1.0856E-03 0.0446 0.0632  2.2 3.1E-01   6.5086E-04 0.0158 0.0372  2.7 2.5E+00   4.1300E-04 0.0110 0.0121  2.4
5.1E+00
     11264000   1.0959E-03 0.0447 0.0650  2.3 2.8E-01   6.5087E-04 0.0150 0.0321  2.5 2.5E+00   4.1456E-04 0.0105 0.0111  2.7
5.1E+00
     11558540   1.0891E-03 0.0439 0.0647  2.3 2.8E-01   6.4978E-04 0.0147 0.0314  2.6 2.5E+00   4.1432E-04 0.0105 0.0108  2.8
5.0E+00


                    tally   62
         nps      mean     error    vov  slope    fom
      1024000   4.9173E+01 0.0026 0.0001 10.0     891
      2048000   4.9303E+01 0.0019 0.0001 10.0     893
      3072000   4.9300E+01 0.0015 0.0000 10.0     894
      4096000   4.9336E+01 0.0013 0.0000 10.0     892
      5120000   4.9363E+01 0.0012 0.0000 10.0     891
      6144000   4.9389E+01 0.0011 0.0000  7.6     889
      7168000   4.9423E+01 0.0010 0.0000  7.3     889
      8192000   4.9414E+01 0.0009 0.0000  7.7     888
      9216000   4.9412E+01 0.0009 0.0000  7.1     888
     10240000   4.9424E+01 0.0008 0.0000  8.3     888
     11264000   4.9417E+01 0.0008 0.0000 10.0     887
     11558540   4.9413E+01 0.0008 0.0000  9.5     887


************************************************************************************************************
*******
 dump no.   32 on file runtpe       nps =    11558540     coll =     9671008044     ctm =     1829.75   nrn =
122426683506


        21 warning messages so far.


 run terminated at end of surface-source input file.

 computer time = 1829.90 minutes

  mcnp     version 5     11112005                    03/20/09 22:31:18                    probid =  03/19/09
                                                    16:00:05
```

MCNP Case to Translate the Source With Shield Bells
(No concrete floor)

```
         Thread Name & Version = mcnp5VE_RSICC, 1.40
                                  |_
         .-|-|  (_  |-|  |_)   _)
                          |
 +-------------------------------------------------------------------+
 |   This program was prepared by the Regents of the University of    |
 |California at Los Alamos National Laboratory (the University) under |
 |  contract number W-7405-ENG-36 with the U.S. Department of Energy  |
 |(DoE).  The University has certain rights in the program pursuant to|
 |  the contract and the program should not be copied or distributed  |
 | outside your organization.  All rights in the program are reserved |
 |by the DoE and the University.  Neither the U.S. Government nor the |
 | University makes any warranty, express or implied, or assumes any  |
 |     liability or responsibility for the use of this software.      |
 +-------------------------------------------------------------------+

1mcnp     version 5     ld=11112005                    03/18/09 18:10:02
 ***********************************************************************                probid =  03/18/09
18:10:02
  inp = sbnc.i outp = sbnc.o

    1-       c     Created on: Tuesday, November 11, 2008 at 09:35
    2-       c     Canister Cells
    3-          11     5      -1 -11 1209 -1212
    4-          12     5      -1 -12 1209 -1212
    5-          13     5      -1 -13 1209 -1212
    6-          14     5      -1 -14 1209 -1212
    7-          15     5      -1 -15 1209 -1212
    8-          16     5      -1 -16 1209 -1212
    9-          17     5      -1 -17 1209 -1212
   10-          18     5      -1 -18 1209 -1212
   11-          19     5      -1 -19 1209 -1212
   12-          21     5      -1 -21 1209 -1212
   13-          22     5      -1 -22 1209 -1212
   14-          23     5      -1 -23 1209 -1212
   15-          24     5      -1 -24 1209 -1212
   16-          25     5      -1 -25 1209 -1212
   17-          26     5      -1 -26 1209 -1212
   18-          27     5      -1 -27 1209 -1212
   19-          28     5      -1 -28 1209 -1212
   20-          29     5      -1 -29 1209 -1212
   21-          31     5      -1 -31 1209 -1212
   22-          32     5      -1 -32 1209 -1212
   23-          33     5      -1 -33 1209 -1212
   24-          34     5      -1 -34 1209 -1212
   25-          35     5      -1 -35 1209 -1212
   26-          36     5      -1 -36 1209 -1212
   27-          37     5      -1 -37 1209 -1212
   28-          38     5      -1 -38 1209 -1212
   29-          39     5      -1 -39 1209 -1212
   30-          41     5      -1 -41 1209 -1212
   31-          42     5      -1 -42 1209 -1212
   32-          43     5      -1 -43 1209 -1212
   33-          44     5      -1 -44 1209 -1212
   34-          45     5      -1 -45 1209 -1212
   35-          46     5      -1 -46 1209 -1212
   36-          47     5      -1 -47 1209 -1212
   37-          48     5      -1 -48 1209 -1212
   38-          49     5      -1 -49 1209 -1212
   39-          51     5      -1 -51 1209 -1212
   40-          52     5      -1 -52 1209 -1212
   41-          53     5      -1 -53 1209 -1212
   42-          54     5      -1 -54 1209 -1212
   43-          55     5      -1 -55 1209 -1212
   44-          56     5      -1 -56 1209 -1212
   45-          57     5      -1 -57 1209 -1212
   46-          58     5      -1 -58 1209 -1212
   47-          59     5      -1 -59 1209 -1212
   48-          61     5      -1 -61 1209 -1212
   49-          62     5      -1 -62 1209 -1212
   50-          63     5      -1 -63 1209 -1212
   51-          64     5      -1 -64 1209 -1212
```

```
 52-          65      5       -1 -65 1209 -1212
 53-          66      5       -1 -66 1209 -1212
 54-          67      5       -1 -67 1209 -1212
 55-          68      5       -1 -68 1209 -1212
 56-          69      5       -1 -69 1209 -1212
 57-          71      5       -1 -71 1209 -1212
 58-          72      5       -1 -72 1209 -1212
 59-          73      5       -1 -73 1209 -1212
 60-          74      5       -1 -74 1209 -1212
 61-          75      5       -1 -75 1209 -1212
 62-          76      5       -1 -76 1209 -1212
 63-          77      5       -1 -77 1209 -1212
 64-          78      5       -1 -78 1209 -1212
 65-          79      5       -1 -79 1209 -1212
 66-          81      5       -1 -81 1209 -1212
 67-          82      5       -1 -82 1209 -1212
 68-          83      5       -1 -83 1209 -1212
 69-          84      5       -1 -84 1209 -1212
 70-          85      5       -1 -85 1209 -1212
 71-          86      5       -1 -86 1209 -1212
 72-          87      5       -1 -87 1209 -1212
 73-          88      5       -1 -88 1209 -1212
 74-          89      5       -1 -89 1209 -1212
 75-          91      5       -1 -91 1209 -1212
 76-          92      5       -1 -92 1209 -1212
 77-          93      5       -1 -93 1209 -1212
 78-          94      5       -1 -94 1209 -1212
 79-          95      5       -1 -95 1209 -1212
 80-          96      5       -1 -96 1209 -1212
 81-          97      5       -1 -97 1209 -1212
 82-          98      5       -1 -98 1209 -1212
 83-          99      5       -1 -99 1209 -1212
 84-         101      5       -1 -101 1209 -1212
 85-         102      5       -1 -102 1209 -1212
 86-         103      5       -1 -103 1209 -1212
 87-         104      5       -1 -104 1209 -1212
 88-         105      5       -1 -105 1209 -1212
 89-         106      5       -1 -106 1209 -1212
 90-         107      5       -1 -107 1209 -1212
 91-         108      5       -1 -108 1209 -1212
 92-         109      5       -1 -109 1209 -1212
 93-         111      5       -1 -111 1209 -1212
 94-         112      5       -1 -112 1209 -1212
 95-         113      5       -1 -113 1209 -1212
 96-         114      5       -1 -114 1209 -1212
 97-         115      5       -1 -115 1209 -1212
 98-         116      5       -1 -116 1209 -1212
 99-         117      5       -1 -117 1209 -1212
100-         118      5       -1 -118 1209 -1212
101-         119      5       -1 -119 1209 -1212
102-         121      5       -1 -121 1209 -1212
103-         122      5       -1 -122 1209 -1212
104-         123      5       -1 -123 1209 -1212
105-         124      5       -1 -124 1209 -1212
106-         125      5       -1 -125 1209 -1212
107-         126      5       -1 -126 1209 -1212
108-         127      5       -1 -127 1209 -1212
109-         128      5       -1 -128 1209 -1212
110-         129      5       -1 -129 1209 -1212
111-         131      5       -1 -131 1209 -1212
112-         132      5       -1 -132 1209 -1212
113-         133      5       -1 -133 1209 -1212
114-         134      5       -1 -134 1209 -1212
115-         135      5       -1 -135 1209 -1212
116-         136      5       -1 -136 1209 -1212
117-         137      5       -1 -137 1209 -1212
118-         138      5       -1 -138 1209 -1212
119-         139      5       -1 -139 1209 -1212
120-         141      5       -1 -141 1209 -1212
121-         142      5       -1 -142 1209 -1212
122-         143      5       -1 -143 1209 -1212
123-         144      5       -1 -144 1209 -1212
124-         145      5       -1 -145 1209 -1212
125-         146      5       -1 -146 1209 -1212
126-         147      5       -1 -147 1209 -1212
127-         148      5       -1 -148 1209 -1212
128-         149      5       -1 -149 1209 -1212
129-       c     Air  Gap Cells
```

```
130-         211      3 -0.001225 -211 1209 -1213 #11
131-         212      3 -0.001225 -212 1209 -1213 #12
132-         213      3 -0.001225 -213 1209 -1213 #13
133-         214      3 -0.001225 -214 1209 -1213 #14
134-         215      3 -0.001225 -215 1209 -1213 #15
135-         216      3 -0.001225 -216 1209 -1213 #16
136-         217      3 -0.001225 -217 1209 -1213 #17
137-         218      3 -0.001225 -218 1209 -1213 #18
138-         219      3 -0.001225 -219 1209 -1213 #19
139-         221      3 -0.001225 -221 1209 -1213 #21
140-         222      3 -0.001225 -222 1209 -1213 #22
141-         223      3 -0.001225 -223 1209 -1213 #23
142-         224      3 -0.001225 -224 1209 -1213 #24
143-         225      3 -0.001225 -225 1209 -1213 #25
144-         226      3 -0.001225 -226 1209 -1213 #26
145-         227      3 -0.001225 -227 1209 -1213 #27
146-         228      3 -0.001225 -228 1209 -1213 #28
147-         229      3 -0.001225 -229 1209 -1213 #29
148-         231      3 -0.001225 -231 1209 -1213 #31
149-         232      3 -0.001225 -232 1209 -1213 #32
150-         233      3 -0.001225 -233 1209 -1213 #33
151-         234      3 -0.001225 -234 1209 -1213 #34
152-         235      3 -0.001225 -235 1209 -1213 #35
153-         236      3 -0.001225 -236 1209 -1213 #36
154-         237      3 -0.001225 -237 1209 -1213 #37
155-         238      3 -0.001225 -238 1209 -1213 #38
156-         239      3 -0.001225 -239 1209 -1213 #39
157-         241      3 -0.001225 -241 1209 -1213 #41
158-         242      3 -0.001225 -242 1209 -1213 #42
159-         243      3 -0.001225 -243 1209 -1213 #43
160-         244      3 -0.001225 -244 1209 -1213 #44
161-         245      3 -0.001225 -245 1209 -1213 #45
162-         246      3 -0.001225 -246 1209 -1213 #46
163-         247      3 -0.001225 -247 1209 -1213 #47
164-         248      3 -0.001225 -248 1209 -1213 #48
165-         249      3 -0.001225 -249 1209 -1213 #49
166-         251      3 -0.001225 -251 1209 -1213 #51
167-         252      3 -0.001225 -252 1209 -1213 #52
168-         253      3 -0.001225 -253 1209 -1213 #53
169-         254      3 -0.001225 -254 1209 -1213 #54
170-         255      3 -0.001225 -255 1209 -1213 #55
171-         256      3 -0.001225 -256 1209 -1213 #56
172-         257      3 -0.001225 -257 1209 -1213 #57
173-         258      3 -0.001225 -258 1209 -1213 #58
174-         259      3 -0.001225 -259 1209 -1213 #59
175-         261      3 -0.001225 -261 1209 -1213 #61
176-         262      3 -0.001225 -262 1209 -1213 #62
177-         263      3 -0.001225 -263 1209 -1213 #63
178-         264      3 -0.001225 -264 1209 -1213 #64
179-         265      3 -0.001225 -265 1209 -1213 #65
180-         266      3 -0.001225 -266 1209 -1213 #66
181-         267      3 -0.001225 -267 1209 -1213 #67
182-         268      3 -0.001225 -268 1209 -1213 #68
183-         269      3 -0.001225 -269 1209 -1213 #69
184-         271      3 -0.001225 -271 1209 -1213 #71
185-         272      3 -0.001225 -272 1209 -1213 #72
186-         273      3 -0.001225 -273 1209 -1213 #73
187-         274      3 -0.001225 -274 1209 -1213 #74
188-         275      3 -0.001225 -275 1209 -1213 #75
189-         276      3 -0.001225 -276 1209 -1213 #76
190-         277      3 -0.001225 -277 1209 -1213 #77
191-         278      3 -0.001225 -278 1209 -1213 #78
192-         279      3 -0.001225 -279 1209 -1213 #79
193-         281      3 -0.001225 -281 1209 -1213 #81
194-         282      3 -0.001225 -282 1209 -1213 #82
195-         283      3 -0.001225 -283 1209 -1213 #83
196-         284      3 -0.001225 -284 1209 -1213 #84
197-         285      3 -0.001225 -285 1209 -1213 #85
198-         286      3 -0.001225 -286 1209 -1213 #86
199-         287      3 -0.001225 -287 1209 -1213 #87
200-         288      3 -0.001225 -288 1209 -1213 #88
201-         289      3 -0.001225 -289 1209 -1213 #89
202-         291      3 -0.001225 -291 1209 -1213 #91
203-         292      3 -0.001225 -292 1209 -1213 #92
204-         293      3 -0.001225 -293 1209 -1213 #93
205-         294      3 -0.001225 -294 1209 -1213 #94
206-         295      3 -0.001225 -295 1209 -1213 #95
207-         296      3 -0.001225 -296 1209 -1213 #96
```

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209-         298      3 -0.001225 -298 1209 -1213 #98
210-         299      3 -0.001225 -299 1209 -1213 #99
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212-         302      3 -0.001225 -302 1209 -1213 #102
213-         303      3 -0.001225 -303 1209 -1213 #103
214-         304      3 -0.001225 -304 1209 -1213 #104
215-         305      3 -0.001225 -305 1209 -1213 #105
216-         306      3 -0.001225 -306 1209 -1213 #106
217-         307      3 -0.001225 -307 1209 -1213 #107
218-         308      3 -0.001225 -308 1209 -1213 #108
219-         309      3 -0.001225 -309 1209 -1213 #109
220-         311      3 -0.001225 -311 1209 -1213 #111
221-         312      3 -0.001225 -312 1209 -1213 #112
222-         313      3 -0.001225 -313 1209 -1213 #113
223-         314      3 -0.001225 -314 1209 -1213 #114
224-         315      3 -0.001225 -315 1209 -1213 #115
225-         316      3 -0.001225 -316 1209 -1213 #116
226-         317      3 -0.001225 -317 1209 -1213 #117
227-         318      3 -0.001225 -318 1209 -1213 #118
228-         319      3 -0.001225 -319 1209 -1213 #119
229-         321      3 -0.001225 -321 1209 -1213 #121
230-         322      3 -0.001225 -322 1209 -1213 #122
231-         323      3 -0.001225 -323 1209 -1213 #123
232-         324      3 -0.001225 -324 1209 -1213 #124
233-         325      3 -0.001225 -325 1209 -1213 #125
234-         326      3 -0.001225 -326 1209 -1213 #126
235-         327      3 -0.001225 -327 1209 -1213 #127
236-         328      3 -0.001225 -328 1209 -1213 #128
237-         329      3 -0.001225 -329 1209 -1213 #129
238-         331      3 -0.001225 -331 1209 -1213 #131
239-         332      3 -0.001225 -332 1209 -1213 #132
240-         333      3 -0.001225 -333 1209 -1213 #133
241-         334      3 -0.001225 -334 1209 -1213 #134
242-         335      3 -0.001225 -335 1209 -1213 #135
243-         336      3 -0.001225 -336 1209 -1213 #136
244-         337      3 -0.001225 -337 1209 -1213 #137
245-         338      3 -0.001225 -338 1209 -1213 #138
246-         339      3 -0.001225 -339 1209 -1213 #139
247-         341      3 -0.001225 -341 1209 -1213 #141
248-         342      3 -0.001225 -342 1209 -1213 #142
249-         343      3 -0.001225 -343 1209 -1213 #143
250-         344      3 -0.001225 -344 1209 -1213 #144
251-         345      3 -0.001225 -345 1209 -1213 #145
252-         346      3 -0.001225 -346 1209 -1213 #146
253-         347      3 -0.001225 -347 1209 -1213 #147
254-         348      3 -0.001225 -348 1209 -1213 #148
255-         349      3 -0.001225 -349 1209 -1213 #149
256-       c     Bell Cells
257-         411      4   -7.86 -411 1209 -1214 #211 #11
258-         412      4   -7.86 -412 1209 -1214 #212 #12
259-         413      4   -7.86 -413 1209 -1214 #213 #13
260-         414      4   -7.86 -414 1209 -1214 #214 #14
261-         415      4   -7.86 -415 1209 -1214 #215 #15
262-         416      4   -7.86 -416 1209 -1214 #216 #16
263-         417      4   -7.86 -417 1209 -1214 #217 #17
264-         418      4   -7.86 -418 1209 -1214 #218 #18
265-         419      4   -7.86 -419 1209 -1214 #219 #19
266-         421      4   -7.86 -421 1209 -1214 #221 #21
267-         422      4   -7.86 -422 1209 -1214 #222 #22
268-         423      4   -7.86 -423 1209 -1214 #223 #23
269-         424      4   -7.86 -424 1209 -1214 #224 #24
270-         425      4   -7.86 -425 1209 -1214 #225 #25
271-         426      4   -7.86 -426 1209 -1214 #226 #26
272-         427      4   -7.86 -427 1209 -1214 #227 #27
273-         428      4   -7.86 -428 1209 -1214 #228 #28
274-         429      4   -7.86 -429 1209 -1214 #229 #29
275-         431      4   -7.86 -431 1209 -1214 #231 #31
276-         432      4   -7.86 -432 1209 -1214 #232 #32
277-         433      4   -7.86 -433 1209 -1214 #233 #33
278-         434      4   -7.86 -434 1209 -1214 #234 #34
279-         435      4   -7.86 -435 1209 -1214 #235 #35
280-         436      4   -7.86 -436 1209 -1214 #236 #36
281-         437      4   -7.86 -437 1209 -1214 #237 #37
282-         438      4   -7.86 -438 1209 -1214 #238 #38
283-         439      4   -7.86 -439 1209 -1214 #239 #39
284-         441      4   -7.86 -441 1209 -1214 #241 #41
285-         442      4   -7.86 -442 1209 -1214 #242 #42
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287-         444     4   -7.86 -444 1209 -1214 #244 #44
288-         445     4   -7.86 -445 1209 -1214 #245 #45
289-         446     4   -7.86 -446 1209 -1214 #246 #46
290-         447     4   -7.86 -447 1209 -1214 #247 #47
291-         448     4   -7.86 -448 1209 -1214 #248 #48
292-         449     4   -7.86 -449 1209 -1214 #249 #49
293-         451     4   -7.86 -451 1209 -1214 #251 #51
294-         452     4   -7.86 -452 1209 -1214 #252 #52
295-         453     4   -7.86 -453 1209 -1214 #253 #53
296-         454     4   -7.86 -454 1209 -1214 #254 #54
297-         455     4   -7.86 -455 1209 -1214 #255 #55
298-         456     4   -7.86 -456 1209 -1214 #256 #56
299-         457     4   -7.86 -457 1209 -1214 #257 #57
300-         458     4   -7.86 -458 1209 -1214 #258 #58
301-         459     4   -7.86 -459 1209 -1214 #259 #59
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303-         462     4   -7.86 -462 1209 -1214 #262 #62
304-         463     4   -7.86 -463 1209 -1214 #263 #63
305-         464     4   -7.86 -464 1209 -1214 #264 #64
306-         465     4   -7.86 -465 1209 -1214 #265 #65
307-         466     4   -7.86 -466 1209 -1214 #266 #66
308-         467     4   -7.86 -467 1209 -1214 #267 #67
309-         468     4   -7.86 -468 1209 -1214 #268 #68
310-         469     4   -7.86 -469 1209 -1214 #269 #69
311-         471     4   -7.86 -471 1209 -1214 #271 #71
312-         472     4   -7.86 -472 1209 -1214 #272 #72
313-         473     4   -7.86 -473 1209 -1214 #273 #73
314-         474     4   -7.86 -474 1209 -1214 #274 #74
315-         475     4   -7.86 -475 1209 -1214 #275 #75
316-         476     4   -7.86 -476 1209 -1214 #276 #76
317-         477     4   -7.86 -477 1209 -1214 #277 #77
318-         478     4   -7.86 -478 1209 -1214 #278 #78
319-         479     4   -7.86 -479 1209 -1214 #279 #79
320-         481     4   -7.86 -481 1209 -1214 #281 #81
321-         482     4   -7.86 -482 1209 -1214 #282 #82
322-         483     4   -7.86 -483 1209 -1214 #283 #83
323-         484     4   -7.86 -484 1209 -1214 #284 #84
324-         485     4   -7.86 -485 1209 -1214 #285 #85
325-         486     4   -7.86 -486 1209 -1214 #286 #86
326-         487     4   -7.86 -487 1209 -1214 #287 #87
327-         488     4   -7.86 -488 1209 -1214 #288 #88
328-         489     4   -7.86 -489 1209 -1214 #289 #89
329-         491     4   -7.86 -491 1209 -1214 #291 #91
330-         492     4   -7.86 -492 1209 -1214 #292 #92
331-         493     4   -7.86 -493 1209 -1214 #293 #93
332-         494     4   -7.86 -494 1209 -1214 #294 #94
333-         495     4   -7.86 -495 1209 -1214 #295 #95
334-         496     4   -7.86 -496 1209 -1214 #296 #96
335-         497     4   -7.86 -497 1209 -1214 #297 #97
336-         498     4   -7.86 -498 1209 -1214 #298 #98
337-         499     4   -7.86 -499 1209 -1214 #299 #99
338-         501     4   -7.86 -501 1209 -1214 #301 #101
339-         502     4   -7.86 -502 1209 -1214 #302 #102
340-         503     4   -7.86 -503 1209 -1214 #303 #103
341-         504     4   -7.86 -504 1209 -1214 #304 #104
342-         505     4   -7.86 -505 1209 -1214 #305 #105
343-         506     4   -7.86 -506 1209 -1214 #306 #106
344-         507     4   -7.86 -507 1209 -1214 #307 #107
345-         508     4   -7.86 -508 1209 -1214 #308 #108
346-         509     4   -7.86 -509 1209 -1214 #309 #109
347-         511     4   -7.86 -511 1209 -1214 #311 #111
348-         512     4   -7.86 -512 1209 -1214 #312 #112
349-         513     4   -7.86 -513 1209 -1214 #313 #113
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353-         517     4   -7.86 -517 1209 -1214 #317 #117
354-         518     4   -7.86 -518 1209 -1214 #318 #118
355-         519     4   -7.86 -519 1209 -1214 #319 #119
356-         521     4   -7.86 -521 1209 -1214 #321 #121
357-         522     4   -7.86 -522 1209 -1214 #322 #122
358-         523     4   -7.86 -523 1209 -1214 #323 #123
359-         524     4   -7.86 -524 1209 -1214 #324 #124
360-         525     4   -7.86 -525 1209 -1214 #325 #125
361-         526     4   -7.86 -526 1209 -1214 #326 #126
362-         527     4   -7.86 -527 1209 -1214 #327 #127
363-         528     4   -7.86 -528 1209 -1214 #328 #128
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364-         529     4   -7.86 -529 1209 -1214 #329 #129
365-         531     4   -7.86 -531 1209 -1214 #331 #131
366-         532     4   -7.86 -532 1209 -1214 #332 #132
367-         533     4   -7.86 -533 1209 -1214 #333 #133
368-         534     4   -7.86 -534 1209 -1214 #334 #134
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370-         536     4   -7.86 -536 1209 -1214 #336 #136
371-         537     4   -7.86 -537 1209 -1214 #337 #137
372-         538     4   -7.86 -538 1209 -1214 #338 #138
373-         539     4   -7.86 -539 1209 -1214 #339 #139
374-         541     4   -7.86 -541 1209 -1214 #341 #141
375-         542     4   -7.86 -542 1209 -1214 #342 #142
376-         543     4   -7.86 -543 1209 -1214 #343 #143
377-         544     4   -7.86 -544 1209 -1214 #344 #144
378-         545     4   -7.86 -545 1209 -1214 #345 #145
379-         546     4   -7.86 -546 1209 -1214 #346 #146
380-         547     4   -7.86 -547 1209 -1214 #347 #147
381-         548     4   -7.86 -548 1209 -1214 #348 #148
382-         549     4   -7.86 -549 1209 -1214 #349 #149
383-       c Walls
384-        1200     3 -0.001225 1222 -1221 1206 -1208 1220 -1219  $Notch
385-        1201     1   -2.365 1206 -1208 1202 -1203 -1219 1209 #1200  $Inner Wall
386-        1202     1   -2.365 1207 -1233 1219 -1215 -1225 1226  $Top of Back Wall
387-       12021     1   -2.365 1233 -1223 1219 -1215 1226 -1225  $Split in Back Wall
388-        1203     1   -2.365 1207 -1205 -1219 1209 -1203 1202  $Bottom of Back Wall
389-        1204     1   -2.365 1225 -1234 1207 -1218 1219 -1215  $Top Of Right Wall
390-       12041     1   -2.365 1234 -1204 1207 -1218 1219 -1215  $Split in Right Wall
391-        1205     1   -2.365 1203 -1204 1207 -1218 -1219 1209  $Bottom of Right Wall
392-        1206     1   -2.365 1235 -1218 -1225 1226 1219 -1215  $Top of Front Wall
393-       12061     1   -2.365 1224 -1235 -1225 1226 1219 -1215  $Split in Front Wall
394-        1207     1   -2.365 1217 -1218 -1203 1202 -1219 1209  $Bottom of Front Wall
395-        1208     1   -2.365 1201 -1236 -1218 1207 1219 -1215 #10000 $Top of Left Wall
396-                    #10001 #10002 #10003 #10004 #10005
397-       12081     1   -2.365 -1226 1236 -1218 1207 1219 -1215 #10000 $Split in Left Wall
398-                    #10001 #10002 #10003 #10004 #10005
399-        1209     1   -2.365 -1202 1201 -1218 1207 -1219 1209  $Bottom of Left Wall
400-        1210     1   -2.365 -1209 1227 1207 -1218 -1204 1201  $Floor
401-        1211     1   -2.328 1215 -1237 1207 -1218 -1204 1201  $Roof
402-       12111     1   -2.328 1237 -1216 1207 -1218 -1204 1201  $Split in Roof
403-       c   Air
404-        9999     0         2015  $Outside Model
405-        9998     3 -0.001225 1205 -1228 -1220 1209 -1203 1202 #(-415 1209 -1214 )#
406-                   (-416 1209 -1214 )#(-417 1209 -1214 )#(-418 1209 -1214 )#
407-                   (-419 1209 -1214 )#(-421 1209 -1214 )#(-422 1209 -1214 )#
408-                   (-423 1209 -1214 )#(-424 1209 -1214 )#(-425 1209 -1214 )#
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417-                   (-453 1209 -1214 )#(-454 1209 -1214 )#(-455 1209 -1214 )#
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419-                   (-459 1209 -1214 )#(-411 1209 -1214 )#(-412 1209 -1214 )#
420-                   (-413 1209 -1214 )#(-414 1209 -1214 )
421-        9997     3 -0.001225 1228 -1229 -1220 1209 -1203 1202 #(-467 1209 -1214 )#
422-                   (-468 1209 -1214 )#(-469 1209 -1214 )#(-471 1209 -1214 )#
423-                   (-472 1209 -1214 )#(-473 1209 -1214 )#(-474 1209 -1214 )#
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434-                   (-508 1209 -1214 )#(-509 1209 -1214 )#(-461 1209 -1214 )#
435-                   (-462 1209 -1214 )#(-463 1209 -1214 )#(-464 1209 -1214 )#
436-                   (-465 1209 -1214 )#(-466 1209 -1214 )
437-        9996     3 -0.001225 1229 -1206 -1220 1209 -1203 1202 #(-518 1209 -1214 )#
438-                   (-519 1209 -1214 )#(-521 1209 -1214 )#(-522 1209 -1214 )#
439-                   (-523 1209 -1214 )#(-524 1209 -1214 )#(-525 1209 -1214 )#
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441-                   (-529 1209 -1214 )#(-531 1209 -1214 )#(-532 1209 -1214 )#
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                  (-513 1209 -1214 )#(-514 1209 -1214 )#(-515 1209 -1214 )#
                  (-516 1209 -1214 )#(-517 1209 -1214 )
        9995      3 -0.001225 1220 -1219 1205 -1206 -1203 1202  $Notch Air Side A
        9994      3 -0.001225 -1215 1219 1223 -1208 -1225 1226  $Air Above Crane Rail
        9993      3 -0.001225 1209 -1231 1208 -1217 -1203 1202  $Bottom Air Side B
        9992      3 -0.001225 -1230 1231 1208 -1217 -1203 1202  $Air Up to Shield Side B
        9991      3 -0.001225 -1220 1230 1208 -1217 -1203 1202  $Truck Bay Shield
        9990      3 -0.001225 1220 -1219 1208 -1217 -1203 1202  $Notch Air Side B
        9989      3 -0.001225 -1215 1219 1208 -1224 -1225 1226  $Notch Air Side B
        9988      3 -0.001225 (-2000 -1207 1201 -1204 1227 -1216 ):
                  (1218 -2000 1201 -1204 1227 -1216 ):(-2000 -1201 1227 -1216 ):
                  (1204 -2000 1227 -1216 ):(1216 -2000 )
        9987      0          -1232 -2015  $Bottom Void
        9986      3 -0.001225 1232 -1227 -2015  $6 in Ground Air
      c       Ductwork Penetrations
      10000     3 -0.001225 12441 -12451 12321 -12331 1201 -1226
      10001     3 -0.001225 12441 -12451 12341 -12351 1201 -1226
      10002     3 -0.001225 12461 -12471 12361 -12371 1201 -1226
      10003     3 -0.001225 12441 -12451 12381 -12391 1201 -1226
      10004     3 -0.001225 12401 -12411 12441 -12451 1201 -1226
      10005     3 -0.001225 12441 -12451 12421 -12431 1201 -1226
      c Sphere Detector Cells
        2001    3 -0.001225 2000 -2001 1227
        2002    3 -0.001225 2001 -2002 1227
        2003    3 -0.001225 -2003 2002 1227
        2004    3 -0.001225 2003 -2004 1227
        2005    3 -0.001225 2004 -2005 1227
        2006    3 -0.001225 2005 -2006 1227
        2007    3 -0.001225 2006 -2007 1227
        2008    3 -0.001225 2007 -2008 1227
        2009    3 -0.001225 2008 -2009 1227
        2010    3 -0.001225 2009 -2010 1227
        2011    3 -0.001225 2010 -2011 1227
        2012    3 -0.001225 2011 -2012 1227
        2013    3 -0.001225 2012 -2013 1227
        2014    3 -0.001225 2013 -2014 1227
        2015    3 -0.001225 2014 -2015 1227

      c     Source Canisters
           11       c/z 198.12 121.92 77.47
           12       c/z 198.12 320.04 77.47
           13       c/z 198.12 518.16 77.47
           14       c/z 198.12 716.28 77.47
           15       c/z 198.12 914.4 77.47
           16       c/z 198.12 1112.52 77.47
           17       c/z 198.12 1310.64 77.47
           18       c/z 198.12 1508.76 77.47
           19       c/z 198.12 1706.88 77.47
           21       c/z 396.24 121.92 77.47
           22       c/z 396.24 320.04 77.47
           23       c/z 396.24 518.16 77.47
           24       c/z 396.24 716.28 77.47
           25       c/z 396.24 914.4 77.47
           26       c/z 396.24 1112.52 77.47
           27       c/z 396.24 1310.64 77.47
           28       c/z 396.24 1508.76 77.47
           29       c/z 396.24 1706.88 77.47
           31       c/z 594.36 121.92 77.47
           32       c/z 594.36 320.04 77.47
           33       c/z 594.36 518.16 77.47
           34       c/z 594.36 716.28 77.47
           35       c/z 594.36 914.4 77.47
           36       c/z 594.36 1112.52 77.47
           37       c/z 594.36 1310.64 77.47
           38       c/z 594.36 1508.76 77.47
           39       c/z 594.36 1706.88 77.47
           41       c/z 792.48 121.92 77.47
           42       c/z 792.48 320.04 77.47
           43       c/z 792.48 518.16 77.47
           44       c/z 792.48 716.28 77.47
           45       c/z 792.48 914.4 77.47
           46       c/z 792.48 1112.52 77.47
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520-          47       c/z 792.48 1310.64 77.47
521-          48       c/z 792.48 1508.76 77.47
522-          49       c/z 792.48 1706.88 77.47
523-          51       c/z 990.6 121.92 77.47
524-          52       c/z 990.6 320.04 77.47
525-          53       c/z 990.6 518.16 77.47
526-          54       c/z 990.6 716.28 77.47
527-          55       c/z 990.6 914.4 77.47
528-          56       c/z 990.6 1112.52 77.47
529-          57       c/z 990.6 1310.64 77.47
530-          58       c/z 990.6 1508.76 77.47
531-          59       c/z 990.6 1706.88 77.47
532-          61       c/z 1188.72 121.92 77.47
533-          62       c/z 1188.72 320.04 77.47
534-          63       c/z 1188.72 518.16 77.47
535-          64       c/z 1188.72 716.28 77.47
536-          65       c/z 1188.72 914.4 77.47
537-          66       c/z 1188.72 1112.52 77.47
538-          67       c/z 1188.72 1310.64 77.47
539-          68       c/z 1188.72 1508.76 77.47
540-          69       c/z 1188.72 1706.88 77.47
541-          71       c/z 1386.84 121.92 77.47
542-          72       c/z 1386.84 320.04 77.47
543-          73       c/z 1386.84 518.16 77.47
544-          74       c/z 1386.84 716.28 77.47
545-          75       c/z 1386.84 914.4 77.47
546-          76       c/z 1386.84 1112.52 77.47
547-          77       c/z 1386.84 1310.64 77.47
548-          78       c/z 1386.84 1508.76 77.47
549-          79       c/z 1386.84 1706.88 77.47
550-          81       c/z 1584.96 121.92 77.47
551-          82       c/z 1584.96 320.04 77.47
552-          83       c/z 1584.96 518.16 77.47
553-          84       c/z 1584.96 716.28 77.47
554-          85       c/z 1584.96 914.4 77.47
555-          86       c/z 1584.96 1112.52 77.47
556-          87       c/z 1584.96 1310.64 77.47
557-          88       c/z 1584.96 1508.76 77.47
558-          89       c/z 1584.96 1706.88 77.47
559-          91       c/z 1783.08 121.92 77.47
560-          92       c/z 1783.08 320.04 77.47
561-          93       c/z 1783.08 518.16 77.47
562-          94       c/z 1783.08 716.28 77.47
563-          95       c/z 1783.08 914.4 77.47
564-          96       c/z 1783.08 1112.52 77.47
565-          97       c/z 1783.08 1310.64 77.47
566-          98       c/z 1783.08 1508.76 77.47
567-          99       c/z 1783.08 1706.88 77.47
568-         101       c/z 1981.2 121.92 77.47
569-         102       c/z 1981.2 320.04 77.47
570-         103       c/z 1981.2 518.16 77.47
571-         104       c/z 1981.2 716.28 77.47
572-         105       c/z 1981.2 914.4 77.47
573-         106       c/z 1981.2 1112.52 77.47
574-         107       c/z 1981.2 1310.64 77.47
575-         108       c/z 1981.2 1508.76 77.47
576-         109       c/z 1981.2 1706.88 77.47
577-         111       c/z 2179.32 121.92 77.47
578-         112       c/z 2179.32 320.04 77.47
579-         113       c/z 2179.32 518.16 77.47
580-         114       c/z 2179.32 716.28 77.47
581-         115       c/z 2179.32 914.4 77.47
582-         116       c/z 2179.32 1112.52 77.47
583-         117       c/z 2179.32 1310.64 77.47
584-         118       c/z 2179.32 1508.76 77.47
585-         119       c/z 2179.32 1706.88 77.47
586-         121       c/z 2377.44 121.92 77.47
587-         122       c/z 2377.44 320.04 77.47
588-         123       c/z 2377.44 518.16 77.47
589-         124       c/z 2377.44 716.28 77.47
590-         125       c/z 2377.44 914.4 77.47
591-         126       c/z 2377.44 1112.52 77.47
592-         127       c/z 2377.44 1310.64 77.47
593-         128       c/z 2377.44 1508.76 77.47
594-         129       c/z 2377.44 1706.88 77.47
595-         131       c/z 2575.56 121.92 77.47
596-         132       c/z 2575.56 320.04 77.47
597-         133       c/z 2575.56 518.16 77.47
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598-         134       c/z 2575.56 716.28 77.47
599-         135       c/z 2575.56 914.4 77.47
600-         136       c/z 2575.56 1112.52 77.47
601-         137       c/z 2575.56 1310.64 77.47
602-         138       c/z 2575.56 1508.76 77.47
603-         139       c/z 2575.56 1706.88 77.47
604-         141       c/z 2773.68 121.92 77.47
605-         142       c/z 2773.68 320.04 77.47
606-         143       c/z 2773.68 518.16 77.47
607-         144       c/z 2773.68 716.28 77.47
608-         145       c/z 2773.68 914.4 77.47
609-         146       c/z 2773.68 1112.52 77.47
610-         147       c/z 2773.68 1310.64 77.47
611-         148       c/z 2773.68 1508.76 77.47
612-         149       c/z 2773.68 1706.88 77.47
613-       c     Inside of Shield Bell
614-         211       c/z 198.12 121.92 86.36
615-         212       c/z 198.12 320.04 86.36
616-         213       c/z 198.12 518.16 86.36
617-         214       c/z 198.12 716.28 86.36
618-         215       c/z 198.12 914.4 86.36
619-         216       c/z 198.12 1112.52 86.36
620-         217       c/z 198.12 1310.64 86.36
621-         218       c/z 198.12 1508.76 86.36
622-         219       c/z 198.12 1706.88 86.36
623-         221       c/z 396.24 121.92 86.36
624-         222       c/z 396.24 320.04 86.36
625-         223       c/z 396.24 518.16 86.36
626-         224       c/z 396.24 716.28 86.36
627-         225       c/z 396.24 914.4 86.36
628-         226       c/z 396.24 1112.52 86.36
629-         227       c/z 396.24 1310.64 86.36
630-         228       c/z 396.24 1508.76 86.36
631-         229       c/z 396.24 1706.88 86.36
632-         231       c/z 594.36 121.92 86.36
633-         232       c/z 594.36 320.04 86.36
634-         233       c/z 594.36 518.16 86.36
635-         234       c/z 594.36 716.28 86.36
636-         235       c/z 594.36 914.4 86.36
637-         236       c/z 594.36 1112.52 86.36
638-         237       c/z 594.36 1310.64 86.36
639-         238       c/z 594.36 1508.76 86.36
640-         239       c/z 594.36 1706.88 86.36
641-         241       c/z 792.48 121.92 86.36
642-         242       c/z 792.48 320.04 86.36
643-         243       c/z 792.48 518.16 86.36
644-         244       c/z 792.48 716.28 86.36
645-         245       c/z 792.48 914.4 86.36
646-         246       c/z 792.48 1112.52 86.36
647-         247       c/z 792.48 1310.64 86.36
648-         248       c/z 792.48 1508.76 86.36
649-         249       c/z 792.48 1706.88 86.36
650-         251       c/z 990.6 121.92 86.36
651-         252       c/z 990.6 320.04 86.36
652-         253       c/z 990.6 518.16 86.36
653-         254       c/z 990.6 716.28 86.36
654-         255       c/z 990.6 914.4 86.36
655-         256       c/z 990.6 1112.52 86.36
656-         257       c/z 990.6 1310.64 86.36
657-         258       c/z 990.6 1508.76 86.36
658-         259       c/z 990.6 1706.88 86.36
659-         261       c/z 1188.72 121.92 86.36
660-         262       c/z 1188.72 320.04 86.36
661-         263       c/z 1188.72 518.16 86.36
662-         264       c/z 1188.72 716.28 86.36
663-         265       c/z 1188.72 914.4 86.36
664-         266       c/z 1188.72 1112.52 86.36
665-         267       c/z 1188.72 1310.64 86.36
666-         268       c/z 1188.72 1508.76 86.36
667-         269       c/z 1188.72 1706.88 86.36
668-         271       c/z 1386.84 121.92 86.36
669-         272       c/z 1386.84 320.04 86.36
670-         273       c/z 1386.84 518.16 86.36
671-         274       c/z 1386.84 716.28 86.36
672-         275       c/z 1386.84 914.4 86.36
673-         276       c/z 1386.84 1112.52 86.36
674-         277       c/z 1386.84 1310.64 86.36
675-         278       c/z 1386.84 1508.76 86.36
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676-         279       c/z 1386.84 1706.88 86.36
677-         281       c/z 1584.96 121.92 86.36
678-         282       c/z 1584.96 320.04 86.36
679-         283       c/z 1584.96 518.16 86.36
680-         284       c/z 1584.96 716.28 86.36
681-         285       c/z 1584.96 914.4 86.36
682-         286       c/z 1584.96 1112.52 86.36
683-         287       c/z 1584.96 1310.64 86.36
684-         288       c/z 1584.96 1508.76 86.36
685-         289       c/z 1584.96 1706.88 86.36
686-         291       c/z 1783.08 121.92 86.36
687-         292       c/z 1783.08 320.04 86.36
688-         293       c/z 1783.08 518.16 86.36
689-         294       c/z 1783.08 716.28 86.36
690-         295       c/z 1783.08 914.4 86.36
691-         296       c/z 1783.08 1112.52 86.36
692-         297       c/z 1783.08 1310.64 86.36
693-         298       c/z 1783.08 1508.76 86.36
694-         299       c/z 1783.08 1706.88 86.36
695-         301       c/z 1981.2 121.92 86.36
696-         302       c/z 1981.2 320.04 86.36
697-         303       c/z 1981.2 518.16 86.36
698-         304       c/z 1981.2 716.28 86.36
699-         305       c/z 1981.2 914.4 86.36
700-         306       c/z 1981.2 1112.52 86.36
701-         307       c/z 1981.2 1310.64 86.36
702-         308       c/z 1981.2 1508.76 86.36
703-         309       c/z 1981.2 1706.88 86.36
704-         311       c/z 2179.32 121.92 86.36
705-         312       c/z 2179.32 320.04 86.36
706-         313       c/z 2179.32 518.16 86.36
707-         314       c/z 2179.32 716.28 86.36
708-         315       c/z 2179.32 914.4 86.36
709-         316       c/z 2179.32 1112.52 86.36
710-         317       c/z 2179.32 1310.64 86.36
711-         318       c/z 2179.32 1508.76 86.36
712-         319       c/z 2179.32 1706.88 86.36
713-         321       c/z 2377.44 121.92 86.36
714-         322       c/z 2377.44 320.04 86.36
715-         323       c/z 2377.44 518.16 86.36
716-         324       c/z 2377.44 716.28 86.36
717-         325       c/z 2377.44 914.4 86.36
718-         326       c/z 2377.44 1112.52 86.36
719-         327       c/z 2377.44 1310.64 86.36
720-         328       c/z 2377.44 1508.76 86.36
721-         329       c/z 2377.44 1706.88 86.36
722-         331       c/z 2575.56 121.92 86.36
723-         332       c/z 2575.56 320.04 86.36
724-         333       c/z 2575.56 518.16 86.36
725-         334       c/z 2575.56 716.28 86.36
726-         335       c/z 2575.56 914.4 86.36
727-         336       c/z 2575.56 1112.52 86.36
728-         337       c/z 2575.56 1310.64 86.36
729-         338       c/z 2575.56 1508.76 86.36
730-         339       c/z 2575.56 1706.88 86.36
731-         341       c/z 2773.68 121.92 86.36
732-         342       c/z 2773.68 320.04 86.36
733-         343       c/z 2773.68 518.16 86.36
734-         344       c/z 2773.68 716.28 86.36
735-         345       c/z 2773.68 914.4 86.36
736-         346       c/z 2773.68 1112.52 86.36
737-         347       c/z 2773.68 1310.64 86.36
738-         348       c/z 2773.68 1508.76 86.36
739-         349       c/z 2773.68 1706.88 86.36
740-       c     Outside of Shield Bell
741-         411       c/z 198.12 121.92 92.71
742-         412       c/z 198.12 320.04 92.71
743-         413       c/z 198.12 518.16 92.71
744-         414       c/z 198.12 716.28 92.71
745-         415       c/z 198.12 914.4 92.71
746-         416       c/z 198.12 1112.52 92.71
747-         417       c/z 198.12 1310.64 92.71
748-         418       c/z 198.12 1508.76 92.71
749-         419       c/z 198.12 1706.88 92.71
750-         421       c/z 396.24 121.92 92.71
751-         422       c/z 396.24 320.04 92.71
752-         423       c/z 396.24 518.16 92.71
753-         424       c/z 396.24 716.28 92.71
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754-         425       c/z 396.24 914.4 92.71
755-         426       c/z 396.24 1112.52 92.71
756-         427       c/z 396.24 1310.64 92.71
757-         428       c/z 396.24 1508.76 92.71
758-         429       c/z 396.24 1706.88 92.71
759-         431       c/z 594.36 121.92 92.71
760-         432       c/z 594.36 320.04 92.71
761-         433       c/z 594.36 518.16 92.71
762-         434       c/z 594.36 716.28 92.71
763-         435       c/z 594.36 914.4 92.71
764-         436       c/z 594.36 1112.52 92.71
765-         437       c/z 594.36 1310.64 92.71
766-         438       c/z 594.36 1508.76 92.71
767-         439       c/z 594.36 1706.88 92.71
768-         441       c/z 792.48 121.92 92.71
769-         442       c/z 792.48 320.04 92.71
770-         443       c/z 792.48 518.16 92.71
771-         444       c/z 792.48 716.28 92.71
772-         445       c/z 792.48 914.4 92.71
773-         446       c/z 792.48 1112.52 92.71
774-         447       c/z 792.48 1310.64 92.71
775-         448       c/z 792.48 1508.76 92.71
776-         449       c/z 792.48 1706.88 92.71
777-         451       c/z 990.6 121.92 92.71
778-         452       c/z 990.6 320.04 92.71
779-         453       c/z 990.6 518.16 92.71
780-         454       c/z 990.6 716.28 92.71
781-         455       c/z 990.6 914.4 92.71
782-         456       c/z 990.6 1112.52 92.71
783-         457       c/z 990.6 1310.64 92.71
784-         458       c/z 990.6 1508.76 92.71
785-         459       c/z 990.6 1706.88 92.71
786-         461       c/z 1188.72 121.92 92.71
787-         462       c/z 1188.72 320.04 92.71
788-         463       c/z 1188.72 518.16 92.71
789-         464       c/z 1188.72 716.28 92.71
790-         465       c/z 1188.72 914.4 92.71
791-         466       c/z 1188.72 1112.52 92.71
792-         467       c/z 1188.72 1310.64 92.71
793-         468       c/z 1188.72 1508.76 92.71
794-         469       c/z 1188.72 1706.88 92.71
795-         471       c/z 1386.84 121.92 92.71
796-         472       c/z 1386.84 320.04 92.71
797-         473       c/z 1386.84 518.16 92.71
798-         474       c/z 1386.84 716.28 92.71
799-         475       c/z 1386.84 914.4 92.71
800-         476       c/z 1386.84 1112.52 92.71
801-         477       c/z 1386.84 1310.64 92.71
802-         478       c/z 1386.84 1508.76 92.71
803-         479       c/z 1386.84 1706.88 92.71
804-         481       c/z 1584.96 121.92 92.71
805-         482       c/z 1584.96 320.04 92.71
806-         483       c/z 1584.96 518.16 92.71
807-         484       c/z 1584.96 716.28 92.71
808-         485       c/z 1584.96 914.4 92.71
809-         486       c/z 1584.96 1112.52 92.71
810-         487       c/z 1584.96 1310.64 92.71
811-         488       c/z 1584.96 1508.76 92.71
812-         489       c/z 1584.96 1706.88 92.71
813-         491       c/z 1783.08 121.92 92.71
814-         492       c/z 1783.08 320.04 92.71
815-         493       c/z 1783.08 518.16 92.71
816-         494       c/z 1783.08 716.28 92.71
817-         495       c/z 1783.08 914.4 92.71
818-         496       c/z 1783.08 1112.52 92.71
819-         497       c/z 1783.08 1310.64 92.71
820-         498       c/z 1783.08 1508.76 92.71
821-         499       c/z 1783.08 1706.88 92.71
822-         501       c/z 1981.2 121.92 92.71
823-         502       c/z 1981.2 320.04 92.71
824-         503       c/z 1981.2 518.16 92.71
825-         504       c/z 1981.2 716.28 92.71
826-         505       c/z 1981.2 914.4 92.71
827-         506       c/z 1981.2 1112.52 92.71
828-         507       c/z 1981.2 1310.64 92.71
829-         508       c/z 1981.2 1508.76 92.71
830-         509       c/z 1981.2 1706.88 92.71
831-         511       c/z 2179.32 121.92 92.71
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832-         512       c/z 2179.32 320.04 92.71
833-         513       c/z 2179.32 518.16 92.71
834-         514       c/z 2179.32 716.28 92.71
835-         515       c/z 2179.32 914.4 92.71
836-         516       c/z 2179.32 1112.52 92.71
837-         517       c/z 2179.32 1310.64 92.71
838-         518       c/z 2179.32 1508.76 92.71
839-         519       c/z 2179.32 1706.88 92.71
840-         521       c/z 2377.44 121.92 92.71
841-         522       c/z 2377.44 320.04 92.71
842-         523       c/z 2377.44 518.16 92.71
843-         524       c/z 2377.44 716.28 92.71
844-         525       c/z 2377.44 914.4 92.71
845-         526       c/z 2377.44 1112.52 92.71
846-         527       c/z 2377.44 1310.64 92.71
847-         528       c/z 2377.44 1508.76 92.71
848-         529       c/z 2377.44 1706.88 92.71
849-         531       c/z 2575.56 121.92 92.71
850-         532       c/z 2575.56 320.04 92.71
851-         533       c/z 2575.56 518.16 92.71
852-         534       c/z 2575.56 716.28 92.71
853-         535       c/z 2575.56 914.4 92.71
854-         536       c/z 2575.56 1112.52 92.71
855-         537       c/z 2575.56 1310.64 92.71
856-         538       c/z 2575.56 1508.76 92.71
857-         539       c/z 2575.56 1706.88 92.71
858-         541       c/z 2773.68 121.92 92.71
859-         542       c/z 2773.68 320.04 92.71
860-         543       c/z 2773.68 518.16 92.71
861-         544       c/z 2773.68 716.28 92.71
862-         545       c/z 2773.68 914.4 92.71
863-         546       c/z 2773.68 1112.52 92.71
864-         547       c/z 2773.68 1310.64 92.71
865-         548       c/z 2773.68 1508.76 92.71
866-         549       c/z 2773.68 1706.88 92.71
867-       c    Planes
868-        1201        py -76.2  $Outside Left Wall
869-        1202        py 0  $Inside Left Thick Wall
870-        1203        py 1828.8  $Inside Right Thick Wall
871-        1204        py 1905  $Outside Right Wall
872-        1205        px 0  $Inside Back Thick Wall
873-        1206        px 2895.6  $Front of Inner Wall
874-        1207        px -76.2  $Outside Back Wall
875-        1208        px 2971.8  $Back of Inner Wall
876-        1209        pz 0  $Top of Floor
877-        c 1211        pz 190.5  $Top of Bot HIC
878-        1212        pz 381  $Top of Top HIC
879-        1213        pz 388.62  $Bot of Bell Top
880-        1214        pz 396.24  $Top of Bell Top
881-        1215        pz 1455.42  $Bottom of Roof
882-        1216        pz 1493.52  $Top of Roof
883-        1217        px 3947.16  $Inner Truck Bay Wall
884-        1218        px 4023.36  $Outer Truck Bay Wall
885-        1219        pz 1036.32  $Top of Inner Wall
886-        1220        pz 822.96  $Bottom of Notch
887-        1221        py 1760.22  $Right of notch
888-        1222        py 1546.86  $Left of notch
889-        1223        px -38.1  $Inside Back Thin Wall
890-        1224        px 3985.26  $Inside Front Thin Wall
891-        1225        py 1866.9  $Inside Right Thin Wall
892-        1226        py -38.1  $Inside Left Thin Wall
893-        1227        pz -76.2  $Bottom of Floor
894-        1228        px 1089.66  $Zone 1 Air
895-        1229        px 2080.26  $Zone 2 Air
896-        1230        pz 807.72  $Bottom of Truck Bay Shield
897-        1231        pz 213.36  $7ft Detector Surface
898-        1232        pz -91.44  $Bottom Void
899-        1233        px -57.15  $Split for Back Wall
900-        1234        py 1885.95  $Split for Right Wall
901-        1235        px 4004.31  $Split for Front Wall
902-        1236        py -57.15  $Split for Left Wall
903-        1237        pz 1474.47  $Split for Roof
904-       c    HVAC Duct Openings
905-       12321        px 68.58  $Duct1S1
906-       12331        px 170.18  $Duct1 S2
907-       12341        px 871.22  $Duct2 S1
908-       12351        px 972.82  $Duct2 S2
909-       12361        px 1595.12  $Duct3 S1
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910-       12371        px 1747.52  $Duct3 S2
911-       12381        px 1856.74  $Duct4 S1
912-       12391        px 1958.34  $Duct4 S2
913-       12401        px 2720.34  $Duct5 S1
914-       12411        px 2821.94  $Duct5 S2
915-       12421        px 3776.98  $Duct6 S1
916-       12431        px 3878.58  $Duct6 S2
917-       12441        pz 1397  $Small Ducts Bottom
918-       12451        pz 1437.64  $Small Duct Top
919-       12461        pz 1369.06  $Large Ducts Bottom
920-       12471        pz 1445.26  $Large Duct Top
921-       c   Spheres for detectors
922-        2000         s 1973.58 914.4 -72.6 2800  $Closest Sphere
923-        2001         s 1973.58 914.4 -72.6 4000
924-        2002         s 1973.58 914.4 -72.6 7000
925-        2003         s 1973.58 914.4 -72.6 10000
926-        2004         s 1973.58 914.4 -72.6 15000
927-        2005         s 1973.58 914.4 -72.6 20000
928-        2006         s 1973.58 914.4 -72.6 25000
929-        2007         s 1973.58 914.4 -72.6 30000
930-        2008         s 1973.58 914.4 -72.6 37500
931-        2009         s 1973.58 914.4 -72.6 45000
932-        2010         s 1973.58 914.4 -72.6 55000
933-        2011         s 1973.58 914.4 -72.6 65000
934-        2012         s 1973.58 914.4 -72.6 75000
935-        2013         s 1973.58 914.4 -72.6 85000
936-        2014         s 1973.58 914.4 -72.6 95000
937-        2015         s 1973.58 914.4 -72.6 120000
938-        2016        py -276.2
939-        2017        py -476.2
940-        2018        py -676.2
941-        2019        py -876.2
942-        2020        py -1076.2
943-        2021        py -1276.2
944-        2022        py -1476.2
945-        2023        py -1676.2
946-        2024        py -1876.2
947-        2025        py -2076.2
948-        2026        px 359.054
949-        2027        px 2535.94
950-        2028        py -2276.2
951-        2029        py -2476.2
952-        2030        py -2676.2
953-        2031        py -2876.2
954-        2032        py -3076.2
955-        2033        py -3276.2
956-        2034        py -3476.2
957-        2035        py -3676.2
958-
959-       mode  p
960-       c  Materials
961-       m1    1000.            -0.015  $ Concrete from 6.4
962-             8000.            -1.057 11000.           -0.041 12000.           -0.085
963-             13000.           -0.137 14000.           -0.487 15000.           -0.002
964-             16000.           -0.002 19000.           -0.015 20000.           -0.295
965-             22000.           -0.011 25000.           -0.003 26000.           -0.178
966-       m2    13000.                1  $ Aluminum
warning. material   2 is not used in the problem.
967-       m3    7000.           0.78969  $ Air
968-             8000.           0.21019 6000.           0.00012
969-       m4    26000.                1  $ Iron
970-       m5    1000.                 2  $ Water
971-             8000.                 1
972-       imp:p             1 252r                    3 124r                    1  $ 11, 1
973-              16r                     0            9 3r                      1  $ 1201,
974-              6r                      0            1 21r           $ 9993, 2015
975-       phys:p  100 1 0
976-       sdef erg=d5 x=d1 y=d2 z=d3 cel=d4 eff=0.0001 wgt=3.045E+15
977-       si1  0 2895.6
978-       sp1  0.0 1.0
979-       si2  0 1828.8
980-       sp2  0.0 1.0
981-       si3  0.01 304.8 381.00
982-       sp3  0.0 0.8 0.2
983-       sb3  0.0 0.2 1.0
984-       si4  L 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 31 32
985-            33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 51 52 53 54 55
986-            56 57 58 59 61 62 63 64 65 66 67 68 69 71 72 73 74 75 76 77 78
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 987-            79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96 97 98 99 101
 988-            102 103 104 105 106 107 108 109 111 112 113 114 115 116 117 118
 989-            119 121 122 123 124 125 126 127 128 129 131 132 133 134 135 136
 990-            137 138 139 141 142 143 144 145 146 147 148 149
 991-       sp4  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 992-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 993-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 994-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 995-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 996-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 997-            1  1  1  1  1  1  1  1  1  1  1  1  1
 998-       si5 l 1.1730 1.3325
 999-       sp5   1      1
1000-       ssw 1220(9995)
1001-       c ssr
1002-       c ===================================================================
1003-       c ===================================================================
1004-       c Truck bay dose rate
1005-       f2:p 1231
warning. without bremsstrahlung, flux estimates will be low.
1006-       c ===================================================================
1007-       c ===================================================================
1008-       c Rings outside the building
1009-       f12:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1010-       fs12 -2000 -2001 -2002 -2003 -2004 -2005 -2006 -2007 -2008 -2009
1011-            -2010 -2011 -2012 -2013 -2014
1012-       sd12 1e50 2.564E+07 1.037e8 1.602e8 3.927e8 5.498e8 7.069e8 8.639e8 1.590e9
1013-            1.944e9 3.142e9 3.770e9 4.398e9 5.027e9 5.655e9 1.689e10
1014-       c ===================================================================
1015-       c ===================================================================
1016-       c Slabs Ajacent to Ventilation Penetration Side
1017-       f22:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1018-       fs22 1201 -2026 2027
1019-            2016 2017 2018 2019 2020
1020-            2021 2022 2023 2024 2025
1021-            2028 2029 2030 2031 2032
1022-            2033 2034 2035
1023-       sd22 1e50 1e50 1e50
1024-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1025-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1026-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1027-            4.35376e5 4.35376e5 4.35376e5 1e50
1028-       c ===================================================================
1029-       c ===================================================================
1030-       c Dose Rate on Vent Side Wall 7ft up avg
1031-       f32:p 1201
warning. without bremsstrahlung, flux estimates will be low.
1032-       fs32 1231 -2026 2027 -1227
1033-       sd32 1e50 1e50 1e50 1e50 6.30E+05
1034-       c ===================================================================
1035-       c ===================================================================
1036-       c detectors toward north, with HVAC effects
1037-       f42:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1038-       fs42 1219 -1209 1201 -1205 1206
1039-       sd42 1e50 1e50 1e50 1e50 1e50 3.00e06
1040-            1e50 1e50 1e50 1e50 1e50 3.00e06
1041-            1e50 1e50 1e50 1e50 1e50 3.00e06
1042-            1e50 1e50 1e50 1e50 1e50 3.00e06
1043-            1e50 1e50 1e50 1e50 1e50 3.00e06
1044-            1e50 1e50 1e50 1e50 1e50 3.00e06
1045-            1e50 1e50 1e50 1e50 1e50 3.00e06
1046-            1e50 1e50 1e50 1e50 1e50 3.00e06
1047-            1e50 1e50 1e50 1e50 1e50 3.00e06
1048-            1e50 1e50 1e50 1e50 1e50 3.00e06
1049-            1e50 1e50 1e50 1e50 1e50 3.00e06
1050-       c detectors toward sorth, with no HVAC effects
1051-       f52:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1052-       fs52 1219 -1209 -1201 -1205 1206
1053-       sd52 1e50 1e50 1e50 1e50 1e50 3.00e06
1054-            1e50 1e50 1e50 1e50 1e50 3.00e06
1055-            1e50 1e50 1e50 1e50 1e50 3.00e06
1056-            1e50 1e50 1e50 1e50 1e50 3.00e06
1057-            1e50 1e50 1e50 1e50 1e50 3.00e06
1058-            1e50 1e50 1e50 1e50 1e50 3.00e06
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 1059-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1060-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1061-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1062-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1063-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1064-       c ===================================================================
 1065-       c ===================================================================
 1066-       c Detector above the HICS (used as a source check)
 1067-       f62:p 1219
 warning. without bremsstrahlung, flux estimates will be low.
 1068-       fs62 -1205 1206 1203 -1202
 1069-       sd62  1e50 1e50 1e50  1e50 5.30E+06
 1070-       c ===================================================================
 1071-       c ===================================================================
 1072-       c Photon Flux to Dose Rate Conversion Factors
 1073-       de0 0.01 0.03 0.05 0.07 0.10 0.15 0.20
 1074-             0.25 0.30 0.35 0.40 0.45 0.50 0.55
 1075-             0.60 0.65 0.70 0.80 1.00 1.40 1.80
 1076-             2.20 2.60 2.80 3.25 3.75 4.25 4.75
 1077-             5.00 5.25 5.75 6.25 6.75 7.50 9.00
 1078-             11.0 13.0 15.0
 1079-       df0 LIN 3.96E-06 5.82E-07 2.90E-07 2.58E-07 2.83E-07 3.79E-07 5.01E-07
 1080-             6.31e-07 7.59E-07 8.78E-07 9.85E-07 1.08E-06 1.17E-06 1.27E-06
 1081-             1.36e-06 1.44E-06 1.52E-06 1.68E-06 1.98E-06 2.51E-06 2.99E-06
 1082-             3.42e-06 3.82E-06 4.01E-06 4.41E-06 4.83E-06 5.23E-06 5.60E-06
 1083-             5.80e-06 6.01E-06 6.37E-06 6.74E-06 7.11E-06 7.66E-06 8.77E-06
 1084-             1.03e-05 1.18E-05 1.33E-05
 1085-       nps 7E07

 warning.   2 materials had unnormalized fractions. print table 40.

 warning.   1 of the materials appear at more than one density.

 warning. sum of segment sizes differs from total in  25 cases.
1cells                                                                    print
table 60
```

	cell	mat	atom density	gram density	volume	mass	pieces	photon importance
1	11	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
2	12	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
3	13	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
4	14	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
5	15	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
6	16	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
7	17	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
8	18	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
9	19	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
10	21	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
11	22	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
12	23	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
13	24	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
14	25	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
15	26	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
16	27	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
17	28	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
18	29	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
19	31	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
20	32	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
21	33	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
22	34	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
23	35	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
24	36	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
25	37	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
26	38	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
27	39	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
28	41	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
29	42	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
30	43	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
31	44	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
32	45	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
33	46	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
34	47	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
35	48	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
36	49	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
37	51	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
38	52	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

39	53	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
40	54	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
41	55	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
42	56	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
43	57	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
44	58	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
45	59	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
46	61	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
47	62	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
48	63	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
49	64	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
50	65	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
51	66	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
52	67	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
53	68	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
54	69	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
55	71	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
56	72	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
57	73	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
58	74	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
59	75	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
60	76	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
61	77	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
62	78	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
63	79	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
64	81	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
65	82	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
66	83	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
67	84	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
68	85	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
69	86	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
70	87	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
71	88	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
72	89	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
73	91	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
74	92	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
75	93	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
76	94	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
77	95	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
78	96	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
79	97	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
80	98	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
81	99	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
82	101	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
83	102	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
84	103	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
85	104	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
86	105	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
87	106	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
88	107	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
89	108	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
90	109	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
91	111	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
92	112	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
93	113	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
94	114	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
95	115	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
96	116	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
97	117	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
98	118	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
99	119	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
100	121	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
101	122	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
102	123	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
103	124	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
104	125	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
105	126	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
106	127	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
107	128	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
108	129	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
109	131	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
110	132	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
111	133	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
112	134	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
113	135	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
114	136	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
115	137	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
116	138	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

117	139	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
118	141	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
119	142	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
120	143	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
121	144	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
122	145	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
123	146	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
124	147	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
125	148	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
126	149	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
127	211	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
128	212	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
129	213	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
130	214	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
131	215	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
132	216	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
133	217	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
134	218	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
135	219	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
136	221	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
137	222	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
138	223	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
139	224	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
140	225	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
141	226	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
142	227	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
143	228	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
144	229	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
145	231	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
146	232	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
147	233	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
148	234	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
149	235	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
150	236	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
151	237	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
152	238	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
153	239	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
154	241	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
155	242	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
156	243	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
157	244	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
158	245	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
159	246	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
160	247	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
161	248	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
162	249	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
163	251	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
164	252	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
165	253	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
166	254	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
167	255	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
168	256	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
169	257	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
170	258	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
171	259	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
172	261	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
173	262	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
174	263	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
175	264	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
176	265	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
177	266	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
178	267	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
179	268	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
180	269	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
181	271	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
182	272	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
183	273	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
184	274	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
185	275	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
186	276	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
187	277	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
188	278	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
189	279	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
190	281	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
191	282	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
192	283	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
193	284	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
194	285	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00

195	286	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
196	287	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
197	288	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
198	289	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
199	291	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
200	292	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
201	293	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
202	294	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
203	295	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
204	296	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
205	297	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
206	298	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
207	299	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
208	301	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
209	302	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
210	303	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
211	304	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
212	305	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
213	306	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
214	307	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
215	308	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
216	309	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
217	311	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
218	312	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
219	313	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
220	314	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
221	315	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
222	316	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
223	317	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
224	318	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
225	319	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
226	321	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
227	322	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
228	323	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
229	324	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
230	325	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
231	326	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
232	327	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
233	328	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
234	329	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
235	331	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
236	332	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
237	333	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
238	334	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
239	335	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
240	336	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
241	337	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
242	338	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
243	339	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
244	341	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
245	342	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
246	343	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
247	344	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
248	345	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
249	346	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
250	347	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
251	348	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
252	349	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
253	411	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	1.0000E+00
254	412	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
255	413	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
256	414	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
257	415	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
258	416	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
259	417	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
260	418	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
261	419	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
262	421	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
263	422	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
264	423	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
265	424	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
266	425	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
267	426	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
268	427	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
269	428	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
270	429	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
271	431	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
272	432	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00

273	433	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
274	434	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
275	435	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
276	436	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
277	437	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
278	438	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
279	439	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
280	441	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
281	442	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
282	443	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
283	444	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
284	445	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
285	446	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
286	447	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
287	448	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
288	449	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
289	451	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
290	452	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
291	453	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
292	454	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
293	455	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
294	456	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
295	457	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
296	458	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
297	459	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
298	461	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
299	462	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
300	463	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
301	464	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
302	465	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
303	466	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
304	467	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
305	468	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
306	469	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
307	471	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
308	472	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
309	473	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
310	474	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
311	475	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
312	476	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
313	477	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
314	478	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
315	479	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
316	481	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
317	482	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
318	483	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
319	484	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
320	485	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
321	486	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
322	487	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
323	488	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
324	489	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
325	491	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
326	492	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
327	493	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
328	494	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
329	495	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
330	496	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
331	497	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
332	498	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
333	499	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
334	501	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
335	502	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
336	503	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
337	504	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
338	505	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
339	506	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
340	507	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
341	508	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
342	509	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
343	511	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
344	512	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
345	513	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
346	514	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
347	515	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
348	516	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
349	517	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
350	518	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00

351	519	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
352	521	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
353	522	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
354	523	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
355	524	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
356	525	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
357	526	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
358	527	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
359	528	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
360	529	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
361	531	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
362	532	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
363	533	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
364	534	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
365	535	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
366	536	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
367	537	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
368	538	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
369	539	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
370	541	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
371	542	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
372	543	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
373	544	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
374	545	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
375	546	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
376	547	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
377	548	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
378	549	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
379	1200	3	5.11393E-05	1.22500E-03	3.46881E+06	4.24930E+03	0	1.0000E+00
380	1201	1	7.34055E-02	2.36500E+00	1.40947E+08	3.33340E+08	0	1.0000E+00
381	1202	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	1.0000E+00
382	12021	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	1.0000E+00
383	1203	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	1.0000E+00
384	1204	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	1.0000E+00
385	12041	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	1.0000E+00
386	1205	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	1.0000E+00
387	1206	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	1.0000E+00
388	12061	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	1.0000E+00
389	1207	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	1.0000E+00
390	1208	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	1.0000E+00
391	12081	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	1.0000E+00
392	1209	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	1.0000E+00
393	1210	1	7.34055E-02	2.36500E+00	6.18900E+08	1.46370E+09	0	1.0000E+00
394	1211	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	1.0000E+00
395	12111	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	1.0000E+00
396	9999	0	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0	0.0000E+00
397	9998	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	9.0000E+00
398	9997	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	9.0000E+00
399	9996	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	9.0000E+00
400	9995	3	5.11393E-05	1.22500E-03	1.12984E+09	1.38406E+06	0	9.0000E+00
401	9994	3	5.11393E-05	1.22500E-03	2.40306E+09	2.94375E+06	0	1.0000E+00
402	9993	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	1.0000E+00
403	9992	3	5.11393E-05	1.22500E-03	1.06018E+09	1.29872E+06	0	1.0000E+00
404	9991	3	5.11393E-05	1.22500E-03	2.71842E+07	3.33006E+04	0	1.0000E+00
405	9990	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	1.0000E+00
406	9989	3	5.11393E-05	1.22500E-03	8.09132E+08	9.91186E+05	0	1.0000E+00
407	9988	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
408	9987	0	0.00000E+00	0.00000E+00	3.61826E+15	0.00000E+00	1	0.0000E+00
409	9986	3	5.11393E-05	1.22500E-03	6.89441E+11	8.44566E+08	1	1.0000E+00
410	10000	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
411	10001	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
412	10002	3	5.11393E-05	1.22500E-03	4.42451E+05	5.42002E+02	0	1.0000E+00
413	10003	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
414	10004	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
415	10005	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
416	2001	3	5.11393E-05	1.22500E-03	8.81574E+10	1.07993E+08	1	1.0000E+00
417	2002	3	5.11393E-05	1.22500E-03	5.84709E+11	7.16269E+08	1	1.0000E+00
418	2003	3	5.11393E-05	1.22500E-03	1.37659E+12	1.68633E+09	1	1.0000E+00
419	2004	3	5.11393E-05	1.22500E-03	4.97560E+12	6.09511E+09	1	1.0000E+00
420	2005	3	5.11393E-05	1.22500E-03	9.68856E+12	1.18685E+10	1	1.0000E+00
421	2006	3	5.11393E-05	1.22500E-03	1.59723E+13	1.95661E+10	1	1.0000E+00
422	2007	3	5.11393E-05	1.22500E-03	2.38269E+13	2.91879E+10	1	1.0000E+00
423	2008	3	5.11393E-05	1.22500E-03	5.39037E+13	6.60320E+10	1	1.0000E+00
424	2009	3	5.11393E-05	1.22500E-03	8.04121E+13	9.85049E+10	1	1.0000E+00
425	2010	3	5.11393E-05	1.22500E-03	1.57615E+14	1.93078E+11	1	1.0000E+00
426	2011	3	5.11393E-05	1.22500E-03	2.26732E+14	2.77747E+11	1	1.0000E+00
427	2012	3	5.11393E-05	1.22500E-03	3.08416E+14	3.77809E+11	1	1.0000E+00
428	2013	3	5.11393E-05	1.22500E-03	4.02666E+14	4.93265E+11	1	1.0000E+00

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   429  2014    3  5.11393E-05 1.22500E-03 5.09482E+14 6.24115E+11     1  1.0000E+00
   430  2015    3  5.11393E-05 1.22500E-03 1.82349E+15 2.23378E+12     1  1.0000E+00

 total                                    7.23819E+15 4.44208E+12

    minimum source weight = 7.3080E+14    maximum source weight = 1.4616E+16

 ************************************************
 * Random Number Generator  =                   1 *
 * Random Number Seed       =       19073486328125 *
 * Random Number Multiplier =       19073486328125 *
 * Random Number Adder      =                    0 *
 * Random Number Bits Used  =                   48 *
 * Random Number Stride     =               152917 *
 ************************************************


        11 warning messages so far.
1cross-section tables                                                                                    print
table 100

     table    length

                         tables from file mcplib04

   1000.04p    1898  ENDF/B-VI Release 8 Photoatomic Data for 1-H                                    mat 100
02/07/03
   6000.04p    3152  ENDF/B-VI Release 8 Photoatomic Data for 6-C                                    mat 600
02/07/03
   7000.04p    3194  ENDF/B-VI Release 8 Photoatomic Data for 7-N                                    mat 700
02/07/03
   8000.04p    3272  ENDF/B-VI Release 8 Photoatomic Data for 8-O                                    mat 800
02/07/03
  11000.04p    3995  ENDF/B-VI Release 8 Photoatomic Data for 11-NA                                  mat1100
02/07/03
  12000.04p    3781  ENDF/B-VI Release 8 Photoatomic Data for 12-MG                                  mat1200
02/07/03
  13000.04p    4846  ENDF/B-VI Release 8 Photoatomic Data for 13-AL                                  mat1300
02/07/03
  14000.04p    4792  ENDF/B-VI Release 8 Photoatomic Data for 14-SI                                  mat1400
02/07/03
  15000.04p    4498  ENDF/B-VI Release 8 Photoatomic Data for 15-P                                   mat1500
02/07/03
  16000.04p    4654  ENDF/B-VI Release 8 Photoatomic Data for 16-S                                   mat1600
02/07/03
  19000.04p    5047  ENDF/B-VI Release 8 Photoatomic Data for 19-K                                   mat1900
02/07/03
  20000.04p    5013  ENDF/B-VI Release 8 Photoatomic Data for 20-CA                                  mat2000
02/07/03
  22000.04p    5742  ENDF/B-VI Release 8 Photoatomic Data for 22-TI                                  mat2200
02/07/03
  25000.04p    5598  ENDF/B-VI Release 8 Photoatomic Data for 25-MN                                  mat2500
02/07/03
  26000.04p    5718  ENDF/B-VI Release 8 Photoatomic Data for 26-FE                                  mat2600
02/07/03

  total       65200

 warning. simple physics turned on for photons > 100 mev.

************************************************************************************************************
*******
 dump no.    1 on file runtpe       nps =           0     coll =              0     ctm =        0.00   nrn =
0


        12 warning messages so far.

************************************************************************************************************
*******
 dump no.    2 on file runtpe       nps =     9471110     coll =      148612994     ctm =       60.01   nrn =
9678566273
```

```
************************************************************************************************************************
*******
 dump no.    3 on file runtpe       nps =    18945045     coll =      297264447     ctm =      120.01   nrn =
19366234350


************************************************************************************************************************
*******
 dump no.    4 on file runtpe       nps =    28406463     coll =      445745881     ctm =      180.02   nrn =
29039005745


************************************************************************************************************************
*******
 dump no.    5 on file runtpe       nps =    37879180     coll =      594397183     ctm =      240.02   nrn =
38720554544


************************************************************************************************************************
*******
 dump no.    6 on file runtpe       nps =    47349360     coll =      742984744     ctm =      300.02   nrn =
48399924415


************************************************************************************************************************
*******
 dump no.    7 on file runtpe       nps =    56822170     coll =      891630420     ctm =      360.03   nrn =
58080549878


************************************************************************************************************************
*******
 dump no.    8 on file runtpe       nps =    66303960     coll =     1040396169     ctm =      420.04   nrn =
67768813919

1problem summary

      run terminated when    70000000  particle histories were done.
+                                                                                                    03/19/09
01:33:49
      c     Created on: Tuesday, November 11, 2008 at 09:35                                probid =  03/18/09
18:10:02
0
 photon creation     tracks      weight        energy            photon loss         tracks      weight
energy
                                (per source particle)                                            (per source
particle)

 source             70000000    3.0447E+15    1.2528E+00          escape                1471    2.1506E+10
1.8143E-06
                                                                 energy cutoff            0    0.             0.
                                                                 time cutoff              0    0.             0.
 weight window            0    0.            0.                weight window            0    0.             0.
 cell importance   84831940    1.9141E+14    2.2305E-02        cell importance   26963645    1.9140E+14
2.2297E-02
 weight cutoff            0    0.            0.                weight cutoff            0    0.             0.
 e or t importance        0    0.            0.                e or t importance        0    0.             0.
 dxtran                   0    0.            0.                dxtran                   0    0.             0.
 forced collisions        0    0.            0.                forced collisions        0    0.             0.
 exp. transform           0    0.            0.                exp. transform           0    0.             0.
 from neutrons            0    0.            0.                compton scatter          0    0.
1.1747E+00
 bremsstrahlung           0    0.            0.                capture          153754891    3.3735E+15
7.8622E-02
 p-annihilation      152926    3.3305E+12    5.5897E-04        pair production      76463    1.6652E+12
7.1496E-04
 photonuclear             0    0.            0.                photonuclear abs         0    0.             0.
 electron x-rays          0    0.            0.
 1st fluorescence  25811604    3.2714E+14    6.8367E-04
 2nd fluorescence         0    0.            0.
     total        180796470    3.5666E+15    1.2763E+00            total        180796470    3.5666E+15
1.2763E+00
```

```
   number of photons banked                 41813680        average time of (shakes)              cutoffs
   photon tracks per source particle      2.5828E+00          escape            7.2552E+01          tco
1.0000E+33
   photon collisions per source particle  1.5691E+01          capture           2.6974E-01          eco
1.0000E-03
   total photon collisions                1098382475          capture or escape 2.7020E-01          wc1  -
5.0000E-01
                                                              any termination   2.7755E-01          wc2  -
2.5000E-01

 computer time so far in this run   443.62 minutes            maximum number ever in bank         8
 computer time in mcrun             443.45 minutes            bank overflows to backup file       0
 source particles per minute            1.5785E+05
 random numbers generated              71547579278            most random numbers used was       15277 in
history    15415295

 range of sampled source weights = 7.3080E+14 to 1.4616E+16

 source efficiency = 0.0036  in cell    11

 source efficiency = 0.0036  in cell    12

 source efficiency = 0.0036  in cell    13

 source efficiency = 0.0036  in cell    14

 source efficiency = 0.0036  in cell    15

 source efficiency = 0.0036  in cell    16

 source efficiency = 0.0036  in cell    17

 source efficiency = 0.0036  in cell    18

 source efficiency = 0.0036  in cell    19

 source efficiency = 0.0036  in cell    21

 source efficiency = 0.0036  in cell    22

 source efficiency = 0.0036  in cell    23

 source efficiency = 0.0036  in cell    24

 source efficiency = 0.0036  in cell    25

 source efficiency = 0.0036  in cell    26

 source efficiency = 0.0036  in cell    27

 source efficiency = 0.0036  in cell    28

 source efficiency = 0.0036  in cell    29

 source efficiency = 0.0036  in cell    31

 source efficiency = 0.0036  in cell    32

 source efficiency = 0.0036  in cell    33

 source efficiency = 0.0036  in cell    34

 source efficiency = 0.0036  in cell    35

 source efficiency = 0.0036  in cell    36

 source efficiency = 0.0036  in cell    37

 source efficiency = 0.0036  in cell    38

 source efficiency = 0.0036  in cell    39

 source efficiency = 0.0036  in cell    41

 source efficiency = 0.0036  in cell    42

 source efficiency = 0.0035  in cell    43
```

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source efficiency = 0.0036  in cell    44
source efficiency = 0.0036  in cell    45
source efficiency = 0.0036  in cell    46
source efficiency = 0.0036  in cell    47
source efficiency = 0.0036  in cell    48
source efficiency = 0.0036  in cell    49
source efficiency = 0.0036  in cell    51
source efficiency = 0.0036  in cell    52
source efficiency = 0.0036  in cell    53
source efficiency = 0.0036  in cell    54
source efficiency = 0.0036  in cell    55
source efficiency = 0.0036  in cell    56
source efficiency = 0.0036  in cell    57
source efficiency = 0.0036  in cell    58
source efficiency = 0.0036  in cell    59
source efficiency = 0.0036  in cell    61
source efficiency = 0.0036  in cell    62
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source efficiency = 0.0036  in cell    64
source efficiency = 0.0036  in cell    65
source efficiency = 0.0036  in cell    66
source efficiency = 0.0036  in cell    67
source efficiency = 0.0036  in cell    68
source efficiency = 0.0036  in cell    69
source efficiency = 0.0036  in cell    71
source efficiency = 0.0036  in cell    72
source efficiency = 0.0036  in cell    73
source efficiency = 0.0036  in cell    74
source efficiency = 0.0036  in cell    75
source efficiency = 0.0036  in cell    76
source efficiency = 0.0036  in cell    77
source efficiency = 0.0036  in cell    78
source efficiency = 0.0036  in cell    79
source efficiency = 0.0036  in cell    81
source efficiency = 0.0036  in cell    82
source efficiency = 0.0036  in cell    83
source efficiency = 0.0036  in cell    84
source efficiency = 0.0036  in cell    85
source efficiency = 0.0036  in cell    86
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source efficiency = 0.0036  in cell    87
source efficiency = 0.0036  in cell    88
source efficiency = 0.0036  in cell    89
source efficiency = 0.0036  in cell    91
source efficiency = 0.0036  in cell    92
source efficiency = 0.0036  in cell    93
source efficiency = 0.0036  in cell    94
source efficiency = 0.0036  in cell    95
source efficiency = 0.0036  in cell    96
source efficiency = 0.0036  in cell    97
source efficiency = 0.0036  in cell    98
source efficiency = 0.0036  in cell    99
source efficiency = 0.0036  in cell   101
source efficiency = 0.0036  in cell   102
source efficiency = 0.0036  in cell   103
source efficiency = 0.0036  in cell   104
source efficiency = 0.0036  in cell   105
source efficiency = 0.0036  in cell   106
source efficiency = 0.0036  in cell   107
source efficiency = 0.0036  in cell   108
source efficiency = 0.0036  in cell   109
source efficiency = 0.0036  in cell   111
source efficiency = 0.0036  in cell   112
source efficiency = 0.0036  in cell   113
source efficiency = 0.0036  in cell   114
source efficiency = 0.0036  in cell   115
source efficiency = 0.0035  in cell   116
source efficiency = 0.0036  in cell   117
source efficiency = 0.0036  in cell   118
source efficiency = 0.0036  in cell   119
source efficiency = 0.0036  in cell   121
source efficiency = 0.0036  in cell   122
source efficiency = 0.0035  in cell   123
source efficiency = 0.0036  in cell   124
source efficiency = 0.0036  in cell   125
source efficiency = 0.0036  in cell   126
source efficiency = 0.0036  in cell   127
source efficiency = 0.0036  in cell   128
source efficiency = 0.0036  in cell   129
```

source efficiency = 0.0036 in cell 131

source efficiency = 0.0036 in cell 132

source efficiency = 0.0036 in cell 133

source efficiency = 0.0036 in cell 134

source efficiency = 0.0036 in cell 135

source efficiency = 0.0036 in cell 136

source efficiency = 0.0036 in cell 137

source efficiency = 0.0036 in cell 138

source efficiency = 0.0036 in cell 139

source efficiency = 0.0036 in cell 141

source efficiency = 0.0036 in cell 142

source efficiency = 0.0036 in cell 143

source efficiency = 0.0036 in cell 144

source efficiency = 0.0036 in cell 145

source efficiency = 0.0036 in cell 146

source efficiency = 0.0035 in cell 147

source efficiency = 0.0036 in cell 148

source efficiency = 0.0036 in cell 149

warning. biased source position rejection sampling is dangerous.

warning. importance function may be poor. see print table 120.

1photon activity in each cell print table 126

	cell	tracks entering	population	collisions	collisions * weight (per history)	number weighted energy	flux weighted energy	average track weight (relative)	average track mfp (cm)
1	11	591733	556450	5451324	2.5383E+14	4.4338E-01	4.4338E-01	3.2261E+15	8.8635E+00
2	12	592811	580531	5467106	2.5479E+14	4.4165E-01	4.4165E-01	3.2314E+15	8.8470E+00
3	13	592443	580283	5455082	2.5374E+14	4.4388E-01	4.4388E-01	3.2276E+15	8.8669E+00
4	14	590739	578687	5437142	2.5160E+14	4.4251E-01	4.4251E-01	3.2047E+15	8.8564E+00
5	15	590570	578623	5443973	2.5414E+14	4.4335E-01	4.4335E-01	3.2378E+15	8.8639E+00
6	16	591557	579325	5463043	2.5508E+14	4.4111E-01	4.4111E-01	3.2386E+15	8.8448E+00
7	17	593198	581170	5478372	2.5430E+14	4.4337E-01	4.4337E-01	3.2177E+15	8.8636E+00
8	18	590853	578733	5444487	2.5462E+14	4.4374E-01	4.4374E-01	3.2372E+15	8.8682E+00
9	19	592153	579721	5455126	2.5313E+14	4.4372E-01	4.4372E-01	3.2170E+15	8.8658E+00
10	21	591554	579434	5446179	2.5447E+14	4.4332E-01	4.4332E-01	3.2390E+15	8.8641E+00
11	22	591693	579408	5446887	2.5538E+14	4.4270E-01	4.4270E-01	3.2471E+15	8.8587E+00
12	23	592854	580648	5458803	2.5457E+14	4.4432E-01	4.4432E-01	3.2343E+15	8.8716E+00
13	24	592086	579849	5450669	2.5416E+14	4.4383E-01	4.4383E-01	3.2327E+15	8.8697E+00
14	25	591467	579575	5454304	2.5366E+14	4.4294E-01	4.4294E-01	3.2281E+15	8.8595E+00
15	26	591727	579497	5449409	2.5429E+14	4.4203E-01	4.4203E-01	3.2341E+15	8.8528E+00
16	27	592728	580464	5465509	2.5449E+14	4.4389E-01	4.4389E-01	3.2325E+15	8.8688E+00
17	28	592571	580156	5454864	2.5476E+14	4.4270E-01	4.4270E-01	3.2336E+15	8.8571E+00
18	29	590529	578378	5442476	2.5477E+14	4.4369E-01	4.4369E-01	3.2445E+15	8.8672E+00
19	31	591387	579195	5449414	2.5303E+14	4.4338E-01	4.4338E-01	3.2206E+15	8.8640E+00
20	32	591252	579057	5445102	2.5516E+14	4.4334E-01	4.4334E-01	3.2489E+15	8.8647E+00
21	33	591581	579356	5456701	2.5432E+14	4.4376E-01	4.4376E-01	3.2322E+15	8.8667E+00
22	34	591893	579801	5460954	2.5566E+14	4.4334E-01	4.4334E-01	3.2445E+15	8.8621E+00
23	35	592779	580560	5459208	2.5470E+14	4.4345E-01	4.4345E-01	3.2360E+15	8.8628E+00
24	36	591346	579264	5450243	2.5500E+14	4.4334E-01	4.4334E-01	3.2448E+15	8.8643E+00
25	37	591271	579002	5438828	2.5580E+14	4.4337E-01	4.4337E-01	3.2616E+15	8.8629E+00
26	38	591931	579946	5448976	2.5506E+14	4.4418E-01	4.4418E-01	3.2459E+15	8.8717E+00
27	39	592231	580104	5448169	2.5384E+14	4.4372E-01	4.4372E-01	3.2257E+15	8.8678E+00
28	41	591907	579516	5451184	2.5515E+14	4.4426E-01	4.4426E-01	3.2452E+15	8.8730E+00
29	42	591337	579044	5442450	2.5340E+14	4.4388E-01	4.4388E-01	3.2241E+15	8.8694E+00
30	43	590455	578407	5438904	2.5250E+14	4.4346E-01	4.4346E-01	3.2138E+15	8.8653E+00
31	44	592664	580416	5465796	2.5436E+14	4.4448E-01	4.4448E-01	3.2307E+15	8.8753E+00
32	45	591701	579504	5444413	2.5331E+14	4.4310E-01	4.4310E-01	3.2212E+15	8.8626E+00
33	46	591752	579563	5445533	2.5327E+14	4.4280E-01	4.4280E-01	3.2228E+15	8.8588E+00
34	47	590892	578814	5449606	2.5453E+14	4.4321E-01	4.4321E-01	3.2409E+15	8.8638E+00
35	48	591059	578978	5450928	2.5596E+14	4.4190E-01	4.4190E-01	3.2503E+15	8.8489E+00
36	49	591168	578836	5450175	2.5345E+14	4.4328E-01	4.4328E-01	3.2267E+15	8.8616E+00
37	51	591068	578799	5445962	2.5468E+14	4.4325E-01	4.4325E-01	3.2421E+15	8.8618E+00

38	52	591175	579055	5449527	2.5532E+14	4.4350E-01	4.4350E-01	3.2464E+15	8.8641E+00
39	53	590305	578233	5434725	2.5454E+14	4.4331E-01	4.4331E-01	3.2434E+15	8.8629E+00
40	54	592267	579987	5457281	2.5467E+14	4.4326E-01	4.4326E-01	3.2393E+15	8.8636E+00
41	55	592372	580144	5470262	2.5563E+14	4.4345E-01	4.4345E-01	3.2438E+15	8.8640E+00
42	56	590881	578602	5442673	2.5420E+14	4.4364E-01	4.4364E-01	3.2409E+15	8.8672E+00
43	57	592537	580090	5456831	2.5381E+14	4.4313E-01	4.4313E-01	3.2242E+15	8.8625E+00
44	58	592108	579939	5452569	2.5491E+14	4.4253E-01	4.4253E-01	3.2388E+15	8.8560E+00
45	59	590854	578655	5443130	2.5413E+14	4.4402E-01	4.4402E-01	3.2370E+15	8.8697E+00
46	61	591471	579410	5459706	2.5424E+14	4.4386E-01	4.4386E-01	3.2337E+15	8.8686E+00
47	62	592386	580135	5456341	2.5522E+14	4.4334E-01	4.4334E-01	3.2430E+15	8.8648E+00
48	63	591781	579532	5454811	2.5494E+14	4.4318E-01	4.4318E-01	3.2394E+15	8.8633E+00
49	64	591512	579387	5453417	2.5490E+14	4.4341E-01	4.4341E-01	3.2377E+15	8.8656E+00
50	65	591831	579630	5444811	2.5323E+14	4.4301E-01	4.4301E-01	3.2243E+15	8.8623E+00
51	66	591526	579391	5453035	2.5361E+14	4.4448E-01	4.4448E-01	3.2276E+15	8.8746E+00
52	67	591028	578892	5442641	2.5296E+14	4.4345E-01	4.4345E-01	3.2213E+15	8.8652E+00
53	68	591847	579548	5455041	2.5556E+14	4.4214E-01	4.4214E-01	3.2471E+15	8.8538E+00
54	69	590866	578556	5437007	2.5391E+14	4.4262E-01	4.4262E-01	3.2358E+15	8.8559E+00
55	71	591871	579617	5434162	2.5397E+14	4.4330E-01	4.4330E-01	3.2395E+15	8.8627E+00
56	72	591335	579062	5442610	2.5266E+14	4.4455E-01	4.4455E-01	3.2224E+15	8.8762E+00
57	73	590449	578426	5441778	2.5448E+14	4.4259E-01	4.4259E-01	3.2430E+15	8.8576E+00
58	74	592191	580100	5455053	2.5471E+14	4.4334E-01	4.4334E-01	3.2394E+15	8.8652E+00
59	75	589279	577208	5440953	2.5319E+14	4.4318E-01	4.4318E-01	3.2331E+15	8.8629E+00
60	76	592099	579916	5461324	2.5394E+14	4.4405E-01	4.4405E-01	3.2265E+15	8.8701E+00
61	77	592275	580076	5462634	2.5462E+14	4.4092E-01	4.4092E-01	3.2257E+15	8.8418E+00
62	78	591129	578948	5452667	2.5380E+14	4.4351E-01	4.4351E-01	3.2258E+15	8.8650E+00
63	79	591394	579159	5442351	2.5425E+14	4.4309E-01	4.4309E-01	3.2367E+15	8.8621E+00
64	81	591900	579546	5452468	2.5486E+14	4.4288E-01	4.4288E-01	3.2427E+15	8.8591E+00
65	82	591383	579322	5444586	2.5411E+14	4.4237E-01	4.4237E-01	3.2312E+15	8.8546E+00
66	83	591528	579254	5444782	2.5339E+14	4.4386E-01	4.4386E-01	3.2288E+15	8.8685E+00
67	84	591517	579394	5453895	2.5403E+14	4.4347E-01	4.4347E-01	3.2301E+15	8.8661E+00
68	85	592528	580241	5456092	2.5511E+14	4.4382E-01	4.4382E-01	3.2438E+15	8.8685E+00
69	86	592325	580028	5469689	2.5449E+14	4.4382E-01	4.4382E-01	3.2268E+15	8.8683E+00
70	87	592101	579899	5460685	2.5452E+14	4.4341E-01	4.4341E-01	3.2383E+15	8.8654E+00
71	88	592211	580017	5455745	2.5394E+14	4.4296E-01	4.4296E-01	3.2274E+15	8.8609E+00
72	89	590662	578382	5455267	2.5476E+14	4.4292E-01	4.4292E-01	3.2359E+15	8.8599E+00
73	91	591138	578827	5448519	2.5303E+14	4.4276E-01	4.4276E-01	3.2205E+15	8.8581E+00
74	92	592304	580162	5454573	2.5400E+14	4.4187E-01	4.4187E-01	3.2259E+15	8.8502E+00
75	93	590531	578573	5445888	2.5485E+14	4.4201E-01	4.4201E-01	3.2439E+15	8.8513E+00
76	94	590703	578457	5444841	2.5417E+14	4.4304E-01	4.4304E-01	3.2373E+15	8.8609E+00
77	95	590856	578698	5443913	2.5465E+14	4.4332E-01	4.4332E-01	3.2445E+15	8.8660E+00
78	96	592603	580285	5452400	2.5593E+14	4.4193E-01	4.4193E-01	3.2456E+15	8.8495E+00
79	97	592077	579775	5452262	2.5534E+14	4.4347E-01	4.4347E-01	3.2504E+15	8.8655E+00
80	98	592327	579839	5445571	2.5468E+14	4.4284E-01	4.4284E-01	3.2422E+15	8.8606E+00
81	99	590559	578384	5432636	2.5389E+14	4.4423E-01	4.4423E-01	3.2432E+15	8.8711E+00
82	101	592235	580019	5449856	2.5447E+14	4.4341E-01	4.4341E-01	3.2328E+15	8.8639E+00
83	102	591343	579102	5444665	2.5517E+14	4.4242E-01	4.4242E-01	3.2493E+15	8.8559E+00
84	103	592340	580260	5457661	2.5493E+14	4.4310E-01	4.4310E-01	3.2399E+15	8.8618E+00
85	104	591633	579550	5455863	2.5502E+14	4.4295E-01	4.4295E-01	3.2368E+15	8.8607E+00
86	105	591906	580038	5453072	2.5361E+14	4.4395E-01	4.4395E-01	3.2291E+15	8.8702E+00
87	106	590042	578013	5428645	2.5368E+14	4.4398E-01	4.4398E-01	3.2406E+15	8.8704E+00
88	107	592282	579942	5464321	2.5552E+14	4.4230E-01	4.4230E-01	3.2373E+15	8.8536E+00
89	108	591947	579658	5452674	2.5512E+14	4.4278E-01	4.4278E-01	3.2433E+15	8.8586E+00
90	109	590792	578711	5445068	2.5367E+14	4.4391E-01	4.4391E-01	3.2330E+15	8.8709E+00
91	111	590757	578791	5453746	2.5515E+14	4.4276E-01	4.4276E-01	3.2427E+15	8.8589E+00
92	112	591883	579599	5445064	2.5305E+14	4.4333E-01	4.4333E-01	3.2196E+15	8.8640E+00
93	113	592667	580318	5456615	2.5421E+14	4.4270E-01	4.4270E-01	3.2310E+15	8.8581E+00
94	114	592011	579770	5458985	2.5542E+14	4.4351E-01	4.4351E-01	3.2428E+15	8.8650E+00
95	115	592153	579874	5461201	2.5521E+14	4.4271E-01	4.4271E-01	3.2387E+15	8.8569E+00
96	116	592389	580222	5468371	2.5485E+14	4.4385E-01	4.4385E-01	3.2358E+15	8.8690E+00
97	117	592567	580347	5465467	2.5594E+14	4.4207E-01	4.4207E-01	3.2410E+15	8.8515E+00
98	118	592375	580144	5458410	2.5452E+14	4.4292E-01	4.4292E-01	3.2316E+15	8.8596E+00
99	119	590195	578085	5439639	2.5374E+14	4.4336E-01	4.4336E-01	3.2329E+15	8.8632E+00
100	121	591749	579717	5457905	2.5533E+14	4.4198E-01	4.4198E-01	3.2452E+15	8.8516E+00
101	122	591872	579678	5451334	2.5332E+14	4.4403E-01	4.4403E-01	3.2249E+15	8.8701E+00
102	123	590958	578912	5451835	2.5439E+14	4.4362E-01	4.4362E-01	3.2351E+15	8.8672E+00
103	124	592586	580393	5459704	2.5503E+14	4.4295E-01	4.4295E-01	3.2383E+15	8.8608E+00
104	125	590617	578439	5451392	2.5538E+14	4.4204E-01	4.4204E-01	3.2487E+15	8.8516E+00
105	126	591671	579570	5458847	2.5338E+14	4.4457E-01	4.4457E-01	3.2261E+15	8.8743E+00
106	127	591757	579653	5446368	2.5361E+14	4.4293E-01	4.4293E-01	3.2278E+15	8.8610E+00
107	128	592779	580655	5448715	2.5544E+14	4.4435E-01	4.4435E-01	3.2513E+15	8.8731E+00
108	129	591753	579593	5452807	2.5414E+14	4.4335E-01	4.4335E-01	3.2325E+15	8.8642E+00
109	131	592037	579841	5449363	2.5416E+14	4.4362E-01	4.4362E-01	3.2337E+15	8.8678E+00
110	132	591362	579176	5446506	2.5480E+14	4.4185E-01	4.4185E-01	3.2370E+15	8.8503E+00
111	133	594106	581856	5465814	2.5546E+14	4.4282E-01	4.4282E-01	3.2392E+15	8.8592E+00
112	134	591596	579457	5455250	2.5471E+14	4.4287E-01	4.4287E-01	3.2373E+15	8.8589E+00
113	135	591160	579186	5449209	2.5369E+14	4.4283E-01	4.4283E-01	3.2253E+15	8.8602E+00
114	136	591199	579083	5443429	2.5497E+14	4.4254E-01	4.4254E-01	3.2476E+15	8.8561E+00
115	137	592126	579814	5461009	2.5572E+14	4.4282E-01	4.4282E-01	3.2467E+15	8.8583E+00
116	138	590964	578727	5445935	2.5351E+14	4.4285E-01	4.4285E-01	3.2291E+15	8.8601E+00
117	139	591147	578818	5441087	2.5515E+14	4.4173E-01	4.4173E-01	3.2494E+15	8.8504E+00
118	141	590821	578793	5441408	2.5456E+14	4.4225E-01	4.4225E-01	3.2401E+15	8.8542E+00
119	142	591097	578778	5444742	2.5269E+14	4.4266E-01	4.4266E-01	3.2132E+15	8.8561E+00
120	143	591541	579194	5448003	2.5483E+14	4.4350E-01	4.4350E-01	3.2487E+15	8.8660E+00
121	144	590404	578365	5444392	2.5319E+14	4.4364E-01	4.4364E-01	3.2279E+15	8.8669E+00
122	145	591562	579532	5445255	2.5446E+14	4.4329E-01	4.4329E-01	3.2368E+15	8.8614E+00
123	146	590306	578430	5438627	2.5418E+14	4.4246E-01	4.4246E-01	3.2391E+15	8.8551E+00
124	147	590784	578689	5437382	2.5353E+14	4.4397E-01	4.4397E-01	3.2357E+15	8.8701E+00
125	148	590571	578487	5444481	2.5418E+14	4.4308E-01	4.4308E-01	3.2325E+15	8.8604E+00
126	149	591332	579315	5447611	2.5401E+14	4.4299E-01	4.4299E-01	3.2352E+15	8.8602E+00
127	211	314373	252638	638	2.6298E+10	5.3510E-01	5.3510E-01	2.5557E+15	8.9735E+03

128	212	314378	280333	627	2.3803E+10	5.3740E-01	5.3740E-01	2.5627E+15	8.9919E+03
129	213	314982	280931	646	2.0629E+10	5.3523E-01	5.3523E-01	2.5415E+15	8.9779E+03
130	214	313637	279984	675	2.3511E+10	5.3733E-01	5.3733E-01	2.5414E+15	8.9915E+03
131	215	313413	279793	598	2.1715E+10	5.3914E-01	5.3914E-01	2.5525E+15	9.0080E+03
132	216	313396	279043	676	2.3323E+10	5.3088E-01	5.3088E-01	2.5636E+15	8.9412E+03
133	217	313744	280117	634	2.3876E+10	5.3830E-01	5.3830E-01	2.5663E+15	8.9992E+03
134	218	313152	279286	669	2.4638E+10	5.3732E-01	5.3732E-01	2.5661E+15	8.9919E+03
135	219	314223	280093	671	2.5651E+10	5.3679E-01	5.3679E-01	2.5712E+15	8.9919E+03
136	221	314829	280553	659	2.3145E+10	5.3450E-01	5.3450E-01	2.5771E+15	8.9755E+03
137	222	314935	280373	633	2.3271E+10	5.3231E-01	5.3231E-01	2.5644E+15	8.9538E+03
138	223	315131	280792	642	2.3365E+10	5.3643E-01	5.3643E-01	2.5562E+15	8.9844E+03
139	224	314554	280696	647	2.2425E+10	5.3532E-01	5.3532E-01	2.5545E+15	8.9763E+03
140	225	313547	279852	643	2.3772E+10	5.3774E-01	5.3774E-01	2.5543E+15	8.9957E+03
141	226	315197	280862	621	2.0170E+10	5.3657E-01	5.3657E-01	2.5524E+15	8.9859E+03
142	227	314787	280383	649	2.5421E+10	5.3754E-01	5.3754E-01	2.5745E+15	8.9971E+03
143	228	315554	281189	661	2.4952E+10	5.3630E-01	5.3630E-01	2.5301E+15	8.9838E+03
144	229	313556	279416	634	2.3678E+10	5.3504E-01	5.3504E-01	2.5875E+15	8.9731E+03
145	231	314029	279886	625	2.1402E+10	5.3461E-01	5.3461E-01	2.5545E+15	8.9698E+03
146	232	314355	280003	623	2.3563E+10	5.3436E-01	5.3436E-01	2.5770E+15	8.9711E+03
147	233	313950	279981	628	2.3814E+10	5.3721E-01	5.3721E-01	2.5504E+15	8.9930E+03
148	234	314471	280417	659	2.2154E+10	5.3553E-01	5.3553E-01	2.5777E+15	8.9772E+03
149	235	314972	280785	645	2.3396E+10	5.3395E-01	5.3395E-01	2.5595E+15	8.9612E+03
150	236	313292	279748	663	2.4972E+10	5.3333E-01	5.3333E-01	2.5883E+15	8.9608E+03
151	237	314636	280610	655	2.2905E+10	5.3452E-01	5.3452E-01	2.5769E+15	8.9683E+03
152	238	315110	281269	686	2.6006E+10	5.3414E-01	5.3414E-01	2.5684E+15	8.9697E+03
153	239	315274	281252	652	2.2676E+10	5.3799E-01	5.3799E-01	2.5569E+15	8.9989E+03
154	241	314619	280456	619	2.2133E+10	5.3881E-01	5.3881E-01	2.5635E+15	9.0040E+03
155	242	314352	280404	643	2.2582E+10	5.3868E-01	5.3868E-01	2.5537E+15	9.0040E+03
156	243	313956	280032	620	2.3730E+10	5.3486E-01	5.3486E-01	2.5607E+15	8.9741E+03
157	244	314863	280571	653	2.3678E+10	5.3381E-01	5.3381E-01	2.5713E+15	8.9680E+03
158	245	315105	281073	639	2.3730E+10	5.3713E-01	5.3713E-01	2.5643E+15	8.9934E+03
159	246	315104	280990	632	2.1475E+10	5.3632E-01	5.3632E-01	2.5382E+15	8.9838E+03
160	247	313607	279554	615	2.4273E+10	5.3227E-01	5.3227E-01	2.5736E+15	8.9547E+03
161	248	313463	279836	667	2.6601E+10	5.3492E-01	5.3492E-01	2.5607E+15	8.9737E+03
162	249	313575	279527	642	2.2770E+10	5.3564E-01	5.3564E-01	2.5345E+15	8.9766E+03
163	251	314090	280188	673	2.3093E+10	5.3806E-01	5.3806E-01	2.5633E+15	8.9941E+03
164	252	314172	280005	662	2.3970E+10	5.3578E-01	5.3578E-01	2.5645E+15	8.9816E+03
165	253	314248	280153	647	2.3417E+10	5.3647E-01	5.3647E-01	2.5640E+15	8.9876E+03
166	254	314208	280271	645	2.1809E+10	5.3961E-01	5.3961E-01	2.5393E+15	9.0127E+03
167	255	314531	280453	598	2.4096E+10	5.3265E-01	5.3265E-01	2.5909E+15	8.9579E+03
168	256	313891	279656	660	2.7321E+10	5.3689E-01	5.3689E-01	2.5657E+15	8.9918E+03
169	257	315085	280729	641	2.2958E+10	5.3705E-01	5.3705E-01	2.5424E+15	8.9922E+03
170	258	314933	280750	656	2.4503E+10	5.3649E-01	5.3649E-01	2.5673E+15	8.9883E+03
171	259	313949	279857	638	2.2331E+10	5.3873E-01	5.3873E-01	2.5438E+15	9.0033E+03
172	261	313193	279491	686	2.6006E+10	5.3600E-01	5.3600E-01	2.5687E+15	8.9832E+03
173	262	314366	280172	635	2.1308E+10	5.3788E-01	5.3788E-01	2.5655E+15	9.0000E+03
174	263	314459	280365	650	2.3647E+10	5.3557E-01	5.3557E-01	2.5607E+15	8.9800E+03
175	264	314035	280163	641	2.2958E+10	5.3583E-01	5.3583E-01	2.5377E+15	8.9844E+03
176	265	315142	281101	580	2.1131E+10	5.3418E-01	5.3418E-01	2.5680E+15	8.9662E+03
177	266	313855	280042	661	2.4753E+10	5.3703E-01	5.3703E-01	2.5648E+15	8.9917E+03
178	267	314210	280153	660	2.5140E+10	5.3892E-01	5.3892E-01	2.5531E+15	9.0071E+03
179	268	315035	280597	623	2.0786E+10	5.3735E-01	5.3735E-01	2.5659E+15	8.9989E+03
180	269	314634	280408	643	2.6351E+10	5.3129E-01	5.3129E-01	2.5820E+15	8.9452E+03
181	271	315823	281468	597	2.2498E+10	5.3646E-01	5.3646E-01	2.5617E+15	8.9818E+03
182	272	314472	280427	688	2.5829E+10	5.3609E-01	5.3609E-01	2.5446E+15	8.9832E+03
183	273	313117	279279	649	2.5223E+10	5.3427E-01	5.3427E-01	2.5767E+15	8.9646E+03
184	274	314743	280714	627	2.2811E+10	5.3295E-01	5.3295E-01	2.5828E+15	8.9588E+03
185	275	311467	278016	675	2.5098E+10	5.3679E-01	5.3679E-01	2.5846E+15	8.9909E+03
186	276	314184	280161	624	2.3574E+10	5.3377E-01	5.3377E-01	2.5663E+15	8.9625E+03
187	277	314922	280705	699	2.4753E+10	5.3515E-01	5.3515E-01	2.5399E+15	8.9760E+03
188	278	313637	279655	631	2.3647E+10	5.3765E-01	5.3765E-01	2.5676E+15	8.9962E+03
189	279	314324	280233	687	2.2843E+10	5.3470E-01	5.3470E-01	2.5585E+15	8.9752E+03
190	281	314634	280478	653	2.3083E+10	5.3616E-01	5.3616E-01	2.5614E+15	8.9806E+03
191	282	313780	280007	664	2.3594E+10	5.3953E-01	5.3953E-01	2.5544E+15	9.0100E+03
192	283	314925	280594	677	2.6904E+10	5.3635E-01	5.3635E-01	2.5660E+15	8.9884E+03
193	284	313941	279813	604	2.1381E+10	5.3557E-01	5.3557E-01	2.5711E+15	8.9789E+03
194	285	315602	281163	627	2.1026E+10	5.3645E-01	5.3645E-01	2.5799E+15	8.9861E+03
195	286	313932	279952	636	2.1120E+10	5.3452E-01	5.3452E-01	2.5765E+15	8.9698E+03
196	287	314586	280391	654	2.5672E+10	5.3694E-01	5.3694E-01	2.5854E+15	8.9879E+03
197	288	314914	280904	612	2.4440E+10	5.3422E-01	5.3422E-01	2.5657E+15	8.9712E+03
198	289	312536	278855	639	2.4127E+10	5.3705E-01	5.3705E-01	2.5669E+15	8.9883E+03
199	291	313889	279802	632	2.3062E+10	5.4335E-01	5.4335E-01	2.5322E+15	9.0422E+03
200	292	315072	280846	634	2.1298E+10	5.3519E-01	5.3519E-01	2.5635E+15	8.9748E+03
201	293	313712	279841	685	2.5599E+10	5.3828E-01	5.3828E-01	2.5509E+15	8.9983E+03
202	294	313275	279341	671	2.6643E+10	5.4118E-01	5.4118E-01	2.5501E+15	9.0190E+03
203	295	314014	280182	640	2.2550E+10	5.3863E-01	5.3863E-01	2.5620E+15	9.0028E+03
204	296	315580	281150	630	2.1256E+10	5.3473E-01	5.3473E-01	2.5430E+15	8.9725E+03
205	297	314508	280259	620	2.1747E+10	5.3724E-01	5.3724E-01	2.5624E+15	8.9895E+03
206	298	315802	281084	673	2.4283E+10	5.3571E-01	5.3571E-01	2.5576E+15	8.9814E+03
207	299	314076	280003	637	2.5494E+10	5.4041E-01	5.4041E-01	2.5698E+15	9.0178E+03
208	301	314529	280604	611	2.3041E+10	5.3620E-01	5.3620E-01	2.5655E+15	8.9876E+03
209	302	314341	280340	655	2.3699E+10	5.3307E-01	5.3307E-01	2.5666E+15	8.9588E+03
210	303	314548	280544	633	2.2874E+10	5.3378E-01	5.3378E-01	2.5699E+15	8.9648E+03
211	304	313900	280136	636	2.3699E+10	5.3757E-01	5.3757E-01	2.5652E+15	8.9964E+03
212	305	314377	280650	642	2.5348E+10	5.4043E-01	5.4043E-01	2.5639E+15	9.0184E+03
213	306	314051	280364	641	1.9585E+10	5.3912E-01	5.3912E-01	2.5537E+15	9.0073E+03
214	307	314444	280029	692	2.5672E+10	5.3564E-01	5.3564E-01	2.5678E+15	8.9790E+03
215	308	314887	280359	708	2.3657E+10	5.4047E-01	5.4047E-01	2.5935E+15	9.0199E+03
216	309	313092	279308	639	2.2143E+10	5.3516E-01	5.3516E-01	2.5664E+15	8.9744E+03
217	311	312513	279143	645	2.2603E+10	5.3869E-01	5.3869E-01	2.5592E+15	9.0067E+03

218	312	315103	280844	644	2.0609E+10	5.3665E-01	5.3665E-01	2.5503E+15	8.9854E+03
219	313	315331	280887	664	2.3396E+10	5.3537E-01	5.3537E-01	2.5513E+15	8.9788E+03
220	314	315049	280865	688	2.4638E+10	5.3889E-01	5.3889E-01	2.5762E+15	9.0018E+03
221	315	314954	280621	633	2.3866E+10	5.3532E-01	5.3532E-01	2.5535E+15	8.9771E+03
222	316	314294	280150	644	2.5369E+10	5.3553E-01	5.3553E-01	2.5667E+15	8.9757E+03
223	317	314403	280254	642	2.5943E+10	5.3144E-01	5.3144E-01	2.5583E+15	8.9456E+03
224	318	314511	280404	668	2.6215E+10	5.3770E-01	5.3770E-01	2.5684E+15	8.9912E+03
225	319	312877	279294	664	2.5975E+10	5.3832E-01	5.3832E-01	2.5842E+15	9.0017E+03
226	321	313825	280248	672	2.5066E+10	5.3553E-01	5.3553E-01	2.5708E+15	8.9766E+03
227	322	314737	280634	621	2.3344E+10	5.3287E-01	5.3287E-01	2.5712E+15	8.9549E+03
228	323	313435	279679	670	2.6632E+10	5.3543E-01	5.3543E-01	2.5634E+15	8.9828E+03
229	324	315022	280808	607	2.1809E+10	5.3231E-01	5.3231E-01	2.5531E+15	8.9543E+03
230	325	313057	279089	599	2.1329E+10	5.3288E-01	5.3288E-01	2.5642E+15	8.9550E+03
231	326	314116	280212	639	2.4722E+10	5.3570E-01	5.3570E-01	2.5897E+15	8.9824E+03
232	327	314602	280666	615	2.1893E+10	5.3431E-01	5.3431E-01	2.5790E+15	8.9689E+03
233	328	316421	282042	680	2.6340E+10	5.3455E-01	5.3455E-01	2.5976E+15	8.9737E+03
234	329	313778	280126	686	2.5014E+10	5.3668E-01	5.3668E-01	2.5749E+15	8.9902E+03
235	331	314828	280550	666	2.5004E+10	5.3666E-01	5.3666E-01	2.5516E+15	8.9877E+03
236	332	314364	280441	673	2.4085E+10	5.3673E-01	5.3673E-01	2.5478E+15	8.9875E+03
237	333	316353	281865	682	2.4774E+10	5.3432E-01	5.3432E-01	2.5684E+15	8.9735E+03
238	334	314042	280108	668	2.5818E+10	5.3559E-01	5.3559E-01	2.5541E+15	8.9775E+03
239	335	313833	280103	642	2.3166E+10	5.3766E-01	5.3766E-01	2.5409E+15	8.9937E+03
240	336	314755	280844	657	2.6100E+10	5.3718E-01	5.3718E-01	2.5636E+15	8.9915E+03
241	337	314199	279976	654	2.6267E+10	5.2962E-01	5.2962E-01	2.5759E+15	8.9285E+03
242	338	313717	279670	630	2.3041E+10	5.3673E-01	5.3673E-01	2.5733E+15	8.9855E+03
243	339	314380	280263	637	2.4899E+10	5.3347E-01	5.3347E-01	2.5607E+15	8.9634E+03
244	341	313592	279923	637	2.3114E+10	5.3663E-01	5.3663E-01	2.5395E+15	8.9834E+03
245	342	313969	279786	678	2.2749E+10	5.3942E-01	5.3942E-01	2.5678E+15	9.0122E+03
246	343	314211	279919	608	2.3010E+10	5.3448E-01	5.3448E-01	2.5736E+15	8.9719E+03
247	344	312691	279241	637	2.4899E+10	5.3816E-01	5.3816E-01	2.5552E+15	8.9987E+03
248	345	314239	280565	639	2.5119E+10	5.3903E-01	5.3903E-01	2.5413E+15	9.0043E+03
249	346	313311	279892	662	2.3772E+10	5.3904E-01	5.3904E-01	2.5774E+15	9.0069E+03
250	347	313848	280108	680	2.6340E+10	5.3863E-01	5.3863E-01	2.5842E+15	9.0028E+03
251	348	312922	279519	655	2.6079E+10	5.3907E-01	5.3907E-01	2.5578E+15	9.0067E+03
252	349	313478	279850	658	2.4325E+10	5.3633E-01	5.3633E-01	2.5749E+15	8.9857E+03
253	411	286438	259285	1047989	3.6828E+13	5.8194E-01	5.8194E-01	2.4471E+15	1.4608E+00
254	412	867425	840318	3183558	3.7275E+13	5.8234E-01	5.8234E-01	2.4380E+15	1.4609E+00
255	413	869204	841934	3184173	3.7508E+13	5.8096E-01	5.8096E-01	2.4580E+15	1.4592E+00
256	414	866738	839779	3178210	3.7216E+13	5.8200E-01	5.8200E-01	2.4449E+15	1.4606E+00
257	415	865365	838329	3172556	3.7376E+13	5.8098E-01	5.8098E-01	2.4577E+15	1.4594E+00
258	416	864503	837057	3162373	3.7116E+13	5.7913E-01	5.7913E-01	2.4450E+15	1.4563E+00
259	417	866641	839666	3174499	3.7439E+13	5.8124E-01	5.8124E-01	2.4589E+15	1.4593E+00
260	418	864796	837863	3170627	3.7292E+13	5.8178E-01	5.8178E-01	2.4586E+15	1.4603E+00
261	419	859164	832177	3139824	3.6890E+13	5.8299E-01	5.8299E-01	2.4515E+15	1.4616E+00
262	421	868891	841418	3184338	3.7627E+13	5.7861E-01	5.7861E-01	2.4607E+15	1.4555E+00
263	422	879025	851245	3231788	3.8154E+13	5.7759E-01	5.7759E-01	2.4576E+15	1.4546E+00
264	423	880378	852856	3238883	3.8381E+13	5.7969E-01	5.7969E-01	2.4706E+15	1.4579E+00
265	424	879514	852408	3236265	3.8362E+13	5.7955E-01	5.7955E-01	2.4729E+15	1.4575E+00
266	425	877239	849988	3223259	3.8078E+13	5.7969E-01	5.7969E-01	2.4713E+15	1.4580E+00
267	426	879743	852030	3227995	3.8083E+13	5.8041E-01	5.8041E-01	2.4574E+15	1.4581E+00
268	427	879246	851701	3233386	3.8418E+13	5.7980E-01	5.7980E-01	2.4747E+15	1.4579E+00
269	428	881025	853431	3238225	3.8018E+13	5.7886E-01	5.7886E-01	2.4433E+15	1.4562E+00
270	429	865698	838343	3168901	3.7648E+13	5.8189E-01	5.8189E-01	2.4810E+15	1.4602E+00
271	431	867616	840242	3179045	3.7236E+13	5.8021E-01	5.8021E-01	2.4382E+15	1.4582E+00
272	432	878681	850989	3231269	3.8207E+13	5.7825E-01	5.7825E-01	2.4653E+15	1.4555E+00
273	433	877755	850535	3223740	3.8026E+13	5.7923E-01	5.7923E-01	2.4660E+15	1.4577E+00
274	434	879049	851597	3228957	3.8415E+13	5.8013E-01	5.8013E-01	2.4863E+15	1.4581E+00
275	435	879877	852435	3230719	3.8083E+13	5.7947E-01	5.7947E-01	2.4583E+15	1.4576E+00
276	436	876899	850029	3226976	3.8181E+13	5.7841E-01	5.7841E-01	2.4668E+15	1.4558E+00
277	437	879020	851665	3234444	3.8314E+13	5.7986E-01	5.7986E-01	2.4716E+15	1.4585E+00
278	438	881093	853651	3238293	3.8244E+13	5.7874E-01	5.7874E-01	2.4698E+15	1.4561E+00
279	439	870765	843549	3189965	3.7436E+13	5.8013E-01	5.8013E-01	2.4381E+15	1.4576E+00
280	441	869675	842440	3184737	3.7720E+13	5.8087E-01	5.8087E-01	2.4695E+15	1.4588E+00
281	442	878821	851620	3230264	3.8237E+13	5.8015E-01	5.8015E-01	2.4790E+15	1.4591E+00
282	443	878029	850615	3220005	3.7814E+13	5.8020E-01	5.8020E-01	2.4542E+15	1.4588E+00
283	444	880046	852443	3234102	3.8245E+13	5.7976E-01	5.7976E-01	2.4623E+15	1.4575E+00
284	445	880268	852877	3232846	3.8197E+13	5.8112E-01	5.8112E-01	2.4733E+15	1.4601E+00
285	446	880398	853059	3239012	3.8059E+13	5.8116E-01	5.8116E-01	2.4546E+15	1.4600E+00
286	447	876262	848874	3217567	3.8162E+13	5.7932E-01	5.7932E-01	2.4809E+15	1.4574E+00
287	448	876376	849231	3218692	3.7989E+13	5.7869E-01	5.7869E-01	2.4594E+15	1.4566E+00
288	449	866224	839035	3171310	3.7133E+13	5.8111E-01	5.8111E-01	2.4460E+15	1.4595E+00
289	451	867857	840756	3186296	3.7544E+13	5.8147E-01	5.8147E-01	2.4557E+15	1.4598E+00
290	452	878013	850433	3228663	3.8219E+13	5.7869E-01	5.7869E-01	2.4692E+15	1.4566E+00
291	453	877796	850216	3226832	3.8198E+13	5.7977E-01	5.7977E-01	2.4677E+15	1.4577E+00
292	454	878589	851350	3232358	3.7834E+13	5.7900E-01	5.7900E-01	2.4462E+15	1.4573E+00
293	455	878779	851408	3222985	3.8233E+13	5.7886E-01	5.7886E-01	2.4788E+15	1.4567E+00
294	456	877098	849794	3226311	3.8312E+13	5.7765E-01	5.7765E-01	2.4758E+15	1.4549E+00
295	457	880398	853131	3235952	3.7954E+13	5.7830E-01	5.7830E-01	2.4440E+15	1.4558E+00
296	458	880640	853096	3238483	3.8318E+13	5.7940E-01	5.7940E-01	2.4627E+15	1.4570E+00
297	459	867019	839723	3177450	3.7446E+13	5.8107E-01	5.8107E-01	2.4571E+15	1.4589E+00
298	461	865904	838852	3176920	3.7575E+13	5.7979E-01	5.7979E-01	2.4627E+15	1.4569E+00
299	462	878967	851492	3228069	3.8217E+13	5.8057E-01	5.8057E-01	2.4754E+15	1.4595E+00
300	463	877463	850059	3226237	3.8110E+13	5.7932E-01	5.7932E-01	2.4657E+15	1.4574E+00
301	464	878079	850935	3228956	3.7973E+13	5.7888E-01	5.7888E-01	2.4496E+15	1.4560E+00
302	465	881683	854356	3236321	3.8331E+13	5.7877E-01	5.7877E-01	2.4641E+15	1.4559E+00
303	466	877739	850521	3231225	3.8174E+13	5.8035E-01	5.8035E-01	2.4657E+15	1.4589E+00
304	467	877990	850429	3230821	3.8146E+13	5.8008E-01	5.8008E-01	2.4664E+15	1.4587E+00
305	468	879504	851842	3232389	3.8223E+13	5.7877E-01	5.7877E-01	2.4693E+15	1.4570E+00
306	469	868759	841340	3182692	3.7571E+13	5.7885E-01	5.7885E-01	2.4535E+15	1.4557E+00
307	471	872464	845030	3196407	3.7663E+13	5.8119E-01	5.8119E-01	2.4590E+15	1.4596E+00

308	472	879368	852074	3228977	3.8052E+13	5.7864E-01	5.7864E-01	2.4550E+15	1.4564E+00
309	473	875590	848267	3217491	3.8163E+13	5.7979E-01	5.7979E-01	2.4744E+15	1.4574E+00
310	474	879978	852585	3230037	3.8341E+13	5.7672E-01	5.7672E-01	2.4755E+15	1.4532E+00
311	475	871876	845038	3203223	3.8162E+13	5.8025E-01	5.8025E-01	2.4943E+15	1.4586E+00
312	476	879020	851742	3226145	3.8329E+13	5.7882E-01	5.7882E-01	2.4757E+15	1.4569E+00
313	477	880734	853236	3233605	3.7979E+13	5.8102E-01	5.8102E-01	2.4532E+15	1.4593E+00
314	478	876282	848890	3219781	3.7955E+13	5.7825E-01	5.7825E-01	2.4580E+15	1.4558E+00
315	479	869239	841993	3190092	3.7283E+13	5.8040E-01	5.8040E-01	2.4415E+15	1.4585E+00
316	481	869094	841859	3181058	3.7464E+13	5.8010E-01	5.8010E-01	2.4555E+15	1.4576E+00
317	482	878213	851109	3226708	3.8041E+13	5.8040E-01	5.8040E-01	2.4604E+15	1.4591E+00
318	483	880158	852514	3233819	3.8439E+13	5.7883E-01	5.7883E-01	2.4847E+15	1.4568E+00
319	484	877906	850474	3226627	3.8120E+13	5.7997E-01	5.7997E-01	2.4621E+15	1.4579E+00
320	485	881917	854270	3236685	3.8403E+13	5.7982E-01	5.7982E-01	2.4797E+15	1.4579E+00
321	486	878223	850985	3223781	3.8185E+13	5.8059E-01	5.8059E-01	2.4715E+15	1.4588E+00
322	487	878940	851422	3228412	3.8436E+13	5.8022E-01	5.8022E-01	2.4818E+15	1.4585E+00
323	488	880189	852796	3233622	3.8219E+13	5.7833E-01	5.7833E-01	2.4612E+15	1.4558E+00
324	489	863796	837068	3163882	3.7229E+13	5.8179E-01	5.8179E-01	2.4514E+15	1.4605E+00
325	491	867227	840121	3181077	3.7167E+13	5.8235E-01	5.8235E-01	2.4440E+15	1.4618E+00
326	492	881360	853719	3240062	3.8105E+13	5.8127E-01	5.8127E-01	2.4551E+15	1.4598E+00
327	493	877308	849763	3219302	3.7896E+13	5.8190E-01	5.8190E-01	2.4581E+15	1.4612E+00
328	494	876298	849035	3218896	3.8099E+13	5.8323E-01	5.8323E-01	2.4803E+15	1.4632E+00
329	495	877969	850814	3228631	3.8209E+13	5.8036E-01	5.8036E-01	2.4710E+15	1.4589E+00
330	496	881596	854009	3236727	3.7870E+13	5.7887E-01	5.7887E-01	2.4387E+15	1.4564E+00
331	497	879050	851591	3231517	3.8064E+13	5.8222E-01	5.8222E-01	2.4707E+15	1.4614E+00
332	498	881760	854112	3239240	3.8374E+13	5.7885E-01	5.7885E-01	2.4717E+15	1.4562E+00
333	499	868228	840943	3182673	3.7720E+13	5.8135E-01	5.8135E-01	2.4760E+15	1.4592E+00
334	501	869660	842652	3194237	3.7589E+13	5.7971E-01	5.7971E-01	2.4582E+15	1.4575E+00
335	502	878770	851454	3230495	3.8132E+13	5.7755E-01	5.7755E-01	2.4580E+15	1.4547E+00
336	503	879551	852015	3231748	3.8394E+13	5.7889E-01	5.7889E-01	2.4775E+15	1.4566E+00
337	504	877988	850819	3230838	3.8329E+13	5.8043E-01	5.8043E-01	2.4771E+15	1.4589E+00
338	505	879290	852049	3232153	3.8349E+13	5.8202E-01	5.8202E-01	2.4788E+15	1.4608E+00
339	506	878322	851224	3226921	3.8048E+13	5.7967E-01	5.7967E-01	2.4639E+15	1.4577E+00
340	507	878237	850757	3228501	3.8262E+13	5.8111E-01	5.8111E-01	2.4781E+15	1.4605E+00
341	508	880176	852485	3233545	3.8714E+13	5.8155E-01	5.8155E-01	2.5037E+15	1.4605E+00
342	509	865325	838213	3173096	3.7216E+13	5.8190E-01	5.8190E-01	2.4481E+15	1.4606E+00
343	511	865135	838139	3173231	3.7457E+13	5.8062E-01	5.8062E-01	2.4676E+15	1.4589E+00
344	512	880569	852980	3236769	3.8223E+13	5.7802E-01	5.7802E-01	2.4621E+15	1.4553E+00
345	513	879937	852164	3237169	3.8284E+13	5.7809E-01	5.7809E-01	2.4612E+15	1.4556E+00
346	514	881228	853895	3230998	3.8273E+13	5.8101E-01	5.8101E-01	2.4758E+15	1.4592E+00
347	515	879083	851415	3224561	3.8008E+13	5.8020E-01	5.8020E-01	2.4586E+15	1.4586E+00
348	516	878553	851136	3227716	3.8139E+13	5.8043E-01	5.8043E-01	2.4651E+15	1.4586E+00
349	517	878986	851611	3221848	3.8077E+13	5.7891E-01	5.7891E-01	2.4651E+15	1.4563E+00
350	518	880482	853050	3230947	3.8192E+13	5.8069E-01	5.8069E-01	2.4653E+15	1.4592E+00
351	519	864711	837922	3171391	3.7528E+13	5.8179E-01	5.8179E-01	2.4655E+15	1.4603E+00
352	521	867494	840607	3178914	3.7350E+13	5.8026E-01	5.8026E-01	2.4483E+15	1.4580E+00
353	522	879530	852184	3232811	3.8054E+13	5.7965E-01	5.7965E-01	2.4542E+15	1.4575E+00
354	523	875916	848523	3217448	3.7805E+13	5.7810E-01	5.7810E-01	2.4550E+15	1.4558E+00
355	524	879105	851599	3226691	3.7816E+13	5.7916E-01	5.7916E-01	2.4443E+15	1.4574E+00
356	525	874707	847471	3213319	3.7908E+13	5.7767E-01	5.7767E-01	2.4551E+15	1.4547E+00
357	526	877218	849971	3225693	3.8272E+13	5.7895E-01	5.7895E-01	2.4752E+15	1.4568E+00
358	527	879493	852224	3234167	3.8387E+13	5.7922E-01	5.7922E-01	2.4732E+15	1.4572E+00
359	528	884248	856476	3251194	3.8755E+13	5.7846E-01	5.7846E-01	2.4823E+15	1.4562E+00
360	529	867255	840249	3182472	3.7535E+13	5.8216E-01	5.8216E-01	2.4657E+15	1.4610E+00
361	531	869703	842257	3193872	3.7626E+13	5.8116E-01	5.8116E-01	2.4606E+15	1.4598E+00
362	532	878047	850746	3228663	3.7870E+13	5.7947E-01	5.7947E-01	2.4375E+15	1.4573E+00
363	533	883050	855405	3245978	3.8351E+13	5.7889E-01	5.7889E-01	2.4593E+15	1.4567E+00
364	534	877656	850424	3223599	3.7899E+13	5.8093E-01	5.8093E-01	2.4465E+15	1.4589E+00
365	535	877558	850121	3222198	3.7899E+13	5.8086E-01	5.8086E-01	2.4565E+15	1.4593E+00
366	536	879161	851838	3229079	3.8358E+13	5.8010E-01	5.8010E-01	2.4875E+15	1.4587E+00
367	537	877293	849883	3221318	3.8097E+13	5.7738E-01	5.7738E-01	2.4613E+15	1.4547E+00
368	538	876697	849495	3217565	3.8109E+13	5.8016E-01	5.8016E-01	2.4721E+15	1.4585E+00
369	539	867941	840739	3181280	3.7400E+13	5.8001E-01	5.8001E-01	2.4490E+15	1.4574E+00
370	541	858257	831311	3140520	3.6677E+13	5.8141E-01	5.8141E-01	2.4346E+15	1.4591E+00
371	542	866924	839685	3179752	3.7429E+13	5.8229E-01	5.8229E-01	2.4591E+15	1.4618E+00
372	543	867759	840366	3178586	3.7515E+13	5.8067E-01	5.8067E-01	2.4670E+15	1.4585E+00
373	544	864520	837813	3169115	3.7425E+13	5.8172E-01	5.8172E-01	2.4654E+15	1.4599E+00
374	545	868693	841551	3186147	3.7471E+13	5.8218E-01	5.8218E-01	2.4567E+15	1.4607E+00
375	546	866282	839358	3176256	3.7584E+13	5.8118E-01	5.8118E-01	2.4717E+15	1.4596E+00
376	547	867216	840103	3180624	3.7534E+13	5.8110E-01	5.8110E-01	2.4634E+15	1.4594E+00
377	548	865581	838786	3178338	3.7329E+13	5.8080E-01	5.8080E-01	2.4550E+15	1.4588E+00
378	549	858066	831158	3143645	3.6962E+13	5.8295E-01	5.8295E-01	2.4559E+15	1.4616E+00
379	1200	1919	1746	15	1.5660E+08	4.1661E-01	4.1661E-01	8.0248E+14	8.2237E+03
380	1201	86344	86047	484315	1.3156E+13	3.9734E-01	3.9734E-01	1.9350E+15	3.9689E+00
381	1202	1104	1019	5287	6.4122E+10	3.0639E-01	3.0639E-01	8.3737E+14	3.4886E+00
382	12021	22119	21357	105722	1.2910E+12	3.3619E-01	3.3619E-01	8.4570E+14	3.6546E+00
383	1203	78327	78108	443636	1.2164E+13	3.9911E-01	3.9911E-01	1.9742E+15	3.9775E+00
384	1204	38133	36775	181101	2.1704E+12	3.3512E-01	3.3512E-01	8.3017E+14	3.6489E+00
385	12041	1687	1566	8064	8.8949E+10	2.8249E-01	2.8249E-01	7.5471E+14	3.3900E+00
386	1205	140394	140103	795938	2.1243E+13	3.9840E-01	3.9840E-01	1.9023E+15	3.9758E+00
387	1206	68	62	301	3.1424E+09	2.7178E-01	2.7178E-01	7.3080E+14	3.3709E+00
388	12061	2189	2138	9207	1.1159E+11	1.9930E-01	1.9930E-01	8.4558E+14	2.9442E+00
389	1207	2793	2738	10927	1.3471E+11	1.5362E-01	1.5362E-01	8.8442E+14	2.6554E+00
390	1208	2038	1873	8861	9.9055E+10	3.0352E-01	3.0352E-01	7.7178E+14	3.5136E+00
391	12081	37388	36012	175359	2.0652E+12	3.3630E-01	3.3630E-01	8.1626E+14	3.6621E+00
392	1209	139502	139237	790497	2.1445E+13	3.9779E-01	3.9779E-01	1.9361E+15	3.9720E+00
393	1210	611585	549108	3173453	6.5249E+14	4.5055E-01	4.5055E-01	1.4427E+16	4.1357E+00
394	1211	330277	313998	1740692	2.1139E+13	3.7960E-01	3.7960E-01	8.3623E+14	3.9470E+00
395	12111	36874	33958	183657	2.0963E+12	3.5908E-01	3.5908E-01	7.9230E+14	3.8463E+00
397	9998	8527955	8109648	211151	4.9954E+11	5.3110E-01	5.3110E-01	1.4786E+15	9.2153E+03
398	9997	9087692	8638011	207433	4.6611E+11	5.4076E-01	5.4076E-01	1.4135E+15	9.2991E+03

399	9996	6967016	6628260	157147	3.6251E+11	5.3416E-01	5.3416E-01	1.4474E+15	9.2436E+03
400	9995	4705466	4585776	175060	2.4290E+11	4.7166E-01	4.7166E-01	8.5366E+14	8.7030E+03
401	9994	490300	379017	34411	4.3046E+11	4.4229E-01	4.4229E-01	8.6092E+14	8.4522E+03
402	9993	2176	1751	100	1.6391E+09	1.3015E-01	1.3015E-01	8.5022E+14	5.6390E+03
403	9992	5238	4157	547	7.6943E+09	1.4122E-01	1.4122E-01	8.9140E+14	5.7884E+03
404	9991	4774	4261	28	2.9232E+08	1.4749E-01	1.4749E-01	9.0472E+14	5.8740E+03
405	9990	7637	6494	437	5.1574E+09	1.6806E-01	1.6806E-01	8.6369E+14	6.0795E+03
406	9989	26760	20028	1749	2.1037E+10	2.9629E-01	2.9629E-01	8.5298E+14	7.2185E+03
407	9988	4297	3982	766	8.1954E+09	4.0739E-01	4.0739E-01	7.8557E+14	8.1790E+03
409	9986	1474	1471	11	1.1484E+08	2.2388E-01	2.2388E-01	9.2827E+14	6.3914E+03
410	10000	124	101	0	0.0000E+00	2.7298E-01	2.7298E-01	1.1514E+15	7.1302E+03
411	10001	190	152	2	2.0880E+07	3.6826E-01	3.6826E-01	7.4947E+14	7.8812E+03
412	10002	525	445	1	1.0440E+07	4.0901E-01	4.0901E-01	8.2302E+14	8.2338E+03
413	10003	192	157	0	0.0000E+00	4.0662E-01	4.0662E-01	7.7973E+14	8.2256E+03
414	10004	121	106	0	0.0000E+00	3.1071E-01	3.1071E-01	1.0230E+15	7.3671E+03
415	10005	4	4	0	0.0000E+00	1.3790E-01	1.3790E-01	7.3080E+14	5.8498E+03
416	2001	4269	3830	874	9.9180E+09	3.8568E-01	3.8568E-01	7.9746E+14	7.9480E+03
417	2002	4444	3693	2567	2.9378E+10	3.2851E-01	3.2851E-01	7.9999E+14	7.3710E+03
418	2003	4433	3422	2976	3.5037E+10	2.7980E-01	2.7980E-01	8.0520E+14	6.8813E+03
419	2004	4222	3122	4920	5.5134E+10	2.5108E-01	2.5108E-01	7.7842E+14	6.5941E+03
420	2005	3700	2653	4991	5.4090E+10	2.2280E-01	2.2280E-01	7.6019E+14	6.2662E+03
421	2006	3055	2172	4190	4.8108E+10	2.0490E-01	2.0490E-01	7.9691E+14	6.0736E+03
422	2007	2485	1740	3689	4.2679E+10	1.8937E-01	1.8937E-01	8.0871E+14	5.8903E+03
423	2008	1974	1393	4252	4.8160E+10	1.8220E-01	1.8220E-01	7.9509E+14	5.7911E+03
424	2009	1368	955	3179	3.7354E+10	1.6894E-01	1.6894E-01	8.2459E+14	5.5991E+03
425	2010	857	641	2497	2.7259E+10	1.7466E-01	1.7466E-01	7.5639E+14	5.6329E+03
426	2011	452	332	1422	1.4846E+10	1.8130E-01	1.8130E-01	7.3080E+14	5.7421E+03
427	2012	260	180	748	7.8091E+09	1.7983E-01	1.7983E-01	7.3080E+14	5.7354E+03
428	2013	154	99	418	4.3639E+09	1.8886E-01	1.8886E-01	7.3080E+14	5.8854E+03
429	2014	87	56	296	3.0902E+09	1.4781E-01	1.4781E-01	7.3080E+14	5.4589E+03
430	2015	36	33	204	2.1298E+09	1.1871E-01	1.1871E-01	7.3080E+14	5.0359E+03
total		255182687	244326213	1098382475	3.7583E+16				

1tally 2 nps = 70000000
tally type 2 particle flux averaged over a surface.
tally for photons

this tally is modified by a dose function.

areas
surface: 1231
1.78374E+06

surface 1231
7.46846E-03 0.0437

==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 2

tfc bin	--mean--	---------relative error---------			----variance of the variance----			--figure of merit--	-pdf-
behavior	behavior	value	decrease	decrease rate	value	decrease	decrease rate	behavior	slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random >3.00
observed	random	0.04	yes	yes	0.04	yes	yes	constant	increase 1.98
passed?	yes	yes	yes	yes	yes	yes	yes	yes	no no

==========

warning. the tally in the tally fluctuation chart bin did not pass 2 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 2 with nps = 70000000 print table 160

normed average tally per history = 7.46846E-03
estimated tally relative error = 0.0437
relative error from zero tallies = 0.0240
unnormed average tally per history = 1.33218E+04
estimated variance of the variance = 0.0403
relative error from nonzero scores = 0.0365

number of nonzero history tallies = 1738
efficiency for the nonzero tallies = 0.0000

```
 history number of largest  tally  =    27336365          largest  unnormalized history tally = 1.45436E+10
 (largest  tally)/(average tally)  = 1.09171E+06          (largest  tally)/(avg nonzero tally)= 2.71057E+01

 (confidence interval shift)/mean  = 0.0036               shifted confidence interval center  = 7.49524E-03


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            7.46846E-03            7.58494E-03                   0.015596
      relative error                  4.36641E-02            4.56537E-02                   0.045568
      variance of the variance        4.02997E-02            4.44975E-02                   0.104167
      shifted center                  7.49524E-03            7.49880E-03                   0.000475
      figure of merit                 1.18280E+00            1.08195E+00                  -0.085264

 the estimated inverse power slope of the  86 largest  tallies starting at 1.02468E+09 is 1.9825
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.579E+05)*( 2.737E-03)**2 = (1.579E+05)*(7.493E-
06) = 1.183E+00

1unnormed tally density for tally   2            nonzero tally mean(m) = 5.366E+08   nps =    70000000  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 2.0)
  tally  number num den log den:d--------------------d----------------------d-----------------------d----------
------------d-------
 2.00+08     23 8.01-15 -14.097 **********************|**********************|***********************|*******
|
 2.51+08    289 7.99-14 -13.097
**********************|**********************|**********************|**********************|*******
 3.16+08    337 7.40-14 -13.131
**********************|**********************|**********************|**********************|******
 3.98+08    286 4.99-14 -13.302
**********************|**********************|**********************|**********************|**
 5.01+08    258 3.58-14 -13.447
**********************|**********************|**********************|**********************|
 6.31+08    214 2.36-14 -13.628
mmmmmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmm     |
 7.94+08    152 1.33-14 -13.876
**********************|**********************|**********************|************          |
 1.00+09     83 5.77-15 -14.239 **********************|**********************|***********************|***
|
 1.26+09     38 2.10-15 -14.678 **********************|**********************|*****************      |  s
|
 1.58+09     22 9.64-16 -15.016 **********************|**********************|*********              s
|
 2.00+09      8 2.78-16 -15.555 **********************|********************  |                   s   |
|
 2.51+09      4 1.11-16 -15.956 **********************|***********           |               s       |
|
 3.16+09      1 2.20-17 -16.658 *****************     |                      |           s           |
|
 3.98+09      0 0.00+00   0.000                       |                      |        s              |
|
 5.01+09     10 1.39-16 -15.858 **********************|*************         |    s                  |
|
 6.31+09      5 5.50-17 -16.259 **********************|****                  |s                      |
|
 7.94+09      2 1.75-17 -16.757 ***************       |                  s   |                       |
|
 1.00+10      3 2.08-17 -16.681 *****************     |              s       |                       |
|
 1.26+10      2 1.10-17 -16.957 **********            |          s           |                       |
|
 1.58+10      1 4.38-18 -17.358 *                     |     s                |                       |
|
  total    1738 2.48-05         d--------------------d----------------------d-----------------------d----------
------------d-------

1tally  12        nps =    70000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons
```

```
          this tally is modified by a dose function.

          areas
               surface:     1227
              segment
                1       1.00000E+50
                2       2.56400E+07
                3       1.03700E+08
                4       1.60200E+08
                5       3.92700E+08
                6       5.49800E+08
                7       7.06900E+08
                8       8.63900E+08
                9       1.59000E+09
               10       1.94400E+09
               11       3.14200E+09
               12       3.77000E+09
               13       4.39800E+09
               14       5.02700E+09
               15       5.65500E+09
               16       1.68900E+10

surface  1227
segment:       -2000
                9.16397E-47 0.2019

surface  1227
segment:        2000    -2001
                3.56505E-05 0.1062

surface  1227
segment:        2000     2001    -2002
                2.69802E-05 0.1255

surface  1227
segment:        2000     2001     2002    -2003
                1.25276E-05 0.1066

surface  1227
segment:        2000     2001     2002     2003    -2004
                7.28709E-06 0.1489

surface  1227
segment:        2000     2001     2002     2003     2004    -2005
                3.46281E-06 0.1585

surface  1227
segment:        2000     2001     2002     2003     2004     2005    -2006
                1.17940E-06 0.1399

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006    -2007
                6.08088E-07 0.2457

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007    -2008
                1.98627E-07 0.1776

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008    -2009
                7.31456E-08 0.2228

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009    -2010
                7.39947E-08 0.3174

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
    -2011
                4.80087E-09 0.6030

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011    -2012
                4.47329E-09 0.6003

surface  1227
```

```
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012    -2013
                0.00000E+00 0.0000

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013    -2014
                0.00000E+00 0.0000

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013     2014
                2.31102E-10 1.0000


================================================================================================================
==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  12

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed    decrease       1.00      yes          yes            1.00      yes          no            decrease
decrease      0.00
 passed?        no           no      yes          yes              no      yes          no                no
no          no

================================================================================================================
==================


 warning.  the tally in the tally fluctuation chart bin did not pass  7 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  12 with nps =    70000000  print
table 160


 normed average tally per history  = 2.31102E-10          unnormed average tally per history  = 3.90331E+00
 estimated tally relative error    = 1.0000               estimated variance of the variance  = 1.0000
 relative error from zero tallies  = 1.0000               relative error from nonzero scores  = 0.0000

 number of nonzero history tallies =           1          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =    21403139          largest  unnormalized history tally = 2.73232E+08
 (largest  tally)/(average tally)  = 7.00000E+07          (largest  tally)/(avg nonzero tally)= 1.00000E+00

 (confidence interval shift)/mean  = 0.5000               shifted confidence interval center  = 3.46653E-10


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities          value at nps          value at nps+1          value(nps+1)/value(nps)-1.

      mean                           2.31102E-10            4.62204E-10                   1.000000
      relative error                 1.00000E+00            7.07107E-01                  -0.292893
      variance of the variance       1.00000E+00            5.00000E-01                  -0.500000
      shifted center                 3.46653E-10            3.46653E-10                   0.000000
      figure of merit                2.25506E-03            4.51013E-03                   1.000000

 there is not enough information in the largest  history scores (usually less than 500 scores) for a reliable
estimate of the slope.
 the large score tail of the empirical history score probability density function appears to have no unsampled
regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.579E+05)*( 1.195E-04)**2 = (1.579E+05)*(1.429E-
08) = 2.255E-03
 print table 161 cannot be done for this tally because all tallies were between 2.51189E+08 and 3.16228E+08
which is one tally bin.

1tally  22        nps =    70000000
```

```
          tally type 2    particle flux averaged over a surface.
          tally for  photons

          this tally is modified by a dose function.

          areas
               surface:     1227
              segment
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       4.35376E+05
                5       4.35376E+05
                6       4.35376E+05
                7       4.35376E+05
                8       4.35376E+05
                9       4.35376E+05
               10       4.35376E+05
               11       4.35376E+05
               12       4.35376E+05
               13       4.35376E+05
               14       4.35376E+05
               15       4.35376E+05
               16       4.35376E+05
               17       4.35376E+05
               18       4.35376E+05
               19       4.35376E+05
               20       4.35376E+05
               21       4.35376E+05
               22       1.00000E+50

surface  1227
segment:        1201
                1.44816E-46 0.1303

surface  1227
segment:       -1201    -2026
                3.20908E-47 0.1400

surface  1227
segment:       -1201     2026     2027
                2.91415E-47 0.1246

surface  1227
segment:       -1201     2026    -2027     2016
                2.84744E-05 0.6082

surface  1227
segment:       -1201     2026    -2027    -2016     2017
                3.61360E-05 0.5959

surface  1227
segment:       -1201     2026    -2027    -2016    -2017     2018
                7.59263E-05 0.4460

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018     2019
                4.15937E-05 0.6562

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019     2020
                8.72804E-05 0.3949

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020     2021
                1.07627E-04 0.3582

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021     2022
                4.33646E-05 0.6085

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022     2023
                1.70566E-04 0.3354

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     2024
```

```
               6.36362E-05 0.6049

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024     2025
               4.83392E-05 0.6268

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025     2028
               2.90799E-05 0.7166

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028     2029
               1.08279E-04 0.4951

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029     2030
               6.88529E-05 0.6563

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030     2031
               9.29772E-05 0.4683

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031     2032
               3.44407E-05 0.8150

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032     2033
               6.28720E-05 0.7359

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033     2034
               6.02765E-05 0.5228

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034     2035
               1.57896E-04 0.9349

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034    -2035
               5.61063E-48 0.2106


================================================================================================================
==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  22

 tfc bin      --mean--       ---------relative error---------       ----variance of the variance----       --figure
of merit--      -pdf-
 behavior     behavior       value    decrease    decrease rate       value    decrease    decrease rate        value
behavior     slope

 desired       random        <0.10       yes       1/sqrt(nps)        <0.10       yes         1/nps            constant
random       >3.00
 observed      random         0.21       yes           yes             0.12       yes          yes             constant
random        0.00
 passed?         yes            no       yes           yes               no       yes          yes                yes
yes           no


================================================================================================================
==================

 warning.  the tally in the tally fluctuation chart bin did not pass  3 of the 10 statistical checks.
```

```
1analysis of the results in the tally fluctuation chart bin (tfc) for tally  22 with nps =    70000000  print
table 160


 normed average tally per history  = 5.61063E-48          unnormed average tally per history  = 5.61063E+02
 estimated tally relative error    = 0.2106               estimated variance of the variance  = 0.1229
 relative error from zero tallies  = 0.1459               relative error from nonzero scores  = 0.1519

 number of nonzero history tallies =          47          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =    61792373          largest  unnormalized history tally = 3.80257E+09
 (largest  tally)/(average tally)  = 6.77744E+06          (largest  tally)/(avg nonzero tally)= 4.55057E+00

 (confidence interval shift)/mean  = 0.0340               shifted confidence interval center  = 5.80121E-48


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1           value(nps+1)/value(nps)-1.

      mean                            5.61063E-48             6.15385E-48                    0.096821
      relative error                  2.10601E-01             2.11330E-01                    0.003460
      variance of the variance        1.22863E-01             1.14172E-01                   -0.070736
      shifted center                  5.80121E-48             5.81535E-48                    0.002437
      figure of merit                 5.08437E-02             5.04936E-02                   -0.006885

 there is not enough information in the largest  history scores (usually less than 500 scores) for a reliable
estimate of the slope.
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.579E+05)*( 5.675E-04)**2 = (1.579E+05)*(3.221E-
07) = 5.084E-02

1unnormed tally density for tally  22            nonzero tally mean(m) = 8.356E+08   nps =    70000000  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 0.0)
  tally  number num den log den:d----------------------------------------------------------d----------------------
--------------------
 2.51+08      5 1.38-15 -14.859
**************************************************|*************************************
 3.16+08      7 1.54-15 -14.813
**************************************************|*********************************************
 3.98+08      6 1.05-15 -14.980
**************************************************|**********************************
 5.01+08      6 8.32-16 -15.080
**************************************************|****************************
 6.31+08      7 7.71-16 -15.113
**************************************************|************************
 7.94+08      4 3.50-16 -15.456 ************************************************************|*******
 1.00+09      0 0.00+00   0.000                                                            |
 1.26+09      3 1.66-16 -15.781 *********************************************              |
 1.58+09      2 8.77-17 -16.057 ****************************                               |
 2.00+09      3 1.04-16 -15.981 **********************************                         |
 2.51+09      1 2.77-17 -16.558 *                                                          |
 3.16+09      0 0.00+00   0.000                                                            |
 3.98+09      3 5.23-17 -16.281 *****************                                        |
  total      47 6.71-07         d----------------------------------------------------------d----------------------
--------------------

1tally  32        nps =    70000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons

           this tally is modified by a dose function.

           areas
                surface:     1201
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       1.00000E+50
                 5       6.30000E+05
```

```
 surface  1201
 segment:        1231
                 7.37121E-47 0.0638

 surface  1201
 segment:       -1231    -2026
                 0.00000E+00 0.0000

 surface  1201
 segment:       -1231     2026     2027
                 0.00000E+00 0.0000

 surface  1201
 segment:       -1231     2026    -2027    -1227
                 0.00000E+00 0.0000

 surface  1201
 segment:       -1231     2026    -2027     1227
                 7.07305E-05 0.5458
```

==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 32

tfc bin behavior	--mean-- behavior	---------relative error--------- value	decrease	decrease rate	----variance of the variance---- value	decrease	decrease rate	--figure of merit-- -pdf- value	behavior
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random
observed	decrease	0.55	yes	yes	0.43	yes	no	decrease	random
passed?	no	no	yes	yes	no	yes	no	no	yes

slope
>3.00
0.00
no

==========

warning. the tally in the tally fluctuation chart bin did not pass 6 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 32 with nps = 70000000 print table 160

```
 normed average tally per history  = 7.07305E-05          unnormed average tally per history  = 4.45602E+01
 estimated tally relative error    = 0.5458               estimated variance of the variance  = 0.4290
 relative error from zero tallies  = 0.4472               relative error from nonzero scores  = 0.3128

 number of nonzero history tallies =           5          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =    15571061          largest  unnormalized history tally = 1.20475E+09
 (largest  tally)/(average tally)  = 2.70364E+07          (largest  tally)/(avg nonzero tally)= 1.93117E+00

 (confidence interval shift)/mean  = 0.1746               shifted confidence interval center  = 8.30800E-05
```

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	7.07305E-05	9.80490E-05	0.386235
relative error	5.45768E-01	4.82321E-01	-0.116252
variance of the variance	4.28995E-01	3.01810E-01	-0.296471
shifted center	8.30800E-05	8.35171E-05	0.005261
figure of merit	7.57081E-03	9.69362E-03	0.280393

there is not enough information in the largest history scores (usually less than 500 scores) for a reliable estimate of the slope.
the history score probability density function appears to have an unsampled region at the largest history scores:

```
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.579E+05)*( 2.190E-04)**2 = (1.579E+05)*(4.796E-
08) = 7.571E-03

1unnormed tally density for tally  32            nonzero tally mean(m) = 6.238E+08   nps =    70000000  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 0.0)
  tally  number num den log den:d--------------------------------------------------------------------------------
--------------------
 2.51+08      2 5.53-16 -15.257
*********************************************************************************************
 3.16+08      0 0.00+00   0.000
 3.98+08      1 1.74-16 -15.758 ****************************
 5.01+08      0 0.00+00   0.000
 6.31+08      0 0.00+00   0.000
 7.94+08      0 0.00+00   0.000
 1.00+09      0 0.00+00   0.000
 1.26+09      2 1.10-16 -15.957 *
  total       5 7.14-08         d--------------------------------------------------------------------------------
--------------------

1tally  42        nps =    70000000
          tally type 2    particle flux averaged over a surface.
          tally for  photons

          this tally is modified by a dose function.

          areas
               surface:     2003         2004         2005         2006         2007         2008         2009
              segment
                1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
3.00000E+06
               surface:     2010         2011         2012         2013
              segment
                1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:        1219
                 4.42244E-46 0.0341

 surface  2003
 segment:       -1219    -1209
                 2.75196E-49 0.5966

 surface  2003
 segment:       -1219     1209     1201
                 4.31202E-48 0.1554

 surface  2003
 segment:       -1219     1209    -1201    -1205
                 2.27723E-48 0.1913

 surface  2003
 segment:       -1219     1209    -1201     1205     1206
                 1.63338E-48 0.2422

 surface  2003
 segment:       -1219     1209    -1201     1205    -1206
                 6.16272E-05 0.4866
```

```
surface  2004
segment:        1219
                3.72651E-46 0.0383

surface  2004
segment:       -1219    -1209
                3.47905E-49 0.5555

surface  2004
segment:       -1219     1209     1201
                3.17433E-48 0.2699

surface  2004
segment:       -1219     1209    -1201    -1205
                1.74611E-48 0.4911

surface  2004
segment:       -1219     1209    -1201     1205     1206
                1.06826E-48 0.2921

surface  2004
segment:       -1219     1209    -1201     1205    -1206
                1.02205E-05 0.4214

surface  2005
segment:        1219
                3.00930E-46 0.0325

surface  2005
segment:       -1219    -1209
                6.38578E-50 1.0000

surface  2005
segment:       -1219     1209     1201
                1.17811E-48 0.2532

surface  2005
segment:       -1219     1209    -1201    -1205
                1.71559E-48 0.5148

surface  2005
segment:       -1219     1209    -1201     1205     1206
                5.84506E-49 0.4313

surface  2005
segment:       -1219     1209    -1201     1205    -1206
                6.13128E-06 1.0000

surface  2006
segment:        1219
                2.65890E-46 0.0526

surface  2006
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2006
segment:       -1219     1209     1201
                5.78894E-49 0.3858

surface  2006
segment:       -1219     1209    -1201    -1205
                1.26488E-48 0.6773

surface  2006
segment:       -1219     1209    -1201     1205     1206
                3.80980E-49 0.4955

surface  2006
segment:       -1219     1209    -1201     1205    -1206
                2.41053E-06 0.7108

surface  2007
segment:        1219
                1.97398E-46 0.0416

surface  2007
segment:       -1219    -1209
```

```
                5.49595E-50 1.0000

surface  2007
segment:       -1219     1209     1201
                8.75623E-49 0.7132

surface  2007
segment:       -1219     1209    -1201    -1205
                4.20612E-50 1.0000

surface  2007
segment:       -1219     1209    -1201     1205     1206
                3.23016E-49 0.4271

surface  2007
segment:       -1219     1209    -1201     1205    -1206
                2.67036E-06 1.0000

surface  2008
segment:       -1219
                1.46266E-46 0.0575

surface  2008
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2008
segment:       -1219     1209     1201
                7.28987E-50 1.0000

surface  2008
segment:       -1219     1209    -1201    -1205
                1.18917E-49 0.7400

surface  2008
segment:       -1219     1209    -1201     1205     1206
                1.14053E-49 0.7560

surface  2008
segment:       -1219     1209    -1201     1205    -1206
                0.00000E+00 0.0000

surface  2009
segment:       -1219
                9.62513E-47 0.0787

surface  2009
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2009
segment:       -1219     1209     1201
                1.59133E-49 0.8097

surface  2009
segment:       -1219     1209    -1201    -1205
                3.92849E-50 1.0000

surface  2009
segment:       -1219     1209    -1201     1205     1206
                0.00000E+00 0.0000

surface  2009
segment:       -1219     1209    -1201     1205    -1206
                0.00000E+00 0.0000

surface  2010
segment:       -1219
                4.59429E-47 0.0780

surface  2010
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2010
segment:       -1219     1209     1201
                0.00000E+00 0.0000
```

```
surface  2010
segment:       -1219     1209    -1201    -1205
                5.29019E-50 1.0000

surface  2010
segment:       -1219     1209    -1201     1205     1206
                0.00000E+00 0.0000

surface  2010
segment:       -1219     1209    -1201     1205    -1206
                0.00000E+00 0.0000

surface  2011
segment:        1219
                3.22010E-47 0.1177

surface  2011
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209     1201
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209    -1201    -1205
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209    -1201     1205     1206
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209    -1201     1205    -1206
                0.00000E+00 0.0000

surface  2012
segment:        1219
                1.70486E-47 0.1320

surface  2012
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2012
segment:       -1219     1209     1201
                0.00000E+00 0.0000

surface  2012
segment:       -1219     1209    -1201    -1205
                0.00000E+00 0.0000

surface  2012
segment:       -1219     1209    -1201     1205     1206
                0.00000E+00 0.0000

surface  2012
segment:       -1219     1209    -1201     1205    -1206
                0.00000E+00 0.0000

surface  2013
segment:        1219
                1.09995E-47 0.1921

surface  2013
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2013
segment:       -1219     1209     1201
                0.00000E+00 0.0000

surface  2013
segment:       -1219     1209    -1201    -1205
                0.00000E+00 0.0000

surface  2013
segment:       -1219     1209    -1201     1205     1206
```

```
                0.00000E+00 0.0000

 surface  2013
 segment:       -1219     1209    -1201     1205    -1206
                0.00000E+00 0.0000


================================================================================================================
==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  42

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--      -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.49      yes          yes            0.72      yes          no            constant
random       0.00
 passed?        yes           no      yes          yes              no      yes          no               yes
yes          no


================================================================================================================
==================


 warning.  the tally in the tally fluctuation chart bin did not pass  4 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  42 with nps =    70000000  print
table 160


 normed average tally per history  = 6.16272E-05          unnormed average tally per history  = 1.84881E+02
 estimated tally relative error    = 0.4866               estimated variance of the variance  = 0.7202
 relative error from zero tallies  = 0.2500               relative error from nonzero scores  = 0.4174

 number of nonzero history tallies =          16          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =    29974960          largest  unnormalized history tally = 5.78466E+09
 (largest  tally)/(average tally)  = 3.12885E+07          (largest  tally)/(avg nonzero tally)= 7.15165E+00

 (confidence interval shift)/mean  = 0.1965               shifted confidence interval center  = 7.37399E-05


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            6.16272E-05             8.91732E-05                    0.446978
      relative error                  4.86576E-01             4.56618E-01                   -0.061569
      variance of the variance        7.20216E-01             4.21292E-01                   -0.415048
      shifted center                  7.37399E-05             7.44997E-05                    0.010304
      figure of merit                 9.52485E-03             1.08157E-02                    0.135522

 there is not enough information in the largest  history scores (usually less than 500 scores) for a reliable
estimate of the slope.
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.579E+05)*( 2.456E-04)**2 = (1.579E+05)*(6.034E-
08) = 9.525E-03

1unnormed tally density for tally  42            nonzero tally mean(m) = 8.089E+08   nps =    70000000  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 0.0)
  tally  number num den log den:d-------------------------------------------------d-------------------------------
------------------d-
 2.00+08      1 3.48-16 -15.458 ************************************************|************************
|
```

```
 2.51+08      4 1.11-15 -14.956
*********************************************|************************************************|*
 3.16+08      3 6.59-16 -15.181
*********************************************|****************************************         |
 3.98+08      1 1.74-16 -15.758 ***********************************************|***********
|
 5.01+08      4 5.54-16 -15.256
*********************************************|************************************             |
 6.31+08      0 0.00+00   0.000                                                |
|
 7.94+08      0 0.00+00   0.000                                                |
|
 1.00+09      0 0.00+00   0.000                                                |
|
 1.26+09      1 5.52-17 -16.258 ***********************************            |
|
 1.58+09      0 0.00+00   0.000                                                |
|
 2.00+09      1 3.48-17 -16.458 *************************                      |
|
 2.51+09      0 0.00+00   0.000                                                |
|
 3.16+09      0 0.00+00   0.000                                                |
|
 3.98+09      0 0.00+00   0.000                                                |
|
 5.01+09      0 0.00+00   0.000                                                |
|
 6.31+09      1 1.10-17 -16.958 *                                              |
|
  total      16 2.29-07         d-----------------------------------------------d-------------------------------
------------------d-

1tally  52        nps =    70000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
3.00000E+06
                surface:     2010         2011         2012         2013
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:        1219
                 4.42244E-46 0.0341

 surface  2003
 segment:       -1219    -1209
                 2.75196E-49 0.5966

 surface  2003
 segment:       -1219     1209    -1201
                 5.75943E-48 0.1866

 surface  2003
 segment:       -1219     1209     1201    -1205
                 2.26891E-48 0.2172
```

```
surface  2003
segment:       -1219     1209     1201     1205     1206
                1.50326E-48 0.2334

surface  2003
segment:       -1219     1209     1201     1205    -1206
                1.79951E-05 0.5331

surface  2004
segment:        1219
                3.72651E-46 0.0383

surface  2004
segment:       -1219    -1209
                3.47905E-49 0.5555

surface  2004
segment:       -1219     1209    -1201
                3.12099E-48 0.2953

surface  2004
segment:       -1219     1209     1201    -1205
                1.74847E-48 0.4036

surface  2004
segment:       -1219     1209     1201     1205     1206
                1.31072E-48 0.3668

surface  2004
segment:       -1219     1209     1201     1205    -1206
                3.83820E-06 0.5913

surface  2005
segment:        1219
                3.00930E-46 0.0325

surface  2005
segment:       -1219    -1209
                6.38578E-50 1.0000

surface  2005
segment:       -1219     1209    -1201
                2.48403E-48 0.3771

surface  2005
segment:       -1219     1209     1201    -1205
                8.19916E-49 0.3109

surface  2005
segment:       -1219     1209     1201     1205     1206
                2.05646E-49 0.5178

surface  2005
segment:       -1219     1209     1201     1205    -1206
                5.08496E-06 0.7387

surface  2006
segment:        1219
                2.65890E-46 0.0526

surface  2006
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2006
segment:       -1219     1209    -1201
                1.71818E-48 0.5114

surface  2006
segment:       -1219     1209     1201    -1205
                3.59538E-49 0.5028

surface  2006
segment:       -1219     1209     1201     1205     1206
                1.20758E-49 0.7164

surface  2006
```

```
segment:       -1219     1209     1201     1205    -1206
                3.28663E-06 1.0000

surface  2007
segment:        1219
                1.97398E-46 0.0416

surface  2007
segment:       -1219    -1209
                5.49595E-50 1.0000

surface  2007
segment:       -1219     1209    -1201
                4.45188E-49 0.3706

surface  2007
segment:       -1219     1209     1201    -1205
                7.34674E-49 0.8363

surface  2007
segment:       -1219     1209     1201     1205     1206
                1.40949E-49 0.7920

surface  2007
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2008
segment:        1219
                1.46266E-46 0.0575

surface  2008
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2008
segment:       -1219     1209    -1201
                2.32969E-49 0.5288

surface  2008
segment:       -1219     1209     1201    -1205
                0.00000E+00 0.0000

surface  2008
segment:       -1219     1209     1201     1205     1206
                7.28987E-50 1.0000

surface  2008
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2009
segment:        1219
                9.62513E-47 0.0787

surface  2009
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2009
segment:       -1219     1209    -1201
                3.92849E-50 1.0000

surface  2009
segment:       -1219     1209     1201    -1205
                1.59133E-49 0.8097

surface  2009
segment:       -1219     1209     1201     1205     1206
                0.00000E+00 0.0000

surface  2009
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2010
segment:        1219
                4.59429E-47 0.0780
```

```
surface  2010
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2010
segment:       -1219     1209    -1201
                5.29019E-50 1.0000

surface  2010
segment:       -1219     1209     1201    -1205
                0.00000E+00 0.0000

surface  2010
segment:       -1219     1209     1201     1205     1206
                0.00000E+00 0.0000

surface  2010
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2011
segment:        1219
                3.22010E-47 0.1177

surface  2011
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209    -1201
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209     1201    -1205
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209     1201     1205     1206
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2012
segment:        1219
                1.70486E-47 0.1320

surface  2012
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2012
segment:       -1219     1209    -1201
                0.00000E+00 0.0000

surface  2012
segment:       -1219     1209     1201    -1205
                0.00000E+00 0.0000

surface  2012
segment:       -1219     1209     1201     1205     1206
                0.00000E+00 0.0000

surface  2012
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2013
segment:        1219
                1.09995E-47 0.1921

surface  2013
segment:       -1219    -1209
                0.00000E+00 0.0000

surface  2013
```

```
 segment:       -1219     1209    -1201
                 0.00000E+00 0.0000

 surface  2013
 segment:       -1219     1209     1201    -1205
                 0.00000E+00 0.0000

 surface  2013
 segment:       -1219     1209     1201     1205     1206
                 0.00000E+00 0.0000

 surface  2013
 segment:       -1219     1209     1201     1205    -1206
                 0.00000E+00 0.0000
```

==========

```
          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  52

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.53      yes          yes            0.45       no          no             decrease
random       0.00
 passed?        yes           no      yes          yes              no       no          no                 no
yes          no
```

==========

```
 warning.  the tally in the tally fluctuation chart bin did not pass  6 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  52 with nps =    70000000  print
table 160


 normed average tally per history  = 1.79951E-05          unnormed average tally per history  = 5.39852E+01
 estimated tally relative error    = 0.5331               estimated variance of the variance  = 0.4518
 relative error from zero tallies  = 0.4082               relative error from nonzero scores  = 0.3429

 number of nonzero history tallies =           6          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =    64998028          largest  unnormalized history tally = 1.50681E+09
 (largest  tally)/(average tally)  = 2.79115E+07          (largest  tally)/(avg nonzero tally)= 2.39242E+00

 (confidence interval shift)/mean  = 0.1743               shifted confidence interval center  = 2.11318E-05


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            1.79951E-05            2.51703E-05                   0.398736
      relative error                  5.33149E-01            4.75974E-01                  -0.107241
      variance of the variance        4.51794E-01            3.14473E-01                  -0.303946
      shifted center                  2.11318E-05            2.12935E-05                   0.007654
      figure of merit                 7.93344E-03            9.95390E-03                   0.254676

 there is not enough information in the largest  history scores (usually less than 500 scores) for a reliable
estimate of the slope.
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.579E+05)*( 2.242E-04)**2 = (1.579E+05)*(5.026E-
08) = 7.933E-03
```

```
1unnormed tally density for tally  52            nonzero tally mean(m) = 6.298E+08   nps =    70000000  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 0.0)
  tally  number num den log den:d-------------------------------------------------------------------------------
--------------------
 2.00+08      1 3.48-16 -15.458
*********************************************************************************************
 2.51+08      1 2.77-16 -15.558
*****************************************************************************
 3.16+08      1 2.20-16 -15.658 ************************************************************************
 3.98+08      1 1.74-16 -15.758 ********************************************************************
 5.01+08      0 0.00+00   0.000
 6.31+08      0 0.00+00   0.000
 7.94+08      0 0.00+00   0.000
 1.00+09      0 0.00+00   0.000
 1.26+09      1 5.52-17 -16.258 ************
 1.58+09      1 4.38-17 -16.358 *
  total       6 8.57-08         d-------------------------------------------------------------------------------
--------------------

1tally  62        nps =    70000000
          tally type 2    particle flux averaged over a surface.
          tally for  photons

          this tally is modified by a dose function.

          areas
               surface:     1219
              segment
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       1.00000E+50
                5       5.30000E+06

 surface  1219
 segment:       -1205
                1.57181E-46 0.0845

 surface  1219
 segment:        1205     1206
                1.29153E-45 0.0254

 surface  1219
 segment:        1205    -1206     1203
                2.47943E-46 0.0519

 surface  1219
 segment:        1205    -1206    -1203    -1202
                2.60847E-46 0.0746

 surface  1219
 segment:        1205    -1206    -1203     1202
                1.56381E+00 0.0021



==========================================================================================================
==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  62

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value   decrease   decrease rate      value   decrease   decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.00      yes          yes            0.01      yes         yes            constant
random       2.98
 passed?        yes          yes      yes          yes             yes      yes         yes               yes
yes          no
```

==========

 warning. the tally in the tally fluctuation chart bin did not pass 1 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 62 with nps =   70000000 print table 160

normed average tally per history	= 1.56381E+00	unnormed average tally per history	= 8.28822E+06
estimated tally relative error	= 0.0021	estimated variance of the variance	= 0.0055
relative error from zero tallies	= 0.0010	relative error from nonzero scores	= 0.0018
number of nonzero history tallies	= 1043609	efficiency for the nonzero tallies	= 0.0149
history number of largest tally	= 24917020	largest unnormalized history tally	= 2.67342E+11
(largest tally)/(average tally)	= 3.22557E+04	(largest tally)/(avg nonzero tally)	= 4.80890E+02
(confidence interval shift)/mean	= 0.0000	shifted confidence interval center	= 1.56388E+00

 if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	1.56381E+00	1.56454E+00	0.000461
relative error	2.08629E-03	2.13559E-03	0.023628
variance of the variance	5.47643E-03	7.14211E-03	0.304155
shifted center	1.56388E+00	1.56389E+00	0.000009
figure of merit	5.18095E+02	4.94453E+02	-0.045632

 the estimated inverse power slope of the 200 largest tallies starting at 2.28835E+10 is 2.9765
 the history score probability density function appears to have an unsampled region at the largest history scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.579E+05)*(5.729E-02)**2 = (1.579E+05)*(3.282E-03) = 5.181E+02

1unnormed tally density for tally 62   nonzero tally mean(m) = 5.559E+08   nps =   70000000 print table 161

 abscissa   ordinate   log plot of tally probability density function in tally fluctuation chart bin(d=decade,slope= 3.0)

tally	number	num den	log den	d	d	d	d	d	d	d	d	d
2.51+07	980	2.71-12	-11.567						**			
3.16+07	2939	6.46-12	-11.190						*******			
3.98+07	3964	6.92-12	-11.160						*******			
5.01+07	5006	6.94-12	-11.159						*******			
6.31+07	7343	8.08-12	-11.092						********			
7.94+07	12819	1.12-11	-10.950						*********			
1.00+08	24657	1.71-11	-10.766									
1.26+08	36154	1.99-11	-10.700									*
1.58+08	46938	2.06-11	-10.687									*
2.00+08	57834	2.01-11	-10.696									*
2.51+08	71191	1.97-11	-10.706									*
3.16+08	90605	1.99-11	-10.701									*
3.98+08	114116	1.99-11	-10.701									*
5.01+08	134317	1.86-11	-10.730									*
6.31+08	172345	1.90-11	-10.722									
m	m	m	m	m	m	m	m	m	m	m	m	m

```
 7.94+08 111957 9.79-12 -11.009
**********|**********|**********|**********|**********|**********|**********|*********  |
 1.00+09  60551 4.21-12 -11.376
**********|**********|**********|**********|**********|**********|**********|****       |
 1.26+09  42416 2.34-12 -11.631
**********|**********|**********|**********|**********|**********|**********|*          |
 1.58+09  20676 9.06-13 -12.043
**********|**********|**********|**********|**********|**********|********   |           |
 2.00+09  10201 3.55-13 -12.450 **********|**********|**********|**********|**********|**********|***
|          |
 2.51+09   5025 1.39-13 -12.857 **********|**********|**********|**********|**********|********** |
|          |
 3.16+09   2858 6.28-14 -13.202 **********|**********|**********|**********|**********|*******     |
|          |
 3.98+09   1856 3.24-14 -13.490 **********|**********|**********|**********|**********|***         |
|          |
 5.01+09   1501 2.08-14 -13.682 **********|**********|**********|**********|**********|*           |
|          |
 6.31+09   1319 1.45-14 -13.838 **********|**********|**********|**********|**********|            |
|          |
 7.94+09   1120 9.79-15 -14.009 **********|**********|**********|**********|*********  |            |
|          |
 1.00+10    928 6.45-15 -14.191 **********|**********|**********|**********|******     |            |
|          |
 1.26+10    819 4.52-15 -14.345 **********|**********|**********|**********|*****      |            |
|          |
 1.58+10    543 2.38-15 -14.623 **********|**********|**********|**********|*          |            |
|          |
 2.00+10    321 1.12-15 -14.952 **********|**********|**********|**********  |          |            |
|          |
 2.51+10    153 4.23-16 -15.374 **********|**********|**********|*****       | s        |            |
|          |
 3.16+10     72 1.58-16 -15.801 **********|**********|**********|            s          |            |
|          |
 3.98+10     40 6.98-17 -16.156 **********|**********|*******    |         s  |          |            |
|          |
 5.01+10     19 2.63-17 -16.580 **********|**********|**         |       s    |          |            |
|          |
 6.31+10     10 1.10-17 -16.958 **********|**********  |           |    s       |          |            |
|          |
 7.94+10      5 4.37-18 -17.359 **********|*****       |           | s          |          |            |
|          |
 1.00+11      2 1.39-18 -17.857 **********|            |          s|            |          |            |
|          |
 1.26+11      3 1.66-18 -17.781 **********|            |       s   |            |          |            |
|          |
 1.58+11      3 1.31-18 -17.881 **********|            |    s      |            |          |            |
|          |
 2.00+11      0 0.00+00   0.000            |            |s          |            |          |            |
|          |
 2.51+11      2 5.53-19 -18.257 ******     |          s |           |            |          |            |
|          |
 3.16+11      1 2.20-19 -18.658 *          |      s     |           |            |          |            |
|          |
  total 1043609 1.49-02         d----------d----------d----------d----------d----------d----------d-----
------d----------d-

1status of the statistical checks used to form confidence intervals for the mean for each tally bin


 tally   result of statistical checks for the tfc bin (the first check not passed is listed) and error magnitude
check for all bins

     2   missed  2 of 10 tfc bin checks: the figure of merit has a trend during the last half of the problem
         passed all bin error check:     1 tally bins all have relative errors less than 0.10 with no zero bins

    12   missed  7 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint
detector tallies
         missed all bin error check:    16 tally bins had     2 bins with zeros and    14 bins with relative
errors exceeding 0.10

    22   missed  3 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint
detector tallies
         missed all bin error check:    22 tally bins had     0 bins with zeros and    22 bins with relative
errors exceeding 0.10

    32   missed  6 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint
detector tallies
```

missed all bin error check: 5 tally bins had 3 bins with zeros and 1 bins with relative errors exceeding 0.10

42 missed 4 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint detector tallies
missed all bin error check: 66 tally bins had 25 bins with zeros and 33 bins with relative errors exceeding 0.10

52 missed 6 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint detector tallies
missed all bin error check: 66 tally bins had 27 bins with zeros and 31 bins with relative errors exceeding 0.10

62 missed 1 of 10 tfc bin checks: the slope of decrease of largest tallies is less than the minimum acceptable value of 3.0
passed all bin error check: 5 tally bins all have relative errors less than 0.10 with no zero bins

the 10 statistical checks are only for the tally fluctuation chart bin and do not apply to other tally bins.

the tally bins with zeros may or may not be correct: compare the source, cutoffs, multipliers, et cetera with the tally bins.

warning. 7 of the 7 tally fluctuation chart bins did not pass all 10 statistical checks.
warning. 5 of the 7 tallies had bins with relative errors greater than recommended.
1tally fluctuation charts

	tally 2					tally 12					tally 22				
nps	mean	error	vov	slope	fom	mean	error	vov	slope	fom	mean	error	vov	slope	fom
4096000	8.9710E-03	0.1353	0.1364	0.0	2.1E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.5533E-48	1.0000	1.0000	0.0	3.8E-02
8192000	7.3663E-03	0.0945	0.0809	0.0	2.2E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	2.1875E-48	0.5172	0.3218	0.0	7.2E-02
12288000	7.3837E-03	0.0844	0.0790	0.0	1.8E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.7188E-48	0.4643	0.2682	0.0	6.0E-02
16384000	7.4937E-03	0.0841	0.1090	0.0	1.4E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	2.3879E-48	0.4374	0.3853	0.0	5.0E-02
20480000	7.5528E-03	0.0749	0.0813	1.6	1.4E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.8512E-48	0.3984	0.3640	0.0	4.9E-02
24576000	7.6528E-03	0.0715	0.0764	1.6	1.3E+00	6.5825E-10	1.0000	1.0000	0.0	6.4E-03	6.2083E-48	0.3330	0.2912	0.0	5.8E-02
28672000	7.7279E-03	0.0734	0.0998	1.9	1.0E+00	5.6421E-10	1.0000	1.0000	0.0	5.5E-03	6.2738E-48	0.3014	0.2372	0.0	6.1E-02
32768000	8.0143E-03	0.0739	0.0723	2.0	8.8E-01	4.9369E-10	1.0000	1.0000	0.0	4.8E-03	5.7838E-48	0.2887	0.2288	0.0	5.8E-02
36864000	7.8216E-03	0.0682	0.0689	1.8	9.2E-01	4.3883E-10	1.0000	1.0000	0.0	4.3E-03	5.9792E-48	0.2624	0.1903	0.0	6.2E-02
40960000	7.6951E-03	0.0631	0.0659	1.7	9.7E-01	3.9495E-10	1.0000	1.0000	0.0	3.9E-03	5.5045E-48	0.2575	0.1875	0.0	5.8E-02
45056000	7.7292E-03	0.0588	0.0591	2.0	1.0E+00	3.5905E-10	1.0000	1.0000	0.0	3.5E-03	6.1975E-48	0.2512	0.1499	0.0	5.6E-02
49152000	7.7062E-03	0.0551	0.0549	2.0	1.1E+00	3.2912E-10	1.0000	1.0000	0.0	3.2E-03	5.8265E-48	0.2456	0.1482	0.0	5.3E-02
53248000	7.5666E-03	0.0524	0.0526	2.1	1.1E+00	3.0381E-10	1.0000	1.0000	0.0	3.0E-03	5.9890E-48	0.2252	0.1370	0.0	5.8E-02
57344000	7.5416E-03	0.0496	0.0494	2.1	1.1E+00	2.8211E-10	1.0000	1.0000	0.0	2.8E-03	5.8316E-48	0.2167	0.1324	0.0	5.9E-02
61440000	7.5329E-03	0.0475	0.0453	2.1	1.1E+00	2.6330E-10	1.0000	1.0000	0.0	2.6E-03	5.4785E-48	0.2154	0.1321	0.0	5.5E-02
65536000	7.4935E-03	0.0460	0.0421	2.0	1.1E+00	2.4684E-10	1.0000	1.0000	0.0	2.4E-03	5.8741E-48	0.2143	0.1241	0.0	5.2E-02
69632000	7.4743E-03	0.0438	0.0404	2.0	1.2E+00	2.3232E-10	1.0000	1.0000	0.0	2.3E-03	5.6403E-48	0.2106	0.1229	0.0	5.1E-02
70000000	7.4685E-03	0.0437	0.0403	2.0	1.2E+00	2.3110E-10	1.0000	1.0000	0.0	2.3E-03	5.6106E-48	0.2106	0.1229	0.0	5.1E-02

	tally 32					tally 42					tally 52				
nps	mean	error	vov	slope	fom	mean	error	vov	slope	fom	mean	error	vov	slope	fom
4096000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00
8192000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00
12288000	1.7264E-04	0.8430	0.9171	0.0	1.8E-02	4.8450E-05	1.0000	1.0000	0.0	1.3E-02	0.0000E+00	0.0000	0.0000	0.0	0.0E+00
16384000	2.4619E-04	0.6491	0.4842	0.0	2.3E-02	4.2768E-05	0.8628	0.9411	0.0	1.3E-02	5.7419E-06	1.0000	1.0000	0.0	9.6E-03
20480000	1.9696E-04	0.6491	0.4842	0.0	1.8E-02	3.4215E-05	0.8628	0.9411	0.0	1.0E-02	7.7818E-06	0.7185	0.5612	0.0	1.5E-02
24576000	1.6413E-04	0.6491	0.4842	0.0	1.5E-02	5.8141E-05	0.5302	0.4719	0.0	2.3E-02	6.4849E-06	0.7185	0.5612	0.0	1.2E-02
28672000	1.4068E-04	0.6491	0.4842	0.0	1.3E-02	4.9835E-05	0.5302	0.4719	0.0	2.0E-02	8.3039E-06	0.5837	0.3618	0.0	1.6E-02

```
     32768000   1.2310E-04 0.6491 0.4842  0.0 1.1E-02   1.0711E-04 0.5919 0.7507  0.0 1.4E-02   7.2659E-06 0.5837 0.3618  0.0
1.4E-02
     36864000   1.0942E-04 0.6491 0.4842  0.0 1.0E-02   9.9357E-05 0.5687 0.7427  0.0 1.3E-02   6.4586E-06 0.5837 0.3618  0.0
1.3E-02
     40960000   1.1248E-04 0.5818 0.4430  0.0 1.1E-02   9.1015E-05 0.5590 0.7412  0.0 1.2E-02   8.5058E-06 0.5092 0.2856  0.0
1.5E-02
     45056000   1.0225E-04 0.5818 0.4430  0.0 1.0E-02   8.4663E-05 0.5468 0.7387  0.0 1.2E-02   7.7325E-06 0.5092 0.2856  0.0
1.4E-02
     49152000   9.3729E-05 0.5818 0.4430  0.0 9.5E-03   7.7608E-05 0.5468 0.7387  0.0 1.1E-02   7.0881E-06 0.5092 0.2856  0.0
1.2E-02
     53248000   8.6519E-05 0.5818 0.4430  0.0 8.8E-03   7.9739E-05 0.4941 0.7217  0.0 1.2E-02   6.5429E-06 0.5092 0.2856  0.0
1.1E-02
     57344000   8.6341E-05 0.5458 0.4290  0.0 9.2E-03   7.4043E-05 0.4941 0.7217  0.0 1.1E-02   1.3208E-05 0.5886 0.7155  0.0
7.9E-03
     61440000   8.0585E-05 0.5458 0.4290  0.0 8.6E-03   6.9107E-05 0.4941 0.7217  0.0 1.1E-02   1.2327E-05 0.5886 0.7155  0.0
7.4E-03
     65536000   7.5548E-05 0.5458 0.4290  0.0 8.1E-03   6.5825E-05 0.4866 0.7202  0.0 1.0E-02   1.9221E-05 0.5331 0.4518  0.0
8.5E-03
     69632000   7.1104E-05 0.5458 0.4290  0.0 7.6E-03   6.1953E-05 0.4866 0.7202  0.0 9.6E-03   1.8090E-05 0.5331 0.4518  0.0
8.0E-03
     70000000   7.0730E-05 0.5458 0.4290  0.0 7.6E-03   6.1627E-05 0.4866 0.7202  0.0 9.5E-03   1.7995E-05 0.5331 0.4518  0.0
7.9E-03
1tally fluctuation charts

                      tally   62
          nps      mean     error   vov  slope    fom
      4096000   1.5535E+00 0.0079 0.0087  5.9     616
      8192000   1.5551E+00 0.0059 0.0139  3.2     560
     12288000   1.5621E+00 0.0048 0.0081  3.4     550
     16384000   1.5586E+00 0.0041 0.0053  3.5     581
     20480000   1.5564E+00 0.0037 0.0057  3.4     573
     24576000   1.5566E+00 0.0033 0.0042  3.4     581
     28672000   1.5570E+00 0.0032 0.0172  3.1     522
     32768000   1.5592E+00 0.0031 0.0164  3.0     498
     36864000   1.5598E+00 0.0030 0.0152  2.8     475
     40960000   1.5605E+00 0.0028 0.0131  2.8     491
     45056000   1.5611E+00 0.0027 0.0112  2.8     494
     49152000   1.5619E+00 0.0025 0.0097  2.6     502
     53248000   1.5643E+00 0.0024 0.0084  2.7     500
     57344000   1.5653E+00 0.0023 0.0074  2.7     508
     61440000   1.5640E+00 0.0023 0.0068  2.6     507
     65536000   1.5630E+00 0.0022 0.0061  2.7     514
     69632000   1.5637E+00 0.0021 0.0055  2.9     517
     70000000   1.5638E+00 0.0021 0.0055  3.0     518


************************************************************************************************************
*******
 dump no.    9 on file runtpe       nps =    70000000     coll =     1098382475     ctm =      443.45   nrn =
71547579278

 surface-source file wssa     with nps =    70000000 and     3874082 tracks was written for
     surface(s)   1220

        23 warning messages so far.


 run terminated when    70000000  particle histories were done.

 computer time =  443.95 minutes

mcnp     version 5     11112005                    03/19/09 01:34:09                    probid =  03/18/09
                                                    18:10:02
```

MCNP Case With Translated Source With Shield Bells (With concrete floor)

```
                Thread Name & Version = mcnp5VE_RSICC, 1.40

        .  .  .  
```

```
 55-          68     5       -1 -68 1209 -1212
 56-          69     5       -1 -69 1209 -1212
 57-          71     5       -1 -71 1209 -1212
 58-          72     5       -1 -72 1209 -1212
 59-          73     5       -1 -73 1209 -1212
 60-          74     5       -1 -74 1209 -1212
 61-          75     5       -1 -75 1209 -1212
 62-          76     5       -1 -76 1209 -1212
 63-          77     5       -1 -77 1209 -1212
 64-          78     5       -1 -78 1209 -1212
 65-          79     5       -1 -79 1209 -1212
 66-          81     5       -1 -81 1209 -1212
 67-          82     5       -1 -82 1209 -1212
 68-          83     5       -1 -83 1209 -1212
 69-          84     5       -1 -84 1209 -1212
 70-          85     5       -1 -85 1209 -1212
 71-          86     5       -1 -86 1209 -1212
 72-          87     5       -1 -87 1209 -1212
 73-          88     5       -1 -88 1209 -1212
 74-          89     5       -1 -89 1209 -1212
 75-          91     5       -1 -91 1209 -1212
 76-          92     5       -1 -92 1209 -1212
 77-          93     5       -1 -93 1209 -1212
 78-          94     5       -1 -94 1209 -1212
 79-          95     5       -1 -95 1209 -1212
 80-          96     5       -1 -96 1209 -1212
 81-          97     5       -1 -97 1209 -1212
 82-          98     5       -1 -98 1209 -1212
 83-          99     5       -1 -99 1209 -1212
 84-         101     5       -1 -101 1209 -1212
 85-         102     5       -1 -102 1209 -1212
 86-         103     5       -1 -103 1209 -1212
 87-         104     5       -1 -104 1209 -1212
 88-         105     5       -1 -105 1209 -1212
 89-         106     5       -1 -106 1209 -1212
 90-         107     5       -1 -107 1209 -1212
 91-         108     5       -1 -108 1209 -1212
 92-         109     5       -1 -109 1209 -1212
 93-         111     5       -1 -111 1209 -1212
 94-         112     5       -1 -112 1209 -1212
 95-         113     5       -1 -113 1209 -1212
 96-         114     5       -1 -114 1209 -1212
 97-         115     5       -1 -115 1209 -1212
 98-         116     5       -1 -116 1209 -1212
 99-         117     5       -1 -117 1209 -1212
100-         118     5       -1 -118 1209 -1212
101-         119     5       -1 -119 1209 -1212
102-         121     5       -1 -121 1209 -1212
103-         122     5       -1 -122 1209 -1212
104-         123     5       -1 -123 1209 -1212
105-         124     5       -1 -124 1209 -1212
106-         125     5       -1 -125 1209 -1212
107-         126     5       -1 -126 1209 -1212
108-         127     5       -1 -127 1209 -1212
109-         128     5       -1 -128 1209 -1212
110-         129     5       -1 -129 1209 -1212
111-         131     5       -1 -131 1209 -1212
112-         132     5       -1 -132 1209 -1212
113-         133     5       -1 -133 1209 -1212
114-         134     5       -1 -134 1209 -1212
115-         135     5       -1 -135 1209 -1212
116-         136     5       -1 -136 1209 -1212
117-         137     5       -1 -137 1209 -1212
118-         138     5       -1 -138 1209 -1212
119-         139     5       -1 -139 1209 -1212
120-         141     5       -1 -141 1209 -1212
121-         142     5       -1 -142 1209 -1212
122-         143     5       -1 -143 1209 -1212
123-         144     5       -1 -144 1209 -1212
124-         145     5       -1 -145 1209 -1212
125-         146     5       -1 -146 1209 -1212
126-         147     5       -1 -147 1209 -1212
127-         148     5       -1 -148 1209 -1212
128-         149     5       -1 -149 1209 -1212
129-       c     Air  Gap Cells
130-         211     3 -0.001225 -211 1209 -1213 #11
131-         212     3 -0.001225 -212 1209 -1213 #12
132-         213     3 -0.001225 -213 1209 -1213 #13
```

```
133-          214      3 -0.001225 -214 1209 -1213 #14
134-          215      3 -0.001225 -215 1209 -1213 #15
135-          216      3 -0.001225 -216 1209 -1213 #16
136-          217      3 -0.001225 -217 1209 -1213 #17
137-          218      3 -0.001225 -218 1209 -1213 #18
138-          219      3 -0.001225 -219 1209 -1213 #19
139-          221      3 -0.001225 -221 1209 -1213 #21
140-          222      3 -0.001225 -222 1209 -1213 #22
141-          223      3 -0.001225 -223 1209 -1213 #23
142-          224      3 -0.001225 -224 1209 -1213 #24
143-          225      3 -0.001225 -225 1209 -1213 #25
144-          226      3 -0.001225 -226 1209 -1213 #26
145-          227      3 -0.001225 -227 1209 -1213 #27
146-          228      3 -0.001225 -228 1209 -1213 #28
147-          229      3 -0.001225 -229 1209 -1213 #29
148-          231      3 -0.001225 -231 1209 -1213 #31
149-          232      3 -0.001225 -232 1209 -1213 #32
150-          233      3 -0.001225 -233 1209 -1213 #33
151-          234      3 -0.001225 -234 1209 -1213 #34
152-          235      3 -0.001225 -235 1209 -1213 #35
153-          236      3 -0.001225 -236 1209 -1213 #36
154-          237      3 -0.001225 -237 1209 -1213 #37
155-          238      3 -0.001225 -238 1209 -1213 #38
156-          239      3 -0.001225 -239 1209 -1213 #39
157-          241      3 -0.001225 -241 1209 -1213 #41
158-          242      3 -0.001225 -242 1209 -1213 #42
159-          243      3 -0.001225 -243 1209 -1213 #43
160-          244      3 -0.001225 -244 1209 -1213 #44
161-          245      3 -0.001225 -245 1209 -1213 #45
162-          246      3 -0.001225 -246 1209 -1213 #46
163-          247      3 -0.001225 -247 1209 -1213 #47
164-          248      3 -0.001225 -248 1209 -1213 #48
165-          249      3 -0.001225 -249 1209 -1213 #49
166-          251      3 -0.001225 -251 1209 -1213 #51
167-          252      3 -0.001225 -252 1209 -1213 #52
168-          253      3 -0.001225 -253 1209 -1213 #53
169-          254      3 -0.001225 -254 1209 -1213 #54
170-          255      3 -0.001225 -255 1209 -1213 #55
171-          256      3 -0.001225 -256 1209 -1213 #56
172-          257      3 -0.001225 -257 1209 -1213 #57
173-          258      3 -0.001225 -258 1209 -1213 #58
174-          259      3 -0.001225 -259 1209 -1213 #59
175-          261      3 -0.001225 -261 1209 -1213 #61
176-          262      3 -0.001225 -262 1209 -1213 #62
177-          263      3 -0.001225 -263 1209 -1213 #63
178-          264      3 -0.001225 -264 1209 -1213 #64
179-          265      3 -0.001225 -265 1209 -1213 #65
180-          266      3 -0.001225 -266 1209 -1213 #66
181-          267      3 -0.001225 -267 1209 -1213 #67
182-          268      3 -0.001225 -268 1209 -1213 #68
183-          269      3 -0.001225 -269 1209 -1213 #69
184-          271      3 -0.001225 -271 1209 -1213 #71
185-          272      3 -0.001225 -272 1209 -1213 #72
186-          273      3 -0.001225 -273 1209 -1213 #73
187-          274      3 -0.001225 -274 1209 -1213 #74
188-          275      3 -0.001225 -275 1209 -1213 #75
189-          276      3 -0.001225 -276 1209 -1213 #76
190-          277      3 -0.001225 -277 1209 -1213 #77
191-          278      3 -0.001225 -278 1209 -1213 #78
192-          279      3 -0.001225 -279 1209 -1213 #79
193-          281      3 -0.001225 -281 1209 -1213 #81
194-          282      3 -0.001225 -282 1209 -1213 #82
195-          283      3 -0.001225 -283 1209 -1213 #83
196-          284      3 -0.001225 -284 1209 -1213 #84
197-          285      3 -0.001225 -285 1209 -1213 #85
198-          286      3 -0.001225 -286 1209 -1213 #86
199-          287      3 -0.001225 -287 1209 -1213 #87
200-          288      3 -0.001225 -288 1209 -1213 #88
201-          289      3 -0.001225 -289 1209 -1213 #89
202-          291      3 -0.001225 -291 1209 -1213 #91
203-          292      3 -0.001225 -292 1209 -1213 #92
204-          293      3 -0.001225 -293 1209 -1213 #93
205-          294      3 -0.001225 -294 1209 -1213 #94
206-          295      3 -0.001225 -295 1209 -1213 #95
207-          296      3 -0.001225 -296 1209 -1213 #96
208-          297      3 -0.001225 -297 1209 -1213 #97
209-          298      3 -0.001225 -298 1209 -1213 #98
210-          299      3 -0.001225 -299 1209 -1213 #99
```

```
211-         301     3 -0.001225 -301 1209 -1213 #101
212-         302     3 -0.001225 -302 1209 -1213 #102
213-         303     3 -0.001225 -303 1209 -1213 #103
214-         304     3 -0.001225 -304 1209 -1213 #104
215-         305     3 -0.001225 -305 1209 -1213 #105
216-         306     3 -0.001225 -306 1209 -1213 #106
217-         307     3 -0.001225 -307 1209 -1213 #107
218-         308     3 -0.001225 -308 1209 -1213 #108
219-         309     3 -0.001225 -309 1209 -1213 #109
220-         311     3 -0.001225 -311 1209 -1213 #111
221-         312     3 -0.001225 -312 1209 -1213 #112
222-         313     3 -0.001225 -313 1209 -1213 #113
223-         314     3 -0.001225 -314 1209 -1213 #114
224-         315     3 -0.001225 -315 1209 -1213 #115
225-         316     3 -0.001225 -316 1209 -1213 #116
226-         317     3 -0.001225 -317 1209 -1213 #117
227-         318     3 -0.001225 -318 1209 -1213 #118
228-         319     3 -0.001225 -319 1209 -1213 #119
229-         321     3 -0.001225 -321 1209 -1213 #121
230-         322     3 -0.001225 -322 1209 -1213 #122
231-         323     3 -0.001225 -323 1209 -1213 #123
232-         324     3 -0.001225 -324 1209 -1213 #124
233-         325     3 -0.001225 -325 1209 -1213 #125
234-         326     3 -0.001225 -326 1209 -1213 #126
235-         327     3 -0.001225 -327 1209 -1213 #127
236-         328     3 -0.001225 -328 1209 -1213 #128
237-         329     3 -0.001225 -329 1209 -1213 #129
238-         331     3 -0.001225 -331 1209 -1213 #131
239-         332     3 -0.001225 -332 1209 -1213 #132
240-         333     3 -0.001225 -333 1209 -1213 #133
241-         334     3 -0.001225 -334 1209 -1213 #134
242-         335     3 -0.001225 -335 1209 -1213 #135
243-         336     3 -0.001225 -336 1209 -1213 #136
244-         337     3 -0.001225 -337 1209 -1213 #137
245-         338     3 -0.001225 -338 1209 -1213 #138
246-         339     3 -0.001225 -339 1209 -1213 #139
247-         341     3 -0.001225 -341 1209 -1213 #141
248-         342     3 -0.001225 -342 1209 -1213 #142
249-         343     3 -0.001225 -343 1209 -1213 #143
250-         344     3 -0.001225 -344 1209 -1213 #144
251-         345     3 -0.001225 -345 1209 -1213 #145
252-         346     3 -0.001225 -346 1209 -1213 #146
253-         347     3 -0.001225 -347 1209 -1213 #147
254-         348     3 -0.001225 -348 1209 -1213 #148
255-         349     3 -0.001225 -349 1209 -1213 #149
256-       c     Bell Cells
257-         411     4   -7.86 -411 1209 -1214 #211 #11
258-         412     4   -7.86 -412 1209 -1214 #212 #12
259-         413     4   -7.86 -413 1209 -1214 #213 #13
260-         414     4   -7.86 -414 1209 -1214 #214 #14
261-         415     4   -7.86 -415 1209 -1214 #215 #15
262-         416     4   -7.86 -416 1209 -1214 #216 #16
263-         417     4   -7.86 -417 1209 -1214 #217 #17
264-         418     4   -7.86 -418 1209 -1214 #218 #18
265-         419     4   -7.86 -419 1209 -1214 #219 #19
266-         421     4   -7.86 -421 1209 -1214 #221 #21
267-         422     4   -7.86 -422 1209 -1214 #222 #22
268-         423     4   -7.86 -423 1209 -1214 #223 #23
269-         424     4   -7.86 -424 1209 -1214 #224 #24
270-         425     4   -7.86 -425 1209 -1214 #225 #25
271-         426     4   -7.86 -426 1209 -1214 #226 #26
272-         427     4   -7.86 -427 1209 -1214 #227 #27
273-         428     4   -7.86 -428 1209 -1214 #228 #28
274-         429     4   -7.86 -429 1209 -1214 #229 #29
275-         431     4   -7.86 -431 1209 -1214 #231 #31
276-         432     4   -7.86 -432 1209 -1214 #232 #32
277-         433     4   -7.86 -433 1209 -1214 #233 #33
278-         434     4   -7.86 -434 1209 -1214 #234 #34
279-         435     4   -7.86 -435 1209 -1214 #235 #35
280-         436     4   -7.86 -436 1209 -1214 #236 #36
281-         437     4   -7.86 -437 1209 -1214 #237 #37
282-         438     4   -7.86 -438 1209 -1214 #238 #38
283-         439     4   -7.86 -439 1209 -1214 #239 #39
284-         441     4   -7.86 -441 1209 -1214 #241 #41
285-         442     4   -7.86 -442 1209 -1214 #242 #42
286-         443     4   -7.86 -443 1209 -1214 #243 #43
287-         444     4   -7.86 -444 1209 -1214 #244 #44
288-         445     4   -7.86 -445 1209 -1214 #245 #45
```

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289-         446     4   -7.86 -446 1209 -1214 #246 #46
290-         447     4   -7.86 -447 1209 -1214 #247 #47
291-         448     4   -7.86 -448 1209 -1214 #248 #48
292-         449     4   -7.86 -449 1209 -1214 #249 #49
293-         451     4   -7.86 -451 1209 -1214 #251 #51
294-         452     4   -7.86 -452 1209 -1214 #252 #52
295-         453     4   -7.86 -453 1209 -1214 #253 #53
296-         454     4   -7.86 -454 1209 -1214 #254 #54
297-         455     4   -7.86 -455 1209 -1214 #255 #55
298-         456     4   -7.86 -456 1209 -1214 #256 #56
299-         457     4   -7.86 -457 1209 -1214 #257 #57
300-         458     4   -7.86 -458 1209 -1214 #258 #58
301-         459     4   -7.86 -459 1209 -1214 #259 #59
302-         461     4   -7.86 -461 1209 -1214 #261 #61
303-         462     4   -7.86 -462 1209 -1214 #262 #62
304-         463     4   -7.86 -463 1209 -1214 #263 #63
305-         464     4   -7.86 -464 1209 -1214 #264 #64
306-         465     4   -7.86 -465 1209 -1214 #265 #65
307-         466     4   -7.86 -466 1209 -1214 #266 #66
308-         467     4   -7.86 -467 1209 -1214 #267 #67
309-         468     4   -7.86 -468 1209 -1214 #268 #68
310-         469     4   -7.86 -469 1209 -1214 #269 #69
311-         471     4   -7.86 -471 1209 -1214 #271 #71
312-         472     4   -7.86 -472 1209 -1214 #272 #72
313-         473     4   -7.86 -473 1209 -1214 #273 #73
314-         474     4   -7.86 -474 1209 -1214 #274 #74
315-         475     4   -7.86 -475 1209 -1214 #275 #75
316-         476     4   -7.86 -476 1209 -1214 #276 #76
317-         477     4   -7.86 -477 1209 -1214 #277 #77
318-         478     4   -7.86 -478 1209 -1214 #278 #78
319-         479     4   -7.86 -479 1209 -1214 #279 #79
320-         481     4   -7.86 -481 1209 -1214 #281 #81
321-         482     4   -7.86 -482 1209 -1214 #282 #82
322-         483     4   -7.86 -483 1209 -1214 #283 #83
323-         484     4   -7.86 -484 1209 -1214 #284 #84
324-         485     4   -7.86 -485 1209 -1214 #285 #85
325-         486     4   -7.86 -486 1209 -1214 #286 #86
326-         487     4   -7.86 -487 1209 -1214 #287 #87
327-         488     4   -7.86 -488 1209 -1214 #288 #88
328-         489     4   -7.86 -489 1209 -1214 #289 #89
329-         491     4   -7.86 -491 1209 -1214 #291 #91
330-         492     4   -7.86 -492 1209 -1214 #292 #92
331-         493     4   -7.86 -493 1209 -1214 #293 #93
332-         494     4   -7.86 -494 1209 -1214 #294 #94
333-         495     4   -7.86 -495 1209 -1214 #295 #95
334-         496     4   -7.86 -496 1209 -1214 #296 #96
335-         497     4   -7.86 -497 1209 -1214 #297 #97
336-         498     4   -7.86 -498 1209 -1214 #298 #98
337-         499     4   -7.86 -499 1209 -1214 #299 #99
338-         501     4   -7.86 -501 1209 -1214 #301 #101
339-         502     4   -7.86 -502 1209 -1214 #302 #102
340-         503     4   -7.86 -503 1209 -1214 #303 #103
341-         504     4   -7.86 -504 1209 -1214 #304 #104
342-         505     4   -7.86 -505 1209 -1214 #305 #105
343-         506     4   -7.86 -506 1209 -1214 #306 #106
344-         507     4   -7.86 -507 1209 -1214 #307 #107
345-         508     4   -7.86 -508 1209 -1214 #308 #108
346-         509     4   -7.86 -509 1209 -1214 #309 #109
347-         511     4   -7.86 -511 1209 -1214 #311 #111
348-         512     4   -7.86 -512 1209 -1214 #312 #112
349-         513     4   -7.86 -513 1209 -1214 #313 #113
350-         514     4   -7.86 -514 1209 -1214 #314 #114
351-         515     4   -7.86 -515 1209 -1214 #315 #115
352-         516     4   -7.86 -516 1209 -1214 #316 #116
353-         517     4   -7.86 -517 1209 -1214 #317 #117
354-         518     4   -7.86 -518 1209 -1214 #318 #118
355-         519     4   -7.86 -519 1209 -1214 #319 #119
356-         521     4   -7.86 -521 1209 -1214 #321 #121
357-         522     4   -7.86 -522 1209 -1214 #322 #122
358-         523     4   -7.86 -523 1209 -1214 #323 #123
359-         524     4   -7.86 -524 1209 -1214 #324 #124
360-         525     4   -7.86 -525 1209 -1214 #325 #125
361-         526     4   -7.86 -526 1209 -1214 #326 #126
362-         527     4   -7.86 -527 1209 -1214 #327 #127
363-         528     4   -7.86 -528 1209 -1214 #328 #128
364-         529     4   -7.86 -529 1209 -1214 #329 #129
365-         531     4   -7.86 -531 1209 -1214 #331 #131
366-         532     4   -7.86 -532 1209 -1214 #332 #132
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367-         533     4   -7.86 -533 1209 -1214 #333 #133
368-         534     4   -7.86 -534 1209 -1214 #334 #134
369-         535     4   -7.86 -535 1209 -1214 #335 #135
370-         536     4   -7.86 -536 1209 -1214 #336 #136
371-         537     4   -7.86 -537 1209 -1214 #337 #137
372-         538     4   -7.86 -538 1209 -1214 #338 #138
373-         539     4   -7.86 -539 1209 -1214 #339 #139
374-         541     4   -7.86 -541 1209 -1214 #341 #141
375-         542     4   -7.86 -542 1209 -1214 #342 #142
376-         543     4   -7.86 -543 1209 -1214 #343 #143
377-         544     4   -7.86 -544 1209 -1214 #344 #144
378-         545     4   -7.86 -545 1209 -1214 #345 #145
379-         546     4   -7.86 -546 1209 -1214 #346 #146
380-         547     4   -7.86 -547 1209 -1214 #347 #147
381-         548     4   -7.86 -548 1209 -1214 #348 #148
382-         549     4   -7.86 -549 1209 -1214 #349 #149
383-       c Walls
384-        1200     3 -0.001225 1222 -1221 1206 -1208 1220 -1219  $Notch
385-        1201     1  -2.365 1206 -1208 1202 -1203 -1219 1209 #1200  $Inner Wall
386-        1202     1  -2.365 1207 -1233 1219 -1215 -1225 1226  $Top of Back Wall
387-       12021     1  -2.365 1233 -1223 1219 -1215 1226 -1225  $Split in Back Wall
388-        1203     1  -2.365 1207 -1205 -1219 1209 -1203 1202  $Bottom of Back Wall
389-        1204     1  -2.365 1225 -1234 1207 -1218 1219 -1215  $Top Of Right Wall
390-       12041     1  -2.365 1234 -1204 1207 -1218 1219 -1215  $Split in Right Wall
391-        1205     1  -2.365 1203 -1204 1207 -1218 -1219 1209  $Bottom of Right Wall
392-        1206     1  -2.365 1235 -1218 -1225 1226 1219 -1215  $Top of Front Wall
393-       12061     1  -2.365 1224 -1235 -1225 1226 1219 -1215  $Split in Front Wall
394-        1207     1  -2.365 1217 -1218 -1203 1202 -1219 1209  $Bottom of Front Wall
395-        1208     1  -2.365 1201 -1236 -1218 1207 1219 -1215 #10000 $Top of Left Wall
396-                   #10001 #10002 #10003 #10004 #10005
397-       12081     1  -2.365 -1226 1236 -1218 1207 1219 -1215 #10000 $Split in Left Wall
398-                   #10001 #10002 #10003 #10004 #10005
399-        1209     1  -2.365 -1202 1201 -1218 1207 -1219 1209  $Bottom of Left Wall
400-        1210     1  -2.365 -1209 1227 1207 -1218 -1204 1201  $Floor
401-        1211     1  -2.328 1215 -1237 1207 -1218 -1204 1201  $Roof
402-       12111     1  -2.328 1237 -1216 1207 -1218 -1204 1201  $Split in Roof
403-       c   Air
404-        9999     0         2015  $Outside Model
405-        9998     3 -0.001225 1205 -1228 -1220 1209 -1203 1202 #(-412 1209 -1214 )#
406-                   (-413 1209 -1214 )#(-414 1209 -1214 )#(-415 1209 -1214 )#
407-                   (-416 1209 -1214 )#(-417 1209 -1214 )#(-418 1209 -1214 )#
408-                   (-419 1209 -1214 )#(-421 1209 -1214 )#(-422 1209 -1214 )#
409-                   (-423 1209 -1214 )#(-424 1209 -1214 )#(-425 1209 -1214 )#
410-                   (-426 1209 -1214 )#(-427 1209 -1214 )#(-428 1209 -1214 )#
411-                   (-429 1209 -1214 )#(-431 1209 -1214 )#(-432 1209 -1214 )#
412-                   (-433 1209 -1214 )#(-434 1209 -1214 )#(-435 1209 -1214 )#
413-                   (-436 1209 -1214 )#(-437 1209 -1214 )#(-438 1209 -1214 )#
414-                   (-439 1209 -1214 )#(-441 1209 -1214 )#(-442 1209 -1214 )#
415-                   (-443 1209 -1214 )#(-444 1209 -1214 )#(-445 1209 -1214 )#
416-                   (-446 1209 -1214 )#(-447 1209 -1214 )#(-448 1209 -1214 )#
417-                   (-449 1209 -1214 )#(-451 1209 -1214 )#(-452 1209 -1214 )#
418-                   (-453 1209 -1214 )#(-454 1209 -1214 )#(-455 1209 -1214 )#
419-                   (-456 1209 -1214 )#(-457 1209 -1214 )#(-458 1209 -1214 )#
420-                   (-459 1209 -1214 )#(-411 1209 -1214 )
421-        9997     3 -0.001225 1228 -1229 -1220 1209 -1203 1202 #(-464 1209 -1214 )#
422-                   (-465 1209 -1214 )#(-466 1209 -1214 )#(-467 1209 -1214 )#
423-                   (-468 1209 -1214 )#(-469 1209 -1214 )#(-471 1209 -1214 )#
424-                   (-472 1209 -1214 )#(-473 1209 -1214 )#(-474 1209 -1214 )#
425-                   (-475 1209 -1214 )#(-476 1209 -1214 )#(-477 1209 -1214 )#
426-                   (-478 1209 -1214 )#(-479 1209 -1214 )#(-481 1209 -1214 )#
427-                   (-482 1209 -1214 )#(-483 1209 -1214 )#(-484 1209 -1214 )#
428-                   (-485 1209 -1214 )#(-486 1209 -1214 )#(-487 1209 -1214 )#
429-                   (-488 1209 -1214 )#(-489 1209 -1214 )#(-491 1209 -1214 )#
430-                   (-492 1209 -1214 )#(-493 1209 -1214 )#(-494 1209 -1214 )#
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432-                   (-498 1209 -1214 )#(-499 1209 -1214 )#(-501 1209 -1214 )#
433-                   (-502 1209 -1214 )#(-503 1209 -1214 )#(-504 1209 -1214 )#
434-                   (-505 1209 -1214 )#(-506 1209 -1214 )#(-507 1209 -1214 )#
435-                   (-508 1209 -1214 )#(-509 1209 -1214 )#(-461 1209 -1214 )#
436-                   (-462 1209 -1214 )#(-463 1209 -1214 )
437-        9996     3 -0.001225 1229 -1206 -1220 1209 -1203 1202 #(-515 1209 -1214 )#
438-                   (-516 1209 -1214 )#(-517 1209 -1214 )#(-518 1209 -1214 )#
439-                   (-519 1209 -1214 )#(-521 1209 -1214 )#(-522 1209 -1214 )#
440-                   (-523 1209 -1214 )#(-524 1209 -1214 )#(-525 1209 -1214 )#
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442-                   (-529 1209 -1214 )#(-531 1209 -1214 )#(-532 1209 -1214 )#
443-                   (-533 1209 -1214 )#(-534 1209 -1214 )#(-535 1209 -1214 )#
444-                   (-536 1209 -1214 )#(-537 1209 -1214 )#(-538 1209 -1214 )#
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                  (-539 1209 -1214 )#(-541 1209 -1214 )#(-542 1209 -1214 )#
                  (-543 1209 -1214 )#(-544 1209 -1214 )#(-545 1209 -1214 )#
                  (-546 1209 -1214 )#(-547 1209 -1214 )#(-548 1209 -1214 )#
                  (-549 1209 -1214 )#(-511 1209 -1214 )#(-512 1209 -1214 )#
                  (-513 1209 -1214 )#(-514 1209 -1214 )
       9995     3 -0.001225 1220 -1219 1205 -1206 -1203 1202  $Notch Air Side A
       9994     3 -0.001225 -1215 1219 1223 -1208 -1225 1226  $Air Above Crane Rail
       9993     3 -0.001225 1209 -1231 1208 -1217 -1203 1202  $Bottom Air Side B
       9992     3 -0.001225 -1230 1231 1208 -1217 -1203 1202  $Air Up to Shield Side B
       9991     1  -2.365 -1220 1230 1208 -1217 -1203 1202  $Truck Bay Shield
       9990     3 -0.001225 1220 -1219 1208 -1217 -1203 1202  $Notch Air Side B
       9989     3 -0.001225 -1215 1219 1208 -1224 -1225 1226  $Notch Air Side B
       9988     3 -0.001225 (-2000 -1207 1201 -1204 1227 -1216 ):
                  (1218 -2000 1201 -1204 1227 -1216 ):(-2000 -1201 1227 -1216 ):
                  (1204 -2000 1227 -1216 ):(1216 -2000 )
       9987     0         -1232 -2015  $Bottom Void
       9986     3 -0.001225 1232 -1227 -2015  $6 in Ground Air
c      Ductwork Penetrations
      10000     3 -0.001225 12441 -12451 12321 -12331 1201 -1226
      10001     3 -0.001225 12441 -12451 12341 -12351 1201 -1226
      10002     3 -0.001225 12461 -12471 12361 -12371 1201 -1226
      10003     3 -0.001225 12441 -12451 12381 -12391 1201 -1226
      10004     3 -0.001225 12401 -12411 12441 -12451 1201 -1226
      10005     3 -0.001225 12441 -12451 12421 -12431 1201 -1226
c Sphere Detector Cells
       2001     3 -0.001225 2000 -2001 1227
       2002     3 -0.001225 2001 -2002 1227
       2003     3 -0.001225 -2003 2002 1227
       2004     3 -0.001225 2003 -2004 1227
       2005     3 -0.001225 2004 -2005 1227
       2006     3 -0.001225 2005 -2006 1227
       2007     3 -0.001225 2006 -2007 1227
       2008     3 -0.001225 2007 -2008 1227
       2009     3 -0.001225 2008 -2009 1227
       2010     3 -0.001225 2009 -2010 1227
       2011     3 -0.001225 2010 -2011 1227
       2012     3 -0.001225 2011 -2012 1227
       2013     3 -0.001225 2012 -2013 1227
       2014     3 -0.001225 2013 -2014 1227
       2015     3 -0.001225 2014 -2015 1227

c     Source Canisters
         11       c/z 198.12 121.92 77.47
         12       c/z 198.12 320.04 77.47
         13       c/z 198.12 518.16 77.47
         14       c/z 198.12 716.28 77.47
         15       c/z 198.12 914.4 77.47
         16       c/z 198.12 1112.52 77.47
         17       c/z 198.12 1310.64 77.47
         18       c/z 198.12 1508.76 77.47
         19       c/z 198.12 1706.88 77.47
         21       c/z 396.24 121.92 77.47
         22       c/z 396.24 320.04 77.47
         23       c/z 396.24 518.16 77.47
         24       c/z 396.24 716.28 77.47
         25       c/z 396.24 914.4 77.47
         26       c/z 396.24 1112.52 77.47
         27       c/z 396.24 1310.64 77.47
         28       c/z 396.24 1508.76 77.47
         29       c/z 396.24 1706.88 77.47
         31       c/z 594.36 121.92 77.47
         32       c/z 594.36 320.04 77.47
         33       c/z 594.36 518.16 77.47
         34       c/z 594.36 716.28 77.47
         35       c/z 594.36 914.4 77.47
         36       c/z 594.36 1112.52 77.47
         37       c/z 594.36 1310.64 77.47
         38       c/z 594.36 1508.76 77.47
         39       c/z 594.36 1706.88 77.47
         41       c/z 792.48 121.92 77.47
         42       c/z 792.48 320.04 77.47
         43       c/z 792.48 518.16 77.47
         44       c/z 792.48 716.28 77.47
         45       c/z 792.48 914.4 77.47
         46       c/z 792.48 1112.52 77.47
         47       c/z 792.48 1310.64 77.47
         48       c/z 792.48 1508.76 77.47
         49       c/z 792.48 1706.88 77.47
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523-          51       c/z 990.6 121.92 77.47
524-          52       c/z 990.6 320.04 77.47
525-          53       c/z 990.6 518.16 77.47
526-          54       c/z 990.6 716.28 77.47
527-          55       c/z 990.6 914.4 77.47
528-          56       c/z 990.6 1112.52 77.47
529-          57       c/z 990.6 1310.64 77.47
530-          58       c/z 990.6 1508.76 77.47
531-          59       c/z 990.6 1706.88 77.47
532-          61       c/z 1188.72 121.92 77.47
533-          62       c/z 1188.72 320.04 77.47
534-          63       c/z 1188.72 518.16 77.47
535-          64       c/z 1188.72 716.28 77.47
536-          65       c/z 1188.72 914.4 77.47
537-          66       c/z 1188.72 1112.52 77.47
538-          67       c/z 1188.72 1310.64 77.47
539-          68       c/z 1188.72 1508.76 77.47
540-          69       c/z 1188.72 1706.88 77.47
541-          71       c/z 1386.84 121.92 77.47
542-          72       c/z 1386.84 320.04 77.47
543-          73       c/z 1386.84 518.16 77.47
544-          74       c/z 1386.84 716.28 77.47
545-          75       c/z 1386.84 914.4 77.47
546-          76       c/z 1386.84 1112.52 77.47
547-          77       c/z 1386.84 1310.64 77.47
548-          78       c/z 1386.84 1508.76 77.47
549-          79       c/z 1386.84 1706.88 77.47
550-          81       c/z 1584.96 121.92 77.47
551-          82       c/z 1584.96 320.04 77.47
552-          83       c/z 1584.96 518.16 77.47
553-          84       c/z 1584.96 716.28 77.47
554-          85       c/z 1584.96 914.4 77.47
555-          86       c/z 1584.96 1112.52 77.47
556-          87       c/z 1584.96 1310.64 77.47
557-          88       c/z 1584.96 1508.76 77.47
558-          89       c/z 1584.96 1706.88 77.47
559-          91       c/z 1783.08 121.92 77.47
560-          92       c/z 1783.08 320.04 77.47
561-          93       c/z 1783.08 518.16 77.47
562-          94       c/z 1783.08 716.28 77.47
563-          95       c/z 1783.08 914.4 77.47
564-          96       c/z 1783.08 1112.52 77.47
565-          97       c/z 1783.08 1310.64 77.47
566-          98       c/z 1783.08 1508.76 77.47
567-          99       c/z 1783.08 1706.88 77.47
568-         101       c/z 1981.2 121.92 77.47
569-         102       c/z 1981.2 320.04 77.47
570-         103       c/z 1981.2 518.16 77.47
571-         104       c/z 1981.2 716.28 77.47
572-         105       c/z 1981.2 914.4 77.47
573-         106       c/z 1981.2 1112.52 77.47
574-         107       c/z 1981.2 1310.64 77.47
575-         108       c/z 1981.2 1508.76 77.47
576-         109       c/z 1981.2 1706.88 77.47
577-         111       c/z 2179.32 121.92 77.47
578-         112       c/z 2179.32 320.04 77.47
579-         113       c/z 2179.32 518.16 77.47
580-         114       c/z 2179.32 716.28 77.47
581-         115       c/z 2179.32 914.4 77.47
582-         116       c/z 2179.32 1112.52 77.47
583-         117       c/z 2179.32 1310.64 77.47
584-         118       c/z 2179.32 1508.76 77.47
585-         119       c/z 2179.32 1706.88 77.47
586-         121       c/z 2377.44 121.92 77.47
587-         122       c/z 2377.44 320.04 77.47
588-         123       c/z 2377.44 518.16 77.47
589-         124       c/z 2377.44 716.28 77.47
590-         125       c/z 2377.44 914.4 77.47
591-         126       c/z 2377.44 1112.52 77.47
592-         127       c/z 2377.44 1310.64 77.47
593-         128       c/z 2377.44 1508.76 77.47
594-         129       c/z 2377.44 1706.88 77.47
595-         131       c/z 2575.56 121.92 77.47
596-         132       c/z 2575.56 320.04 77.47
597-         133       c/z 2575.56 518.16 77.47
598-         134       c/z 2575.56 716.28 77.47
599-         135       c/z 2575.56 914.4 77.47
600-         136       c/z 2575.56 1112.52 77.47
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601-         137       c/z 2575.56 1310.64 77.47
602-         138       c/z 2575.56 1508.76 77.47
603-         139       c/z 2575.56 1706.88 77.47
604-         141       c/z 2773.68 121.92 77.47
605-         142       c/z 2773.68 320.04 77.47
606-         143       c/z 2773.68 518.16 77.47
607-         144       c/z 2773.68 716.28 77.47
608-         145       c/z 2773.68 914.4 77.47
609-         146       c/z 2773.68 1112.52 77.47
610-         147       c/z 2773.68 1310.64 77.47
611-         148       c/z 2773.68 1508.76 77.47
612-         149       c/z 2773.68 1706.88 77.47
613-       c     Inside of Shield Bell
614-         211       c/z 198.12 121.92 86.36
615-         212       c/z 198.12 320.04 86.36
616-         213       c/z 198.12 518.16 86.36
617-         214       c/z 198.12 716.28 86.36
618-         215       c/z 198.12 914.4 86.36
619-         216       c/z 198.12 1112.52 86.36
620-         217       c/z 198.12 1310.64 86.36
621-         218       c/z 198.12 1508.76 86.36
622-         219       c/z 198.12 1706.88 86.36
623-         221       c/z 396.24 121.92 86.36
624-         222       c/z 396.24 320.04 86.36
625-         223       c/z 396.24 518.16 86.36
626-         224       c/z 396.24 716.28 86.36
627-         225       c/z 396.24 914.4 86.36
628-         226       c/z 396.24 1112.52 86.36
629-         227       c/z 396.24 1310.64 86.36
630-         228       c/z 396.24 1508.76 86.36
631-         229       c/z 396.24 1706.88 86.36
632-         231       c/z 594.36 121.92 86.36
633-         232       c/z 594.36 320.04 86.36
634-         233       c/z 594.36 518.16 86.36
635-         234       c/z 594.36 716.28 86.36
636-         235       c/z 594.36 914.4 86.36
637-         236       c/z 594.36 1112.52 86.36
638-         237       c/z 594.36 1310.64 86.36
639-         238       c/z 594.36 1508.76 86.36
640-         239       c/z 594.36 1706.88 86.36
641-         241       c/z 792.48 121.92 86.36
642-         242       c/z 792.48 320.04 86.36
643-         243       c/z 792.48 518.16 86.36
644-         244       c/z 792.48 716.28 86.36
645-         245       c/z 792.48 914.4 86.36
646-         246       c/z 792.48 1112.52 86.36
647-         247       c/z 792.48 1310.64 86.36
648-         248       c/z 792.48 1508.76 86.36
649-         249       c/z 792.48 1706.88 86.36
650-         251       c/z 990.6 121.92 86.36
651-         252       c/z 990.6 320.04 86.36
652-         253       c/z 990.6 518.16 86.36
653-         254       c/z 990.6 716.28 86.36
654-         255       c/z 990.6 914.4 86.36
655-         256       c/z 990.6 1112.52 86.36
656-         257       c/z 990.6 1310.64 86.36
657-         258       c/z 990.6 1508.76 86.36
658-         259       c/z 990.6 1706.88 86.36
659-         261       c/z 1188.72 121.92 86.36
660-         262       c/z 1188.72 320.04 86.36
661-         263       c/z 1188.72 518.16 86.36
662-         264       c/z 1188.72 716.28 86.36
663-         265       c/z 1188.72 914.4 86.36
664-         266       c/z 1188.72 1112.52 86.36
665-         267       c/z 1188.72 1310.64 86.36
666-         268       c/z 1188.72 1508.76 86.36
667-         269       c/z 1188.72 1706.88 86.36
668-         271       c/z 1386.84 121.92 86.36
669-         272       c/z 1386.84 320.04 86.36
670-         273       c/z 1386.84 518.16 86.36
671-         274       c/z 1386.84 716.28 86.36
672-         275       c/z 1386.84 914.4 86.36
673-         276       c/z 1386.84 1112.52 86.36
674-         277       c/z 1386.84 1310.64 86.36
675-         278       c/z 1386.84 1508.76 86.36
676-         279       c/z 1386.84 1706.88 86.36
677-         281       c/z 1584.96 121.92 86.36
678-         282       c/z 1584.96 320.04 86.36
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679-         283       c/z 1584.96 518.16 86.36
680-         284       c/z 1584.96 716.28 86.36
681-         285       c/z 1584.96 914.4 86.36
682-         286       c/z 1584.96 1112.52 86.36
683-         287       c/z 1584.96 1310.64 86.36
684-         288       c/z 1584.96 1508.76 86.36
685-         289       c/z 1584.96 1706.88 86.36
686-         291       c/z 1783.08 121.92 86.36
687-         292       c/z 1783.08 320.04 86.36
688-         293       c/z 1783.08 518.16 86.36
689-         294       c/z 1783.08 716.28 86.36
690-         295       c/z 1783.08 914.4 86.36
691-         296       c/z 1783.08 1112.52 86.36
692-         297       c/z 1783.08 1310.64 86.36
693-         298       c/z 1783.08 1508.76 86.36
694-         299       c/z 1783.08 1706.88 86.36
695-         301       c/z 1981.2 121.92 86.36
696-         302       c/z 1981.2 320.04 86.36
697-         303       c/z 1981.2 518.16 86.36
698-         304       c/z 1981.2 716.28 86.36
699-         305       c/z 1981.2 914.4 86.36
700-         306       c/z 1981.2 1112.52 86.36
701-         307       c/z 1981.2 1310.64 86.36
702-         308       c/z 1981.2 1508.76 86.36
703-         309       c/z 1981.2 1706.88 86.36
704-         311       c/z 2179.32 121.92 86.36
705-         312       c/z 2179.32 320.04 86.36
706-         313       c/z 2179.32 518.16 86.36
707-         314       c/z 2179.32 716.28 86.36
708-         315       c/z 2179.32 914.4 86.36
709-         316       c/z 2179.32 1112.52 86.36
710-         317       c/z 2179.32 1310.64 86.36
711-         318       c/z 2179.32 1508.76 86.36
712-         319       c/z 2179.32 1706.88 86.36
713-         321       c/z 2377.44 121.92 86.36
714-         322       c/z 2377.44 320.04 86.36
715-         323       c/z 2377.44 518.16 86.36
716-         324       c/z 2377.44 716.28 86.36
717-         325       c/z 2377.44 914.4 86.36
718-         326       c/z 2377.44 1112.52 86.36
719-         327       c/z 2377.44 1310.64 86.36
720-         328       c/z 2377.44 1508.76 86.36
721-         329       c/z 2377.44 1706.88 86.36
722-         331       c/z 2575.56 121.92 86.36
723-         332       c/z 2575.56 320.04 86.36
724-         333       c/z 2575.56 518.16 86.36
725-         334       c/z 2575.56 716.28 86.36
726-         335       c/z 2575.56 914.4 86.36
727-         336       c/z 2575.56 1112.52 86.36
728-         337       c/z 2575.56 1310.64 86.36
729-         338       c/z 2575.56 1508.76 86.36
730-         339       c/z 2575.56 1706.88 86.36
731-         341       c/z 2773.68 121.92 86.36
732-         342       c/z 2773.68 320.04 86.36
733-         343       c/z 2773.68 518.16 86.36
734-         344       c/z 2773.68 716.28 86.36
735-         345       c/z 2773.68 914.4 86.36
736-         346       c/z 2773.68 1112.52 86.36
737-         347       c/z 2773.68 1310.64 86.36
738-         348       c/z 2773.68 1508.76 86.36
739-         349       c/z 2773.68 1706.88 86.36
740-       c     Outside of Shield Bell
741-         411       c/z 198.12 121.92 92.71
742-         412       c/z 198.12 320.04 92.71
743-         413       c/z 198.12 518.16 92.71
744-         414       c/z 198.12 716.28 92.71
745-         415       c/z 198.12 914.4 92.71
746-         416       c/z 198.12 1112.52 92.71
747-         417       c/z 198.12 1310.64 92.71
748-         418       c/z 198.12 1508.76 92.71
749-         419       c/z 198.12 1706.88 92.71
750-         421       c/z 396.24 121.92 92.71
751-         422       c/z 396.24 320.04 92.71
752-         423       c/z 396.24 518.16 92.71
753-         424       c/z 396.24 716.28 92.71
754-         425       c/z 396.24 914.4 92.71
755-         426       c/z 396.24 1112.52 92.71
756-         427       c/z 396.24 1310.64 92.71
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757-          428       c/z 396.24 1508.76 92.71
758-          429       c/z 396.24 1706.88 92.71
759-          431       c/z 594.36 121.92 92.71
760-          432       c/z 594.36 320.04 92.71
761-          433       c/z 594.36 518.16 92.71
762-          434       c/z 594.36 716.28 92.71
763-          435       c/z 594.36 914.4 92.71
764-          436       c/z 594.36 1112.52 92.71
765-          437       c/z 594.36 1310.64 92.71
766-          438       c/z 594.36 1508.76 92.71
767-          439       c/z 594.36 1706.88 92.71
768-          441       c/z 792.48 121.92 92.71
769-          442       c/z 792.48 320.04 92.71
770-          443       c/z 792.48 518.16 92.71
771-          444       c/z 792.48 716.28 92.71
772-          445       c/z 792.48 914.4 92.71
773-          446       c/z 792.48 1112.52 92.71
774-          447       c/z 792.48 1310.64 92.71
775-          448       c/z 792.48 1508.76 92.71
776-          449       c/z 792.48 1706.88 92.71
777-          451       c/z 990.6 121.92 92.71
778-          452       c/z 990.6 320.04 92.71
779-          453       c/z 990.6 518.16 92.71
780-          454       c/z 990.6 716.28 92.71
781-          455       c/z 990.6 914.4 92.71
782-          456       c/z 990.6 1112.52 92.71
783-          457       c/z 990.6 1310.64 92.71
784-          458       c/z 990.6 1508.76 92.71
785-          459       c/z 990.6 1706.88 92.71
786-          461       c/z 1188.72 121.92 92.71
787-          462       c/z 1188.72 320.04 92.71
788-          463       c/z 1188.72 518.16 92.71
789-          464       c/z 1188.72 716.28 92.71
790-          465       c/z 1188.72 914.4 92.71
791-          466       c/z 1188.72 1112.52 92.71
792-          467       c/z 1188.72 1310.64 92.71
793-          468       c/z 1188.72 1508.76 92.71
794-          469       c/z 1188.72 1706.88 92.71
795-          471       c/z 1386.84 121.92 92.71
796-          472       c/z 1386.84 320.04 92.71
797-          473       c/z 1386.84 518.16 92.71
798-          474       c/z 1386.84 716.28 92.71
799-          475       c/z 1386.84 914.4 92.71
800-          476       c/z 1386.84 1112.52 92.71
801-          477       c/z 1386.84 1310.64 92.71
802-          478       c/z 1386.84 1508.76 92.71
803-          479       c/z 1386.84 1706.88 92.71
804-          481       c/z 1584.96 121.92 92.71
805-          482       c/z 1584.96 320.04 92.71
806-          483       c/z 1584.96 518.16 92.71
807-          484       c/z 1584.96 716.28 92.71
808-          485       c/z 1584.96 914.4 92.71
809-          486       c/z 1584.96 1112.52 92.71
810-          487       c/z 1584.96 1310.64 92.71
811-          488       c/z 1584.96 1508.76 92.71
812-          489       c/z 1584.96 1706.88 92.71
813-          491       c/z 1783.08 121.92 92.71
814-          492       c/z 1783.08 320.04 92.71
815-          493       c/z 1783.08 518.16 92.71
816-          494       c/z 1783.08 716.28 92.71
817-          495       c/z 1783.08 914.4 92.71
818-          496       c/z 1783.08 1112.52 92.71
819-          497       c/z 1783.08 1310.64 92.71
820-          498       c/z 1783.08 1508.76 92.71
821-          499       c/z 1783.08 1706.88 92.71
822-          501       c/z 1981.2 121.92 92.71
823-          502       c/z 1981.2 320.04 92.71
824-          503       c/z 1981.2 518.16 92.71
825-          504       c/z 1981.2 716.28 92.71
826-          505       c/z 1981.2 914.4 92.71
827-          506       c/z 1981.2 1112.52 92.71
828-          507       c/z 1981.2 1310.64 92.71
829-          508       c/z 1981.2 1508.76 92.71
830-          509       c/z 1981.2 1706.88 92.71
831-          511       c/z 2179.32 121.92 92.71
832-          512       c/z 2179.32 320.04 92.71
833-          513       c/z 2179.32 518.16 92.71
834-          514       c/z 2179.32 716.28 92.71
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835-         515       c/z 2179.32 914.4 92.71
836-         516       c/z 2179.32 1112.52 92.71
837-         517       c/z 2179.32 1310.64 92.71
838-         518       c/z 2179.32 1508.76 92.71
839-         519       c/z 2179.32 1706.88 92.71
840-         521       c/z 2377.44 121.92 92.71
841-         522       c/z 2377.44 320.04 92.71
842-         523       c/z 2377.44 518.16 92.71
843-         524       c/z 2377.44 716.28 92.71
844-         525       c/z 2377.44 914.4 92.71
845-         526       c/z 2377.44 1112.52 92.71
846-         527       c/z 2377.44 1310.64 92.71
847-         528       c/z 2377.44 1508.76 92.71
848-         529       c/z 2377.44 1706.88 92.71
849-         531       c/z 2575.56 121.92 92.71
850-         532       c/z 2575.56 320.04 92.71
851-         533       c/z 2575.56 518.16 92.71
852-         534       c/z 2575.56 716.28 92.71
853-         535       c/z 2575.56 914.4 92.71
854-         536       c/z 2575.56 1112.52 92.71
855-         537       c/z 2575.56 1310.64 92.71
856-         538       c/z 2575.56 1508.76 92.71
857-         539       c/z 2575.56 1706.88 92.71
858-         541       c/z 2773.68 121.92 92.71
859-         542       c/z 2773.68 320.04 92.71
860-         543       c/z 2773.68 518.16 92.71
861-         544       c/z 2773.68 716.28 92.71
862-         545       c/z 2773.68 914.4 92.71
863-         546       c/z 2773.68 1112.52 92.71
864-         547       c/z 2773.68 1310.64 92.71
865-         548       c/z 2773.68 1508.76 92.71
866-         549       c/z 2773.68 1706.88 92.71
867-       c    Planes
868-        1201        py -76.2  $Outside Left Wall
869-        1202        py 0  $Inside Left Thick Wall
870-        1203        py 1828.8  $Inside Right Thick Wall
871-        1204        py 1905  $Outside Right Wall
872-        1205        px 0  $Inside Back Thick Wall
873-        1206        px 2895.6  $Front of Inner Wall
874-        1207        px -76.2  $Outside Back Wall
875-        1208        px 2971.8  $Back of Inner Wall
876-        1209        pz 0  $Top of Floor
877-        c 1211        pz 190.5  $Top of Bot HIC
878-        1212        pz 381  $Top of Top HIC
879-        1213        pz 388.62  $Bot of Bell Top
880-        1214        pz 396.24  $Top of Bell Top
881-        1215        pz 1455.42  $Bottom of Roof
882-        1216        pz 1493.52  $Top of Roof
883-        1217        px 3947.16  $Inner Truck Bay Wall
884-        1218        px 4023.36  $Outer Truck Bay Wall
885-        1219        pz 1036.32  $Top of Inner Wall
886-        1220        pz 822.96  $Bottom of Notch
887-        1221        py 1760.22  $Right of notch
888-        1222        py 1546.86  $Left of notch
889-        1223        px -38.1  $Inside Back Thin Wall
890-        1224        px 3985.26  $Inside Front Thin Wall
891-        1225        py 1866.9  $Inside Right Thin Wall
892-        1226        py -38.1  $Inside Left Thin Wall
893-        1227        pz -76.2  $Bottom of Floor
894-        1228        px 1089.66  $Zone 1 Air
895-        1229        px 2080.26  $Zone 2 Air
896-        1230        pz 807.72  $Bottom of Truck Bay Shield
897-        1231        pz 213.36  $7ft Detector Surface
898-        1232        pz -91.44  $Bottom Void
899-        1233        px -57.15  $Split for Back Wall
900-        1234        py 1885.95  $Split for Right Wall
901-        1235        px 4004.31  $Split for Front Wall
902-        1236        py -57.15  $Split for Left Wall
903-        1237        pz 1474.47  $Split for Roof
904-       c    HVAC Duct Openings
905-       12321        px 68.58  $Duct1S1
906-       12331        px 170.18  $Duct1 S2
907-       12341        px 871.22  $Duct2 S1
908-       12351        px 972.82  $Duct2 S2
909-       12361        px 1595.12  $Duct3 S1
910-       12371        px 1747.52  $Duct3 S2
911-       12381        px 1856.74  $Duct4 S1
912-       12391        px 1958.34  $Duct4 S2
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 913-       12401        px 2720.34  $Duct5 S1
 914-       12411        px 2821.94  $Duct5 S2
 915-       12421        px 3776.98  $Duct6 S1
 916-       12431        px 3878.58  $Duct6 S2
 917-       12441        pz 1397  $Small Ducts Bottom
 918-       12451        pz 1437.64  $Small Duct Top
 919-       12461        pz 1369.06  $Large Ducts Bottom
 920-       12471        pz 1445.26  $Large Duct Top
 921-       c   Spheres for detectors
 922-        2000         s 1973.58 914.4 -72.6 2800  $Closest Sphere
 923-        2001         s 1973.58 914.4 -72.6 4000
 924-        2002         s 1973.58 914.4 -72.6 7000
 925-        2003         s 1973.58 914.4 -72.6 10000
 926-        2004         s 1973.58 914.4 -72.6 15000
 927-        2005         s 1973.58 914.4 -72.6 20000
 928-        2006         s 1973.58 914.4 -72.6 25000
 929-        2007         s 1973.58 914.4 -72.6 30000
 930-        2008         s 1973.58 914.4 -72.6 37500
 931-        2009         s 1973.58 914.4 -72.6 45000
 932-        2010         s 1973.58 914.4 -72.6 55000
 933-        2011         s 1973.58 914.4 -72.6 65000
 934-        2012         s 1973.58 914.4 -72.6 75000
 935-        2013         s 1973.58 914.4 -72.6 85000
 936-        2014         s 1973.58 914.4 -72.6 95000
 937-        2015         s 1973.58 914.4 -72.6 120000
 938-        2016        py -276.2
 939-        2017        py -476.2
 940-        2018        py -676.2
 941-        2019        py -876.2
 942-        2020        py -1076.2
 943-        2021        py -1276.2
 944-        2022        py -1476.2
 945-        2023        py -1676.2
 946-        2024        py -1876.2
 947-        2025        py -2076.2
 948-        2026        px 359.054
 949-        2027        px 2535.94
 950-        2028        py -2276.2
 951-        2029        py -2476.2
 952-        2030        py -2676.2
 953-        2031        py -2876.2
 954-        2032        py -3076.2
 955-        2033        py -3276.2
 956-        2034        py -3476.2
 957-        2035        py -3676.2
 958-
 959-       mode  p
 960-       c  Materials
 961-       m1    1000.            -0.015  $ Concrete from 6.4
 962-             8000.            -1.057 11000.           -0.041 12000.           -0.085
 963-             13000.           -0.137 14000.           -0.487 15000.           -0.002
 964-             16000.           -0.002 19000.           -0.015 20000.           -0.295
 965-             22000.           -0.011 25000.           -0.003 26000.           -0.178
 966-       m2    13000.                1  $ Aluminum
warning. material   2 is not used in the problem.
 967-       m3    7000.           0.78969  $ Air
 968-             8000.           0.21019 6000.           0.00012
 969-       m4    26000.                1  $ Iron
 970-       m5    1000.                 2  $ Water
 971-             8000.                 1
 972-       imp:p             1 92r                    3            1 157r          $ 11, 3
 973-                         3 125r                   9 1r                   27  $ 411,
 974-                         9 2r                    27            9           27  $ 12021
 975-                         9 1r                    27            9 1r            $ 12061
 976-                         1            9          27            0            9  $ 1210,
 977-              4r                     81 1r                   27            9  $ 9997,
 978-              1r                     81            0          1            9  $ 9989,
 979-              5r                     81          162 1r                   324  $ 10001
 980-              1r                    648 1r                  1296 1r           $ 2005,
 981-                     2592 1r                  5184 1r                 10368  $ 2010,
 982-              1r            $ 2015, 2015
 983-       phys:p  100 1 0
 984-       c sdef erg=d5 x=d1 y=d2 z=d3 cel=d4 eff=0.0001 wgt=3.045E+15
 985-       c si1  0 2895.6
 986-       c sp1  0.0 1.0
 987-       c si2  0 1828.8
 988-       c sp2  0.0 1.0
 989-       c si3  0.01 304.8 381.00
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 990-       c sp3  0.0 0.8 0.2
 991-       c sb3  0.0 0.2 1.0
 992-       c si4  L 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 31 32
 993-       c      33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 51 52 53 54 55
 994-       c      56 57 58 59 61 62 63 64 65 66 67 68 69 71 72 73 74 75 76 77 78
 995-       c      79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96 97 98 99 101
 996-       c      102 103 104 105 106 107 108 109 111 112 113 114 115 116 117 118
 997-       c      119 121 122 123 124 125 126 127 128 129 131 132 133 134 135 136
 998-       c      137 138 139 141 142 143 144 145 146 147 148 149
 999-       c sp4  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1000-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1001-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1002-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1003-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1004-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1005-       c      1  1  1  1  1  1  1  1  1  1  1  1  1
1006-       c si5 l 1.1730 1.3325
1007-       c sp5   1      1
1008-       c ssw 1220(9995)
1009-       ssr
1010-       c ===========================================================================
1011-       c ===========================================================================
1012-       c Truck bay dose rate
1013-       f2:p 1231
warning. without bremsstrahlung, flux estimates will be low.
1014-       c ===========================================================================
1015-       c ===========================================================================
1016-       c Rings outside the building
1017-       f12:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1018-       fs12 -2000 -2001 -2002 -2003 -2004 -2005 -2006 -2007 -2008 -2009
1019-            -2010 -2011 -2012 -2013 -2014
1020-       sd12 1e50 2.564E+07 1.037e8 1.602e8 3.927e8 5.498e8 7.069e8 8.639e8 1.590e9
1021-            1.944e9 3.142e9 3.770e9 4.398e9 5.027e9 5.655e9 1.689e10
1022-       c ===========================================================================
1023-       c ===========================================================================
1024-       c Slabs Ajacent to Ventilation Penetration Side
1025-       f22:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1026-       fs22 1201 -2026 2027
1027-            2016 2017 2018 2019 2020
1028-            2021 2022 2023 2024 2025
1029-            2028 2029 2030 2031 2032
1030-            2033 2034 2035
1031-       sd22 1e50 1e50 1e50
1032-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1033-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1034-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1035-            4.35376e5 4.35376e5 4.35376e5 1e50
1036-       c ===========================================================================
1037-       c ===========================================================================
1038-       c Dose Rate on Vent Side Wall 7ft up avg
1039-       f32:p 1201
warning. without bremsstrahlung, flux estimates will be low.
1040-       fs32 1231 -2026 2027 -1227
1041-       sd32 1e50 1e50 1e50 1e50 6.30E+05
1042-       c ===========================================================================
1043-       c ===========================================================================
1044-       c detectors toward north, with HVAC effects
1045-       f42:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1046-       fs42 1219 -1209 1201 -1205 1206
1047-       sd42 1e50 1e50 1e50 1e50 1e50 3.00e06
1048-            1e50 1e50 1e50 1e50 1e50 3.00e06
1049-            1e50 1e50 1e50 1e50 1e50 3.00e06
1050-            1e50 1e50 1e50 1e50 1e50 3.00e06
1051-            1e50 1e50 1e50 1e50 1e50 3.00e06
1052-            1e50 1e50 1e50 1e50 1e50 3.00e06
1053-            1e50 1e50 1e50 1e50 1e50 3.00e06
1054-            1e50 1e50 1e50 1e50 1e50 3.00e06
1055-            1e50 1e50 1e50 1e50 1e50 3.00e06
1056-            1e50 1e50 1e50 1e50 1e50 3.00e06
1057-            1e50 1e50 1e50 1e50 1e50 3.00e06
1058-       c detectors toward sorth, with no HVAC effects
1059-       f52:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1060-       fs52 1219 -1209 -1201 -1205 1206
1061-       sd52 1e50 1e50 1e50 1e50 1e50 3.00e06
```

```
 1062-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1063-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1064-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1065-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1066-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1067-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1068-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1069-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1070-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1071-            1e50 1e50 1e50 1e50 1e50 3.00e06
 1072-       c ======================================================================
 1073-       c ======================================================================
 1074-       c Detector above the HICS (used as a source check)
 1075-       f62:p 1219
 warning. without bremsstrahlung, flux estimates will be low.
 1076-       fs62 -1205 1206 1203 -1202
 1077-       sd62  1e50 1e50 1e50  1e50 5.30E+06
 1078-       c ======================================================================
 1079-       c ======================================================================
 1080-       c Photon Flux to Dose Rate Conversion Factors
 1081-       de0 0.01 0.03 0.05 0.07 0.10 0.15 0.20
 1082-             0.25 0.30 0.35 0.40 0.45 0.50 0.55
 1083-             0.60 0.65 0.70 0.80 1.00 1.40 1.80
 1084-             2.20 2.60 2.80 3.25 3.75 4.25 4.75
 1085-             5.00 5.25 5.75 6.25 6.75 7.50 9.00
 1086-             11.0 13.0 15.0
 1087-       df0 LIN 3.96E-06 5.82E-07 2.90E-07 2.58E-07 2.83E-07 3.79E-07 5.01E-07
 1088-             6.31e-07 7.59E-07 8.78E-07 9.85E-07 1.08E-06 1.17E-06 1.27E-06
 1089-             1.36e-06 1.44E-06 1.52E-06 1.68E-06 1.98E-06 2.51E-06 2.99E-06
 1090-             3.42e-06 3.82E-06 4.01E-06 4.41E-06 4.83E-06 5.23E-06 5.60E-06
 1091-             5.80e-06 6.01E-06 6.37E-06 6.74E-06 7.11E-06 7.66E-06 8.77E-06
 1092-             1.03e-05 1.18E-05 1.33E-05
 1093-       nps 9E08


 information from the header of surface-source file SBwssa

 the file was written by mcnp     version 5     with probid =  03/18/09 18:10:02  and ending with dump no.     9
 the title of the creation run was     c     Created on: Tuesday, November 11, 2008 at 09:35
 the original number of histories was    70000000
 the total number of tracks recorded was     3874082 from     1177383 independent histories.

 this ssr problem will use the following particles if available: photon

 warning.   2 materials had unnormalized fractions. print table 40.

 warning.   1 of the materials appear at more than one density.

 warning. sum of segment sizes differs from total in  25 cases.
1cells                                                                                                    print table
   60

                     atom        gram                                          photon
       cell  mat    density     density     volume       mass     pieces importance

    1    11    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    2    12    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    3    13    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    4    14    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    5    15    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    6    16    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    7    17    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    8    18    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    9    19    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   10    21    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   11    22    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   12    23    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   13    24    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   14    25    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   15    26    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   16    27    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   17    28    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   18    29    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   19    31    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   20    32    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   21    33    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   22    34    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
   23    35    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
```

24	36	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
25	37	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
26	38	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
27	39	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
28	41	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
29	42	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
30	43	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
31	44	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
32	45	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
33	46	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
34	47	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
35	48	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
36	49	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
37	51	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
38	52	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
39	53	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
40	54	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
41	55	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
42	56	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
43	57	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
44	58	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
45	59	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
46	61	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
47	62	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
48	63	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
49	64	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
50	65	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
51	66	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
52	67	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
53	68	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
54	69	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
55	71	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
56	72	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
57	73	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
58	74	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
59	75	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
60	76	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
61	77	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
62	78	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
63	79	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
64	81	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
65	82	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
66	83	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
67	84	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
68	85	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
69	86	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
70	87	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
71	88	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
72	89	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
73	91	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
74	92	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
75	93	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
76	94	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
77	95	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
78	96	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
79	97	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
80	98	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
81	99	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
82	101	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
83	102	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
84	103	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
85	104	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
86	105	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
87	106	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
88	107	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
89	108	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
90	109	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
91	111	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
92	112	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
93	113	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
94	114	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	3.0000E+00
95	115	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
96	116	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
97	117	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
98	118	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
99	119	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
100	121	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
101	122	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

102	123	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
103	124	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
104	125	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
105	126	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
106	127	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
107	128	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
108	129	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
109	131	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
110	132	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
111	133	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
112	134	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
113	135	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
114	136	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
115	137	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
116	138	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
117	139	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
118	141	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
119	142	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
120	143	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
121	144	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
122	145	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
123	146	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
124	147	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
125	148	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
126	149	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
127	211	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
128	212	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
129	213	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
130	214	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
131	215	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
132	216	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
133	217	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
134	218	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
135	219	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
136	221	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
137	222	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
138	223	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
139	224	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
140	225	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
141	226	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
142	227	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
143	228	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
144	229	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
145	231	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
146	232	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
147	233	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
148	234	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
149	235	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
150	236	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
151	237	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
152	238	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
153	239	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
154	241	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
155	242	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
156	243	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
157	244	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
158	245	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
159	246	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
160	247	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
161	248	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
162	249	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
163	251	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
164	252	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
165	253	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
166	254	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
167	255	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
168	256	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
169	257	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
170	258	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
171	259	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
172	261	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
173	262	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
174	263	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
175	264	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
176	265	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
177	266	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
178	267	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
179	268	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00

180	269	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
181	271	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
182	272	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
183	273	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
184	274	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
185	275	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
186	276	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
187	277	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
188	278	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
189	279	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
190	281	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
191	282	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
192	283	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
193	284	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
194	285	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
195	286	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
196	287	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
197	288	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
198	289	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
199	291	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
200	292	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
201	293	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
202	294	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
203	295	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
204	296	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
205	297	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
206	298	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
207	299	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
208	301	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
209	302	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
210	303	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
211	304	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
212	305	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
213	306	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
214	307	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
215	308	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
216	309	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
217	311	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
218	312	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
219	313	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
220	314	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
221	315	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
222	316	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
223	317	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
224	318	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
225	319	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
226	321	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
227	322	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
228	323	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
229	324	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
230	325	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
231	326	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
232	327	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
233	328	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
234	329	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
235	331	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
236	332	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
237	333	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
238	334	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
239	335	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
240	336	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
241	337	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
242	338	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
243	339	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
244	341	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
245	342	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
246	343	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
247	344	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
248	345	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
249	346	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
250	347	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
251	348	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
252	349	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
253	411	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
254	412	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
255	413	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
256	414	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
257	415	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00

258	416	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
259	417	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
260	418	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
261	419	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
262	421	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
263	422	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
264	423	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
265	424	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
266	425	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
267	426	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
268	427	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
269	428	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
270	429	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
271	431	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
272	432	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
273	433	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
274	434	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
275	435	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
276	436	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
277	437	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
278	438	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
279	439	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
280	441	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
281	442	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
282	443	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
283	444	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
284	445	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
285	446	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
286	447	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
287	448	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
288	449	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
289	451	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
290	452	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
291	453	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
292	454	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
293	455	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
294	456	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
295	457	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
296	458	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
297	459	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
298	461	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
299	462	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
300	463	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
301	464	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
302	465	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
303	466	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
304	467	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
305	468	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
306	469	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
307	471	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
308	472	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
309	473	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
310	474	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
311	475	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
312	476	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
313	477	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
314	478	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
315	479	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
316	481	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
317	482	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
318	483	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
319	484	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
320	485	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
321	486	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
322	487	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
323	488	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
324	489	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
325	491	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
326	492	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
327	493	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
328	494	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
329	495	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
330	496	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
331	497	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
332	498	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
333	499	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
334	501	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
335	502	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00

336	503	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
337	504	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
338	505	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
339	506	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
340	507	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
341	508	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
342	509	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
343	511	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
344	512	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
345	513	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
346	514	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
347	515	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
348	516	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
349	517	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
350	518	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
351	519	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
352	521	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
353	522	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
354	523	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
355	524	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
356	525	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
357	526	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
358	527	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
359	528	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
360	529	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
361	531	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
362	532	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
363	533	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
364	534	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
365	535	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
366	536	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
367	537	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
368	538	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
369	539	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
370	541	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
371	542	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
372	543	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
373	544	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
374	545	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
375	546	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
376	547	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
377	548	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
378	549	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
379	1200	3	5.11393E-05	1.22500E-03	3.46881E+06	4.24930E+03	0	9.0000E+00
380	1201	1	7.34055E-02	2.36500E+00	1.40947E+08	3.33340E+08	0	9.0000E+00
381	1202	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	2.7000E+01
382	12021	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	9.0000E+00
383	1203	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	9.0000E+00
384	1204	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	9.0000E+00
385	12041	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	2.7000E+01
386	1205	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	9.0000E+00
387	1206	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	2.7000E+01
388	12061	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	9.0000E+00
389	1207	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	9.0000E+00
390	1208	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	2.7000E+01
391	12081	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	9.0000E+00
392	1209	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	9.0000E+00
393	1210	1	7.34055E-02	2.36500E+00	6.18900E+08	1.46370E+09	0	1.0000E+00
394	1211	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	9.0000E+00
395	12111	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	2.7000E+01
396	9999	0	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0	0.0000E+00
397	9998	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	9.0000E+00
398	9997	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	9.0000E+00
399	9996	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	9.0000E+00
400	9995	3	5.11393E-05	1.22500E-03	1.12984E+09	1.38406E+06	0	9.0000E+00
401	9994	3	5.11393E-05	1.22500E-03	2.40306E+09	2.94375E+06	0	9.0000E+00
402	9993	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	8.1000E+01
403	9992	3	5.11393E-05	1.22500E-03	1.06018E+09	1.29872E+06	0	8.1000E+01
404	9991	1	7.34055E-02	2.36500E+00	2.71842E+07	6.42906E+07	0	2.7000E+01
405	9990	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	9.0000E+00
406	9989	3	5.11393E-05	1.22500E-03	8.09132E+08	9.91186E+05	0	9.0000E+00
407	9988	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	8.1000E+01
408	9987	0	0.00000E+00	0.00000E+00	3.61826E+15	0.00000E+00	1	0.0000E+00
409	9986	3	5.11393E-05	1.22500E-03	6.89441E+11	8.44566E+08	1	1.0000E+00
410	10000	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	9.0000E+00
411	10001	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	9.0000E+00
412	10002	3	5.11393E-05	1.22500E-03	4.42451E+05	5.42002E+02	0	9.0000E+00
413	10003	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	9.0000E+00

```
  414 10004    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  9.0000E+00
  415 10005    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  9.0000E+00
  416  2001    3  5.11393E-05 1.22500E-03 8.81574E+10 1.07993E+08     1  8.1000E+01
  417  2002    3  5.11393E-05 1.22500E-03 5.84709E+11 7.16269E+08     1  1.6200E+02
  418  2003    3  5.11393E-05 1.22500E-03 1.37659E+12 1.68633E+09     1  1.6200E+02
  419  2004    3  5.11393E-05 1.22500E-03 4.97560E+12 6.09511E+09     1  3.2400E+02
  420  2005    3  5.11393E-05 1.22500E-03 9.68856E+12 1.18685E+10     1  3.2400E+02
  421  2006    3  5.11393E-05 1.22500E-03 1.59723E+13 1.95661E+10     1  6.4800E+02
  422  2007    3  5.11393E-05 1.22500E-03 2.38269E+13 2.91879E+10     1  6.4800E+02
  423  2008    3  5.11393E-05 1.22500E-03 5.39037E+13 6.60320E+10     1  1.2960E+03
  424  2009    3  5.11393E-05 1.22500E-03 8.04121E+13 9.85049E+10     1  1.2960E+03
  425  2010    3  5.11393E-05 1.22500E-03 1.57615E+14 1.93078E+11     1  2.5920E+03
  426  2011    3  5.11393E-05 1.22500E-03 2.26732E+14 2.77747E+11     1  2.5920E+03
  427  2012    3  5.11393E-05 1.22500E-03 3.08416E+14 3.77809E+11     1  5.1840E+03
  428  2013    3  5.11393E-05 1.22500E-03 4.02666E+14 4.93265E+11     1  5.1840E+03
  429  2014    3  5.11393E-05 1.22500E-03 5.09482E+14 6.24115E+11     1  1.0368E+04
  430  2015    3  5.11393E-05 1.22500E-03 1.82349E+15 2.23378E+12     1  1.0368E+04

 total                                   7.23819E+15 4.44214E+12

 ***************************************************
 * Random Number Generator  =                    1 *
 * Random Number Seed       =       19073486328125 *
 * Random Number Multiplier =       19073486328125 *
 * Random Number Adder      =                    0 *
 * Random Number Bits Used  =                   48 *
 * Random Number Stride     =               152917 *
 ***************************************************


        11 warning messages so far.
1cross-section tables                                                                                    print table
    100

     table    length

                        tables from file mcplib04

   1000.04p    1898  ENDF/B-VI Release 8 Photoatomic Data for 1-H                                  mat 100
    02/07/03
   6000.04p    3152  ENDF/B-VI Release 8 Photoatomic Data for 6-C                                  mat 600
    02/07/03
   7000.04p    3194  ENDF/B-VI Release 8 Photoatomic Data for 7-N                                  mat 700
    02/07/03
   8000.04p    3272  ENDF/B-VI Release 8 Photoatomic Data for 8-O                                  mat 800
    02/07/03
  11000.04p    3995  ENDF/B-VI Release 8 Photoatomic Data for 11-NA                                mat1100
    02/07/03
  12000.04p    3781  ENDF/B-VI Release 8 Photoatomic Data for 12-MG                                mat1200
    02/07/03
  13000.04p    4846  ENDF/B-VI Release 8 Photoatomic Data for 13-AL                                mat1300
    02/07/03
  14000.04p    4792  ENDF/B-VI Release 8 Photoatomic Data for 14-SI                                mat1400
    02/07/03
  15000.04p    4498  ENDF/B-VI Release 8 Photoatomic Data for 15-P                                 mat1500
    02/07/03
  16000.04p    4654  ENDF/B-VI Release 8 Photoatomic Data for 16-S                                 mat1600
    02/07/03
  19000.04p    5047  ENDF/B-VI Release 8 Photoatomic Data for 19-K                                 mat1900
    02/07/03
  20000.04p    5013  ENDF/B-VI Release 8 Photoatomic Data for 20-CA                                mat2000
    02/07/03
  22000.04p    5742  ENDF/B-VI Release 8 Photoatomic Data for 22-TI                                mat2200
    02/07/03
  25000.04p    5598  ENDF/B-VI Release 8 Photoatomic Data for 25-MN                                mat2500
    02/07/03
  26000.04p    5718  ENDF/B-VI Release 8 Photoatomic Data for 26-FE                                mat2600
    02/07/03

  total       65200

 warning. simple physics turned on for photons > 100 mev.


    ***************************************************************************************************************
    *******
 dump no.    1 on file runtpf       nps =           0     coll =              0     ctm =        0.00   nrn =
    0
```

12 warning messages so far.

****
dump no. 2 on file runtpf nps = 562096 coll = 432917685 ctm = 60.01 nrn = 5395992142

****
dump no. 3 on file runtpf nps = 1123724 coll = 866429200 ctm = 120.02 nrn = 10799656995

1problem summary source particle weight for summary table normalization = 70000000.00

run terminated at end of surface-source input file.

+ 03/19/09 14:55:52

c Created on: Tuesday, November 11, 2008 at 09:35 probid = 03/19/09 12:49:25

0

photon creation	tracks	weight (per source particle)	energy	photon loss	tracks	weight (per source particle)	
source	49807874	5.2642E+12	5.8740E-01	escape	748182	1.5804E+10	4.0490E-04
				energy cutoff	0	0.	0.
				time cutoff	0	0.	0.
weight window	0	0.	0.	weight window	0	0.	0.
cell importance	72149468	5.3061E+11	1.4342E-02	cell importance	29363259	5.3012E+11	1.4331E-02
weight cutoff	0	0.	0.	weight cutoff	0	0.	0.
e or t importance	0	0.	0.	e or t importance	0	0.	0.
dxtran	0	0.	0.	dxtran	0	0.	0.
forced collisions	0	0.	0.	forced collisions	0	0.	0.
exp. transform	0	0.	0.	exp. transform	0	0.	0.
from neutrons	0	0.	0.	compton scatter	0	0.	4.9306E-01
bremsstrahlung	0	0.	0.	capture	102268067	6.3127E+12	9.5037E-02
p-annihilation	14368	1.1087E+09	1.0763E-04	pair production	7184	5.5437E+08	1.3668E-04
photonuclear	0	0.	0.	photonuclear abs	0	0.	0.
electron x-rays	0	0.	0.				
1st fluorescence	10414982	1.0633E+12	1.1136E-03				
2nd fluorescence	0	0.	0.				
total	132386692	6.8592E+12	6.0297E-01	total	132386692	6.8592E+12	6.0297E-01

number of photons banked	68898936	average time of (shakes)		cutoffs	
photon tracks per source particle	1.8912E+00	escape	9.8701E+01	tco	1.0000E+33
photon collisions per source particle	1.2975E+01	capture	6.2902E+00	eco	1.0000E-03
total photon collisions	908234183	capture or escape	6.5210E+00	wc1	-5.0000E-01
		any termination	7.1852E+00	wc2	-2.5000E-01

computer time so far in this run	125.91 minutes	maximum number ever in bank	49
computer time in mcrun	125.82 minutes	bank overflows to backup file	0
source particles per minute	9.3574E+03		
random numbers generated	11320889368	most random numbers used was	2157405 in history 329677

warning. random number stride 152917 exceeded 684 times.

range of sampled source weights = 6.2462E+12 to 1.3533E+14

warning. importance function may be poor. see print table 120.

1photon activity in each cell print table 126

cell	tracks entering	population	collisions	collisions * weight	number weighted	flux weighted	average track weight	average track mfp

					(per history)	energy	energy	(relative)	(cm)
1	11	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
2	12	1	1	4	3.2123E+06	1.5360E-01	1.5360E-01	5.6215E+13	6.6615E+00
3	13	1	1	4	3.4800E+06	1.0277E-01	1.0277E-01	6.0900E+13	5.8795E+00
4	14	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5	15	1	1	5	4.3500E+06	1.5031E-01	1.5031E-01	6.0900E+13	6.5240E+00
6	16	1	1	2	1.6062E+06	1.8501E-01	1.8501E-01	5.6215E+13	7.1184E+00
7	17	1	1	1	8.0308E+05	6.8869E-02	6.8869E-02	5.6215E+13	5.1298E+00
8	18	3	3	9	7.2277E+06	1.2789E-01	1.2789E-01	5.6215E+13	6.2467E+00
9	19	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10	21	1	1	12	9.6369E+06	7.7949E-02	7.7949E-02	5.6215E+13	4.9067E+00
11	22	2	2	14	1.1243E+07	1.6303E-01	1.6303E-01	5.6215E+13	6.6368E+00
12	23	1	1	11	8.8338E+06	9.1129E-02	9.1129E-02	5.6215E+13	5.4992E+00
13	24	1	1	3	2.4092E+06	1.3755E-01	1.3755E-01	5.6215E+13	6.4443E+00
14	25	3	3	19	1.6128E+07	1.3263E-01	1.3263E-01	5.8506E+13	6.2576E+00
15	26	2	2	6	4.8185E+06	1.9733E-01	1.9733E-01	5.6215E+13	7.2280E+00
16	27	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
17	28	1	1	7	6.0900E+06	1.7068E-01	1.7068E-01	6.0900E+13	6.9072E+00
18	29	2	2	10	8.4323E+06	1.5881E-01	1.5881E-01	5.8666E+13	6.4924E+00
19	31	1	1	10	8.0308E+06	1.9214E-01	1.9214E-01	5.6215E+13	7.1593E+00
20	32	1	1	3	2.4092E+06	7.4430E-02	7.4430E-02	5.6215E+13	5.3044E+00
21	33	1	1	4	3.2123E+06	1.1547E-01	1.1547E-01	5.6215E+13	6.1008E+00
22	34	1	1	7	6.0900E+06	9.4159E-02	9.4159E-02	6.0900E+13	5.5966E+00
23	35	2	2	2	1.6062E+06	1.4556E-01	1.4556E-01	5.6215E+13	6.5580E+00
24	36	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
25	37	2	2	13	1.0440E+07	1.3939E-01	1.3939E-01	5.6215E+13	6.1702E+00
26	38	2	2	18	1.4455E+07	1.2160E-01	1.2160E-01	5.6215E+13	5.9993E+00
27	39	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
28	41	1	1	1	8.0308E+05	2.0147E-01	2.0147E-01	5.6215E+13	7.3200E+00
29	42	1	1	12	9.6369E+06	1.2029E-01	1.2029E-01	5.6215E+13	6.0022E+00
30	43	1	1	17	1.3652E+07	1.0515E-01	1.0515E-01	5.6215E+13	5.7029E+00
31	44	1	1	11	8.8338E+06	7.8840E-02	7.8840E-02	5.6215E+13	5.2147E+00
32	45	3	3	17	1.3652E+07	1.6452E-01	1.6452E-01	5.6215E+13	6.6741E+00
33	46	1	1	12	9.6369E+06	9.6517E-02	9.6517E-02	5.6215E+13	5.6455E+00
34	47	4	4	21	1.8069E+07	1.2477E-01	1.2477E-01	6.0359E+13	6.1068E+00
35	48	1	1	8	6.4246E+06	9.0057E-02	9.0057E-02	5.6215E+13	5.4295E+00
36	49	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
37	51	3	3	22	1.7668E+07	1.6701E-01	1.6701E-01	5.6215E+13	6.7487E+00
38	52	2	2	9	7.2277E+06	1.5016E-01	1.5016E-01	5.6215E+13	6.6154E+00
39	53	2	2	30	2.4092E+07	1.3293E-01	1.3293E-01	5.6215E+13	5.9602E+00
40	54	2	2	9	7.2277E+06	1.2450E-01	1.2450E-01	5.6215E+13	6.1969E+00
41	55	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
42	56	2	2	15	1.2046E+07	1.4931E-01	1.4931E-01	5.6215E+13	6.4418E+00
43	57	3	3	27	2.1683E+07	1.3630E-01	1.3630E-01	5.6215E+13	6.2539E+00
44	58	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
45	59	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
46	61	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
47	62	3	3	5	4.0154E+06	1.7042E-01	1.7042E-01	5.6215E+13	6.9079E+00
48	63	1	1	2	1.6062E+06	1.4467E-01	1.4467E-01	5.6215E+13	6.5488E+00
49	64	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
50	65	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
51	66	2	2	12	9.6369E+06	9.3310E-02	9.3310E-02	5.6215E+13	5.3842E+00
52	67	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
53	68	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
54	69	1	1	15	1.3050E+07	9.9011E-02	9.9011E-02	6.0900E+13	5.3739E+00
55	71	1	1	2	1.6062E+06	1.7615E-01	1.7615E-01	5.6215E+13	6.9851E+00
56	72	1	1	9	7.2277E+06	5.6411E-02	5.6411E-02	5.6215E+13	4.6029E+00
57	73	3	3	38	3.0517E+07	1.1804E-01	1.1804E-01	5.6215E+13	5.9388E+00
58	74	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
59	75	1	1	1	8.0308E+05	1.3079E-01	1.3079E-01	5.6215E+13	6.3559E+00
60	76	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
61	77	3	3	37	2.9714E+07	9.3151E-02	9.3151E-02	5.6215E+13	5.5364E+00
62	78	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
63	79	1	1	1	8.0308E+05	1.5971E-01	1.5971E-01	5.6215E+13	6.7824E+00
64	81	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
65	82	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
66	83	1	1	3	2.4092E+06	2.0765E-01	2.0765E-01	5.6215E+13	7.3966E+00
67	84	1	1	15	1.3050E+07	8.9151E-02	8.9151E-02	6.0900E+13	5.1544E+00
68	85	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
69	86	1	1	2	1.6062E+06	1.4546E-01	1.4546E-01	5.6215E+13	6.5495E+00
70	87	2	2	6	4.8185E+06	1.4243E-01	1.4243E-01	5.6215E+13	6.4945E+00
71	88	1	1	3	2.4092E+06	1.1965E-01	1.1965E-01	5.6215E+13	6.1822E+00
72	89	2	2	7	5.6215E+06	1.4119E-01	1.4119E-01	5.6215E+13	6.4596E+00
73	91	2	2	2	1.6062E+06	1.9968E-01	1.9968E-01	5.6215E+13	7.2928E+00
74	92	5	5	28	2.2687E+07	1.2154E-01	1.2154E-01	5.6722E+13	6.0638E+00
75	93	1	1	13	1.0440E+07	1.2069E-01	1.2069E-01	5.6215E+13	6.0198E+00
76	94	2	2	20	1.6062E+07	1.0777E-01	1.0777E-01	5.6215E+13	5.7840E+00

77	95	1	1	1	8.0308E+05	1.7087E-01	1.7087E-01	5.6215E+13	6.8918E+00
78	96	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
79	97	1	1	3	2.4092E+06	2.2668E-01	2.2668E-01	5.6215E+13	7.6121E+00
80	98	1	1	1	8.0308E+05	1.9846E-01	1.9846E-01	5.6215E+13	7.2687E+00
81	99	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
82	101	1	1	9	7.2277E+06	8.7480E-02	8.7480E-02	5.6215E+13	5.2162E+00
83	102	1	1	6	4.8185E+06	1.7221E-01	1.7221E-01	5.6215E+13	6.8044E+00
84	103	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
85	104	1	1	12	9.6369E+06	1.0136E-01	1.0136E-01	5.6215E+13	5.4860E+00
86	105	1	1	19	1.5258E+07	6.8997E-02	6.8997E-02	5.6215E+13	4.4774E+00
87	106	1	1	19	1.5258E+07	9.8500E-02	9.8500E-02	5.6215E+13	5.2355E+00
88	107	1	1	10	8.7000E+06	1.1789E-01	1.1789E-01	6.0900E+13	5.7537E+00
89	108	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
90	109	3	3	10	8.0308E+06	1.0972E-01	1.0972E-01	5.6215E+13	5.9331E+00
91	111	1	1	15	1.3050E+07	7.3279E-02	7.3279E-02	6.0900E+13	4.9639E+00
92	112	1	1	9	7.2277E+06	1.0575E-01	1.0575E-01	5.6215E+13	5.7500E+00
93	113	1	1	6	4.8185E+06	9.6260E-02	9.6260E-02	5.6215E+13	5.6735E+00
94	114	3	3	33	8.8338E+06	1.6842E-01	1.6842E-01	5.6215E+13	6.6812E+00
95	115	4	4	17	1.3987E+07	1.1154E-01	1.1154E-01	5.7813E+13	5.8087E+00
96	116	2	2	9	7.2277E+06	1.3485E-01	1.3485E-01	5.6215E+13	6.3479E+00
97	117	5	4	29	2.3289E+07	9.6197E-02	9.6197E-02	5.6215E+13	5.2156E+00
98	118	1	1	10	8.0308E+06	9.5304E-02	9.5304E-02	5.6215E+13	5.4387E+00
99	119	2	2	3	2.5431E+06	1.3625E-01	1.3625E-01	5.9068E+13	6.4044E+00
100	121	1	1	11	8.8338E+06	1.3416E-01	1.3416E-01	5.6215E+13	6.1310E+00
101	122	1	1	1	8.0308E+05	2.2518E-01	2.2518E-01	5.6215E+13	7.5946E+00
102	123	2	2	9	7.2277E+06	6.4612E-02	6.4612E-02	5.6215E+13	4.9850E+00
103	124	3	3	15	1.2046E+07	1.4148E-01	1.4148E-01	5.6215E+13	6.2544E+00
104	125	2	2	32	2.6769E+07	6.7810E-02	6.7810E-02	5.8722E+13	4.7854E+00
105	126	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
106	127	2	2	24	1.9274E+07	7.8577E-02	7.8577E-02	5.6215E+13	5.0965E+00
107	128	1	1	4	3.2123E+06	1.8536E-01	1.8536E-01	5.6215E+13	6.9875E+00
108	129	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
109	131	1	1	7	6.0900E+06	1.3164E-01	1.3164E-01	6.0900E+13	6.1490E+00
110	132	1	1	1	8.0308E+05	1.7976E-01	1.7976E-01	5.6215E+13	7.0232E+00
111	133	4	4	14	1.1243E+07	1.3720E-01	1.3720E-01	5.6215E+13	6.2453E+00
112	134	1	1	0	0.0000E+00	1.7487E-01	1.7487E-01	5.6215E+13	6.9892E+00
113	135	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
114	136	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
115	137	2	2	14	1.1243E+07	1.0359E-01	1.0359E-01	5.6215E+13	5.5597E+00
116	138	1	1	2	1.6062E+06	1.8407E-01	1.8407E-01	5.6215E+13	7.0820E+00
117	139	3	3	24	1.9341E+07	1.0448E-01	1.0448E-01	5.6798E+13	5.5002E+00
118	141	2	2	21	1.6865E+07	1.2434E-01	1.2434E-01	5.6215E+13	5.7861E+00
119	142	3	3	10	8.0308E+06	1.4025E-01	1.4025E-01	5.6215E+13	6.4429E+00
120	143	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
121	144	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
122	145	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
123	146	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
124	147	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
125	148	4	4	22	1.8538E+07	8.9429E-02	8.9429E-02	5.8394E+13	5.4000E+00
126	149	1	1	2	1.6062E+06	1.1940E-01	1.1940E-01	5.6215E+13	6.1666E+00
127	211	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
128	212	2	1	0	0.0000E+00	2.0757E-01	2.0757E-01	5.6215E+13	6.5394E+03
129	213	2	1	0	0.0000E+00	1.0442E-01	1.0442E-01	6.0900E+13	5.2937E+03
130	214	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
131	215	2	1	0	0.0000E+00	1.3386E-01	1.3386E-01	6.0900E+13	5.6470E+03
132	216	3	2	0	0.0000E+00	1.4984E-01	1.4984E-01	5.6215E+13	5.9726E+03
133	217	2	1	0	0.0000E+00	6.8322E-02	6.8322E-02	5.6215E+13	4.6636E+03
134	218	5	3	0	0.0000E+00	1.4464E-01	1.4464E-01	5.6215E+13	5.9301E+03
135	219	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
136	221	1	1	0	0.0000E+00	1.5121E-01	1.5121E-01	5.6215E+13	6.0485E+03
137	222	2	2	0	0.0000E+00	2.8547E-01	2.8547E-01	5.6215E+13	7.4611E+03
138	223	2	2	0	0.0000E+00	2.1107E-01	2.1107E-01	5.6215E+13	6.7420E+03
139	224	2	1	0	0.0000E+00	1.1575E-01	1.1575E-01	5.6215E+13	5.5424E+03
140	225	4	3	0	0.0000E+00	1.8280E-01	1.8280E-01	5.6836E+13	6.4073E+03
141	226	4	2	0	0.0000E+00	1.7191E-01	1.7191E-01	5.6215E+13	6.2513E+03
142	227	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
143	228	1	1	0	0.0000E+00	2.2616E-01	2.2616E-01	6.0900E+13	6.9111E+03
144	229	4	3	0	0.0000E+00	2.0406E-01	2.0406E-01	5.7145E+13	6.6131E+03
145	231	3	2	0	0.0000E+00	2.2154E-01	2.2154E-01	5.9558E+13	6.7816E+03
146	232	3	3	0	0.0000E+00	2.0354E-01	2.0354E-01	5.6215E+13	6.6146E+03
147	233	2	1	0	0.0000E+00	1.2278E-01	1.2278E-01	5.6215E+13	5.5941E+03
148	234	1	1	0	0.0000E+00	1.6962E-01	1.6962E-01	6.0900E+13	6.2752E+03
149	235	4	2	0	0.0000E+00	1.4269E-01	1.4269E-01	5.6215E+13	5.9128E+03
150	236	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
151	237	4	2	0	0.0000E+00	2.6404E-01	2.6404E-01	5.6215E+13	7.0588E+03
152	238	3	2	0	0.0000E+00	1.4207E-01	1.4207E-01	5.6215E+13	5.7468E+03
153	239	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
154	241	2	1	0	0.0000E+00	2.1078E-01	2.1078E-01	5.6215E+13	6.7408E+03

155	242	1	1	0	0.0000E+00	2.3713E-01	2.3713E-01	5.6215E+13	7.0252E+03
156	243	1	1	0	0.0000E+00	1.9280E-01	1.9280E-01	5.6215E+13	6.5428E+03
157	244	1	1	0	0.0000E+00	1.8061E-01	1.8061E-01	5.6215E+13	6.4057E+03
158	245	5	3	0	0.0000E+00	2.2091E-01	2.2091E-01	5.6215E+13	6.7098E+03
159	246	1	1	0	0.0000E+00	1.2561E-01	1.2561E-01	5.6215E+13	5.7066E+03
160	247	7	4	0	0.0000E+00	1.4782E-01	1.4782E-01	5.6663E+13	5.9740E+03
161	248	2	2	0	0.0000E+00	1.3596E-01	1.3596E-01	5.6215E+13	5.8523E+03
162	249	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
163	251	5	3	0	0.0000E+00	1.6071E-01	1.6071E-01	5.6215E+13	5.9083E+03
164	252	4	2	0	0.0000E+00	1.5460E-01	1.5460E-01	5.6215E+13	6.0519E+03
165	253	2	2	0	0.0000E+00	2.3440E-01	2.3440E-01	5.6215E+13	6.9916E+03
166	254	5	3	0	0.0000E+00	1.5872E-01	1.5872E-01	5.6215E+13	6.0017E+03
167	255	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
168	256	3	2	0	0.0000E+00	1.9190E-01	1.9190E-01	5.6215E+13	6.4169E+03
169	257	4	3	0	0.0000E+00	1.7868E-01	1.7868E-01	5.6215E+13	6.2269E+03
170	258	2	1	0	0.0000E+00	1.7869E-01	1.7869E-01	5.6215E+13	6.3400E+03
171	259	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
172	261	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
173	262	6	3	1	8.0308E+05	1.6875E-01	1.6875E-01	5.6215E+13	6.2291E+03
174	263	2	1	0	0.0000E+00	1.4461E-01	1.4461E-01	5.6215E+13	5.9403E+03
175	264	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
176	265	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
177	266	2	2	0	0.0000E+00	1.5532E-01	1.5532E-01	5.6215E+13	6.0990E+03
178	267	1	1	0	0.0000E+00	1.6780E-01	1.6780E-01	5.6215E+13	6.2529E+03
179	268	1	1	0	0.0000E+00	2.2499E-01	2.2499E-01	5.6215E+13	6.8987E+03
180	269	1	1	0	0.0000E+00	2.5488E-01	2.5488E-01	6.0900E+13	7.2048E+03
181	271	2	1	0	0.0000E+00	1.5981E-01	1.5981E-01	5.6215E+13	6.1307E+03
182	272	1	1	0	0.0000E+00	7.5607E-02	7.5607E-02	5.6215E+13	4.8638E+03
183	273	3	3	0	0.0000E+00	1.8868E-01	1.8868E-01	5.6215E+13	6.4524E+03
184	274	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
185	275	2	1	0	0.0000E+00	1.3079E-01	1.3079E-01	5.6215E+13	5.7670E+03
186	276	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
187	277	4	4	0	0.0000E+00	1.4310E-01	1.4310E-01	5.6215E+13	5.9292E+03
188	278	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
189	279	2	1	0	0.0000E+00	1.6024E-01	1.6024E-01	5.6215E+13	6.1580E+03
190	281	1	1	0	0.0000E+00	1.3260E-01	1.3260E-01	5.6215E+13	5.8063E+03
191	282	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
192	283	3	2	0	0.0000E+00	1.8935E-01	1.8935E-01	5.6215E+13	6.4901E+03
193	284	2	2	0	0.0000E+00	2.6937E-01	2.6937E-01	5.7086E+13	7.3409E+03
194	285	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
195	286	3	2	0	0.0000E+00	1.8053E-01	1.8053E-01	5.6215E+13	6.3902E+03
196	287	4	2	0	0.0000E+00	1.4687E-01	1.4687E-01	5.6215E+13	5.8947E+03
197	288	2	1	0	0.0000E+00	1.1814E-01	1.1814E-01	5.6215E+13	5.5788E+03
198	289	3	2	0	0.0000E+00	1.7833E-01	1.7833E-01	5.6215E+13	6.3608E+03
199	291	4	2	0	0.0000E+00	1.7270E-01	1.7270E-01	5.6215E+13	6.2706E+03
200	292	8	5	0	0.0000E+00	1.5065E-01	1.5065E-01	5.7571E+13	5.9950E+03
201	293	2	1	0	0.0000E+00	1.1538E-01	1.1538E-01	5.6215E+13	5.2588E+03
202	294	2	2	0	0.0000E+00	2.1486E-01	2.1486E-01	5.6215E+13	6.7746E+03
203	295	3	2	0	0.0000E+00	2.0544E-01	2.0544E-01	5.6215E+13	6.6268E+03
204	296	1	1	0	0.0000E+00	2.2343E-01	2.2343E-01	5.6215E+13	6.8821E+03
205	297	2	1	0	0.0000E+00	2.1768E-01	2.1768E-01	5.6215E+13	6.8026E+03
206	298	2	1	0	0.0000E+00	2.0038E-01	2.0038E-01	5.6215E+13	6.6117E+03
207	299	2	2	0	0.0000E+00	2.0510E-01	2.0510E-01	5.6215E+13	6.6610E+03
208	301	2	1	0	0.0000E+00	1.1351E-01	1.1351E-01	5.6215E+13	5.0689E+03
209	302	2	1	0	0.0000E+00	1.6983E-01	1.6983E-01	5.6215E+13	5.9522E+03
210	303	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
211	304	2	1	0	0.0000E+00	1.1436E-01	1.1436E-01	5.6215E+13	4.9323E+03
212	305	1	1	0	0.0000E+00	1.7778E-01	1.7778E-01	5.6215E+13	6.3728E+03
213	306	1	1	0	0.0000E+00	2.3034E-01	2.3034E-01	5.6215E+13	6.9551E+03
214	307	2	1	0	0.0000E+00	1.1050E-01	1.1050E-01	6.0900E+13	4.7992E+03
215	308	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
216	309	4	3	0	0.0000E+00	1.4716E-01	1.4716E-01	5.6215E+13	5.9905E+03
217	311	1	1	0	0.0000E+00	1.7656E-01	1.7656E-01	6.0900E+13	6.3584E+03
218	312	1	1	0	0.0000E+00	1.7069E-01	1.7069E-01	5.6215E+13	6.2882E+03
219	313	1	1	0	0.0000E+00	1.4398E-01	1.4398E-01	5.6215E+13	5.9579E+03
220	314	2	2	0	0.0000E+00	2.4222E-01	2.4222E-01	5.6215E+13	7.0643E+03
221	315	8	5	0	0.0000E+00	1.3225E-01	1.3225E-01	5.6644E+13	5.7202E+03
222	316	3	2	0	0.0000E+00	1.4908E-01	1.4908E-01	5.6215E+13	5.9779E+03
223	317	10	4	0	0.0000E+00	1.1729E-01	1.1729E-01	5.6215E+13	5.1195E+03
224	318	2	1	0	0.0000E+00	1.3988E-01	1.3988E-01	5.6215E+13	5.3735E+03
225	319	6	3	0	0.0000E+00	1.1533E-01	1.1533E-01	5.6794E+13	5.5065E+03
226	321	1	1	0	0.0000E+00	2.6224E-01	2.6224E-01	5.6215E+13	7.2810E+03
227	322	2	1	0	0.0000E+00	2.2518E-01	2.2518E-01	5.6215E+13	6.8868E+03
228	323	3	2	0	0.0000E+00	1.4316E-01	1.4316E-01	5.6215E+13	5.9033E+03
229	324	4	3	0	0.0000E+00	1.4651E-01	1.4651E-01	5.6215E+13	5.9391E+03
230	325	2	2	0	0.0000E+00	1.4198E-01	1.4198E-01	5.8087E+13	5.8753E+03
231	326	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
232	327	3	2	0	0.0000E+00	1.5816E-01	1.5816E-01	5.6215E+13	6.0873E+03

233	328	2	1	0	0.0000E+00	1.8222E-01	1.8222E-01	5.6215E+13	6.2290E+03
234	329	1	1	0	0.0000E+00	1.3911E-01	1.3911E-01	5.6215E+13	5.8946E+03
235	331	2	2	0	0.0000E+00	1.3307E-01	1.3307E-01	5.7874E+13	5.7563E+03
236	332	2	1	0	0.0000E+00	1.7706E-01	1.7706E-01	5.6215E+13	6.3369E+03
237	333	7	4	0	0.0000E+00	1.5471E-01	1.5471E-01	5.6215E+13	5.9473E+03
238	334	2	1	0	0.0000E+00	1.7487E-01	1.7487E-01	5.6215E+13	6.3384E+03
239	335	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
240	336	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
241	337	3	2	0	0.0000E+00	1.6811E-01	1.6811E-01	5.6215E+13	6.2395E+03
242	338	2	1	0	0.0000E+00	1.8376E-01	1.8376E-01	5.6215E+13	6.4186E+03
243	339	4	3	0	0.0000E+00	1.7596E-01	1.7596E-01	5.9388E+13	6.3204E+03
244	341	3	2	0	0.0000E+00	1.4963E-01	1.4963E-01	5.6215E+13	5.8234E+03
245	342	5	3	0	0.0000E+00	1.8933E-01	1.8933E-01	5.6215E+13	6.4849E+03
246	343	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
247	344	1	1	0	0.0000E+00	2.4772E-01	2.4772E-01	5.6215E+13	7.1318E+03
248	345	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
249	346	1	1	0	0.0000E+00	2.3193E-01	2.3193E-01	5.6215E+13	6.9716E+03
250	347	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
251	348	7	4	0	0.0000E+00	1.1895E-01	1.1895E-01	5.6472E+13	5.5496E+03
252	349	2	1	0	0.0000E+00	1.5001E-01	1.5001E-01	5.6215E+13	5.9849E+03
253	411	10433	10417	24541	7.5889E+09	1.6213E-01	1.6213E-01	6.4626E+13	6.5737E-01
254	412	12019	12011	28366	8.7923E+09	1.6347E-01	1.6347E-01	6.4849E+13	6.6407E-01
255	413	13113	13108	31233	9.7198E+09	1.5807E-01	1.5807E-01	6.3901E+13	6.4346E-01
256	414	13840	13830	32773	1.0239E+10	1.5819E-01	1.5819E-01	6.4030E+13	6.4492E-01
257	415	14077	14067	32775	1.0305E+10	1.5923E-01	1.5923E-01	6.5913E+13	6.5026E-01
258	416	13855	13843	32582	1.0084E+10	1.5757E-01	1.5757E-01	6.3078E+13	6.4287E-01
259	417	13304	13288	31215	9.8375E+09	1.5854E-01	1.5854E-01	6.4998E+13	6.4649E-01
260	418	12275	12262	28903	9.1421E+09	1.5855E-01	1.5855E-01	6.4254E+13	6.4462E-01
261	419	10440	10431	24635	7.7685E+09	1.6318E-01	1.6318E-01	6.6093E+13	6.6358E-01
262	421	10989	10978	26354	8.5749E+09	1.6240E-01	1.6240E-01	6.6335E+13	6.6189E-01
263	422	13062	13058	31294	1.0018E+10	1.5919E-01	1.5919E-01	6.5001E+13	6.5141E-01
264	423	14227	14219	33953	1.0812E+10	1.5759E-01	1.5759E-01	6.5347E+13	6.4660E-01
265	424	14766	14756	35457	1.1066E+10	1.5934E-01	1.5934E-01	6.5034E+13	6.5355E-01
266	425	15054	15046	35785	1.1135E+10	1.5941E-01	1.5941E-01	6.3898E+13	6.5358E-01
267	426	14824	14816	35373	1.1134E+10	1.5567E-01	1.5567E-01	6.3787E+13	6.3715E-01
268	427	14023	14020	33693	1.0821E+10	1.5813E-01	1.5813E-01	6.6429E+13	6.4791E-01
269	428	13019	13012	31142	9.8529E+09	1.6036E-01	1.6036E-01	6.4755E+13	6.5568E-01
270	429	11367	11357	27239	8.5240E+09	1.6290E-01	1.6290E-01	6.5892E+13	6.6423E-01
271	431	12177	12163	29146	9.2492E+09	1.5989E-01	1.5989E-01	6.4800E+13	6.5323E-01
272	432	14274	14264	33884	1.0737E+10	1.5864E-01	1.5864E-01	6.6252E+13	6.5116E-01
273	433	15415	15407	36600	1.1546E+10	1.5851E-01	1.5851E-01	6.4519E+13	6.5029E-01
274	434	16050	16042	38235	1.1971E+10	1.5618E-01	1.5618E-01	6.4514E+13	6.4084E-01
275	435	16004	15998	38302	1.2523E+10	1.5699E-01	1.5699E-01	6.7268E+13	6.4377E-01
276	436	16046	16040	38306	1.2207E+10	1.5681E-01	1.5681E-01	6.4728E+13	6.4379E-01
277	437	15149	15142	35870	1.1331E+10	1.5556E-01	1.5556E-01	6.4445E+13	6.3672E-01
278	438	14301	14293	34206	1.0577E+10	1.5888E-01	1.5888E-01	6.4322E+13	6.5108E-01
279	439	12348	12338	29547	9.1436E+09	1.5856E-01	1.5856E-01	6.2832E+13	6.4691E-01
280	441	12814	12804	30399	9.7726E+09	1.5730E-01	1.5730E-01	6.6077E+13	6.4200E-01
281	442	14991	14980	35678	1.1090E+10	1.5647E-01	1.5647E-01	6.3162E+13	6.4035E-01
282	443	16294	16288	38848	1.2018E+10	1.5649E-01	1.5649E-01	6.3066E+13	6.4135E-01
283	444	16926	16920	40472	1.2665E+10	1.5735E-01	1.5735E-01	6.4836E+13	6.4474E-01
284	445	17247	17238	40811	1.2843E+10	1.5625E-01	1.5625E-01	6.3873E+13	6.4211E-01
285	446	17069	17063	40698	1.2825E+10	1.5586E-01	1.5586E-01	6.4772E+13	6.3869E-01
286	447	16111	16103	38431	1.2055E+10	1.5553E-01	1.5553E-01	6.4398E+13	6.3779E-01
287	448	14709	14695	35021	1.0944E+10	1.5751E-01	1.5751E-01	6.4930E+13	6.4439E-01
288	449	12817	12810	30552	9.6533E+09	1.5790E-01	1.5790E-01	6.4161E+13	6.4499E-01
289	451	13183	13171	31500	1.0242E+10	1.5891E-01	1.5891E-01	6.7872E+13	6.5159E-01
290	452	15348	15341	36913	1.1513E+10	1.5664E-01	1.5664E-01	6.4547E+13	6.4379E-01
291	453	16906	16898	40278	1.2688E+10	1.5545E-01	1.5545E-01	6.5793E+13	6.3879E-01
292	454	17554	17547	42058	1.3579E+10	1.5507E-01	1.5507E-01	6.5736E+13	6.3779E-01
293	455	17556	17549	41948	1.3116E+10	1.5604E-01	1.5604E-01	6.4894E+13	6.4202E-01
294	456	17398	17388	41566	1.3045E+10	1.5622E-01	1.5622E-01	6.3011E+13	6.4184E-01
295	457	17027	17019	40779	1.2790E+10	1.5597E-01	1.5597E-01	6.4357E+13	6.4119E-01
296	458	15431	15419	37063	1.1992E+10	1.5772E-01	1.5772E-01	6.7132E+13	6.4766E-01
297	459	13052	13042	31062	9.5497E+09	1.5878E-01	1.5878E-01	6.3570E+13	6.5084E-01
298	461	13412	13402	32037	1.0064E+10	1.5769E-01	1.5769E-01	6.5244E+13	6.4560E-01
299	462	16100	16086	38487	1.2320E+10	1.5724E-01	1.5724E-01	6.7026E+13	6.4623E-01
300	463	17024	17016	40626	1.2457E+10	1.5607E-01	1.5607E-01	6.2974E+13	6.4176E-01
301	464	17803	17795	42513	1.3197E+10	1.5537E-01	1.5537E-01	6.4307E+13	6.3940E-01
302	465	18027	18022	42823	1.3587E+10	1.5447E-01	1.5447E-01	6.5334E+13	6.3450E-01
303	466	17753	17747	42427	1.3575E+10	1.5424E-01	1.5424E-01	6.5566E+13	6.3324E-01
304	467	17105	17099	40856	1.2607E+10	1.5521E-01	1.5521E-01	6.3244E+13	6.3806E-01
305	468	15852	15842	38104	1.1817E+10	1.5634E-01	1.5634E-01	6.4580E+13	6.4189E-01
306	469	13562	13546	32264	1.0151E+10	1.5780E-01	1.5780E-01	6.6100E+13	6.4673E-01
307	471	13834	13822	32898	1.0336E+10	1.5728E-01	1.5728E-01	6.4899E+13	6.4328E-01
308	472	16099	16093	38672	1.2210E+10	1.5633E-01	1.5633E-01	6.4907E+13	6.4084E-01
309	473	17457	17453	41870	1.3264E+10	1.5660E-01	1.5660E-01	6.5423E+13	6.4432E-01
310	474	17962	17955	42498	1.3485E+10	1.5560E-01	1.5560E-01	6.6560E+13	6.4089E-01

311	475	18297	18287	43720	1.3777E+10	1.5515E-01	1.5515E-01	6.5480E+13	6.3824E-01
312	476	18243	18230	43661	1.3913E+10	1.5403E-01	1.5403E-01	6.4270E+13	6.3293E-01
313	477	17247	17239	41352	1.2839E+10	1.5699E-01	1.5699E-01	6.3742E+13	6.4569E-01
314	478	15941	15936	37974	1.2052E+10	1.5691E-01	1.5691E-01	6.5962E+13	6.4453E-01
315	479	13448	13438	32328	1.0024E+10	1.5556E-01	1.5556E-01	6.3190E+13	6.3617E-01
316	481	13829	13812	33134	1.0561E+10	1.5819E-01	1.5819E-01	6.3264E+13	6.4832E-01
317	482	15819	15811	37414	1.1631E+10	1.5720E-01	1.5720E-01	6.3473E+13	6.4658E-01
318	483	17273	17268	41208	1.2600E+10	1.5589E-01	1.5589E-01	6.2996E+13	6.4058E-01
319	484	17768	17758	42485	1.3556E+10	1.5379E-01	1.5379E-01	6.5315E+13	6.3135E-01
320	485	18272	18263	43524	1.3637E+10	1.5478E-01	1.5478E-01	6.4187E+13	6.3714E-01
321	486	17950	17943	42968	1.3495E+10	1.5467E-01	1.5467E-01	6.5030E+13	6.3554E-01
322	487	17415	17402	41569	1.3212E+10	1.5603E-01	1.5603E-01	6.6028E+13	6.4160E-01
323	488	15820	15812	38055	1.2027E+10	1.5689E-01	1.5689E-01	6.5660E+13	6.4601E-01
324	489	13572	13553	32108	1.0125E+10	1.5665E-01	1.5665E-01	6.4822E+13	6.4072E-01
325	491	13315	13300	31726	9.6023E+09	1.6040E-01	1.6040E-01	6.2413E+13	6.5527E-01
326	492	15715	15704	37384	1.1882E+10	1.5718E-01	1.5718E-01	6.6307E+13	6.4521E-01
327	493	16906	16898	40606	1.2779E+10	1.5613E-01	1.5613E-01	6.4523E+13	6.4205E-01
328	494	17776	17770	42227	1.3183E+10	1.5521E-01	1.5521E-01	6.4535E+13	6.3849E-01
329	495	18081	18068	43405	1.3246E+10	1.5521E-01	1.5521E-01	6.2618E+13	6.3780E-01
330	496	17723	17714	42429	1.3459E+10	1.5439E-01	1.5439E-01	6.5072E+13	6.3423E-01
331	497	16936	16926	40687	1.2855E+10	1.5622E-01	1.5622E-01	6.5113E+13	6.4139E-01
332	498	15482	15478	37485	1.1817E+10	1.5827E-01	1.5827E-01	6.5445E+13	6.5063E-01
333	499	13357	13349	31745	9.8842E+09	1.5952E-01	1.5952E-01	6.4643E+13	6.5372E-01
334	501	13078	13070	31570	9.7625E+09	1.5779E-01	1.5779E-01	6.3624E+13	6.4534E-01
335	502	15136	15128	36188	1.1231E+10	1.5751E-01	1.5751E-01	6.4968E+13	6.4606E-01
336	503	16602	16591	39609	1.2671E+10	1.5627E-01	1.5627E-01	6.5805E+13	6.4100E-01
337	504	17141	17134	40961	1.2849E+10	1.5558E-01	1.5558E-01	6.3877E+13	6.4025E-01
338	505	17441	17431	41607	1.3360E+10	1.5635E-01	1.5635E-01	6.6420E+13	6.4048E-01
339	506	17229	17221	41126	1.2756E+10	1.5754E-01	1.5754E-01	6.4942E+13	6.4886E-01
340	507	16429	16418	39229	1.2181E+10	1.5687E-01	1.5687E-01	6.4383E+13	6.4387E-01
341	508	15019	15016	36000	1.1287E+10	1.5684E-01	1.5684E-01	6.5236E+13	6.4404E-01
342	509	13098	13088	31275	1.0040E+10	1.5818E-01	1.5818E-01	6.6484E+13	6.4786E-01
343	511	12384	12376	29189	9.0996E+09	1.5899E-01	1.5899E-01	6.5550E+13	6.5237E-01
344	512	14523	14516	34937	1.0730E+10	1.5929E-01	1.5929E-01	6.3364E+13	6.5213E-01
345	513	15646	15636	37454	1.1688E+10	1.5659E-01	1.5659E-01	6.4945E+13	6.4337E-01
346	514	16208	16200	38581	1.1946E+10	1.5641E-01	1.5641E-01	6.4207E+13	6.4186E-01
347	515	16702	16693	40097	1.2525E+10	1.5619E-01	1.5619E-01	6.3840E+13	6.4054E-01
348	516	16560	16550	39633	1.2157E+10	1.5684E-01	1.5684E-01	6.3276E+13	6.4443E-01
349	517	15831	15821	37784	1.2015E+10	1.5696E-01	1.5696E-01	6.5461E+13	6.4409E-01
350	518	14413	14408	34757	1.0918E+10	1.5948E-01	1.5948E-01	6.4944E+13	6.5445E-01
351	519	12456	12436	29470	9.2479E+09	1.5710E-01	1.5710E-01	6.4781E+13	6.4262E-01
352	521	11773	11763	28353	8.7949E+09	1.6076E-01	1.6076E-01	6.3985E+13	6.5629E-01
353	522	13656	13653	32815	1.0262E+10	1.5895E-01	1.5895E-01	6.3667E+13	6.5079E-01
354	523	14823	14822	35565	1.1497E+10	1.5750E-01	1.5750E-01	6.6669E+13	6.4625E-01
355	524	15578	15568	37175	1.1735E+10	1.5651E-01	1.5651E-01	6.3983E+13	6.4208E-01
356	525	15630	15622	37733	1.2017E+10	1.5661E-01	1.5661E-01	6.4989E+13	6.4193E-01
357	526	15348	15340	36695	1.1517E+10	1.5698E-01	1.5698E-01	6.4636E+13	6.4456E-01
358	527	14612	14604	34956	1.1242E+10	1.5924E-01	1.5924E-01	6.6489E+13	6.5178E-01
359	528	13563	13558	32727	1.0376E+10	1.5981E-01	1.5981E-01	6.5418E+13	6.5556E-01
360	529	11746	11732	28011	8.6162E+09	1.6101E-01	1.6101E-01	6.2840E+13	6.5722E-01
361	531	10605	10593	25585	8.0889E+09	1.6117E-01	1.6117E-01	6.5037E+13	6.5726E-01
362	532	12360	12357	29229	9.3094E+09	1.6005E-01	1.6005E-01	6.6036E+13	6.5336E-01
363	533	13599	13583	32594	1.0525E+10	1.5910E-01	1.5910E-01	6.7574E+13	6.5204E-01
364	534	14020	14007	33408	1.0658E+10	1.5916E-01	1.5916E-01	6.5836E+13	6.5285E-01
365	535	14170	14164	34194	1.0839E+10	1.5664E-01	1.5664E-01	6.4793E+13	6.4229E-01
366	536	14079	14075	33769	1.0457E+10	1.5741E-01	1.5741E-01	6.4599E+13	6.4422E-01
367	537	13521	13513	32543	1.0224E+10	1.6070E-01	1.6070E-01	6.6045E+13	6.5838E-01
368	538	12395	12390	29731	9.3628E+09	1.6009E-01	1.6009E-01	6.5077E+13	6.5464E-01
369	539	10363	10354	24546	7.6913E+09	1.6204E-01	1.6204E-01	6.4090E+13	6.5904E-01
370	541	9046	9024	21620	6.8126E+09	1.6403E-01	1.6403E-01	6.4197E+13	6.6672E-01
371	542	10647	10634	25621	7.8710E+09	1.6179E-01	1.6179E-01	6.3832E+13	6.5903E-01
372	543	11591	11584	27869	8.4803E+09	1.5994E-01	1.5994E-01	6.3079E+13	6.5382E-01
373	544	12053	12042	28728	8.7245E+09	1.6116E-01	1.6116E-01	6.2513E+13	6.5861E-01
374	545	12317	12307	29747	9.1677E+09	1.6090E-01	1.6090E-01	6.3426E+13	6.5897E-01
375	546	11953	11945	28554	8.8426E+09	1.5881E-01	1.5881E-01	6.4048E+13	6.4972E-01
376	547	11578	11571	27548	8.7509E+09	1.5871E-01	1.5871E-01	6.4341E+13	6.4683E-01
377	548	10430	10414	25028	7.8232E+09	1.6084E-01	1.6084E-01	6.3229E+13	6.5471E-01
378	549	9076	9069	21512	6.7389E+09	1.6438E-01	1.6438E-01	6.5764E+13	6.7099E-01
379	1200	219769	200710	2739	2.5883E+08	4.1117E-01	4.1117E-01	6.2989E+13	8.1813E+03
380	1201	2319971	2279341	10681483	1.0877E+12	3.0343E-01	3.0343E-01	6.3376E+13	3.4619E+00
381	1202	375040	365720	1775026	5.8151E+10	3.0254E-01	3.0254E-01	6.1875E+13	3.5070E+00
382	12021	2600355	2525670	12309513	1.2634E+12	3.3305E-01	3.3305E-01	6.3955E+13	3.6400E+00
383	1203	2370790	2329089	11105612	1.1443E+12	3.0591E-01	3.0591E-01	6.4104E+13	3.4787E+00
384	1204	4499457	4368040	21171266	2.1591E+12	3.3603E-01	3.3603E-01	6.3541E+13	3.6509E+00
385	12041	588380	573673	2765028	8.9265E+10	2.9624E-01	2.9624E-01	6.0879E+13	3.4716E+00
386	1205	3941626	3872356	18445759	1.8995E+12	3.1539E-01	3.1539E-01	6.4122E+13	3.5247E+00
387	1206	23865	23305	105951	3.3820E+09	2.4074E-01	2.4074E-01	6.0058E+13	3.1910E+00
388	12061	267582	262134	1107838	1.1307E+11	1.9335E-01	1.9335E-01	6.3493E+13	2.8826E+00

389	1207	130914	129622	528167	5.4389E+10	1.6067E-01	1.6067E-01	6.4410E+13	2.6933E+00
390	1208	703537	684693	3128370	1.0333E+11	3.0559E-01	3.0559E-01	6.2317E+13	3.5176E+00
391	12081	4419883	4284198	20652967	2.1211E+12	3.3467E-01	3.3467E-01	6.3976E+13	3.6442E+00
392	1209	3946356	3876500	18460888	1.8940E+12	3.1486E-01	3.1486E-01	6.3946E+13	3.5236E+00
393	1210	13402	13392	51821	4.8343E+10	1.2690E-01	1.2690E-01	6.5209E+13	2.4236E+00
394	1211	38717774	37230847	202987364	2.1312E+13	3.7921E-01	3.7921E-01	6.5053E+13	3.9413E+00
395	12111	12793336	12466127	63918045	2.0944E+12	3.5978E-01	3.5978E-01	6.1568E+13	3.8474E+00
397	9998	4141094	3658424	370046	3.9601E+10	1.4060E-01	1.4060E-01	6.6704E+13	5.8101E+03
398	9997	4408447	4057150	372997	3.9545E+10	1.4054E-01	1.4054E-01	6.6623E+13	5.8155E+03
399	9996	3166321	2789507	260158	2.7579E+10	1.4166E-01	1.4166E-01	6.6391E+13	5.8241E+03
400	9995	61406808	50006109	2315374	2.4904E+11	4.6547E-01	4.6547E-01	6.6218E+13	8.6442E+03
401	9994	57550916	43883963	4070035	4.3875E+11	4.3905E-01	4.3905E-01	6.6609E+13	8.4189E+03
402	9993	60091	59236	2721	2.9734E+07	1.3837E-01	1.3837E-01	6.1961E+13	5.7666E+03
403	9992	103086	100379	11184	1.2219E+08	1.4408E-01	1.4408E-01	6.2676E+13	5.8410E+03
404	9991	1494448	1481081	5464063	1.8669E+11	1.4339E-01	1.4339E-01	6.4046E+13	2.5607E+00
405	9990	960813	827919	53764	5.5780E+09	1.6414E-01	1.6414E-01	6.5221E+13	6.0279E+03
406	9989	3190560	2418190	209937	2.1929E+10	2.9023E-01	2.9023E-01	6.5063E+13	7.1562E+03
407	9988	4308726	4110644	743247	8.0113E+09	4.1389E-01	4.1389E-01	6.0952E+13	8.2357E+03
409	9986	17922	17922	95	9.2622E+07	1.4581E-01	1.4581E-01	6.1717E+13	5.6870E+03
410	10000	14583	12691	72	1.1570E+07	3.6607E-01	3.6607E-01	6.4663E+13	7.7987E+03
411	10001	22925	19763	89	9.7336E+06	4.0938E-01	4.0938E-01	6.4276E+13	8.1854E+03
412	10002	58327	52688	365	3.8042E+07	4.2477E-01	4.2477E-01	6.5656E+13	8.3042E+03
413	10003	23244	20185	101	1.2485E+07	3.7967E-01	3.7967E-01	6.2986E+13	7.9397E+03
414	10004	16360	14055	76	6.8633E+06	3.7644E-01	3.7644E-01	6.0647E+13	7.8997E+03
415	10005	1224	1057	10	8.9974E+05	2.1009E-01	2.1009E-01	6.1557E+13	6.3740E+03
416	2001	4289349	4040628	903238	9.7519E+09	3.9628E-01	3.9628E-01	6.0913E+13	8.0438E+03
417	2002	8763215	7829382	4918061	2.6542E+10	3.4996E-01	3.4996E-01	6.0904E+13	7.5902E+03
418	2003	8582421	7475523	5517348	2.9685E+10	3.0227E-01	3.0227E-01	6.0808E+13	7.1102E+03
419	2004	16597055	13646428	19769709	5.3059E+10	2.6164E-01	2.6164E-01	6.0706E+13	6.6822E+03
420	2005	14827037	12146747	19522102	5.2275E+10	2.3007E-01	2.3007E-01	6.0572E+13	6.3360E+03
421	2006	25319159	19978446	35484173	4.7405E+10	2.1077E-01	2.1077E-01	6.0471E+13	6.1166E+03
422	2007	20837038	16656797	30412991	4.0551E+10	1.9844E-01	1.9844E-01	6.0352E+13	5.9728E+03
423	2008	32611130	25442135	71081043	4.7280E+10	1.8905E-01	1.8905E-01	6.0224E+13	5.8608E+03
424	2009	22322009	17674636	49773893	3.3002E+10	1.8234E-01	1.8234E-01	6.0054E+13	5.7789E+03
425	2010	28868890	22688376	83508001	2.7606E+10	1.7851E-01	1.7851E-01	5.9899E+13	5.7316E+03
426	2011	16077057	12739569	46952375	1.5477E+10	1.7671E-01	1.7671E-01	5.9721E+13	5.7084E+03
427	2012	17483168	13701202	51323347	8.4324E+09	1.7649E-01	1.7649E-01	5.9568E+13	5.7048E+03
428	2013	9368589	7394346	27600453	4.5252E+09	1.7699E-01	1.7699E-01	5.9452E+13	5.7093E+03
429	2014	9932163	7675748	29339739	2.4002E+09	1.7808E-01	1.7808E-01	5.9328E+13	5.7209E+03
430	2015	4389094	3703765	24628430	2.0104E+09	1.8487E-01	1.8487E-01	5.9206E+13	5.7991E+03
total		460999232	383662790	908234183	3.8255E+13				

```
1tally   2        nps =     1177383
          tally type 2    particle flux averaged over a surface.
          tally for  photons
 number of histories used for normalizing tallies =     70000000.00

          this tally is modified by a dose function.

          areas
               surface:     1231
                        1.78374E+06

 surface  1231
               1.87925E-04 0.0244
```

==========

```
          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
   tally   2

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
   merit--     -pdf-
 behavior    behavior      value    decrease   decrease rate      value    decrease   decrease rate       value
   behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
   random      >3.00
 observed     random        0.02       no           no            0.11       no          no            decrease
   random       7.31
 passed?        yes          yes       no           no              no       no          no                no
   yes          yes
```

```
   ==========================================================================================================
   ===================

 warning.  the tally in the tally fluctuation chart bin did not pass  6 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally   2 with nps =     1177383  print table
   160


 normed average tally per history  = 1.87925E-04          unnormed average tally per history  = 3.35209E+02
 estimated tally relative error    = 0.0244               estimated variance of the variance  = 0.1067
 relative error from zero tallies  = 0.0083               relative error from nonzero scores  = 0.0230

 number of nonzero history tallies =       14496          efficiency for the nonzero tallies  = 0.0002
 history number of largest  tally  =      824477          largest  unnormalized history tally = 3.23674E+08
 (largest  tally)/(average tally)  = 9.65591E+05          (largest  tally)/(avg nonzero tally)= 1.99960E+02

 (confidence interval shift)/mean  = 0.0028               shifted confidence interval center  = 1.88447E-04


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
   as follows:

      estimated quantities           value at nps           value at nps+1           value(nps+1)/value(nps)-1.

      mean                            1.87925E-04             3.42045E-04                     0.820114
      relative error                  2.44121E-02             2.76432E-02                     0.132354
      variance of the variance        1.06690E-01             1.20097E-01                     0.125668
      shifted center                  1.88447E-04             2.30162E-04                     0.221362
      figure of merit                 1.33361E+01             1.04007E+01                    -0.220106

 the estimated inverse power slope of the 200 largest  tallies starting at 1.09339E+07 is 7.3115
 the history score probability density function appears to have an unsampled region at the largest  history scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (5.563E+05)*( 4.896E-03)**2 = (5.563E+05)*(2.397E-05) =
   1.334E+01

1unnormed tally density for tally   2            nonzero tally mean(m) = 1.619E+06   nps =     1177383  print table
   161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
   bin(d=decade,slope= 7.3)
  tally  number num den log den:d--------------d----------------d---------------d---------------d---------------d---
   -------------d--
 2.00+05     32 1.11-11 -10.953 ***************|****************|***************|***************|************** |
   |
 2.51+05    153 4.23-11 -10.374
   ***************|****************|***************|***************|***************|********        |
 3.16+05    165 3.62-11 -10.441
   ***************|****************|***************|***************|***************|*******         |
 3.98+05    183 3.19-11 -10.496
   ***************|****************|***************|***************|***************|******          |
 5.01+05    567 7.86-11 -10.105
   ***************|****************|***************|***************|***************|************    |
 6.31+05   1205 1.33-10  -9.877
   ***************|****************|***************|***************|***************|****************|
 7.94+05   2398 2.10-10  -9.678
   ***************|****************|***************|***************|***************|****************|**
 1.00+06   2601 1.81-10  -9.743
   ***************|****************|***************|***************|***************|****************|*
 1.26+06   2373 1.31-10  -9.883
   ***************|****************|***************|***************|***************|****************|
 1.58+06   1801 7.89-11 -10.103
   ***************|****************|***************|***************|***************|************    |
 2.00+06   1171 4.08-11 -10.390
   mmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmm|mmmmmmm         |
 2.51+06    664 1.84-11 -10.736 ***************|****************|***************|***************|***************|**
   |
 3.16+06    404 8.87-12 -11.052 ***************|****************|***************|***************|*************  |
   |
 3.98+06    241 4.20-12 -11.376 ***************|****************|***************|***************|*******        |
   |
 5.01+06    136 1.88-12 -11.725 ***************|****************|***************|***************|**             |
   |
```

```
 6.31+06     86 9.47-13 -12.024 **************|***************|**************|************  |               |
   |
 7.94+06     74 6.47-13 -12.189 **************|***************|**************|**********    |               |
   |
 1.00+07     30 2.08-13 -12.681 **************|***************|**************|**            |               |
   |
 1.26+07     34 1.88-13 -12.727 **************|***************|**************|*         s    |               |
   |
 1.58+07     24 1.05-13 -12.978 **************|***************|************  |         s     |               |
   |
 2.00+07     37 1.29-13 -12.890 **************|***************|**************|       s       |               |
   |
 2.51+07     38 1.05-13 -12.978 **************|***************|************  |     s         |               |
   |
 3.16+07     31 6.81-14 -13.167 **************|***************|**********    |  s            |               |
   |
 3.98+07     16 2.79-14 -13.554 **************|***************|****          s               |               |
   |
 5.01+07     15 2.08-14 -13.682 **************|***************|**          s  |               |               |
   |
 6.31+07      7 7.71-15 -14.113 **************|************   |       s       |               |               |
   |
 7.94+07      5 4.37-15 -14.359 **************|********       |   s           |               |               |
   |
 1.00+08      4 2.78-15 -14.556 **************|*****         s |               |               |               |
   |
 1.26+08      0 0.00+00   0.000               |        s      |               |               |               |
   |
 1.58+08      0 0.00+00   0.000               | s             |               |               |               |
   |
 2.00+08      0 0.00+00   0.000          s    |               |               |               |               |
   |
 2.51+08      0 0.00+00   0.000  s            |               |               |               |               |
   |
 3.16+08      0 0.00+00   0.000               |               |               |               |               |
   |
 3.98+08      1 1.74-16 -15.758 *             |               |               |               |               |
   |
  total   14496 2.07-04         d-------------d---------------d--------------d--------------d---------------d---
    -------------d--

1tally  12        nps =     1177383
          tally type 2    particle flux averaged over a surface.
          tally for  photons
 number of histories used for normalizing tallies =     70000000.00

          this tally is modified by a dose function.

          areas
               surface:     1227
              segment
                1       1.00000E+50
                2       2.56400E+07
                3       1.03700E+08
                4       1.60200E+08
                5       3.92700E+08
                6       5.49800E+08
                7       7.06900E+08
                8       8.63900E+08
                9       1.59000E+09
               10       1.94400E+09
               11       3.14200E+09
               12       3.77000E+09
               13       4.39800E+09
               14       5.02700E+09
               15       5.65500E+09
               16       1.68900E+10

 surface  1227
 segment:       -2000
                 6.44609E-48 0.0137

 surface  1227
 segment:        2000    -2001
                 4.15138E-05 0.0106

 surface  1227
 segment:        2000     2001    -2002
```

```
                2.68793E-05 0.0078

surface  1227
segment:        2000     2001     2002    -2003
                1.39530E-05 0.0106

surface  1227
segment:        2000     2001     2002     2003    -2004
                6.50859E-06 0.0082

surface  1227
segment:        2000     2001     2002     2003     2004    -2005
                2.93722E-06 0.0082

surface  1227
segment:        2000     2001     2002     2003     2004     2005    -2006
                1.36796E-06 0.0131

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006    -2007
                6.69764E-07 0.0116

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007    -2008
                2.92006E-07 0.0089

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008    -2009
                1.12359E-07 0.0085

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009    -2010
                4.11530E-08 0.0128

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
    -2011
                1.27566E-08 0.0100

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011    -2012
                4.15772E-09 0.0114

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012    -2013
                1.47130E-09 0.0220

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012     2013    -2014
                5.10839E-10 0.0204

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012     2013     2014
                1.00504E-10 0.0214


   ==========================================================================================================
   ====================

         results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
   tally  12

tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
   merit--     -pdf-
behavior    behavior      value   decrease   decrease rate      value   decrease   decrease rate       value
   behavior     slope

desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
   random      >3.00
observed     random        0.02      yes          yes            0.08      yes         yes            constant
   random       5.18
passed?        yes          yes      yes          yes             yes      yes         yes               yes
   yes         yes
```

```
   ==================================================================================================================
   ===================

 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to
    verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 9.8549E-11 to 1.0286E-10; 9.6393E-11 to 1.0502E-10; 9.4237E-
    11 to 1.0717E-10
 estimated  symmetric confidence interval(1,2,3 sigma): 9.8352E-11 to 1.0266E-10; 9.6200E-11 to 1.0481E-10; 9.4048E-
    11 to 1.0696E-10

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  12 with nps =     1177383  print table
    160


 normed average tally per history  = 1.00504E-10          unnormed average tally per history  = 1.69751E+00
 estimated tally relative error    = 0.0214               estimated variance of the variance  = 0.0808
 relative error from zero tallies  = 0.0078               relative error from nonzero scores  = 0.0200

 number of nonzero history tallies =       16627          efficiency for the nonzero tallies  = 0.0002
 history number of largest  tally  =      391062          largest  unnormalized history tally = 1.34002E+06
 (largest  tally)/(average tally)  = 7.89406E+05          (largest  tally)/(avg nonzero tally)= 1.87506E+02

 (confidence interval shift)/mean  = 0.0020               shifted confidence interval center  = 1.00705E-10


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1           value(nps+1)/value(nps)-1.

      mean                            1.00504E-10             1.67889E-10                     0.670474
      relative error                  2.14096E-02             2.39108E-02                     0.116824
      variance of the variance        8.07523E-02             9.69054E-02                     0.200034
      shifted center                  1.00705E-10             1.17198E-10                     0.163783
      figure of merit                 1.73388E+01             1.39011E+01                    -0.198266

 the estimated inverse power slope of the 198 largest  tallies starting at 6.17926E+04 is 5.1769
 the history score probability density function appears to have an unsampled region at the largest  history scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (5.563E+05)*( 5.583E-03)**2 = (5.563E+05)*(3.117E-05) =
    1.734E+01

1tally  22        nps =     1177383
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     70000000.00

           this tally is modified by a dose function.

           areas
                surface:     1227
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       4.35376E+05
                 5       4.35376E+05
                 6       4.35376E+05
                 7       4.35376E+05
                 8       4.35376E+05
                 9       4.35376E+05
                10       4.35376E+05
                11       4.35376E+05
                12       4.35376E+05
                13       4.35376E+05
                14       4.35376E+05
                15       4.35376E+05
                16       4.35376E+05
                17       4.35376E+05
                18       4.35376E+05
```

```
              19       4.35376E+05
              20       4.35376E+05
              21       4.35376E+05
              22       1.00000E+50

surface  1227
segment:        1201
                5.76933E-47 0.0050

surface  1227
segment:       -1201    -2026
                3.23945E-47 0.0099

surface  1227
segment:       -1201     2026     2027
                3.09730E-47 0.0098

surface  1227
segment:       -1201     2026    -2027     2016
                3.43876E-05 0.0459

surface  1227
segment:       -1201     2026    -2027    -2016     2017
                4.69802E-05 0.0512

surface  1227
segment:       -1201     2026    -2027    -2016    -2017     2018
                6.01620E-05 0.0503

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018     2019
                6.86964E-05 0.0439

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019     2020
                8.47297E-05 0.0335

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020     2021
                8.64671E-05 0.0318

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021     2022
                9.39759E-05 0.0344

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022     2023
                9.50532E-05 0.0398

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     2024
                9.81019E-05 0.0422

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024     2025
                1.02627E-04 0.0466

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025     2028
                1.15195E-04 0.0761

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028     2029
                9.25675E-05 0.0438

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029     2030
                9.56741E-05 0.0403

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030     2031
                8.21352E-05 0.0567
```

```
 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031     2032
                7.98147E-05 0.0700

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032     2033
                7.29300E-05 0.0447

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033     2034
                6.64943E-05 0.0485

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034     2035
                6.69599E-05 0.0445

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034    -2035
                6.04173E-48 0.0198


    ================================================================================================================================
    ==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  22

 tfc bin      --mean--       ---------relative error---------       ----variance of the variance----       --figure of
    merit--       -pdf-
 behavior     behavior       value    decrease    decrease rate       value    decrease    decrease rate        value
    behavior      slope

 desired       random        <0.10       yes       1/sqrt(nps)        <0.10       yes         1/nps            constant
    random       >3.00
 observed      random         0.02       yes           yes             0.15       no            no             decrease
    random        2.68
 passed?         yes           yes       yes           yes               no       no            no                no
    yes           no


    ================================================================================================================================
    ==================


 warning.  the tally in the tally fluctuation chart bin did not pass  5 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  22 with nps =     1177383  print table
    160


 normed average tally per history  = 6.04173E-48          unnormed average tally per history  = 6.04173E+02
 estimated tally relative error    = 0.0198               estimated variance of the variance  = 0.1476
 relative error from zero tallies  = 0.0034               relative error from nonzero scores  = 0.0195

 number of nonzero history tallies =       88363          efficiency for the nonzero tallies  = 0.0013
 history number of largest  tally  =      741623          largest  unnormalized history tally = 5.03142E+08
 (largest  tally)/(average tally)  = 8.32777E+05          (largest  tally)/(avg nonzero tally)= 1.05124E+03

 (confidence interval shift)/mean  = 0.0029               shifted confidence interval center  = 6.05901E-48


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities          value at nps          value at nps+1          value(nps+1)/value(nps)-1.

      mean                          6.04173E-48           1.03151E-47                    0.707311
      relative error                1.97905E-02           2.28013E-02                    0.152133
      variance of the variance      1.47586E-01           1.50528E-01                    0.019938
      shifted center                6.05901E-48           7.36577E-48                    0.215671
      figure of merit               2.02919E+01           1.52869E+01                   -0.246653
```

the estimated inverse power slope of the 198 largest tallies starting at 1.54753E+07 is 2.6834
the history score probability density function appears to have an unsampled region at the largest history scores:
please examine. see print table 161.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (5.563E+05)*(6.039E-03)**2 = (5.563E+05)*(3.647E-05) = 2.029E+01

1unnormed tally density for tally 22 nonzero tally mean(m) = 4.786E+05 nps = 1177383 print table 161

abscissa ordinate log plot of tally probability density function in tally fluctuation chart bin(d=decade,slope= 2.7)

tally	number	num den	log den	d	d	d	d	d	d	d
1.58+03	5	2.19-10	-9.659	**********	**********	**********	**********	**********	**********	****
2.00+03	14	4.87-10	-9.312	**********	**********	**********	**********	**********	*********	
2.51+03	23	6.36-10	-9.197	**********	**********	**********	**********	**********	*********	
3.16+03	37	8.13-10	-9.090	**********	**********	**********	**********	**********		
3.98+03	73	1.27-09	-8.895	**********	**********	**********	**********	**********	**	
5.01+03	75	1.04-09	-8.983	**********	**********	**********	**********	**********	*	
6.31+03	168	1.85-09	-8.733	**********	**********	**********	**********	**********	****	
7.94+03	394	3.45-09	-8.463	**********	**********	**********	**********	**********	********	
1.00+04	373	2.59-09	-8.587	**********	**********	**********	**********	**********	******	
1.26+04	577	3.18-09	-8.497	**********	**********	**********	**********	**********	*******	
1.58+04	1358	5.95-09	-8.225	**********	**********	**********	**********	**********	**********	
2.00+04	1214	4.23-09	-8.374	**********	**********	**********	**********	**********	*********	
2.51+04	1469	4.06-09	-8.391	**********	**********	**********	**********	**********	*********	
3.16+04	2589	5.69-09	-8.245	**********	**********	**********	**********	**********	**********	
3.98+04	2313	4.04-09	-8.394	**********	**********	**********	**********	**********	*********	
5.01+04	3116	4.32-09	-8.365	**********	**********	**********	**********	**********	*********	
6.31+04	5658	6.23-09	-8.206	**********	**********	**********	**********	**********	**********	
7.94+04	5370	4.70-09	-8.328	**********	**********	**********	**********	**********	*********	
1.00+05	5794	4.02-09	-8.395	**********	**********	**********	**********	**********	*********	
1.26+05	8872	4.89-09	-8.310	**********	**********	**********	**********	**********	**********	
1.58+05	8544	3.74-09	-8.427	**********	**********	**********	**********	**********	********	
2.00+05	7797	2.71-09	-8.566	**********	**********	**********	**********	**********	******	
2.51+05	6865	1.90-09	-8.722	**********	**********	**********	**********	**********	****	
3.16+05	5691	1.25-09	-8.903	**********	**********	**********	**********	**********	**	
3.98+05	4398	7.67-10	-9.115	**********	**********	**********	**********	**********		
5.01+05	3380	4.68-10	-9.329	mmmmmmmmmmmm	mmmmmmmmmmmm	mmmmmmmmmmm	mmmmmmmmmmmm	mmmmmmmmmmmm	mmmmmmmmmmm	mmmmmmmmm
6.31+05	2660	2.93-10	-9.533	**********	**********	**********	**********	**********	**********	******
7.94+05	1996	1.75-10	-9.758	**********	**********	**********	**********	**********	**********	***
1.00+06	1526	1.06-10	-9.975	**********	**********	**********	**********	**********	**********	
1.26+06	1064	5.87-11	-10.231	**********	**********	**********	**********	**********	**********	
1.58+06	840	3.68-11	-10.434	**********	**********	**********	**********	**********	********	

```
 2.00+06    685 2.38-11 -10.623 ***********|***********|***********|***********|***********|*****       |
     |
 2.51+06    578 1.60-11 -10.796 ***********|***********|***********|***********|***********|***         |
     |
 3.16+06    524 1.15-11 -10.939 ***********|***********|***********|***********|***********|*           |
     |
 3.98+06    459 8.01-12 -11.096 ***********|***********|***********|***********|***********|            |
     |
 5.01+06    413 5.72-12 -11.242 ***********|***********|***********|***********|**********  |            |
     |
 6.31+06    345 3.80-12 -11.420 ***********|***********|***********|***********|********    |            |
     |
 7.94+06    318 2.78-12 -11.556 ***********|***********|***********|***********|******      |            |
     |
 1.00+07    247 1.72-12 -11.766 ***********|***********|***********|***********|****        |            |
     |
 1.26+07    190 1.05-12 -11.980 ***********|***********|***********|***********|*           |            |
     |
 1.58+07    161 7.06-13 -12.151 ***********|***********|***********|***********|         s  |            |
     |
 2.00+07     75 2.61-13 -12.583 ***********|***********|***********|******      |      s     |            |
     |
 2.51+07     57 1.58-13 -12.802 ***********|***********|***********|***         |    s       |            |
     |
 3.16+07     20 4.39-14 -13.357 ***********|***********|********   |            | s          |            |
     |
 3.98+07     11 1.92-14 -13.717 ***********|***********|****       |            s            |            |
     |
 5.01+07      9 1.25-14 -13.904 ***********|***********|*          |         s  |            |            |
     |
 6.31+07      6 6.61-15 -14.180 ***********|********** |           |      s     |            |            |
     |
 7.94+07      4 3.50-15 -14.456 ***********|*******     |           |   s        |            |            |
     |
 1.00+08      2 1.39-15 -14.857 ***********|**          |           |s           |            |            |
     |
 1.26+08      2 1.10-15 -14.957 ***********|*           |         s |            |            |            |
     |
 1.58+08      1 4.38-16 -15.358 *********   |            |      s    |            |            |            |
     |
 2.00+08      1 3.48-16 -15.458 *******     |            |   s       |            |            |            |
     |
 2.51+08      0 0.00+00   0.000             |            |s          |            |            |            |
     |
 3.16+08      1 2.20-16 -15.658 *****       |          s |           |            |            |            |
     |
 3.98+08      0 0.00+00   0.000             |      s     |           |            |            |            |
     |
 5.01+08      0 0.00+00   0.000             |   s        |           |            |            |            |
     |
 6.31+08      1 1.10-16 -15.958 *           |s           |           |            |            |            |
     |
  total   88363 1.26-03         d-----------d-----------d-----------d-----------d-----------d-----------d-------
    ----d-----------

1tally  32        nps =     1177383
          tally type 2    particle flux averaged over a surface.
          tally for  photons
 number of histories used for normalizing tallies =     70000000.00

          this tally is modified by a dose function.

          areas
               surface:     1201
              segment
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       1.00000E+50
                5       6.30000E+05

 surface  1201
 segment:        1231
                 7.42779E-47 0.0272

 surface  1201
 segment:       -1231    -2026
                 2.82380E-50 0.1218
```

```
 surface  1201
 segment:       -1231     2026     2027
                 1.04948E-49 0.0963

 surface  1201
 segment:       -1231     2026    -2027    -1227
                 0.00000E+00 0.0000

 surface  1201
 segment:       -1231     2026    -2027     1227
                 2.75384E-05 0.0590
```

==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 32

tfc bin behavior	--mean-- behavior	relative error value	relative error decrease	relative error decrease rate	variance of the variance value	variance of the variance decrease	variance of the variance decrease rate	--figure of merit-- value	-pdf- behavior slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random >3.00
observed	random	0.06	yes	yes	0.09	yes	no	constant	random 5.40
passed?	yes	yes	yes	yes	yes	yes	no	yes	yes yes

==========

warning. the tally in the tally fluctuation chart bin did not pass 1 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 32 with nps = 1177383 print table 160

```
 normed average tally per history  = 2.75384E-05          unnormed average tally per history  = 1.73492E+01
 estimated tally relative error    = 0.0590              estimated variance of the variance  = 0.0941
 relative error from zero tallies  = 0.0248              relative error from nonzero scores  = 0.0536

 number of nonzero history tallies =        1629         efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =      761495         largest  unnormalized history tally = 3.61432E+07
 (largest  tally)/(average tally)  = 2.08327E+06         (largest  tally)/(avg nonzero tally)= 4.84807E+01

 (confidence interval shift)/mean  = 0.0072              shifted confidence interval center  = 2.77355E-05
```

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	2.75384E-05	7.62652E-05	1.769408
relative error	5.90180E-02	6.41805E-02	0.087472
variance of the variance	9.40730E-02	1.00924E-01	0.072823
shifted center	2.77355E-05	4.18217E-05	0.507877
figure of merit	2.28176E+00	1.92945E+00	-0.154403

```
 the estimated inverse power slope of the  81 largest  tallies starting at 2.08268E+06 is 5.4023
 the history score probability density function appears to have an unsampled region at the largest  history scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (5.563E+05)*( 2.025E-03)**2 = (5.563E+05)*(4.101E-06) =
    2.282E+00
```

1unnormed tally density for tally 32 nonzero tally mean(m) = 7.455E+05 nps = 1177383 print table 161

```
 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
    bin(d=decade,slope= 5.4)
```

```
 tally  number num den log den:d-------------------d--------------------d--------------------d--------------------
   -d--------------
2.00+05     54 1.88-11 -10.726
   ********************|********************|********************|********************|**
2.51+05    260 7.19-11 -10.143
   ********************|********************|********************|********************|**************
3.16+05    284 6.24-11 -10.205
   ********************|********************|********************|********************|*************
3.98+05    261 4.55-11 -10.342
   ********************|********************|********************|********************|**********
5.01+05    192 2.66-11 -10.575
   ********************|********************|********************|********************|*****
6.31+05    151 1.66-11 -10.779
   ********************|********************|********************|********************|
7.94+05    125 1.09-11 -10.961 mmmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmm
   |
1.00+06     87 6.04-12 -11.219 ********************|********************|********************|*************
   |
1.26+06     60 3.31-12 -11.480 ********************|********************|********************|*******
   |
1.58+06     45 1.97-12 -11.705 ********************|********************|********************|**
   |
2.00+06     27 9.40-13 -12.027 ********************|********************|*****************   |
   |
2.51+06     13 3.59-13 -12.444 ********************|********************|********         s  |
   |
3.16+06     13 2.86-13 -12.544 ********************|********************|*****          s    |
   |
3.98+06     13 2.27-13 -12.644 ********************|********************|***          s      |
   |
5.01+06     11 1.52-13 -12.817 ********************|********************|          s         |
   |
6.31+06     11 1.21-13 -12.917 ********************|******************   |       s            |
   |
7.94+06      8 7.00-14 -13.155 ********************|**************       |   s                |
   |
1.00+07      7 4.86-14 -13.313 ********************|***********         s|                    |
   |
1.26+07      3 1.66-14 -13.781 ********************|*              s     |                    |
   |
1.58+07      2 8.77-15 -14.057 ****************    |         s           |                    |
   |
2.00+07      0 0.00+00   0.000                     |   s                 |                    |
   |
2.51+07      0 0.00+00   0.000                   s |                     |                    |
   |
3.16+07      1 2.20-15 -14.658 ***      s          |                     |                    |
   |
3.98+07      1 1.74-15 -14.758 *s                  |                     |                    |
   |
 total    1629 2.33-05         d-------------------d--------------------d--------------------d--------------------
   -d--------------

1tally  42        nps =     1177383
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     70000000.00

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
                surface:     2010         2011         2012         2013
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
```

```
surface  2003
segment:        1219
                4.20607E-46 0.0038

surface  2003
segment:       -1219    -1209
                4.84814E-49 0.0179

surface  2003
segment:       -1219     1209     1201
                3.60408E-48 0.0081

surface  2003
segment:       -1219     1209    -1201    -1205
                2.11234E-48 0.0149

surface  2003
segment:       -1219     1209    -1201     1205     1206
                1.85845E-48 0.0129

surface  2003
segment:       -1219     1209    -1201     1205    -1206
                2.02199E-05 0.0249

surface  2004
segment:        1219
                3.70315E-46 0.0038

surface  2004
segment:       -1219    -1209
                2.91596E-49 0.0173

surface  2004
segment:       -1219     1209     1201
                2.19271E-48 0.0079

surface  2004
segment:       -1219     1209    -1201    -1205
                1.28409E-48 0.0127

surface  2004
segment:       -1219     1209    -1201     1205     1206
                1.17681E-48 0.0134

surface  2004
segment:       -1219     1209    -1201     1205    -1206
                6.90973E-06 0.0299

surface  2005
segment:        1219
                3.13851E-46 0.0039

surface  2005
segment:       -1219    -1209
                1.84128E-49 0.0206

surface  2005
segment:       -1219     1209     1201
                1.32790E-48 0.0075

surface  2005
segment:       -1219     1209    -1201    -1205
                7.89031E-49 0.0125

surface  2005
segment:       -1219     1209    -1201     1205     1206
                7.22482E-49 0.0164

surface  2005
segment:       -1219     1209    -1201     1205    -1206
                3.02257E-06 0.0497

surface  2006
segment:        1219
                2.57454E-46 0.0039

surface  2006
segment:       -1219    -1209
```

```
                1.23340E-49 0.0999

surface  2006
segment:        -1219     1209     1201
                8.18650E-49 0.0089

surface  2006
segment:        -1219     1209    -1201    -1205
                4.75305E-49 0.0123

surface  2006
segment:        -1219     1209    -1201     1205     1206
                4.36916E-49 0.0153

surface  2006
segment:        -1219     1209    -1201     1205    -1206
                1.45969E-06 0.0477

surface  2007
segment:        1219
                2.05709E-46 0.0040

surface  2007
segment:        -1219    -1209
                6.84077E-50 0.0244

surface  2007
segment:        -1219     1209     1201
                4.97707E-49 0.0085

surface  2007
segment:        -1219     1209    -1201    -1205
                3.04484E-49 0.0277

surface  2007
segment:        -1219     1209    -1201     1205     1206
                2.72253E-49 0.0164

surface  2007
segment:        -1219     1209    -1201     1205    -1206
                6.68252E-07 0.0531

surface  2008
segment:        1219
                1.41541E-46 0.0041

surface  2008
segment:        -1219    -1209
                3.15724E-50 0.0231

surface  2008
segment:        -1219     1209     1201
                2.34959E-49 0.0105

surface  2008
segment:        -1219     1209    -1201    -1205
                1.41418E-49 0.0188

surface  2008
segment:        -1219     1209    -1201     1205     1206
                1.29319E-49 0.0159

surface  2008
segment:        -1219     1209    -1201     1205    -1206
                2.77737E-07 0.0736

surface  2009
segment:        1219
                9.43927E-47 0.0042

surface  2009
segment:        -1219    -1209
                1.59057E-50 0.0288

surface  2009
segment:        -1219     1209     1201
                1.12214E-49 0.0138
```

```
surface  2009
segment:       -1219     1209    -1201    -1205
                6.78590E-50 0.0164

surface  2009
segment:       -1219     1209    -1201     1205     1206
                6.43983E-50 0.0258

surface  2009
segment:       -1219     1209    -1201     1205    -1206
                1.03187E-07 0.0521

surface  2010
segment:        1219
                5.30979E-47 0.0045

surface  2010
segment:       -1219    -1209
                6.13618E-51 0.0374

surface  2010
segment:       -1219     1209     1201
                4.19528E-50 0.0137

surface  2010
segment:       -1219     1209    -1201    -1205
                2.67749E-50 0.0222

surface  2010
segment:       -1219     1209    -1201     1205     1206
                2.39715E-50 0.0238

surface  2010
segment:       -1219     1209    -1201     1205    -1206
                3.38179E-08 0.0734

surface  2011
segment:        1219
                2.91787E-47 0.0047

surface  2011
segment:       -1219    -1209
                2.32569E-51 0.0558

surface  2011
segment:       -1219     1209     1201
                1.57366E-50 0.0212

surface  2011
segment:       -1219     1209    -1201    -1205
                1.00633E-50 0.0271

surface  2011
segment:       -1219     1209    -1201     1205     1206
                9.47943E-51 0.0343

surface  2011
segment:       -1219     1209    -1201     1205    -1206
                1.27300E-08 0.1707

surface  2012
segment:        1219
                1.57916E-47 0.0049

surface  2012
segment:       -1219    -1209
                8.33036E-52 0.0539

surface  2012
segment:       -1219     1209     1201
                6.40360E-51 0.0279

surface  2012
segment:       -1219     1209    -1201    -1205
                3.89408E-51 0.0314

surface  2012
segment:       -1219     1209    -1201     1205     1206
```

```
                3.78920E-51 0.0752

 surface  2012
 segment:       -1219     1209    -1201     1205    -1206
                4.65203E-09 0.1530

 surface  2013
 segment:        1219
                8.44663E-48 0.0051

 surface  2013
 segment:       -1219    -1209
                3.23742E-52 0.0805

 surface  2013
 segment:       -1219     1209     1201
                2.55339E-51 0.0907

 surface  2013
 segment:       -1219     1209    -1201    -1205
                1.55368E-51 0.0485

 surface  2013
 segment:       -1219     1209    -1201     1205     1206
                1.46441E-51 0.0600

 surface  2013
 segment:       -1219     1209    -1201     1205    -1206
                8.02377E-10 0.2502


    ================================================================================================================================
    ===================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  42

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
    merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
    behavior     slope

 desired      random       <0.10       yes       1/sqrt(nps)       <0.10       yes         1/nps           constant
    random       >3.00
 observed     random        0.02       yes           yes            0.04       yes          yes            constant
    random       2.47
 passed?        yes          yes       yes           yes             yes       yes          yes               yes
    yes          no


    ================================================================================================================================
    ===================


 warning.  the tally in the tally fluctuation chart bin did not pass  1 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  42 with nps =     1177383  print table
    160


 normed average tally per history  = 2.02199E-05          unnormed average tally per history  = 6.06596E+01
 estimated tally relative error    = 0.0249               estimated variance of the variance  = 0.0357
 relative error from zero tallies  = 0.0091               relative error from nonzero scores  = 0.0232

 number of nonzero history tallies =       11967          efficiency for the nonzero tallies  = 0.0002
 history number of largest  tally  =      663225          largest  unnormalized history tally = 3.90387E+07
 (largest  tally)/(average tally)  = 6.43571E+05          (largest  tally)/(avg nonzero tally)= 1.10023E+02

 (confidence interval shift)/mean  = 0.0018               shifted confidence interval center  = 2.02563E-05


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            2.02199E-05             3.12722E-05                    0.546610
```

```
     relative error                  2.49372E-02            2.63201E-02                     0.055452
     variance of the variance        3.56612E-02            4.20358E-02                     0.178756
     shifted center                  2.02563E-05            2.27920E-05                     0.125179
     figure of merit                 1.27803E+01            1.14727E+01                    -0.102317

 the estimated inverse power slope of the 200 largest  tallies starting at 2.36371E+06 is 2.4662
 the large score tail of the empirical history score probability density function appears to have no unsampled
    regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (5.563E+05)*( 4.793E-03)**2 = (5.563E+05)*(2.297E-05) =
    1.278E+01

1unnormed tally density for tally  42            nonzero tally mean(m) = 3.548E+05   nps =     1177383  print table
    161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
    bin(d=decade,slope= 2.5)
  tally  number num den log den:d---------------d-----------------d----------------d----------------d---------------
    --d-------------
 5.01+04    125 1.73-10  -9.761
    ****************|*****************|****************|****************|*****************|*
 6.31+04    600 6.61-10  -9.180
    ****************|*****************|****************|****************|*****************|***********
 7.94+04    602 5.26-10  -9.279
    ****************|*****************|****************|****************|*****************|*********
 1.00+05    896 6.22-10  -9.206
    ****************|*****************|****************|****************|*****************|**********
 1.26+05   1630 8.99-10  -9.046
    ****************|*****************|****************|****************|*****************|*************
 1.58+05   1539 6.74-10  -9.171
    ****************|*****************|****************|****************|*****************|***********
 2.00+05   1362 4.74-10  -9.324
    ****************|*****************|****************|****************|*****************|********
 2.51+05   1169 3.23-10  -9.490
    ****************|*****************|****************|****************|*****************|*****
 3.16+05   1081 2.37-10  -9.624
    ****************|*****************|****************|****************|*****************|***
 3.98+05    815 1.42-10  -9.847
    mmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmm|
 5.01+05    562 7.79-11 -10.109 ****************|*****************|****************|****************|*************
    |
 6.31+05    393 4.33-11 -10.364 ****************|*****************|****************|****************|********
    |
 7.94+05    280 2.45-11 -10.611 ****************|*****************|****************|****************|****
    |
 1.00+06    206 1.43-11 -10.844 ****************|*****************|****************|****************|
    |
 1.26+06    175 9.66-12 -11.015 ****************|*****************|****************|**************  |
    |
 1.58+06    125 5.48-12 -11.261 ****************|*****************|****************|**********      |
    |
 2.00+06    126 4.39-12 -11.358 ****************|*****************|****************|********        |
    |
 2.51+06     98 2.71-12 -11.567 ****************|*****************|****************|****         s  |
    |
 3.16+06     85 1.87-12 -11.729 ****************|*****************|****************|*         s     |
    |
 3.98+06     39 6.80-13 -12.167 ****************|*****************|***********     |       s        |
    |
 5.01+06     21 2.91-13 -12.536 ****************|*****************|*****           |    s           |
    |
 6.31+06      9 9.91-14 -13.004 ****************|**************   |                | s              |
    |
 7.94+06      4 3.50-14 -13.456 ****************|*******          |              s |                |
    |
 1.00+07     10 6.95-14 -13.158 ****************|************     |           s    |                |
    |
 1.26+07      3 1.66-14 -13.781 ****************|*                |       s        |                |
    |
 1.58+07      4 1.75-14 -13.756 ****************|*                |   s            |                |
    |
 2.00+07      3 1.04-14 -13.981 **************  |                 s                |                |
    |
 2.51+07      3 8.30-15 -14.081 *************   |             s   |                |                |
    |
 3.16+07      1 2.20-15 -14.658 ***             |         s       |                |                |
    |
```

```
 3.98+07      1 1.74-15 -14.758 *               |     s           |               |               |
   |
  total   11967 1.71-04         d---------------d-----------------d---------------d---------------d---------------
    --d-------------

1tally  52        nps =     1177383
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     70000000.00

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
                surface:     2010         2011         2012         2013
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:        1219
                 4.20607E-46 0.0038

 surface  2003
 segment:       -1219    -1209
                 4.84814E-49 0.0179

 surface  2003
 segment:       -1219     1209    -1201
                 4.57739E-48 0.0103

 surface  2003
 segment:       -1219     1209     1201    -1205
                 1.77264E-48 0.0108

 surface  2003
 segment:       -1219     1209     1201     1205     1206
                 1.48842E-48 0.0129

 surface  2003
 segment:       -1219     1209     1201     1205    -1206
                 1.14339E-05 0.0217

 surface  2004
 segment:        1219
                 3.70315E-46 0.0038

 surface  2004
 segment:       -1219    -1209
                 2.91596E-49 0.0173

 surface  2004
 segment:       -1219     1209    -1201
                 2.66819E-48 0.0099

 surface  2004
 segment:       -1219     1209     1201    -1205
                 1.09868E-48 0.0116

 surface  2004
 segment:       -1219     1209     1201     1205     1206
                 9.51652E-49 0.0102

 surface  2004
 segment:       -1219     1209     1201     1205    -1206
                 4.74570E-06 0.0317
```

```
surface  2005
segment:        1219
                3.13851E-46 0.0039

surface  2005
segment:       -1219    -1209
                1.84128E-49 0.0206

surface  2005
segment:       -1219     1209    -1201
                1.60219E-48 0.0118

surface  2005
segment:       -1219     1209     1201    -1205
                6.77833E-49 0.0112

surface  2005
segment:       -1219     1209     1201     1205     1206
                5.87428E-49 0.0098

surface  2005
segment:       -1219     1209     1201     1205    -1206
                2.08811E-06 0.0261

surface  2006
segment:        1219
                2.57454E-46 0.0039

surface  2006
segment:       -1219    -1209
                1.23340E-49 0.0999

surface  2006
segment:       -1219     1209    -1201
                9.56011E-49 0.0103

surface  2006
segment:       -1219     1209     1201    -1205
                4.22946E-49 0.0133

surface  2006
segment:       -1219     1209     1201     1205     1206
                3.65159E-49 0.0116

surface  2006
segment:       -1219     1209     1201     1205    -1206
                1.01818E-06 0.0300

surface  2007
segment:        1219
                2.05709E-46 0.0040

surface  2007
segment:       -1219    -1209
                6.84077E-50 0.0244

surface  2007
segment:       -1219     1209    -1201
                5.96785E-49 0.0170

surface  2007
segment:       -1219     1209     1201    -1205
                2.54576E-49 0.0108

surface  2007
segment:       -1219     1209     1201     1205     1206
                2.28650E-49 0.0130

surface  2007
segment:       -1219     1209     1201     1205    -1206
                4.82733E-07 0.0399

surface  2008
segment:        1219
                1.41541E-46 0.0041

surface  2008
segment:       -1219    -1209
```

```
                3.15724E-50 0.0231

surface  2008
segment:        -1219     1209    -1201
                2.79069E-49 0.0131

surface  2008
segment:        -1219     1209     1201    -1205
                1.21139E-49 0.0156

surface  2008
segment:        -1219     1209     1201     1205     1206
                1.07573E-49 0.0132

surface  2008
segment:        -1219     1209     1201     1205    -1206
                2.08231E-07 0.0986

surface  2009
segment:        1219
                9.43927E-47 0.0042

surface  2009
segment:        -1219    -1209
                1.59057E-50 0.0288

surface  2009
segment:        -1219     1209    -1201
                1.35353E-49 0.0161

surface  2009
segment:        -1219     1209     1201    -1205
                5.84432E-50 0.0175

surface  2009
segment:        -1219     1209     1201     1205     1206
                5.14245E-50 0.0219

surface  2009
segment:        -1219     1209     1201     1205    -1206
                7.82192E-08 0.0714

surface  2010
segment:        1219
                5.30979E-47 0.0045

surface  2010
segment:        -1219    -1209
                6.13618E-51 0.0374

surface  2010
segment:        -1219     1209    -1201
                5.17609E-50 0.0171

surface  2010
segment:        -1219     1209     1201    -1205
                2.18608E-50 0.0189

surface  2010
segment:        -1219     1209     1201     1205     1206
                1.94096E-50 0.0199

surface  2010
segment:        -1219     1209     1201     1205    -1206
                2.27439E-08 0.1002

surface  2011
segment:        1219
                2.91787E-47 0.0047

surface  2011
segment:        -1219    -1209
                2.32569E-51 0.0558

surface  2011
segment:        -1219     1209    -1201
                1.99246E-50 0.0223
```

```
surface  2011
segment:       -1219     1209     1201    -1205
                8.34554E-51 0.0296

surface  2011
segment:       -1219     1209     1201     1205     1206
                7.19376E-51 0.0309

surface  2011
segment:       -1219     1209     1201     1205    -1206
                6.57557E-09 0.1206

surface  2012
segment:        1219
                1.57916E-47 0.0049

surface  2012
segment:       -1219    -1209
                8.33036E-52 0.0539

surface  2012
segment:       -1219     1209    -1201
                7.82284E-51 0.0410

surface  2012
segment:       -1219     1209     1201    -1205
                3.21776E-51 0.0357

surface  2012
segment:       -1219     1209     1201     1205     1206
                3.05287E-51 0.0413

surface  2012
segment:       -1219     1209     1201     1205    -1206
                4.43241E-09 0.3952

surface  2013
segment:        1219
                8.44663E-48 0.0051

surface  2013
segment:       -1219    -1209
                3.23742E-52 0.0805

surface  2013
segment:       -1219     1209    -1201
                3.04216E-51 0.0386

surface  2013
segment:       -1219     1209     1201    -1205
                1.31996E-51 0.0479

surface  2013
segment:       -1219     1209     1201     1205     1206
                1.20599E-51 0.1845

surface  2013
segment:       -1219     1209     1201     1205    -1206
                9.14267E-10 0.2432


   ================================================================================================================
   ==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
   tally  52

tfc bin      --mean--       ---------relative error---------      ----variance of the variance----      --figure of
   merit--      -pdf-
behavior     behavior       value    decrease    decrease rate      value    decrease    decrease rate       value
   behavior      slope

desired       random        <0.10       yes       1/sqrt(nps)       <0.10       yes         1/nps           constant
   random       >3.00
observed      random         0.02        no            no            0.08        no           no             constant
   random        7.96
```

```
 passed?        yes          yes       no          no             yes       no          no              yes
    yes         yes

    ================================================================================================================
    ===================

 warning.  the tally in the tally fluctuation chart bin did not pass  4 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  52 with nps =     1177383  print table
    160


 normed average tally per history  = 1.14339E-05          unnormed average tally per history  = 3.43018E+01
 estimated tally relative error    = 0.0217               estimated variance of the variance  = 0.0808
 relative error from zero tallies  = 0.0105               relative error from nonzero scores  = 0.0189

 number of nonzero history tallies =        9039          efficiency for the nonzero tallies  = 0.0001
 history number of largest  tally  =     1116644          largest  unnormalized history tally = 2.75354E+07
 (largest  tally)/(average tally)  = 8.02740E+05          (largest  tally)/(avg nonzero tally)= 1.03657E+02

 (confidence interval shift)/mean  = 0.0020               shifted confidence interval center  = 1.14563E-05


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            1.14339E-05            1.92296E-05                   0.681799
      relative error                  2.16594E-02            2.42128E-02                   0.117890
      variance of the variance        8.07715E-02            9.74572E-02                   0.206579
      shifted center                  1.14563E-05            1.33269E-05                   0.163280
      figure of merit                 1.69413E+01            1.35566E+01                  -0.199793

 the estimated inverse power slope of the 200 largest  tallies starting at 1.27885E+06 is 7.9636
 the history score probability density function appears to have an unsampled region at the largest  history scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (5.563E+05)*( 5.518E-03)**2 = (5.563E+05)*(3.045E-05) =
    1.694E+01

1unnormed tally density for tally  52            nonzero tally mean(m) = 2.656E+05   nps =     1177383  print table
    161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
    bin(d=decade,slope= 8.0)
  tally  number num den log den:d----------------d----------------d----------------d----------------d------------
    -----d----------
 5.01+04     112 1.55-10  -9.809
    *****************|*****************|*****************|*****************|*************** |
 6.31+04     480 5.28-10  -9.277
    *****************|*****************|*****************|*****************|*****************|*******
 7.94+04     439 3.84-10  -9.416
    *****************|*****************|*****************|*****************|*****************|*****
 1.00+05     672 4.67-10  -9.331
    *****************|*****************|*****************|*****************|*****************|******
 1.26+05    1343 7.41-10  -9.130
    *****************|*****************|*****************|*****************|*****************|**********
 1.58+05    1286 5.64-10  -9.249
    *****************|*****************|*****************|*****************|*****************|********
 2.00+05    1112 3.87-10  -9.412
    *****************|*****************|*****************|*****************|*****************|*****
 2.51+05    1025 2.83-10  -9.548
    *****************|*****************|*****************|*****************|*****************|***
 3.16+05     820 1.80-10  -9.744
    mmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmm|
 3.98+05     626 1.09-10  -9.962
    *****************|*****************|*****************|*****************|*************    |
 5.01+05     388 5.38-11 -10.269 *****************|*****************|*****************|*****************|********
    |
 6.31+05     209 2.30-11 -10.638 *****************|*****************|*****************|*****************|*
    |
 7.94+05     130 1.14-11 -10.944 *****************|*****************|*****************|**************   |
    |
 1.00+06     119 8.27-12 -11.083 *****************|*****************|*****************|***********      |
    |
```

```
 1.26+06     73 4.03-12 -11.395 ****************|****************|****************|*****           |
    |
 1.58+06     48 2.10-12 -11.677 ****************|****************|****************|         s       |
    |
 2.00+06     52 1.81-12 -11.742 ****************|****************|****************|      s          |
    |
 2.51+06     48 1.33-12 -11.877 ****************|****************|***************  |   s             |
    |
 3.16+06     27 5.93-13 -12.227 ****************|****************|*********        |s                |
    |
 3.98+06     12 2.09-13 -12.679 ****************|****************|             s   |                 |
    |
 5.01+06     12 1.66-13 -12.779 ****************|****************|        s        |                 |
    |
 6.31+06      5 5.50-14 -13.259 ****************|********         |  s              |                 |
    |
 7.94+06      0 0.00+00   0.000                  |             s   |                 |                 |
    |
 1.00+07      0 0.00+00   0.000                  |      s          |                 |                 |
    |
 1.26+07      0 0.00+00   0.000               s  |                 |                 |                 |
    |
 1.58+07      0 0.00+00   0.000       s          |                 |                 |                 |
    |
 2.00+07      0 0.00+00   0.000                  |                 |                 |                 |
    |
 2.51+07      0 0.00+00   0.000                  |                 |                 |                 |
    |
 3.16+07      1 2.20-15 -14.658 *                |                 |                 |                 |
    |
  total    9039 1.29-04         d----------------d-----------------d-----------------d-----------------d------------
   -----d----------

1tally  62        nps =     1177383
          tally type 2    particle flux averaged over a surface.
          tally for  photons
 number of histories used for normalizing tallies =     70000000.00

          this tally is modified by a dose function.

          areas
               surface:     1219
              segment
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       1.00000E+50
                5       5.30000E+06

 surface  1219
 segment:       -1205
                1.49361E-46 0.0283

 surface  1219
 segment:        1205     1206
                1.26185E-45 0.0070

 surface  1219
 segment:        1205    -1206     1203
                2.52837E-46 0.0214

 surface  1219
 segment:        1205    -1206    -1203    -1202
                2.44786E-46 0.0148

 surface  1219
 segment:        1205    -1206    -1203     1202
                1.57007E+00 0.0017


   ================================================================================================================
   ==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
   tally  62
```

tfc bin	--mean--	---------relative error---------			----variance of the variance----			--figure of merit--	-pdf-
behavior	behavior	value	decrease	decrease rate	value	decrease	decrease rate	value	behavior slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random >3.00
observed	random	0.00	yes	yes	0.00	yes	yes	constant	random 10.00
passed?	yes	yes	yes	yes	yes	yes	yes	yes	yes yes

==========

this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to verify.
the results in other bins associated with this tally may not meet these statistical criteria.

----- estimated confidence intervals: -----

estimated asymmetric confidence interval(1,2,3 sigma): 1.5674E+00 to 1.5728E+00; 1.5647E+00 to 1.5755E+00; 1.5620E+00 to 1.5781E+00
estimated symmetric confidence interval(1,2,3 sigma): 1.5674E+00 to 1.5728E+00; 1.5647E+00 to 1.5754E+00; 1.5620E+00 to 1.5781E+00

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 62 with nps = 1177383 print table 160

normed average tally per history	= 1.57007E+00	unnormed average tally per history	= 8.32139E+06
estimated tally relative error	= 0.0017	estimated variance of the variance	= 0.0002
relative error from zero tallies	= 0.0009	relative error from nonzero scores	= 0.0014
number of nonzero history tallies	= 1175262	efficiency for the nonzero tallies	= 0.0168
history number of largest tally	= 910473	largest unnormalized history tally	= 4.81987E+10
(largest tally)/(average tally)	= 5.79214E+03	(largest tally)/(avg nonzero tally)	= 9.72469E+01
(confidence interval shift)/mean	= 0.0000	shifted confidence interval center	= 1.57009E+00

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	1.57007E+00	1.57780E+00	0.004919
relative error	1.70807E-03	1.44528E-03	-0.153856
variance of the variance	1.91222E-04	3.47243E-04	0.815918
shifted center	1.57009E+00	1.57121E+00	0.000718
figure of merit	2.72411E+03	3.80484E+03	0.396727

the estimated slope of the 200 largest tallies starting at 1.96928E+10 appears to be decreasing at least exponentially.
the large score tail of the empirical history score probability density function appears to have no unsampled regions.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (5.563E+05)*(6.998E-02)**2 = (5.563E+05)*(4.897E-03) = 2.724E+03

1status of the statistical checks used to form confidence intervals for the mean for each tally bin

tally result of statistical checks for the tfc bin (the first check not passed is listed) and error magnitude check for all bins

2 missed 6 of 10 tfc bin checks: the relative error does not monotonically decrease over the last half of the problem
passed all bin error check: 1 tally bins all have relative errors less than 0.10 with no zero bins

12 passed the 10 statistical checks for the tally fluctuation chart bin result
passed all bin error check: 16 tally bins all have relative errors less than 0.10 with no zero bins

22 missed 5 of 10 tfc bin checks: the variance of the variance exceeds the recommended value of 0.1
passed all bin error check: 22 tally bins all have relative errors less than 0.10 with no zero bins

```
   32   missed  1 of 10 tfc bin checks: the variance of the variance appears not to decrease as 1/nps for the last
   half of problem
        missed all bin error check:     5 tally bins had     1 bins with zeros and     1 bins with relative errors
   exceeding 0.10

   42   missed  1 of 10 tfc bin checks: the slope of decrease of largest tallies is less than the minimum
   acceptable value of 3.0
        missed all bin error check:    66 tally bins had     0 bins with zeros and     3 bins with relative errors
   exceeding 0.10

   52   missed  4 of 10 tfc bin checks: the relative error does not monotonically decrease over the last half of
   the problem
        missed all bin error check:    66 tally bins had     0 bins with zeros and     5 bins with relative errors
   exceeding 0.10

   62   passed the 10 statistical checks for the tally fluctuation chart bin result
        passed all bin error check:     5 tally bins all have relative errors less than 0.10 with no zero bins


 the 10 statistical checks are only for the tally fluctuation chart bin and do not apply to other tally bins.

 the tally bins with zeros may or may not be correct: compare the source, cutoffs, multipliers, et cetera with the
    tally bins.

 warning.     5 of the   7 tally fluctuation chart bins did not pass all 10 statistical checks.
 warning.     3 of the   7 tallies had bins with relative errors greater than recommended.
1tally fluctuation charts

                  tally    2                                  tally   12                                  tally   22
      nps      mean     error   vov  slope    fom      mean     error   vov  slope    fom      mean     error   vov  slope
   fom
    64000   1.8443E-04 0.0927 0.1559  1.9      17   8.8949E-11 0.0638 0.0456  5.2      36   5.5689E-48 0.0475 0.0236  7.0
   65
   128000   1.7346E-04 0.0573 0.0918  2.0      22   9.4530E-11 0.0480 0.0222  4.0      32   5.8508E-48 0.0436 0.1022  4.8
   38
   192000   1.7413E-04 0.0512 0.0794  2.1      19   9.8566E-11 0.0449 0.0823  3.6      24   5.8917E-48 0.0372 0.0688  3.7
   35
   256000   1.7162E-04 0.0421 0.0604  2.1      21   9.9913E-11 0.0381 0.0511  3.8      25   5.9360E-48 0.0314 0.0450  3.8
   37
   320000   1.7401E-04 0.0390 0.0597  2.3      19   1.0058E-10 0.0343 0.0350  3.7      25   5.9833E-48 0.0276 0.0330  3.7
   38
   384000   1.7602E-04 0.0346 0.0459  2.3      20   9.8946E-11 0.0312 0.0276  3.7      25   5.9827E-48 0.0247 0.0255  4.2
   40
   448000   1.8191E-04 0.0329 0.0325  2.5      19   1.0137E-10 0.0406 0.2785  3.4      13   6.0055E-48 0.0244 0.0393  3.5
   35
   512000   1.7926E-04 0.0302 0.0289  2.7      20   1.0105E-10 0.0368 0.2440  3.5      14   5.9318E-48 0.0226 0.0333  3.1
   36
   576000   1.7993E-04 0.0291 0.0266  3.0      19   1.0066E-10 0.0339 0.2163  3.4      14   5.9667E-48 0.0216 0.0277  3.1
   35
   640000   1.7930E-04 0.0270 0.0242  2.8      20   1.0091E-10 0.0318 0.1820  3.6      14   5.9519E-48 0.0202 0.0240  2.9
   36
   704000   1.7847E-04 0.0255 0.0217  3.1      20   1.0081E-10 0.0298 0.1632  3.8      15   6.0315E-48 0.0216 0.0749  2.7
   28
   768000   1.7709E-04 0.0240 0.0203  3.5      21   1.0023E-10 0.0281 0.1485  4.3      15   6.1697E-48 0.0269 0.2140  2.5
   17
   832000   1.8311E-04 0.0304 0.1945  4.2      12   1.0027E-10 0.0265 0.1366  4.6      16   6.1327E-48 0.0252 0.2054  2.5
   18
   896000   1.8253E-04 0.0288 0.1805  4.6      13   9.9972E-11 0.0250 0.1295  4.5      17   6.0939E-48 0.0238 0.1976  2.6
   18
   960000   1.8487E-04 0.0276 0.1551  5.9      13   1.0067E-10 0.0241 0.1112  4.4      17   6.0632E-48 0.0226 0.1901  2.7
   19
  1024000   1.8400E-04 0.0268 0.1393  6.4      13   1.0086E-10 0.0233 0.0990  4.8      17   6.0400E-48 0.0215 0.1824  2.7
   20
  1088000   1.8559E-04 0.0257 0.1246  7.3      13   1.0120E-10 0.0225 0.0881  4.7      17   6.0188E-48 0.0204 0.1763  2.8
   21
  1152000   1.8765E-04 0.0247 0.1108  7.9      13   1.0068E-10 0.0216 0.0837  4.9      17   6.0640E-48 0.0201 0.1491  2.7
   20
  1177383   1.8792E-04 0.0244 0.1067  7.3      13   1.0050E-10 0.0214 0.0808  5.2      17   6.0417E-48 0.0198 0.1476  2.7
   20


                  tally   32                                  tally   42                                  tally   52
      nps      mean     error   vov  slope    fom      mean     error   vov  slope    fom      mean     error   vov  slope
   fom
    64000   3.9439E-05 0.2169 0.2349  0.0 3.1E+00   1.8087E-05 0.0678 0.0303 10.0      32   1.0089E-05 0.0663 0.0296  0.0
   33
   128000   3.5192E-05 0.1582 0.1219  0.0 2.9E+00   2.0606E-05 0.0703 0.1497  2.9      15   1.0294E-05 0.0581 0.0558  6.3
   22
   192000   3.2026E-05 0.1263 0.0928  0.0 3.1E+00   2.0600E-05 0.0545 0.0907  3.1      16   1.0938E-05 0.0483 0.0289 10.0
   21
   256000   2.9154E-05 0.1072 0.0832  0.0 3.2E+00   2.0269E-05 0.0470 0.0694  3.2      17   1.1072E-05 0.0425 0.0255  6.5
   20
   320000   3.2574E-05 0.1126 0.1735  0.0 2.3E+00   2.0759E-05 0.0444 0.0739  3.2      15   1.0981E-05 0.0368 0.0196  6.1
   22
   384000   3.0040E-05 0.1025 0.1687 10.0 2.3E+00   2.0458E-05 0.0397 0.0601  3.4      15   1.0983E-05 0.0330 0.0157  5.0
   22
```

```
      448000   2.8933E-05 0.0938 0.1516 10.0 2.4E+00   2.0221E-05 0.0362 0.0503  3.7      16   1.1107E-05 0.0310 0.0132  5.4
    22
      512000   2.8386E-05 0.0864 0.1342 10.0 2.5E+00   2.0202E-05 0.0337 0.0418  3.6      16   1.0996E-05 0.0284 0.0116  4.8
    23
      576000   2.8235E-05 0.0806 0.1150 10.0 2.5E+00   2.0397E-05 0.0331 0.0387  3.2      15   1.0999E-05 0.0270 0.0101  5.4
    22
      640000   2.8050E-05 0.0752 0.1034 10.0 2.6E+00   2.0457E-05 0.0329 0.0459  3.0      14   1.1018E-05 0.0253 0.0087  7.1
    23
      704000   2.8504E-05 0.0706 0.0873 10.0 2.7E+00   2.1079E-05 0.0349 0.0578  2.6      11   1.1087E-05 0.0245 0.0077 10.0
    22
      768000   2.9344E-05 0.0770 0.1339  5.1 2.1E+00   2.0859E-05 0.0329 0.0540  2.6      11   1.1206E-05 0.0233 0.0068 10.0
    22
      832000   2.9081E-05 0.0729 0.1259  5.0 2.1E+00   2.0721E-05 0.0310 0.0510  2.5      12   1.1212E-05 0.0222 0.0061 10.0
    23
      896000   2.8876E-05 0.0704 0.1134  4.9 2.1E+00   2.0715E-05 0.0298 0.0461  2.4      12   1.1264E-05 0.0214 0.0059 10.0
    23
      960000   2.8300E-05 0.0678 0.1087  5.0 2.1E+00   2.0575E-05 0.0284 0.0439  2.5      12   1.1332E-05 0.0206 0.0052 10.0
    23
     1024000   2.7803E-05 0.0652 0.1054  5.2 2.1E+00   2.0583E-05 0.0275 0.0394  2.4      12   1.1356E-05 0.0199 0.0048 10.0
    23
     1088000   2.7571E-05 0.0625 0.1016  4.8 2.2E+00   2.0404E-05 0.0263 0.0379  2.4      12   1.1296E-05 0.0193 0.0045 10.0
    23
     1152000   2.7485E-05 0.0601 0.0959  5.2 2.2E+00   2.0236E-05 0.0253 0.0365  2.5      13   1.1464E-05 0.0220 0.0821  8.0
    17
     1177383   2.7538E-05 0.0590 0.0941  5.4 2.3E+00   2.0220E-05 0.0249 0.0357  2.5      13   1.1434E-05 0.0217 0.0808  8.0
    17
1tally fluctuation charts

                      tally   62
         nps      mean     error   vov  slope    fom
       64000   1.5602E+00 0.0071 0.0030 10.0    2898
      128000   1.5611E+00 0.0051 0.0017 10.0    2812
      192000   1.5626E+00 0.0042 0.0011 10.0    2771
      256000   1.5641E+00 0.0036 0.0008 10.0    2792
      320000   1.5622E+00 0.0032 0.0007 10.0    2808
      384000   1.5612E+00 0.0029 0.0005 10.0    2837
      448000   1.5613E+00 0.0027 0.0005 10.0    2801
      512000   1.5628E+00 0.0026 0.0004  9.2    2776
      576000   1.5641E+00 0.0024 0.0004  7.3    2766
      640000   1.5645E+00 0.0023 0.0004  6.4    2745
      704000   1.5650E+00 0.0022 0.0003  6.9    2750
      768000   1.5664E+00 0.0021 0.0003  6.9    2749
      832000   1.5681E+00 0.0020 0.0003 10.0    2734
      896000   1.5692E+00 0.0020 0.0002  9.1    2735
      960000   1.5706E+00 0.0019 0.0002  8.2    2723
     1024000   1.5700E+00 0.0018 0.0002  8.4    2728
     1088000   1.5697E+00 0.0018 0.0002 10.0    2733
     1152000   1.5699E+00 0.0017 0.0002  9.7    2726
     1177383   1.5701E+00 0.0017 0.0002 10.0    2724


   ********************************************************************************************************************
   *******
 dump no.    4 on file runtpf       nps =     1177383     coll =      908234183     ctm =      125.82    nrn =
   11320889368


        21 warning messages so far.


 run terminated at end of surface-source input file.

 computer time =  125.91 minutes

 mcnp     version 5     11112005                    03/19/09 14:55:53                    probid =  03/19/09
   12:49:25
```

URS
Washington Division

MCNP Case to Translate the Source to the Side Wall Without Shield Bells

```
  Thread Name & Version = mcnp5VE_RSICC, 1.40

         .     .     .     |_
        |_|_|  (_  |_|  |_)  _)
                     |

 +---------------------------------------------------------------------+
 |   This program was prepared by the Regents of the University of     |
 |California at Los Alamos National Laboratory (the University) under  |
 |  contract number W-7405-ENG-36 with the U.S. Department of Energy    |
 |(DoE).  The University has certain rights in the program pursuant to |
 |  the contract and the program should not be copied or distributed    |
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 +---------------------------------------------------------------------+

1mcnp     version 5     ld=11112005                    03/24/09 08:48:55
 ***********************************************************************                probid =  03/24/09
    08:48:55
  inp = NSBSW.i outp = NSBSW.o

     1-       c     Created on: Tuesday, November 11, 2008 at 09:35
     2-       c     Canister Cells
     3-          11     5      -1 -11 1209 -1212
     4-          12     5      -1 -12 1209 -1212
     5-          13     5      -1 -13 1209 -1212
     6-          14     5      -1 -14 1209 -1212
     7-          15     5      -1 -15 1209 -1212
     8-          16     5      -1 -16 1209 -1212
     9-          17     5      -1 -17 1209 -1212
    10-          18     5      -1 -18 1209 -1212
    11-          19     5      -1 -19 1209 -1212
    12-          21     5      -1 -21 1209 -1212
    13-          22     5      -1 -22 1209 -1212
    14-          23     5      -1 -23 1209 -1212
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    16-          25     5      -1 -25 1209 -1212
    17-          26     5      -1 -26 1209 -1212
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    23-          33     5      -1 -33 1209 -1212
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    27-          37     5      -1 -37 1209 -1212
    28-          38     5      -1 -38 1209 -1212
    29-          39     5      -1 -39 1209 -1212
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    31-          42     5      -1 -42 1209 -1212
    32-          43     5      -1 -43 1209 -1212
    33-          44     5      -1 -44 1209 -1212
    34-          45     5      -1 -45 1209 -1212
    35-          46     5      -1 -46 1209 -1212
    36-          47     5      -1 -47 1209 -1212
    37-          48     5      -1 -48 1209 -1212
    38-          49     5      -1 -49 1209 -1212
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    40-          52     5      -1 -52 1209 -1212
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    45-          57     5      -1 -57 1209 -1212
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    50-          63     5      -1 -63 1209 -1212
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123-         144     5       -1 -144 1209 -1212
124-         145     5       -1 -145 1209 -1212
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127-         148     5       -1 -148 1209 -1212
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131-         212     3 -0.001225 -212 1209 -1213 #12
132-         213     3 -0.001225 -213 1209 -1213 #13
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137-          218      3 -0.001225 -218 1209 -1213 #18
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141-          223      3 -0.001225 -223 1209 -1213 #23
142-          224      3 -0.001225 -224 1209 -1213 #24
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255-         349      3 -0.001225 -349 1209 -1213 #149
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259-         413      3 -0.001225 -413 1209 -1214 #213 #13
260-         414      3 -0.001225 -414 1209 -1214 #214 #14
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267-         422      3 -0.001225 -422 1209 -1214 #222 #22
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272-         427      3 -0.001225 -427 1209 -1214 #227 #27
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276-         432      3 -0.001225 -432 1209 -1214 #232 #32
277-         433      3 -0.001225 -433 1209 -1214 #233 #33
278-         434      3 -0.001225 -434 1209 -1214 #234 #34
279-         435      3 -0.001225 -435 1209 -1214 #235 #35
280-         436      3 -0.001225 -436 1209 -1214 #236 #36
281-         437      3 -0.001225 -437 1209 -1214 #237 #37
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374-         541     3 -0.001225 -541 1209 -1214 #341 #141
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378-         545     3 -0.001225 -545 1209 -1214 #345 #145
379-         546     3 -0.001225 -546 1209 -1214 #346 #146
380-         547     3 -0.001225 -547 1209 -1214 #347 #147
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382-         549     3 -0.001225 -549 1209 -1214 #349 #149
383-       c Walls
384-        1200     3 -0.001225 1222 -1221 1206 -1208 1220 -1219  $Notch
385-        1201     1  -2.365 1206 -1208 1202 -1203 -1219 1209 #1200  $Inner Wall
386-        1202     1  -2.365 1207 -1233 1219 -1215 -1225 1226  $Top of Back Wall
387-       12021     1  -2.365 1233 -1223 1219 -1215 1226 -1225  $Split in Back Wall
388-        1203     1  -2.365 1207 -1205 -1219 1209 -1203 1202  $Bottom of Back Wall
389-        1204     1  -2.365 1225 -1234 1207 -1218 1219 -1215  $Top Of Right Wall
390-       12041     1  -2.365 1234 -1204 1207 -1218 1219 -1215  $Split in Right Wall
391-        1205     1  -2.365 1203 -1204 1207 -1218 -1219 1209  $Bottom of Right Wall
392-        1206     1  -2.365 1235 -1218 -1225 1226 1219 -1215  $Top of Front Wall
393-       12061     1  -2.365 1224 -1235 -1225 1226 1219 -1215  $Split in Front Wall
394-        1207     1  -2.365 1217 -1218 -1203 1202 -1219 1209  $Bottom of Front Wall
395-        1208     1  -2.365 1201 -1236 -1218 1207 1219 -1215 #10000 $Top of Left Wall
396-                   #10001 #10002 #10003 #10004 #10005
397-       12081     1  -2.365 -1226 1236 -1218 1207 1219 -1215 #10000 $Split in Left Wall
398-                   #10001 #10002 #10003 #10004 #10005
399-       c 1209     1  -2.365 -1202 1201 -1218 1207 -1219 1209  $Bottom of Left Wall
400-        1210     1  -2.365 -1209 1227 1207 -1218 -1204 1201  $Floor
401-        1211     1  -2.328 1215 -1237 1207 -1218 -1204 1201  $Roof
402-       12111     1  -2.328 1237 -1216 1207 -1218 -1204 1201  $Split in Roof
403-       c Splits in left wall
404-        4236     1  -2.365 -1202 2036 -1218 1207 -1219 1209
405-        4237     1  -2.365 -2036 2037 -1218 1207 -1219 1209
406-        4238     1  -2.365 -2037 2038 -1218 1207 -1219 1209
407-        4239     1  -2.365 -2038 2039 -1218 1207 -1219 1209
408-        4240     1  -2.365 -2039 2040 -1218 1207 -1219 1209
409-        4241     1  -2.365 -2040 2041 -1218 1207 -1219 1209
410-        4242     1  -2.365 -2041 2042 -1218 1207 -1219 1209
411-        4243     1  -2.365 -2042 2043 -1218 1207 -1219 1209
412-        4244     1  -2.365 -2043 2044 -1218 1207 -1219 1209
413-        4245     1  -2.365 -2044 2045 -1218 1207 -1219 1209
414-        4246     1  -2.365 -2045 2046 -1218 1207 -1219 1209
415-        4247     1  -2.365 -2046 2047 -1218 1207 -1219 1209
416-        4248     1  -2.365 -2047 2048 -1218 1207 -1219 1209
417-        4249     1  -2.365 -2048 2049 -1218 1207 -1219 1209
418-        4250     1  -2.365 -2049 2050 -1218 1207 -1219 1209
419-        4251     1  -2.365 -2050 1201 -1218 1207 -1219 1209
420-       c   Air
421-        9999     0         2015  $Outside Model
422-        9998     3 -0.001225 1205 -1228 -1220 1209 -1203 1202 #(-447 1209 -1214 )#
423-                   (-448 1209 -1214 )#(-449 1209 -1214 )#(-451 1209 -1214 )#
424-                   (-452 1209 -1214 )#(-453 1209 -1214 )#(-454 1209 -1214 )#
425-                   (-455 1209 -1214 )#(-456 1209 -1214 )#(-457 1209 -1214 )#
426-                   (-458 1209 -1214 )#(-459 1209 -1214 )#(-411 1209 -1214 )#
427-                   (-412 1209 -1214 )#(-413 1209 -1214 )#(-414 1209 -1214 )#
428-                   (-415 1209 -1214 )#(-416 1209 -1214 )#(-417 1209 -1214 )#
429-                   (-418 1209 -1214 )#(-419 1209 -1214 )#(-421 1209 -1214 )#
430-                   (-422 1209 -1214 )#(-423 1209 -1214 )#(-424 1209 -1214 )#
431-                   (-425 1209 -1214 )#(-426 1209 -1214 )#(-427 1209 -1214 )#
432-                   (-428 1209 -1214 )#(-429 1209 -1214 )#(-431 1209 -1214 )#
433-                   (-432 1209 -1214 )#(-433 1209 -1214 )#(-434 1209 -1214 )#
434-                   (-435 1209 -1214 )#(-436 1209 -1214 )#(-437 1209 -1214 )#
435-                   (-438 1209 -1214 )#(-439 1209 -1214 )#(-441 1209 -1214 )#
436-                   (-442 1209 -1214 )#(-443 1209 -1214 )#(-444 1209 -1214 )#
437-                   (-445 1209 -1214 )#(-446 1209 -1214 )
438-        9997     3 -0.001225 1228 -1229 -1220 1209 -1203 1202 #(-499 1209 -1214 )#
439-                   (-501 1209 -1214 )#(-502 1209 -1214 )#(-503 1209 -1214 )#
440-                   (-504 1209 -1214 )#(-505 1209 -1214 )#(-506 1209 -1214 )#
441-                   (-507 1209 -1214 )#(-508 1209 -1214 )#(-509 1209 -1214 )#
442-                   (-461 1209 -1214 )#(-462 1209 -1214 )#(-463 1209 -1214 )#
443-                   (-464 1209 -1214 )#(-465 1209 -1214 )#(-466 1209 -1214 )#
444-                   (-467 1209 -1214 )#(-468 1209 -1214 )#(-469 1209 -1214 )#
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445-                  (-471 1209 -1214 )#(-472 1209 -1214 )#(-473 1209 -1214 )#
446-                  (-474 1209 -1214 )#(-475 1209 -1214 )#(-476 1209 -1214 )#
447-                  (-477 1209 -1214 )#(-478 1209 -1214 )#(-479 1209 -1214 )#
448-                  (-481 1209 -1214 )#(-482 1209 -1214 )#(-483 1209 -1214 )#
449-                  (-484 1209 -1214 )#(-485 1209 -1214 )#(-486 1209 -1214 )#
450-                  (-487 1209 -1214 )#(-488 1209 -1214 )#(-489 1209 -1214 )#
451-                  (-491 1209 -1214 )#(-492 1209 -1214 )#(-493 1209 -1214 )#
452-                  (-494 1209 -1214 )#(-495 1209 -1214 )#(-496 1209 -1214 )#
453-                  (-497 1209 -1214 )#(-498 1209 -1214 )
454-        9996      3 -0.001225 1229 -1206 -1220 1209 -1203 1202 #(-541 1209 -1214 )#
455-                  (-542 1209 -1214 )#(-543 1209 -1214 )#(-544 1209 -1214 )#
456-                  (-545 1209 -1214 )#(-546 1209 -1214 )#(-547 1209 -1214 )#
457-                  (-548 1209 -1214 )#(-549 1209 -1214 )#(-511 1209 -1214 )#
458-                  (-512 1209 -1214 )#(-513 1209 -1214 )#(-514 1209 -1214 )#
459-                  (-515 1209 -1214 )#(-516 1209 -1214 )#(-517 1209 -1214 )#
460-                  (-518 1209 -1214 )#(-519 1209 -1214 )#(-521 1209 -1214 )#
461-                  (-522 1209 -1214 )#(-523 1209 -1214 )#(-524 1209 -1214 )#
462-                  (-525 1209 -1214 )#(-526 1209 -1214 )#(-527 1209 -1214 )#
463-                  (-528 1209 -1214 )#(-529 1209 -1214 )#(-531 1209 -1214 )#
464-                  (-532 1209 -1214 )#(-533 1209 -1214 )#(-534 1209 -1214 )#
465-                  (-535 1209 -1214 )#(-536 1209 -1214 )#(-537 1209 -1214 )#
466-                  (-538 1209 -1214 )#(-539 1209 -1214 )
467-        9995      3 -0.001225 1220 -1219 1205 -1206 -1203 1202  $Notch Air Side A
468-        9994      3 -0.001225 -1215 1219 1223 -1208 -1225 1226  $Air Above Crane Rail
469-        9993      3 -0.001225 1209 -1231 1208 -1217 -1203 1202  $Bottom Air Side B
470-        9992      3 -0.001225 -1230 1231 1208 -1217 -1203 1202  $Air Up to Shield Side B
471-        9991      1  -2.365 -1220 1230 1208 -1217 -1203 1202  $Truck Bay Shield
472-        9990      3 -0.001225 1220 -1219 1208 -1217 -1203 1202  $Notch Air Side B
473-        9989      3 -0.001225 -1215 1219 1208 -1224 -1225 1226  $Notch Air Side B
474-        9988      3 -0.001225 (-2000 -1207 1201 -1204 1227 -1216 ):
475-                  (1218 -2000 1201 -1204 1227 -1216 ):(-2000 -1201 1227 -1216 ):
476-                  (1204 -2000 1227 -1216 ):(1216 -2000 )
477-        9987      0          -1232 -2015  $Bottom Void
478-        9986      3 -0.001225 1232 -1227 -2015  $6 in Ground Air
479-       c      Ductwork Penetrations
480-       10000      3 -0.001225 12441 -12451 12321 -12331 1201 -1226
481-       10001      3 -0.001225 12441 -12451 12341 -12351 1201 -1226
482-       10002      3 -0.001225 12461 -12471 12361 -12371 1201 -1226
483-       10003      3 -0.001225 12441 -12451 12381 -12391 1201 -1226
484-       10004      3 -0.001225 12401 -12411 12441 -12451 1201 -1226
485-       10005      3 -0.001225 12441 -12451 12421 -12431 1201 -1226
486-       c Sphere Detector Cells
487-        2001      3 -0.001225 2000 -2001 1227
488-        2002      3 -0.001225 2001 -2002 1227
489-        2003      3 -0.001225 -2003 2002 1227
490-        2004      3 -0.001225 2003 -2004 1227
491-        2005      3 -0.001225 2004 -2005 1227
492-        2006      3 -0.001225 2005 -2006 1227
493-        2007      3 -0.001225 2006 -2007 1227
494-        2008      3 -0.001225 2007 -2008 1227
495-        2009      3 -0.001225 2008 -2009 1227
496-        2010      3 -0.001225 2009 -2010 1227
497-        2011      3 -0.001225 2010 -2011 1227
498-        2012      3 -0.001225 2011 -2012 1227
499-        2013      3 -0.001225 2012 -2013 1227
500-        2014      3 -0.001225 2013 -2014 1227
501-        2015      3 -0.001225 2014 -2015 1227
502-
503-       c     Source Canisters
504-          11       c/z 198.12 121.92 77.47
505-          12       c/z 198.12 320.04 77.47
506-          13       c/z 198.12 518.16 77.47
507-          14       c/z 198.12 716.28 77.47
508-          15       c/z 198.12 914.4 77.47
509-          16       c/z 198.12 1112.52 77.47
510-          17       c/z 198.12 1310.64 77.47
511-          18       c/z 198.12 1508.76 77.47
512-          19       c/z 198.12 1706.88 77.47
513-          21       c/z 396.24 121.92 77.47
514-          22       c/z 396.24 320.04 77.47
515-          23       c/z 396.24 518.16 77.47
516-          24       c/z 396.24 716.28 77.47
517-          25       c/z 396.24 914.4 77.47
518-          26       c/z 396.24 1112.52 77.47
519-          27       c/z 396.24 1310.64 77.47
520-          28       c/z 396.24 1508.76 77.47
521-          29       c/z 396.24 1706.88 77.47
522-          31       c/z 594.36 121.92 77.47
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523-          32       c/z 594.36 320.04 77.47
524-          33       c/z 594.36 518.16 77.47
525-          34       c/z 594.36 716.28 77.47
526-          35       c/z 594.36 914.4 77.47
527-          36       c/z 594.36 1112.52 77.47
528-          37       c/z 594.36 1310.64 77.47
529-          38       c/z 594.36 1508.76 77.47
530-          39       c/z 594.36 1706.88 77.47
531-          41       c/z 792.48 121.92 77.47
532-          42       c/z 792.48 320.04 77.47
533-          43       c/z 792.48 518.16 77.47
534-          44       c/z 792.48 716.28 77.47
535-          45       c/z 792.48 914.4 77.47
536-          46       c/z 792.48 1112.52 77.47
537-          47       c/z 792.48 1310.64 77.47
538-          48       c/z 792.48 1508.76 77.47
539-          49       c/z 792.48 1706.88 77.47
540-          51       c/z 990.6 121.92 77.47
541-          52       c/z 990.6 320.04 77.47
542-          53       c/z 990.6 518.16 77.47
543-          54       c/z 990.6 716.28 77.47
544-          55       c/z 990.6 914.4 77.47
545-          56       c/z 990.6 1112.52 77.47
546-          57       c/z 990.6 1310.64 77.47
547-          58       c/z 990.6 1508.76 77.47
548-          59       c/z 990.6 1706.88 77.47
549-          61       c/z 1188.72 121.92 77.47
550-          62       c/z 1188.72 320.04 77.47
551-          63       c/z 1188.72 518.16 77.47
552-          64       c/z 1188.72 716.28 77.47
553-          65       c/z 1188.72 914.4 77.47
554-          66       c/z 1188.72 1112.52 77.47
555-          67       c/z 1188.72 1310.64 77.47
556-          68       c/z 1188.72 1508.76 77.47
557-          69       c/z 1188.72 1706.88 77.47
558-          71       c/z 1386.84 121.92 77.47
559-          72       c/z 1386.84 320.04 77.47
560-          73       c/z 1386.84 518.16 77.47
561-          74       c/z 1386.84 716.28 77.47
562-          75       c/z 1386.84 914.4 77.47
563-          76       c/z 1386.84 1112.52 77.47
564-          77       c/z 1386.84 1310.64 77.47
565-          78       c/z 1386.84 1508.76 77.47
566-          79       c/z 1386.84 1706.88 77.47
567-          81       c/z 1584.96 121.92 77.47
568-          82       c/z 1584.96 320.04 77.47
569-          83       c/z 1584.96 518.16 77.47
570-          84       c/z 1584.96 716.28 77.47
571-          85       c/z 1584.96 914.4 77.47
572-          86       c/z 1584.96 1112.52 77.47
573-          87       c/z 1584.96 1310.64 77.47
574-          88       c/z 1584.96 1508.76 77.47
575-          89       c/z 1584.96 1706.88 77.47
576-          91       c/z 1783.08 121.92 77.47
577-          92       c/z 1783.08 320.04 77.47
578-          93       c/z 1783.08 518.16 77.47
579-          94       c/z 1783.08 716.28 77.47
580-          95       c/z 1783.08 914.4 77.47
581-          96       c/z 1783.08 1112.52 77.47
582-          97       c/z 1783.08 1310.64 77.47
583-          98       c/z 1783.08 1508.76 77.47
584-          99       c/z 1783.08 1706.88 77.47
585-         101       c/z 1981.2 121.92 77.47
586-         102       c/z 1981.2 320.04 77.47
587-         103       c/z 1981.2 518.16 77.47
588-         104       c/z 1981.2 716.28 77.47
589-         105       c/z 1981.2 914.4 77.47
590-         106       c/z 1981.2 1112.52 77.47
591-         107       c/z 1981.2 1310.64 77.47
592-         108       c/z 1981.2 1508.76 77.47
593-         109       c/z 1981.2 1706.88 77.47
594-         111       c/z 2179.32 121.92 77.47
595-         112       c/z 2179.32 320.04 77.47
596-         113       c/z 2179.32 518.16 77.47
597-         114       c/z 2179.32 716.28 77.47
598-         115       c/z 2179.32 914.4 77.47
599-         116       c/z 2179.32 1112.52 77.47
600-         117       c/z 2179.32 1310.64 77.47
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601-         118       c/z 2179.32 1508.76 77.47
602-         119       c/z 2179.32 1706.88 77.47
603-         121       c/z 2377.44 121.92 77.47
604-         122       c/z 2377.44 320.04 77.47
605-         123       c/z 2377.44 518.16 77.47
606-         124       c/z 2377.44 716.28 77.47
607-         125       c/z 2377.44 914.4 77.47
608-         126       c/z 2377.44 1112.52 77.47
609-         127       c/z 2377.44 1310.64 77.47
610-         128       c/z 2377.44 1508.76 77.47
611-         129       c/z 2377.44 1706.88 77.47
612-         131       c/z 2575.56 121.92 77.47
613-         132       c/z 2575.56 320.04 77.47
614-         133       c/z 2575.56 518.16 77.47
615-         134       c/z 2575.56 716.28 77.47
616-         135       c/z 2575.56 914.4 77.47
617-         136       c/z 2575.56 1112.52 77.47
618-         137       c/z 2575.56 1310.64 77.47
619-         138       c/z 2575.56 1508.76 77.47
620-         139       c/z 2575.56 1706.88 77.47
621-         141       c/z 2773.68 121.92 77.47
622-         142       c/z 2773.68 320.04 77.47
623-         143       c/z 2773.68 518.16 77.47
624-         144       c/z 2773.68 716.28 77.47
625-         145       c/z 2773.68 914.4 77.47
626-         146       c/z 2773.68 1112.52 77.47
627-         147       c/z 2773.68 1310.64 77.47
628-         148       c/z 2773.68 1508.76 77.47
629-         149       c/z 2773.68 1706.88 77.47
630-       c     Inside of Shield Bell
631-         211       c/z 198.12 121.92 86.36
632-         212       c/z 198.12 320.04 86.36
633-         213       c/z 198.12 518.16 86.36
634-         214       c/z 198.12 716.28 86.36
635-         215       c/z 198.12 914.4 86.36
636-         216       c/z 198.12 1112.52 86.36
637-         217       c/z 198.12 1310.64 86.36
638-         218       c/z 198.12 1508.76 86.36
639-         219       c/z 198.12 1706.88 86.36
640-         221       c/z 396.24 121.92 86.36
641-         222       c/z 396.24 320.04 86.36
642-         223       c/z 396.24 518.16 86.36
643-         224       c/z 396.24 716.28 86.36
644-         225       c/z 396.24 914.4 86.36
645-         226       c/z 396.24 1112.52 86.36
646-         227       c/z 396.24 1310.64 86.36
647-         228       c/z 396.24 1508.76 86.36
648-         229       c/z 396.24 1706.88 86.36
649-         231       c/z 594.36 121.92 86.36
650-         232       c/z 594.36 320.04 86.36
651-         233       c/z 594.36 518.16 86.36
652-         234       c/z 594.36 716.28 86.36
653-         235       c/z 594.36 914.4 86.36
654-         236       c/z 594.36 1112.52 86.36
655-         237       c/z 594.36 1310.64 86.36
656-         238       c/z 594.36 1508.76 86.36
657-         239       c/z 594.36 1706.88 86.36
658-         241       c/z 792.48 121.92 86.36
659-         242       c/z 792.48 320.04 86.36
660-         243       c/z 792.48 518.16 86.36
661-         244       c/z 792.48 716.28 86.36
662-         245       c/z 792.48 914.4 86.36
663-         246       c/z 792.48 1112.52 86.36
664-         247       c/z 792.48 1310.64 86.36
665-         248       c/z 792.48 1508.76 86.36
666-         249       c/z 792.48 1706.88 86.36
667-         251       c/z 990.6 121.92 86.36
668-         252       c/z 990.6 320.04 86.36
669-         253       c/z 990.6 518.16 86.36
670-         254       c/z 990.6 716.28 86.36
671-         255       c/z 990.6 914.4 86.36
672-         256       c/z 990.6 1112.52 86.36
673-         257       c/z 990.6 1310.64 86.36
674-         258       c/z 990.6 1508.76 86.36
675-         259       c/z 990.6 1706.88 86.36
676-         261       c/z 1188.72 121.92 86.36
677-         262       c/z 1188.72 320.04 86.36
678-         263       c/z 1188.72 518.16 86.36
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679-          264       c/z 1188.72 716.28 86.36
680-          265       c/z 1188.72 914.4 86.36
681-          266       c/z 1188.72 1112.52 86.36
682-          267       c/z 1188.72 1310.64 86.36
683-          268       c/z 1188.72 1508.76 86.36
684-          269       c/z 1188.72 1706.88 86.36
685-          271       c/z 1386.84 121.92 86.36
686-          272       c/z 1386.84 320.04 86.36
687-          273       c/z 1386.84 518.16 86.36
688-          274       c/z 1386.84 716.28 86.36
689-          275       c/z 1386.84 914.4 86.36
690-          276       c/z 1386.84 1112.52 86.36
691-          277       c/z 1386.84 1310.64 86.36
692-          278       c/z 1386.84 1508.76 86.36
693-          279       c/z 1386.84 1706.88 86.36
694-          281       c/z 1584.96 121.92 86.36
695-          282       c/z 1584.96 320.04 86.36
696-          283       c/z 1584.96 518.16 86.36
697-          284       c/z 1584.96 716.28 86.36
698-          285       c/z 1584.96 914.4 86.36
699-          286       c/z 1584.96 1112.52 86.36
700-          287       c/z 1584.96 1310.64 86.36
701-          288       c/z 1584.96 1508.76 86.36
702-          289       c/z 1584.96 1706.88 86.36
703-          291       c/z 1783.08 121.92 86.36
704-          292       c/z 1783.08 320.04 86.36
705-          293       c/z 1783.08 518.16 86.36
706-          294       c/z 1783.08 716.28 86.36
707-          295       c/z 1783.08 914.4 86.36
708-          296       c/z 1783.08 1112.52 86.36
709-          297       c/z 1783.08 1310.64 86.36
710-          298       c/z 1783.08 1508.76 86.36
711-          299       c/z 1783.08 1706.88 86.36
712-          301       c/z 1981.2 121.92 86.36
713-          302       c/z 1981.2 320.04 86.36
714-          303       c/z 1981.2 518.16 86.36
715-          304       c/z 1981.2 716.28 86.36
716-          305       c/z 1981.2 914.4 86.36
717-          306       c/z 1981.2 1112.52 86.36
718-          307       c/z 1981.2 1310.64 86.36
719-          308       c/z 1981.2 1508.76 86.36
720-          309       c/z 1981.2 1706.88 86.36
721-          311       c/z 2179.32 121.92 86.36
722-          312       c/z 2179.32 320.04 86.36
723-          313       c/z 2179.32 518.16 86.36
724-          314       c/z 2179.32 716.28 86.36
725-          315       c/z 2179.32 914.4 86.36
726-          316       c/z 2179.32 1112.52 86.36
727-          317       c/z 2179.32 1310.64 86.36
728-          318       c/z 2179.32 1508.76 86.36
729-          319       c/z 2179.32 1706.88 86.36
730-          321       c/z 2377.44 121.92 86.36
731-          322       c/z 2377.44 320.04 86.36
732-          323       c/z 2377.44 518.16 86.36
733-          324       c/z 2377.44 716.28 86.36
734-          325       c/z 2377.44 914.4 86.36
735-          326       c/z 2377.44 1112.52 86.36
736-          327       c/z 2377.44 1310.64 86.36
737-          328       c/z 2377.44 1508.76 86.36
738-          329       c/z 2377.44 1706.88 86.36
739-          331       c/z 2575.56 121.92 86.36
740-          332       c/z 2575.56 320.04 86.36
741-          333       c/z 2575.56 518.16 86.36
742-          334       c/z 2575.56 716.28 86.36
743-          335       c/z 2575.56 914.4 86.36
744-          336       c/z 2575.56 1112.52 86.36
745-          337       c/z 2575.56 1310.64 86.36
746-          338       c/z 2575.56 1508.76 86.36
747-          339       c/z 2575.56 1706.88 86.36
748-          341       c/z 2773.68 121.92 86.36
749-          342       c/z 2773.68 320.04 86.36
750-          343       c/z 2773.68 518.16 86.36
751-          344       c/z 2773.68 716.28 86.36
752-          345       c/z 2773.68 914.4 86.36
753-          346       c/z 2773.68 1112.52 86.36
754-          347       c/z 2773.68 1310.64 86.36
755-          348       c/z 2773.68 1508.76 86.36
756-          349       c/z 2773.68 1706.88 86.36
```

```
c     Outside of Shield Bell
  411       c/z 198.12 121.92 92.71
  412       c/z 198.12 320.04 92.71
  413       c/z 198.12 518.16 92.71
  414       c/z 198.12 716.28 92.71
  415       c/z 198.12 914.4 92.71
  416       c/z 198.12 1112.52 92.71
  417       c/z 198.12 1310.64 92.71
  418       c/z 198.12 1508.76 92.71
  419       c/z 198.12 1706.88 92.71
  421       c/z 396.24 121.92 92.71
  422       c/z 396.24 320.04 92.71
  423       c/z 396.24 518.16 92.71
  424       c/z 396.24 716.28 92.71
  425       c/z 396.24 914.4 92.71
  426       c/z 396.24 1112.52 92.71
  427       c/z 396.24 1310.64 92.71
  428       c/z 396.24 1508.76 92.71
  429       c/z 396.24 1706.88 92.71
  431       c/z 594.36 121.92 92.71
  432       c/z 594.36 320.04 92.71
  433       c/z 594.36 518.16 92.71
  434       c/z 594.36 716.28 92.71
  435       c/z 594.36 914.4 92.71
  436       c/z 594.36 1112.52 92.71
  437       c/z 594.36 1310.64 92.71
  438       c/z 594.36 1508.76 92.71
  439       c/z 594.36 1706.88 92.71
  441       c/z 792.48 121.92 92.71
  442       c/z 792.48 320.04 92.71
  443       c/z 792.48 518.16 92.71
  444       c/z 792.48 716.28 92.71
  445       c/z 792.48 914.4 92.71
  446       c/z 792.48 1112.52 92.71
  447       c/z 792.48 1310.64 92.71
  448       c/z 792.48 1508.76 92.71
  449       c/z 792.48 1706.88 92.71
  451       c/z 990.6 121.92 92.71
  452       c/z 990.6 320.04 92.71
  453       c/z 990.6 518.16 92.71
  454       c/z 990.6 716.28 92.71
  455       c/z 990.6 914.4 92.71
  456       c/z 990.6 1112.52 92.71
  457       c/z 990.6 1310.64 92.71
  458       c/z 990.6 1508.76 92.71
  459       c/z 990.6 1706.88 92.71
  461       c/z 1188.72 121.92 92.71
  462       c/z 1188.72 320.04 92.71
  463       c/z 1188.72 518.16 92.71
  464       c/z 1188.72 716.28 92.71
  465       c/z 1188.72 914.4 92.71
  466       c/z 1188.72 1112.52 92.71
  467       c/z 1188.72 1310.64 92.71
  468       c/z 1188.72 1508.76 92.71
  469       c/z 1188.72 1706.88 92.71
  471       c/z 1386.84 121.92 92.71
  472       c/z 1386.84 320.04 92.71
  473       c/z 1386.84 518.16 92.71
  474       c/z 1386.84 716.28 92.71
  475       c/z 1386.84 914.4 92.71
  476       c/z 1386.84 1112.52 92.71
  477       c/z 1386.84 1310.64 92.71
  478       c/z 1386.84 1508.76 92.71
  479       c/z 1386.84 1706.88 92.71
  481       c/z 1584.96 121.92 92.71
  482       c/z 1584.96 320.04 92.71
  483       c/z 1584.96 518.16 92.71
  484       c/z 1584.96 716.28 92.71
  485       c/z 1584.96 914.4 92.71
  486       c/z 1584.96 1112.52 92.71
  487       c/z 1584.96 1310.64 92.71
  488       c/z 1584.96 1508.76 92.71
  489       c/z 1584.96 1706.88 92.71
  491       c/z 1783.08 121.92 92.71
  492       c/z 1783.08 320.04 92.71
  493       c/z 1783.08 518.16 92.71
  494       c/z 1783.08 716.28 92.71
  495       c/z 1783.08 914.4 92.71
```

```
835-         496       c/z 1783.08 1112.52 92.71
836-         497       c/z 1783.08 1310.64 92.71
837-         498       c/z 1783.08 1508.76 92.71
838-         499       c/z 1783.08 1706.88 92.71
839-         501       c/z 1981.2 121.92 92.71
840-         502       c/z 1981.2 320.04 92.71
841-         503       c/z 1981.2 518.16 92.71
842-         504       c/z 1981.2 716.28 92.71
843-         505       c/z 1981.2 914.4 92.71
844-         506       c/z 1981.2 1112.52 92.71
845-         507       c/z 1981.2 1310.64 92.71
846-         508       c/z 1981.2 1508.76 92.71
847-         509       c/z 1981.2 1706.88 92.71
848-         511       c/z 2179.32 121.92 92.71
849-         512       c/z 2179.32 320.04 92.71
850-         513       c/z 2179.32 518.16 92.71
851-         514       c/z 2179.32 716.28 92.71
852-         515       c/z 2179.32 914.4 92.71
853-         516       c/z 2179.32 1112.52 92.71
854-         517       c/z 2179.32 1310.64 92.71
855-         518       c/z 2179.32 1508.76 92.71
856-         519       c/z 2179.32 1706.88 92.71
857-         521       c/z 2377.44 121.92 92.71
858-         522       c/z 2377.44 320.04 92.71
859-         523       c/z 2377.44 518.16 92.71
860-         524       c/z 2377.44 716.28 92.71
861-         525       c/z 2377.44 914.4 92.71
862-         526       c/z 2377.44 1112.52 92.71
863-         527       c/z 2377.44 1310.64 92.71
864-         528       c/z 2377.44 1508.76 92.71
865-         529       c/z 2377.44 1706.88 92.71
866-         531       c/z 2575.56 121.92 92.71
867-         532       c/z 2575.56 320.04 92.71
868-         533       c/z 2575.56 518.16 92.71
869-         534       c/z 2575.56 716.28 92.71
870-         535       c/z 2575.56 914.4 92.71
871-         536       c/z 2575.56 1112.52 92.71
872-         537       c/z 2575.56 1310.64 92.71
873-         538       c/z 2575.56 1508.76 92.71
874-         539       c/z 2575.56 1706.88 92.71
875-         541       c/z 2773.68 121.92 92.71
876-         542       c/z 2773.68 320.04 92.71
877-         543       c/z 2773.68 518.16 92.71
878-         544       c/z 2773.68 716.28 92.71
879-         545       c/z 2773.68 914.4 92.71
880-         546       c/z 2773.68 1112.52 92.71
881-         547       c/z 2773.68 1310.64 92.71
882-         548       c/z 2773.68 1508.76 92.71
883-         549       c/z 2773.68 1706.88 92.71
884-       c    Planes
885-        1201        py -76.2  $Outside Left Wall
886-        1202        py 0  $Inside Left Thick Wall
887-        1203        py 1828.8  $Inside Right Thick Wall
888-        1204        py 1905  $Outside Right Wall
889-        1205        px 0  $Inside Back Thick Wall
890-        1206        px 2895.6  $Front of Inner Wall
891-        1207        px -76.2  $Outside Back Wall
892-        1208        px 2971.8  $Back of Inner Wall
893-        1209        pz 0  $Top of Floor
894-        c 1211        pz 190.5  $Top of Bot HIC
895-        1212        pz 381  $Top of Top HIC
896-        1213        pz 388.62  $Bot of Bell Top
897-        1214        pz 396.24  $Top of Bell Top
898-        1215        pz 1455.42  $Bottom of Roof
899-        1216        pz 1493.52  $Top of Roof
900-        1217        px 3947.16  $Inner Truck Bay Wall
901-        1218        px 4023.36  $Outer Truck Bay Wall
902-        1219        pz 1036.32  $Top of Inner Wall
903-        1220        pz 822.96  $Bottom of Notch
904-        1221        py 1760.22  $Right of notch
905-        1222        py 1546.86  $Left of notch
906-        1223        px -38.1  $Inside Back Thin Wall
907-        1224        px 3985.26  $Inside Front Thin Wall
908-        1225        py 1866.9  $Inside Right Thin Wall
909-        1226        py -38.1  $Inside Left Thin Wall
910-        1227        pz -76.2  $Bottom of Floor
911-        1228        px 1089.66  $Zone 1 Air
912-        1229        px 2080.26  $Zone 2 Air
```

```
913-        1230        pz 807.72  $Bottom of Truck Bay Shield
914-        1231        pz 213.36  $7ft Detector Surface
915-        1232        pz -91.44  $Bottom Void
916-        1233        px -57.15  $Split for Back Wall
917-        1234        py 1885.95  $Split for Right Wall
918-        1235        px 4004.31  $Split for Front Wall
919-        1236        py -57.15  $Split for Left Wall
920-        1237        pz 1474.47  $Split for Roof
921-       c    HVAC Duct Openings
922-       12321        px 68.58  $Duct1S1
923-       12331        px 170.18  $Duct1 S2
924-       12341        px 871.22  $Duct2 S1
925-       12351        px 972.82  $Duct2 S2
926-       12361        px 1595.12  $Duct3 S1
927-       12371        px 1747.52  $Duct3 S2
928-       12381        px 1856.74  $Duct4 S1
929-       12391        px 1958.34  $Duct4 S2
930-       12401        px 2720.34  $Duct5 S1
931-       12411        px 2821.94  $Duct5 S2
932-       12421        px 3776.98  $Duct6 S1
933-       12431        px 3878.58  $Duct6 S2
934-       12441        pz 1397  $Small Ducts Bottom
935-       12451        pz 1437.64  $Small Duct Top
936-       12461        pz 1369.06  $Large Ducts Bottom
937-       12471        pz 1445.26  $Large Duct Top
938-       c   Spheres for detectors
939-        2000         s 1973.58 914.4 -72.6 2800  $Closest Sphere
940-        2001         s 1973.58 914.4 -72.6 4000
941-        2002         s 1973.58 914.4 -72.6 7000
942-        2003         s 1973.58 914.4 -72.6 10000
943-        2004         s 1973.58 914.4 -72.6 15000
944-        2005         s 1973.58 914.4 -72.6 20000
945-        2006         s 1973.58 914.4 -72.6 25000
946-        2007         s 1973.58 914.4 -72.6 30000
947-        2008         s 1973.58 914.4 -72.6 37500
948-        2009         s 1973.58 914.4 -72.6 45000
949-        2010         s 1973.58 914.4 -72.6 55000
950-        2011         s 1973.58 914.4 -72.6 65000
951-        2012         s 1973.58 914.4 -72.6 75000
952-        2013         s 1973.58 914.4 -72.6 85000
953-        2014         s 1973.58 914.4 -72.6 95000
954-        2015         s 1973.58 914.4 -72.6 120000
955-        2016        py -276.2
956-        2017        py -476.2
957-        2018        py -676.2
958-        2019        py -876.2
959-        2020        py -1076.2
960-        2021        py -1276.2
961-        2022        py -1476.2
962-        2023        py -1676.2
963-        2024        py -1876.2
964-        2025        py -2076.2
965-        2026        px 359.054
966-        2027        px 2535.94
967-        2028        py -2276.2
968-        2029        py -2476.2
969-        2030        py -2676.2
970-        2031        py -2876.2
971-        2032        py -3076.2
972-        2033        py -3276.2
973-        2034        py -3476.2
974-        2035        py -3676.2
975-       c    Side wall splits for translation
976-        2036        py -1.2
977-        2037        py -6.2
978-        2038        py -11.2
979-        2039        py -16.2
980-        2040        py -21.2
981-        2041        py -26.2
982-        2042        py -31.2
983-        2043        py -36.2
984-        2044        py -41.2
985-        2045        py -46.2
986-        2046        py -51.2
987-        2047        py -56.2
988-        2048        py -61.2
989-        2049        py -66.2
990-        2050        py -71.2
```

```
 991-
 992-       mode  p
 993-       c  Materials
 994-       m1    1000.            -0.015  $ Concrete from 6.4
 995-             8000.            -1.057 11000.           -0.041 12000.           -0.085
 996-             13000.           -0.137 14000.           -0.487 15000.           -0.002
 997-             16000.           -0.002 19000.           -0.015 20000.           -0.295
 998-             22000.           -0.011 25000.           -0.003 26000.           -0.178
 999-       m2    13000.                1  $ Aluminum
warning. material   2 is not used in the problem.
1000-       m3    7000.           0.78969  $ Air
1001-             8000.           0.21019 6000.          0.00012
1002-       m4    26000.                1  $ Iron
warning. material   4 is not used in the problem.
1003-       m5    1000.                 2  $ Water
1004-             8000.                 1
1005-       imp:p             1 377r                   0 15r                     2  $ 11, 4
1006-                          4            8           16           32          64  $ 4237,
1007-                       128          256          512         1024        2048  $ 4242,
1008-                      4096         8192        16384        32768       65536  $ 4247,
1009-                         0            1 2r                     0 6r           $ 9999,
1010-                     65536            0 7r                 65536 14r          $ 9988,
1011-       phys:p  100 1 0
1012-       sdef erg=d5 x=d1 y=d2 z=d3 cel=d4 eff=0.0001 wgt=3.045E+15
1013-       si1  0 2895.6
1014-       sp1  0.0 1.0
1015-       si2  0 1828.8
1016-       sp2  0.0 1.0
1017-       si3  0.01 304.8 381.00
1018-       sp3  0.0 0.8 0.2
1019-       si4  L 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 31 32
1020-            33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 51 52 53 54 55
1021-            56 57 58 59 61 62 63 64 65 66 67 68 69 71 72 73 74 75 76 77 78
1022-            79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96 97 98 99 101
1023-            102 103 104 105 106 107 108 109 111 112 113 114 115 116 117 118
1024-            119 121 122 123 124 125 126 127 128 129 131 132 133 134 135 136
1025-            137 138 139 141 142 143 144 145 146 147 148 149
1026-       sp4  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1027-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1028-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1029-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1030-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1031-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1032-            1  1  1  1  1  1  1  1  1  1  1  1  1
1033-       si5 l 1.1730 1.3325
1034-       sp5   1      1
1035-       ssw -2050(4251)
1036-       c ssr
1037-       c ===========================================================================
1038-       c ===========================================================================
1039-       c Truck bay dose rate
1040-       f2:p 1231
warning. without bremsstrahlung, flux estimates will be low.
1041-       c ===========================================================================
1042-       c ===========================================================================
1043-       c Rings outside the building
1044-       f12:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1045-       fs12 -2000 -2001 -2002 -2003 -2004 -2005 -2006 -2007 -2008 -2009
1046-            -2010 -2011 -2012 -2013 -2014
1047-       sd12 1e50 2.564E+07 1.037e8 1.602e8 3.927e8 5.498e8 7.069e8 8.639e8 1.590e9
1048-            1.944e9 3.142e9 3.770e9 4.398e9 5.027e9 5.655e9 1.689e10
1049-       c ===========================================================================
1050-       c ===========================================================================
1051-       c Slabs Ajacent to Ventilation Penetration Side
1052-       f22:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1053-       fs22 1201 -2026 2027
1054-            2016 2017 2018 2019 2020
1055-            2021 2022 2023 2024 2025
1056-            2028 2029 2030 2031 2032
1057-            2033 2034 2035
1058-       sd22 1e50 1e50 1e50
1059-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1060-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1061-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1062-            4.35376e5 4.35376e5 4.35376e5 1e50
1063-       c ===========================================================================
```

```
1064-       c ===================================================================
1065-       c Dose Rate on Vent Side Wall 7ft up avg
1066-       f32:p 1201
warning. without bremsstrahlung, flux estimates will be low.
1067-       fs32 1231 -2026 2027 -1227
1068-       sd32 1e50 1e50 1e50 1e50 6.30E+05
1069-       c ===================================================================
1070-       c ===================================================================
1071-       c detectors toward north, with HVAC effects
1072-       f42:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1073-       fs42 1219 -1209 1201 -1205 1206
1074-       sd42 1e50 1e50 1e50 1e50 1e50 3.00e06
1075-            1e50 1e50 1e50 1e50 1e50 3.00e06
1076-            1e50 1e50 1e50 1e50 1e50 3.00e06
1077-            1e50 1e50 1e50 1e50 1e50 3.00e06
1078-            1e50 1e50 1e50 1e50 1e50 3.00e06
1079-            1e50 1e50 1e50 1e50 1e50 3.00e06
1080-            1e50 1e50 1e50 1e50 1e50 3.00e06
1081-            1e50 1e50 1e50 1e50 1e50 3.00e06
1082-            1e50 1e50 1e50 1e50 1e50 3.00e06
1083-            1e50 1e50 1e50 1e50 1e50 3.00e06
1084-            1e50 1e50 1e50 1e50 1e50 3.00e06
1085-       c detectors toward sorth, with no HVAC effects
1086-       f52:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1087-       fs52 1219 -1209 -1201 -1205 1206
1088-       sd52 1e50 1e50 1e50 1e50 1e50 3.00e06
1089-            1e50 1e50 1e50 1e50 1e50 3.00e06
1090-            1e50 1e50 1e50 1e50 1e50 3.00e06
1091-            1e50 1e50 1e50 1e50 1e50 3.00e06
1092-            1e50 1e50 1e50 1e50 1e50 3.00e06
1093-            1e50 1e50 1e50 1e50 1e50 3.00e06
1094-            1e50 1e50 1e50 1e50 1e50 3.00e06
1095-            1e50 1e50 1e50 1e50 1e50 3.00e06
1096-            1e50 1e50 1e50 1e50 1e50 3.00e06
1097-            1e50 1e50 1e50 1e50 1e50 3.00e06
1098-            1e50 1e50 1e50 1e50 1e50 3.00e06
1099-       c ===================================================================
1100-       c ===================================================================
1101-       c Detector above the HICS (used as a source check)
1102-       f62:p 1219
warning. without bremsstrahlung, flux estimates will be low.
1103-       fs62 -1205 1206 1203 -1202
1104-       sd62  1e50 1e50 1e50  1e50 5.30E+06
1105-       c ===================================================================
1106-       c ===================================================================
1107-       c Photon Flux to Dose Rate Conversion Factors
1108-       de0 0.01 0.03 0.05 0.07 0.10 0.15 0.20
1109-            0.25 0.30 0.35 0.40 0.45 0.50 0.55
1110-            0.60 0.65 0.70 0.80 1.00 1.40 1.80
1111-            2.20 2.60 2.80 3.25 3.75 4.25 4.75
1112-            5.00 5.25 5.75 6.25 6.75 7.50 9.00
1113-            11.0 13.0 15.0
1114-       df0 LIN 3.96E-06 5.82E-07 2.90E-07 2.58E-07 2.83E-07 3.79E-07 5.01E-07
1115-            6.31e-07 7.59E-07 8.78E-07 9.85E-07 1.08E-06 1.17E-06 1.27E-06
1116-            1.36e-06 1.44E-06 1.52E-06 1.68E-06 1.98E-06 2.51E-06 2.99E-06
1117-            3.42e-06 3.82E-06 4.01E-06 4.41E-06 4.83E-06 5.23E-06 5.60E-06
1118-            5.80e-06 6.01E-06 6.37E-06 6.74E-06 7.11E-06 7.66E-06 8.77E-06
1119-            1.03e-05 1.18E-05 1.33E-05
1120-       nps 20000000

warning. zero photon   importance within non-void cell 1200.

warning. zero photon   importance within non-void cell 1201.

warning. zero photon   importance within non-void cell 1202.

warning. zero photon   importance within non-void cell12021.

warning. zero photon   importance within non-void cell 1203.

warning. zero photon   importance within non-void cell 1204.

warning. zero photon   importance within non-void cell12041.

warning. zero photon   importance within non-void cell 1205.
```

```
 warning. zero photon   importance within non-void cell 1206.

 warning. zero photon   importance within non-void cell12061.

 warning. zero photon   importance within non-void cell 1207.

 warning. zero photon   importance within non-void cell 1208.

 warning. zero photon   importance within non-void cell12081.

 warning. zero photon   importance within non-void cell 1210.

 warning. zero photon   importance within non-void cell 1211.

 warning. zero photon   importance within non-void cell12111.

 warning. zero photon   importance within non-void cell 9995.

 warning. zero photon   importance within non-void cell 9994.

 warning. zero photon   importance within non-void cell 9993.

 warning. zero photon   importance within non-void cell 9992.

 warning. zero photon   importance within non-void cell 9991.

 warning. zero photon   importance within non-void cell 9990.

 warning. zero photon   importance within non-void cell 9989.

 warning. zero photon   importance within non-void cell 9986.

 warning. zero photon   importance within non-void cell10000.

 warning. zero photon   importance within non-void cell10001.

 warning. zero photon   importance within non-void cell10002.

 warning. zero photon   importance within non-void cell10003.

 warning. zero photon   importance within non-void cell10004.

 warning. zero photon   importance within non-void cell10005.

 warning.   2 materials had unnormalized fractions. print table 40.

 warning.   1 of the materials appear at more than one density.

 warning. sum of segment sizes differs from total in  25 cases.
1cells                                                                                                  print table
    60

                    atom        gram                                          photon
       cell  mat    density     density     volume        mass      pieces importance

     1    11    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     2    12    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     3    13    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     4    14    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     5    15    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     6    16    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     7    17    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     8    18    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     9    19    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    10    21    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    11    22    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    12    23    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    13    24    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    14    25    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    15    26    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    16    27    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    17    28    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    18    29    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    19    31    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    20    32    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    21    33    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    22    34    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    23    35    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
```

24	36	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
25	37	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
26	38	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
27	39	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
28	41	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
29	42	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
30	43	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
31	44	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
32	45	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
33	46	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
34	47	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
35	48	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
36	49	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
37	51	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
38	52	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
39	53	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
40	54	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
41	55	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
42	56	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
43	57	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
44	58	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
45	59	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
46	61	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
47	62	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
48	63	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
49	64	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
50	65	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
51	66	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
52	67	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
53	68	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
54	69	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
55	71	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
56	72	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
57	73	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
58	74	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
59	75	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
60	76	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
61	77	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
62	78	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
63	79	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
64	81	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
65	82	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
66	83	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
67	84	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
68	85	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
69	86	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
70	87	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
71	88	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
72	89	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
73	91	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
74	92	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
75	93	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
76	94	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
77	95	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
78	96	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
79	97	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
80	98	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
81	99	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
82	101	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
83	102	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
84	103	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
85	104	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
86	105	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
87	106	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
88	107	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
89	108	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
90	109	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
91	111	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
92	112	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
93	113	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
94	114	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
95	115	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
96	116	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
97	117	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
98	118	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
99	119	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
100	121	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
101	122	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

102	123	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
103	124	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
104	125	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
105	126	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
106	127	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
107	128	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
108	129	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
109	131	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
110	132	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
111	133	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
112	134	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
113	135	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
114	136	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
115	137	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
116	138	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
117	139	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
118	141	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
119	142	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
120	143	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
121	144	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
122	145	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
123	146	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
124	147	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
125	148	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
126	149	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
127	211	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
128	212	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
129	213	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
130	214	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
131	215	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
132	216	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
133	217	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
134	218	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
135	219	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
136	221	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
137	222	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
138	223	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
139	224	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
140	225	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
141	226	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
142	227	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
143	228	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
144	229	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
145	231	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
146	232	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
147	233	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
148	234	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
149	235	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
150	236	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
151	237	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
152	238	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
153	239	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
154	241	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
155	242	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
156	243	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
157	244	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
158	245	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
159	246	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
160	247	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
161	248	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
162	249	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
163	251	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
164	252	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
165	253	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
166	254	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
167	255	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
168	256	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
169	257	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
170	258	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
171	259	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
172	261	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
173	262	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
174	263	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
175	264	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
176	265	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
177	266	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
178	267	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
179	268	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00

180	269	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
181	271	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
182	272	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
183	273	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
184	274	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
185	275	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
186	276	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
187	277	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
188	278	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
189	279	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
190	281	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
191	282	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
192	283	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
193	284	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
194	285	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
195	286	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
196	287	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
197	288	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
198	289	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
199	291	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
200	292	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
201	293	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
202	294	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
203	295	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
204	296	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
205	297	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
206	298	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
207	299	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
208	301	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
209	302	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
210	303	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
211	304	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
212	305	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
213	306	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
214	307	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
215	308	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
216	309	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
217	311	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
218	312	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
219	313	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
220	314	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
221	315	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
222	316	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
223	317	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
224	318	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
225	319	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
226	321	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
227	322	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
228	323	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
229	324	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
230	325	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
231	326	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
232	327	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
233	328	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
234	329	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
235	331	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
236	332	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
237	333	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
238	334	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
239	335	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
240	336	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
241	337	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
242	338	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
243	339	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
244	341	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
245	342	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
246	343	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
247	344	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
248	345	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
249	346	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
250	347	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
251	348	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
252	349	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
253	411	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
254	412	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
255	413	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
256	414	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
257	415	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00

258	416	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
259	417	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
260	418	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
261	419	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
262	421	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
263	422	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
264	423	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
265	424	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
266	425	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
267	426	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
268	427	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
269	428	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
270	429	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
271	431	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
272	432	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
273	433	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
274	434	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
275	435	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
276	436	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
277	437	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
278	438	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
279	439	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
280	441	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
281	442	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
282	443	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
283	444	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
284	445	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
285	446	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
286	447	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
287	448	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
288	449	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
289	451	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
290	452	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
291	453	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
292	454	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
293	455	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
294	456	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
295	457	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
296	458	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
297	459	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
298	461	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
299	462	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
300	463	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
301	464	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
302	465	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
303	466	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
304	467	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
305	468	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
306	469	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
307	471	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
308	472	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
309	473	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
310	474	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
311	475	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
312	476	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
313	477	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
314	478	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
315	479	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
316	481	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
317	482	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
318	483	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
319	484	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
320	485	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
321	486	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
322	487	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
323	488	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
324	489	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
325	491	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
326	492	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
327	493	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
328	494	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
329	495	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
330	496	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
331	497	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
332	498	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
333	499	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
334	501	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
335	502	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00

336	503	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
337	504	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
338	505	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
339	506	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
340	507	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
341	508	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
342	509	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
343	511	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
344	512	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
345	513	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
346	514	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
347	515	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
348	516	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
349	517	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
350	518	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
351	519	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
352	521	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
353	522	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
354	523	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
355	524	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
356	525	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
357	526	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
358	527	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
359	528	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
360	529	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
361	531	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
362	532	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
363	533	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
364	534	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
365	535	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
366	536	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
367	537	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
368	538	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
369	539	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
370	541	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
371	542	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
372	543	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
373	544	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
374	545	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
375	546	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
376	547	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
377	548	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
378	549	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
379	1200	3	5.11393E-05	1.22500E-03	3.46881E+06	4.24930E+03	0	0.0000E+00
380	1201	1	7.34055E-02	2.36500E+00	1.40947E+08	3.33340E+08	0	0.0000E+00
381	1202	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
382	12021	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
383	1203	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	0.0000E+00
384	1204	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	0.0000E+00
385	12041	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	0.0000E+00
386	1205	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	0.0000E+00
387	1206	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
388	12061	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
389	1207	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	0.0000E+00
390	1208	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	0.0000E+00
391	12081	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	0.0000E+00
392	1210	1	7.34055E-02	2.36500E+00	6.18900E+08	1.46370E+09	0	0.0000E+00
393	1211	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	0.0000E+00
394	12111	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	0.0000E+00
395	4236	1	7.34055E-02	2.36500E+00	5.09815E+06	1.20571E+07	0	2.0000E+00
396	4237	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	4.0000E+00
397	4238	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	8.0000E+00
398	4239	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.6000E+01
399	4240	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	3.2000E+01
400	4241	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	6.4000E+01
401	4242	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.2800E+02
402	4243	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	2.5600E+02
403	4244	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	5.1200E+02
404	4245	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.0240E+03
405	4246	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	2.0480E+03
406	4247	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	4.0960E+03
407	4248	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	8.1920E+03
408	4249	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.6384E+04
409	4250	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	3.2768E+04
410	4251	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	6.5536E+04
411	9999	0	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0	0.0000E+00
412	9998	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
413	9997	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00

414	9996	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
415	9995	3	5.11393E-05	1.22500E-03	1.12984E+09	1.38406E+06	0	0.0000E+00
416	9994	3	5.11393E-05	1.22500E-03	2.40306E+09	2.94375E+06	0	0.0000E+00
417	9993	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	0.0000E+00
418	9992	3	5.11393E-05	1.22500E-03	1.06018E+09	1.29872E+06	0	0.0000E+00
419	9991	1	7.34055E-02	2.36500E+00	2.71842E+07	6.42906E+07	0	0.0000E+00
420	9990	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	0.0000E+00
421	9989	3	5.11393E-05	1.22500E-03	8.09132E+08	9.91186E+05	0	0.0000E+00
422	9988	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	6.5536E+04
423	9987	0	0.00000E+00	0.00000E+00	3.61826E+15	0.00000E+00	1	0.0000E+00
424	9986	3	5.11393E-05	1.22500E-03	6.89441E+11	8.44566E+08	1	0.0000E+00
425	10000	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
426	10001	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
427	10002	3	5.11393E-05	1.22500E-03	4.42451E+05	5.42002E+02	0	0.0000E+00
428	10003	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
429	10004	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
430	10005	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
431	2001	3	5.11393E-05	1.22500E-03	8.81574E+10	1.07993E+08	1	6.5536E+04
432	2002	3	5.11393E-05	1.22500E-03	5.84709E+11	7.16269E+08	1	6.5536E+04
433	2003	3	5.11393E-05	1.22500E-03	1.37659E+12	1.68633E+09	1	6.5536E+04
434	2004	3	5.11393E-05	1.22500E-03	4.97560E+12	6.09511E+09	1	6.5536E+04
435	2005	3	5.11393E-05	1.22500E-03	9.68856E+12	1.18685E+10	1	6.5536E+04
436	2006	3	5.11393E-05	1.22500E-03	1.59723E+13	1.95661E+10	1	6.5536E+04
437	2007	3	5.11393E-05	1.22500E-03	2.38269E+13	2.91879E+10	1	6.5536E+04
438	2008	3	5.11393E-05	1.22500E-03	5.39037E+13	6.60320E+10	1	6.5536E+04
439	2009	3	5.11393E-05	1.22500E-03	8.04121E+13	9.85049E+10	1	6.5536E+04
440	2010	3	5.11393E-05	1.22500E-03	1.57615E+14	1.93078E+11	1	6.5536E+04
441	2011	3	5.11393E-05	1.22500E-03	2.26732E+14	2.77747E+11	1	6.5536E+04
442	2012	3	5.11393E-05	1.22500E-03	3.08416E+14	3.77809E+11	1	6.5536E+04
443	2013	3	5.11393E-05	1.22500E-03	4.02666E+14	4.93265E+11	1	6.5536E+04
444	2014	3	5.11393E-05	1.22500E-03	5.09482E+14	6.24115E+11	1	6.5536E+04
445	2015	3	5.11393E-05	1.22500E-03	1.82349E+15	2.23378E+12	1	6.5536E+04
total					7.23819E+15	4.44056E+12		

minimum source weight = 3.0450E+15 maximum source weight = 3.0450E+15

```
************************************************
* Random Number Generator  =                  1 *
* Random Number Seed       =       19073486328125 *
* Random Number Multiplier =       19073486328125 *
* Random Number Adder      =                  0 *
* Random Number Bits Used  =                 48 *
* Random Number Stride     =             152917 *
************************************************


       42 warning messages so far.
1cross-section tables                                                                                print table
    100

     table    length

                        tables from file mcplib04

   1000.04p    1898  ENDF/B-VI Release 8 Photoatomic Data for 1-H                                    mat 100
    02/07/03
   6000.04p    3152  ENDF/B-VI Release 8 Photoatomic Data for 6-C                                    mat 600
    02/07/03
   7000.04p    3194  ENDF/B-VI Release 8 Photoatomic Data for 7-N                                    mat 700
    02/07/03
   8000.04p    3272  ENDF/B-VI Release 8 Photoatomic Data for 8-O                                    mat 800
    02/07/03
  11000.04p    3995  ENDF/B-VI Release 8 Photoatomic Data for 11-NA                                  mat1100
    02/07/03
  12000.04p    3781  ENDF/B-VI Release 8 Photoatomic Data for 12-MG                                  mat1200
    02/07/03
  13000.04p    4846  ENDF/B-VI Release 8 Photoatomic Data for 13-AL                                  mat1300
    02/07/03
  14000.04p    4792  ENDF/B-VI Release 8 Photoatomic Data for 14-SI                                  mat1400
    02/07/03
  15000.04p    4498  ENDF/B-VI Release 8 Photoatomic Data for 15-P                                   mat1500
    02/07/03
  16000.04p    4654  ENDF/B-VI Release 8 Photoatomic Data for 16-S                                   mat1600
    02/07/03
  19000.04p    5047  ENDF/B-VI Release 8 Photoatomic Data for 19-K                                   mat1900
    02/07/03
```

```
 20000.04p    5013  ENDF/B-VI Release 8 Photoatomic Data for 20-CA                                  mat2000
   02/07/03
 22000.04p    5742  ENDF/B-VI Release 8 Photoatomic Data for 22-TI                                  mat2200
   02/07/03
 25000.04p    5598  ENDF/B-VI Release 8 Photoatomic Data for 25-MN                                  mat2500
   02/07/03
 26000.04p    5718  ENDF/B-VI Release 8 Photoatomic Data for 26-FE                                  mat2600
   02/07/03

 total       65200

 warning. simple physics turned on for photons > 100 mev.

    ************************************************************************************************************
    *******
 dump no.    1 on file runtpe       nps =           0     coll =              0     ctm =        0.00   nrn =
    0


        43 warning messages so far.

    ************************************************************************************************************
    *******
 dump no.    2 on file runtpe       nps =     6503241     coll =      112088560     ctm =       60.01   nrn =
    6907736026



    ************************************************************************************************************
    *******
 dump no.    3 on file runtpe       nps =    12976014     coll =      223964710     ctm =      120.02   nrn =
    13788508361



    ************************************************************************************************************
    *******
 dump no.    4 on file runtpe       nps =    19451137     coll =      335473155     ctm =      180.02   nrn =
    20668093066

1problem summary

      run terminated when    20000000  particle histories were done.
+                                                                                                  03/24/09
    11:55:12
      c     Created on: Tuesday, November 11, 2008 at 09:35                              probid =  03/24/09
    08:48:55
0
 photon creation     tracks      weight        energy           photon loss         tracks      weight
    energy
                                (per source particle)                                          (per source
    particle)

 source            20000000    3.0450E+15    1.2527E+00          escape             4947766    5.7873E+14
    1.0334E-01
                                                                  energy cutoff            0    0.            0.
                                                                  time cutoff              0    0.            0.
 weight window            0    0.            0.                  weight window            0    0.            0.
 cell importance   16442876    2.4279E+13    1.3842E-03          cell importance    4361327    2.4248E+13
    1.3847E-03
 weight cutoff            0    0.            0.                  weight cutoff            0    0.            0.
 e or t importance        0    0.            0.                  e or t importance        0    0.            0.
 dxtran                   0    0.            0.                  dxtran                   0    0.            0.
 forced collisions        0    0.            0.                  forced collisions        0    0.            0.
 exp. transform           0    0.            0.                  exp. transform           0    0.            0.
 from neutrons            0    0.            0.                  compton scatter          0    0.
    1.1096E+00
 bremsstrahlung           0    0.            0.                  capture           29262102    2.4778E+15
    3.9750E-02
 p-annihilation       17294    2.2095E+12    3.7080E-04          pair production       8647    1.1048E+12
    4.7446E-04
 photonuclear             0    0.            0.                  photonuclear abs         0    0.            0.
 electron x-rays          0    0.            0.
 1st fluorescence   2119672    1.0366E+13    1.8225E-05
 2nd fluorescence         0    0.            0.
```

```
   total         38579842    3.0819E+15    1.2545E+00              total         38579842    3.0819E+15
  1.2545E+00

  number of photons banked                 16451393        average time of (shakes)              cutoffs
  photon tracks per source particle      1.9290E+00          escape            1.4504E+00          tco   1.0000E+33
  photon collisions per source particle  1.7249E+01          capture           5.1337E-01          eco   1.0000E-03
  total photon collisions                 344973773          capture or escape 6.9079E-01          wc1  -5.0000E-01
                                                             any termination   6.9464E-01          wc2  -2.5000E-01

computer time so far in this run   185.18 minutes           maximum number ever in bank        18
computer time in mcrun             185.10 minutes           bank overflows to backup file       0
source particles per minute            1.0805E+05
random numbers generated              21251626523           most random numbers used was      116128 in history
   6978154

range of sampled source weights = 3.0450E+15 to 3.0450E+15

source efficiency = 0.0036  in cell    11

source efficiency = 0.0036  in cell    12

source efficiency = 0.0036  in cell    13

source efficiency = 0.0036  in cell    14

source efficiency = 0.0036  in cell    15

source efficiency = 0.0036  in cell    16

source efficiency = 0.0036  in cell    17

source efficiency = 0.0036  in cell    18

source efficiency = 0.0036  in cell    19

source efficiency = 0.0035  in cell    21

source efficiency = 0.0035  in cell    22

source efficiency = 0.0036  in cell    23

source efficiency = 0.0036  in cell    24

source efficiency = 0.0036  in cell    25

source efficiency = 0.0036  in cell    26

source efficiency = 0.0036  in cell    27

source efficiency = 0.0036  in cell    28

source efficiency = 0.0036  in cell    29

source efficiency = 0.0035  in cell    31

source efficiency = 0.0036  in cell    32

source efficiency = 0.0036  in cell    33

source efficiency = 0.0036  in cell    34

source efficiency = 0.0036  in cell    35

source efficiency = 0.0036  in cell    36

source efficiency = 0.0036  in cell    37

source efficiency = 0.0036  in cell    38

source efficiency = 0.0036  in cell    39

source efficiency = 0.0036  in cell    41

source efficiency = 0.0036  in cell    42

source efficiency = 0.0036  in cell    43

source efficiency = 0.0036  in cell    44
```

```
source efficiency = 0.0036  in cell    45
source efficiency = 0.0035  in cell    46
source efficiency = 0.0036  in cell    47
source efficiency = 0.0036  in cell    48
source efficiency = 0.0036  in cell    49
source efficiency = 0.0036  in cell    51
source efficiency = 0.0036  in cell    52
source efficiency = 0.0036  in cell    53
source efficiency = 0.0036  in cell    54
source efficiency = 0.0036  in cell    55
source efficiency = 0.0036  in cell    56
source efficiency = 0.0036  in cell    57
source efficiency = 0.0036  in cell    58
source efficiency = 0.0036  in cell    59
source efficiency = 0.0036  in cell    61
source efficiency = 0.0036  in cell    62
source efficiency = 0.0036  in cell    63
source efficiency = 0.0036  in cell    64
source efficiency = 0.0036  in cell    65
source efficiency = 0.0036  in cell    66
source efficiency = 0.0036  in cell    67
source efficiency = 0.0035  in cell    68
source efficiency = 0.0035  in cell    69
source efficiency = 0.0036  in cell    71
source efficiency = 0.0036  in cell    72
source efficiency = 0.0036  in cell    73
source efficiency = 0.0036  in cell    74
source efficiency = 0.0036  in cell    75
source efficiency = 0.0036  in cell    76
source efficiency = 0.0036  in cell    77
source efficiency = 0.0036  in cell    78
source efficiency = 0.0035  in cell    79
source efficiency = 0.0036  in cell    81
source efficiency = 0.0035  in cell    82
source efficiency = 0.0036  in cell    83
source efficiency = 0.0036  in cell    84
source efficiency = 0.0035  in cell    85
source efficiency = 0.0036  in cell    86
source efficiency = 0.0036  in cell    87
```

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source efficiency = 0.0036  in cell    88
source efficiency = 0.0036  in cell    89
source efficiency = 0.0036  in cell    91
source efficiency = 0.0036  in cell    92
source efficiency = 0.0035  in cell    93
source efficiency = 0.0036  in cell    94
source efficiency = 0.0036  in cell    95
source efficiency = 0.0036  in cell    96
source efficiency = 0.0035  in cell    97
source efficiency = 0.0036  in cell    98
source efficiency = 0.0036  in cell    99
source efficiency = 0.0035  in cell   101
source efficiency = 0.0036  in cell   102
source efficiency = 0.0036  in cell   103
source efficiency = 0.0036  in cell   104
source efficiency = 0.0036  in cell   105
source efficiency = 0.0036  in cell   106
source efficiency = 0.0036  in cell   107
source efficiency = 0.0035  in cell   108
source efficiency = 0.0036  in cell   109
source efficiency = 0.0035  in cell   111
source efficiency = 0.0036  in cell   112
source efficiency = 0.0036  in cell   113
source efficiency = 0.0036  in cell   114
source efficiency = 0.0036  in cell   115
source efficiency = 0.0036  in cell   116
source efficiency = 0.0036  in cell   117
source efficiency = 0.0036  in cell   118
source efficiency = 0.0036  in cell   119
source efficiency = 0.0036  in cell   121
source efficiency = 0.0036  in cell   122
source efficiency = 0.0036  in cell   123
source efficiency = 0.0036  in cell   124
source efficiency = 0.0036  in cell   125
source efficiency = 0.0035  in cell   126
source efficiency = 0.0036  in cell   127
source efficiency = 0.0036  in cell   128
source efficiency = 0.0035  in cell   129
source efficiency = 0.0035  in cell   131
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source efficiency = 0.0036 in cell 132

source efficiency = 0.0036 in cell 133

source efficiency = 0.0036 in cell 134

source efficiency = 0.0036 in cell 135

source efficiency = 0.0036 in cell 136

source efficiency = 0.0036 in cell 137

source efficiency = 0.0035 in cell 138

source efficiency = 0.0036 in cell 139

source efficiency = 0.0036 in cell 141

source efficiency = 0.0036 in cell 142

source efficiency = 0.0035 in cell 143

source efficiency = 0.0036 in cell 144

source efficiency = 0.0036 in cell 145

source efficiency = 0.0035 in cell 146

source efficiency = 0.0035 in cell 147

source efficiency = 0.0036 in cell 148

source efficiency = 0.0035 in cell 149

warning. importance function may be poor. see print table 120.

1photon activity in each cell print table 126

	cell	tracks entering	population	collisions	collisions * weight (per history)	number weighted energy	flux weighted energy	average track weight (relative)	average track mfp (cm)
1	11	187184	182759	1811276	2.7577E+14	4.3488E-01	4.3488E-01	3.0450E+15	8.7837E+00
2	12	200061	193916	1897129	2.8884E+14	4.2968E-01	4.2968E-01	3.0450E+15	8.7332E+00
3	13	202286	195958	1908786	2.9061E+14	4.3108E-01	4.3108E-01	3.0450E+15	8.7461E+00
4	14	201666	195378	1907968	2.9049E+14	4.3034E-01	4.3034E-01	3.0450E+15	8.7382E+00
5	15	200932	194704	1900038	2.8928E+14	4.3139E-01	4.3139E-01	3.0450E+15	8.7505E+00
6	16	201314	195160	1905547	2.9012E+14	4.3025E-01	4.3025E-01	3.0450E+15	8.7401E+00
7	17	201202	195100	1911701	2.9106E+14	4.3035E-01	4.3035E-01	3.0450E+15	8.7388E+00
8	18	199615	193476	1892811	2.8818E+14	4.3152E-01	4.3152E-01	3.0450E+15	8.7498E+00
9	19	183628	179816	1778712	2.7081E+14	4.3850E-01	4.3850E-01	3.0450E+15	8.8166E+00
10	21	204474	197482	1917313	2.9191E+14	4.2822E-01	4.2822E-01	3.0450E+15	8.7204E+00
11	22	223711	214079	2056061	3.1304E+14	4.2010E-01	4.2010E-01	3.0450E+15	8.6417E+00
12	23	226832	216902	2076937	3.1621E+14	4.1993E-01	4.1993E-01	3.0450E+15	8.6408E+00
13	24	226702	216915	2077196	3.1625E+14	4.1868E-01	4.1868E-01	3.0450E+15	8.6289E+00
14	25	226972	217036	2081457	3.1690E+14	4.1837E-01	4.1837E-01	3.0450E+15	8.6255E+00
15	26	226629	216840	2084289	3.1733E+14	4.1853E-01	4.1853E-01	3.0450E+15	8.6264E+00
16	27	225569	215757	2068953	3.1500E+14	4.1989E-01	4.1989E-01	3.0450E+15	8.6393E+00
17	28	223450	213807	2058596	3.1342E+14	4.2054E-01	4.2054E-01	3.0450E+15	8.6462E+00
18	29	198835	192741	1885408	2.8705E+14	4.3183E-01	4.3183E-01	3.0450E+15	8.7538E+00
19	31	205645	198593	1926205	2.9326E+14	4.2641E-01	4.2641E-01	3.0450E+15	8.7027E+00
20	32	226245	216394	2069481	3.1508E+14	4.1886E-01	4.1886E-01	3.0450E+15	8.6313E+00
21	33	227557	217515	2081463	3.1690E+14	4.1903E-01	4.1903E-01	3.0450E+15	8.6303E+00
22	34	227853	217684	2079769	3.1664E+14	4.1882E-01	4.1882E-01	3.0450E+15	8.6289E+00
23	35	228712	218702	2091149	3.1838E+14	4.1795E-01	4.1795E-01	3.0450E+15	8.6211E+00
24	36	229046	219114	2097739	3.1938E+14	4.1799E-01	4.1799E-01	3.0450E+15	8.6223E+00
25	37	227730	217694	2081591	3.1692E+14	4.1889E-01	4.1889E-01	3.0450E+15	8.6302E+00
26	38	225432	215736	2070276	3.1520E+14	4.1974E-01	4.1974E-01	3.0450E+15	8.6388E+00
27	39	200432	194524	1906187	2.9022E+14	4.3040E-01	4.3040E-01	3.0450E+15	8.7402E+00
28	41	206204	199187	1934352	2.9451E+14	4.2722E-01	4.2722E-01	3.0450E+15	8.7090E+00
29	42	226812	216945	2074455	3.1584E+14	4.1864E-01	4.1864E-01	3.0450E+15	8.6295E+00
30	43	228094	218166	2087460	3.1782E+14	4.1797E-01	4.1797E-01	3.0450E+15	8.6217E+00
31	44	228819	218804	2097199	3.1930E+14	4.1701E-01	4.1701E-01	3.0450E+15	8.6139E+00
32	45	227970	218035	2083881	3.1727E+14	4.1798E-01	4.1798E-01	3.0450E+15	8.6221E+00
33	46	228186	218245	2083345	3.1719E+14	4.1819E-01	4.1819E-01	3.0450E+15	8.6236E+00
34	47	228239	218255	2086201	3.1762E+14	4.1851E-01	4.1851E-01	3.0450E+15	8.6272E+00
35	48	226232	216189	2076691	3.1618E+14	4.1853E-01	4.1853E-01	3.0450E+15	8.6289E+00

36	49	200510	194352	1896714	2.8877E+14	4.3006E-01	4.3006E-01	3.0450E+15	8.7384E+00
37	51	206267	199210	1931787	2.9411E+14	4.2643E-01	4.2643E-01	3.0450E+15	8.7014E+00
38	52	227137	217084	2078203	3.1641E+14	4.1956E-01	4.1956E-01	3.0450E+15	8.6366E+00
39	53	227374	217528	2078660	3.1648E+14	4.1840E-01	4.1840E-01	3.0450E+15	8.6250E+00
40	54	228587	218728	2093441	3.1873E+14	4.1790E-01	4.1790E-01	3.0450E+15	8.6203E+00
41	55	227680	217901	2088606	3.1799E+14	4.1759E-01	4.1759E-01	3.0450E+15	8.6183E+00
42	56	228347	218375	2088662	3.1800E+14	4.1809E-01	4.1809E-01	3.0450E+15	8.6227E+00
43	57	227981	218174	2085464	3.1751E+14	4.1843E-01	4.1843E-01	3.0450E+15	8.6259E+00
44	58	226174	216171	2068414	3.1492E+14	4.2038E-01	4.2038E-01	3.0450E+15	8.6450E+00
45	59	200964	194878	1906247	2.9023E+14	4.3045E-01	4.3045E-01	3.0450E+15	8.7407E+00
46	61	207211	200079	1937916	2.9505E+14	4.2744E-01	4.2744E-01	3.0450E+15	8.7112E+00
47	62	227406	217575	2082371	3.1704E+14	4.1896E-01	4.1896E-01	3.0450E+15	8.6325E+00
48	63	227245	217417	2080869	3.1681E+14	4.1819E-01	4.1819E-01	3.0450E+15	8.6239E+00
49	64	228781	218986	2095606	3.1906E+14	4.1767E-01	4.1767E-01	3.0450E+15	8.6186E+00
50	65	227952	217988	2079898	3.1666E+14	4.1803E-01	4.1803E-01	3.0450E+15	8.6230E+00
51	66	228363	218523	2087705	3.1785E+14	4.1890E-01	4.1890E-01	3.0450E+15	8.6303E+00
52	67	228077	218023	2083254	3.1718E+14	4.1883E-01	4.1883E-01	3.0450E+15	8.6301E+00
53	68	225788	216046	2068918	3.1499E+14	4.1976E-01	4.1976E-01	3.0450E+15	8.6390E+00
54	69	200449	194180	1895666	2.8862E+14	4.3059E-01	4.3059E-01	3.0450E+15	8.7412E+00
55	71	206288	199166	1932754	2.9426E+14	4.2713E-01	4.2713E-01	3.0450E+15	8.7080E+00
56	72	226556	216564	2072066	3.1547E+14	4.1873E-01	4.1873E-01	3.0450E+15	8.6282E+00
57	73	228227	218323	2085276	3.1748E+14	4.1865E-01	4.1865E-01	3.0450E+15	8.6285E+00
58	74	228928	219068	2094313	3.1886E+14	4.1826E-01	4.1826E-01	3.0450E+15	8.6253E+00
59	75	228376	218349	2089735	3.1816E+14	4.1735E-01	4.1735E-01	3.0450E+15	8.6156E+00
60	76	228211	218178	2090367	3.1826E+14	4.1824E-01	4.1824E-01	3.0450E+15	8.6237E+00
61	77	227616	217860	2084055	3.1730E+14	4.1781E-01	4.1781E-01	3.0450E+15	8.6201E+00
62	78	225185	215404	2066682	3.1465E+14	4.1994E-01	4.1994E-01	3.0450E+15	8.6397E+00
63	79	200426	194359	1898091	2.8898E+14	4.3117E-01	4.3117E-01	3.0450E+15	8.7473E+00
64	81	206201	199148	1936233	2.9479E+14	4.2606E-01	4.2606E-01	3.0450E+15	8.6988E+00
65	82	226624	216701	2070780	3.1528E+14	4.1852E-01	4.1852E-01	3.0450E+15	8.6287E+00
66	83	228094	218000	2084626	3.1738E+14	4.1751E-01	4.1751E-01	3.0450E+15	8.6178E+00
67	84	227490	217562	2076738	3.1618E+14	4.1802E-01	4.1802E-01	3.0450E+15	8.6236E+00
68	85	228999	218869	2092767	3.1862E+14	4.1786E-01	4.1786E-01	3.0450E+15	8.6208E+00
69	86	228484	218683	2093714	3.1877E+14	4.1800E-01	4.1800E-01	3.0450E+15	8.6216E+00
70	87	227746	218062	2088195	3.1793E+14	4.1738E-01	4.1738E-01	3.0450E+15	8.6150E+00
71	88	226455	216580	2082449	3.1705E+14	4.1903E-01	4.1903E-01	3.0450E+15	8.6314E+00
72	89	200593	194320	1899926	2.8926E+14	4.3042E-01	4.3042E-01	3.0450E+15	8.7409E+00
73	91	206355	199312	1932251	2.9419E+14	4.2657E-01	4.2657E-01	3.0450E+15	8.7035E+00
74	92	227311	217450	2078306	3.1642E+14	4.1860E-01	4.1860E-01	3.0450E+15	8.6271E+00
75	93	228566	218710	2089842	3.1818E+14	4.1801E-01	4.1801E-01	3.0450E+15	8.6220E+00
76	94	227884	217944	2081826	3.1696E+14	4.1803E-01	4.1803E-01	3.0450E+15	8.6227E+00
77	95	228469	218515	2086225	3.1763E+14	4.1886E-01	4.1886E-01	3.0450E+15	8.6298E+00
78	96	228945	218718	2087139	3.1777E+14	4.1820E-01	4.1820E-01	3.0450E+15	8.6234E+00
79	97	228492	218457	2088985	3.1805E+14	4.1909E-01	4.1909E-01	3.0450E+15	8.6324E+00
80	98	225078	215211	2063858	3.1422E+14	4.1952E-01	4.1952E-01	3.0450E+15	8.6365E+00
81	99	200609	194352	1899372	2.8918E+14	4.3100E-01	4.3100E-01	3.0450E+15	8.7445E+00
82	101	207070	199898	1945372	2.9618E+14	4.2652E-01	4.2652E-01	3.0450E+15	8.7040E+00
83	102	226321	216371	2065691	3.1450E+14	4.1875E-01	4.1875E-01	3.0450E+15	8.6289E+00
84	103	229146	219236	2091780	3.1847E+14	4.1814E-01	4.1814E-01	3.0450E+15	8.6236E+00
85	104	228382	218419	2085509	3.1752E+14	4.1815E-01	4.1815E-01	3.0450E+15	8.6233E+00
86	105	228596	218500	2087491	3.1782E+14	4.1780E-01	4.1780E-01	3.0450E+15	8.6199E+00
87	106	228684	218609	2086784	3.1771E+14	4.1871E-01	4.1871E-01	3.0450E+15	8.6292E+00
88	107	227355	217480	2080104	3.1670E+14	4.1852E-01	4.1852E-01	3.0450E+15	8.6262E+00
89	108	226284	216492	2075378	3.1598E+14	4.1888E-01	4.1888E-01	3.0450E+15	8.6301E+00
90	109	200908	194719	1897077	2.8883E+14	4.3125E-01	4.3125E-01	3.0450E+15	8.7489E+00
91	111	206600	199493	1936693	2.9486E+14	4.2608E-01	4.2608E-01	3.0450E+15	8.6984E+00
92	112	226722	216821	2075194	3.1595E+14	4.1913E-01	4.1913E-01	3.0450E+15	8.6330E+00
93	113	228411	218306	2080836	3.1681E+14	4.1883E-01	4.1883E-01	3.0450E+15	8.6300E+00
94	114	229491	219396	2093878	3.1879E+14	4.1818E-01	4.1818E-01	3.0450E+15	8.6224E+00
95	115	227933	217855	2084119	3.1731E+14	4.1795E-01	4.1795E-01	3.0450E+15	8.6211E+00
96	116	227485	217601	2082468	3.1706E+14	4.1752E-01	4.1752E-01	3.0450E+15	8.6176E+00
97	117	228345	218268	2088403	3.1796E+14	4.1778E-01	4.1778E-01	3.0450E+15	8.6193E+00
98	118	226280	216450	2070287	3.1520E+14	4.1993E-01	4.1993E-01	3.0450E+15	8.6409E+00
99	119	200590	194406	1901256	2.8947E+14	4.2995E-01	4.2995E-01	3.0450E+15	8.7352E+00
100	121	205741	198673	1935274	2.9465E+14	4.2635E-01	4.2635E-01	3.0450E+15	8.7022E+00
101	122	226164	216325	2071371	3.1537E+14	4.1916E-01	4.1916E-01	3.0450E+15	8.6326E+00
102	123	227885	217790	2081860	3.1696E+14	4.1783E-01	4.1783E-01	3.0450E+15	8.6206E+00
103	124	228649	218688	2086731	3.1770E+14	4.1804E-01	4.1804E-01	3.0450E+15	8.6239E+00
104	125	228407	218411	2084235	3.1732E+14	4.1771E-01	4.1771E-01	3.0450E+15	8.6198E+00
105	126	228197	218335	2089945	3.1819E+14	4.1867E-01	4.1867E-01	3.0450E+15	8.6272E+00
106	127	227835	217778	2081517	3.1691E+14	4.1746E-01	4.1746E-01	3.0450E+15	8.6176E+00
107	128	225823	216038	2067966	3.1485E+14	4.1987E-01	4.1987E-01	3.0450E+15	8.6408E+00
108	129	200592	194477	1902956	2.8973E+14	4.3118E-01	4.3118E-01	3.0450E+15	8.7458E+00
109	131	204925	197927	1924047	2.9294E+14	4.2732E-01	4.2732E-01	3.0450E+15	8.7113E+00
110	132	224698	214848	2065839	3.1452E+14	4.1958E-01	4.1958E-01	3.0450E+15	8.6368E+00
111	133	226573	216827	2075929	3.1606E+14	4.1998E-01	4.1998E-01	3.0450E+15	8.6399E+00
112	134	226601	216788	2080693	3.1679E+14	4.1849E-01	4.1849E-01	3.0450E+15	8.6253E+00
113	135	226772	216778	2074222	3.1580E+14	4.1848E-01	4.1848E-01	3.0450E+15	8.6269E+00

114	136	225711	216070	2069843	3.1513E+14	4.1941E-01	4.1941E-01	3.0450E+15	8.6365E+00
115	137	225771	215881	2070947	3.1530E+14	4.1952E-01	4.1952E-01	3.0450E+15	8.6368E+00
116	138	223610	213934	2058838	3.1346E+14	4.1943E-01	4.1943E-01	3.0450E+15	8.6359E+00
117	139	199988	193911	1896141	2.8869E+14	4.3121E-01	4.3121E-01	3.0450E+15	8.7483E+00
118	141	186196	181853	1793393	2.7304E+14	4.3632E-01	4.3632E-01	3.0450E+15	8.7964E+00
119	142	200468	194308	1900962	2.8942E+14	4.3089E-01	4.3089E-01	3.0450E+15	8.7442E+00
120	143	200730	194464	1900317	2.8932E+14	4.3032E-01	4.3032E-01	3.0450E+15	8.7405E+00
121	144	201339	195230	1908969	2.9064E+14	4.3018E-01	4.3018E-01	3.0450E+15	8.7388E+00
122	145	201064	195060	1901231	2.8946E+14	4.3109E-01	4.3109E-01	3.0450E+15	8.7455E+00
123	146	200061	193883	1896722	2.8878E+14	4.2935E-01	4.2935E-01	3.0450E+15	8.7306E+00
124	147	200691	194688	1904600	2.8998E+14	4.3097E-01	4.3097E-01	3.0450E+15	8.7454E+00
125	148	199574	193531	1895335	2.8856E+14	4.3104E-01	4.3104E-01	3.0450E+15	8.7460E+00
126	149	184636	180999	1791873	2.7281E+14	4.3970E-01	4.3970E-01	3.0450E+15	8.8289E+00
127	211	104648	86083	261	3.9737E+10	5.0870E-01	5.0870E-01	3.0450E+15	8.6504E+03
128	212	125787	99193	257	3.9128E+10	4.9602E-01	4.9602E-01	3.0450E+15	8.5252E+03
129	213	128356	101028	281	4.2782E+10	4.9492E-01	4.9492E-01	3.0450E+15	8.5193E+03
130	214	128297	100946	283	4.3087E+10	4.9612E-01	4.9612E-01	3.0450E+15	8.5285E+03
131	215	127537	100305	284	4.3239E+10	4.9527E-01	4.9527E-01	3.0450E+15	8.5197E+03
132	216	127030	100159	294	4.4762E+10	4.9633E-01	4.9633E-01	3.0450E+15	8.5283E+03
133	217	126842	100052	286	4.3544E+10	4.9725E-01	4.9725E-01	3.0450E+15	8.5361E+03
134	218	125743	99044	264	4.0194E+10	4.9869E-01	4.9869E-01	3.0450E+15	8.5495E+03
135	219	99211	83191	221	3.3647E+10	5.3748E-01	5.3748E-01	3.0450E+15	8.8790E+03
136	221	133689	103646	293	4.4609E+10	4.7510E-01	4.7510E-01	3.0450E+15	8.3565E+03
137	222	163868	121947	417	6.3488E+10	4.6182E-01	4.6182E-01	3.0450E+15	8.2318E+03
138	223	167651	124300	389	5.9225E+10	4.5597E-01	4.5597E-01	3.0450E+15	8.1768E+03
139	224	168145	124689	434	6.6076E+10	4.5823E-01	4.5823E-01	3.0450E+15	8.1964E+03
140	225	168064	124515	413	6.2879E+10	4.5757E-01	4.5757E-01	3.0450E+15	8.1893E+03
141	226	167395	124183	405	6.1661E+10	4.5807E-01	4.5807E-01	3.0450E+15	8.1918E+03
142	227	166812	123859	374	5.6942E+10	4.5824E-01	4.5824E-01	3.0450E+15	8.1942E+03
143	228	163205	121389	398	6.0596E+10	4.6293E-01	4.6293E-01	3.0450E+15	8.2371E+03
144	229	124958	98641	295	4.4914E+10	4.9985E-01	4.9985E-01	3.0450E+15	8.5587E+03
145	231	135613	104963	304	4.6284E+10	4.7155E-01	4.7155E-01	3.0450E+15	8.3300E+03
146	232	168020	124351	392	5.9682E+10	4.5659E-01	4.5659E-01	3.0450E+15	8.1854E+03
147	233	170200	125827	451	6.8665E+10	4.5549E-01	4.5549E-01	3.0450E+15	8.1704E+03
148	234	170792	126268	459	6.9883E+10	4.5363E-01	4.5363E-01	3.0450E+15	8.1532E+03
149	235	170834	126504	424	6.4554E+10	4.5487E-01	4.5487E-01	3.0450E+15	8.1653E+03
150	236	171270	126746	405	6.1661E+10	4.5545E-01	4.5545E-01	3.0450E+15	8.1728E+03
151	237	169729	125710	410	6.2422E+10	4.5761E-01	4.5761E-01	3.0450E+15	8.1876E+03
152	238	166035	123397	394	5.9986E+10	4.6002E-01	4.6002E-01	3.0450E+15	8.2117E+03
153	239	125608	99580	270	4.1108E+10	5.0052E-01	5.0052E-01	3.0450E+15	8.5645E+03
154	241	135747	105247	348	5.2983E+10	4.7191E-01	4.7191E-01	3.0450E+15	8.3316E+03
155	242	168695	124969	401	6.1052E+10	4.5312E-01	4.5312E-01	3.0450E+15	8.1532E+03
156	243	170704	126473	429	6.5315E+10	4.5342E-01	4.5342E-01	3.0450E+15	8.1541E+03
157	244	170707	126267	399	6.0748E+10	4.5247E-01	4.5247E-01	3.0450E+15	8.1480E+03
158	245	170596	126451	435	6.6229E+10	4.5180E-01	4.5180E-01	3.0450E+15	8.1413E+03
159	246	171126	126963	429	6.5315E+10	4.5335E-01	4.5335E-01	3.0450E+15	8.1543E+03
160	247	170805	126456	469	7.1405E+10	4.5746E-01	4.5746E-01	3.0450E+15	8.1855E+03
161	248	167304	123909	416	6.3336E+10	4.5664E-01	4.5664E-01	3.0450E+15	8.1815E+03
162	249	126756	99832	262	3.9890E+10	4.9648E-01	4.9648E-01	3.0450E+15	8.5327E+03
163	251	136089	105470	363	5.5267E+10	4.7285E-01	4.7285E-01	3.0450E+15	8.3365E+03
164	252	168749	124867	431	6.5620E+10	4.5409E-01	4.5409E-01	3.0450E+15	8.1627E+03
165	253	170283	126072	415	6.3184E+10	4.5211E-01	4.5211E-01	3.0450E+15	8.1420E+03
166	254	170910	126509	426	6.4858E+10	4.5424E-01	4.5424E-01	3.0450E+15	8.1581E+03
167	255	169989	125984	401	6.1052E+10	4.5305E-01	4.5305E-01	3.0450E+15	8.1533E+03
168	256	170761	126421	435	6.6229E+10	4.5315E-01	4.5315E-01	3.0450E+15	8.1564E+03
169	257	170635	126373	459	6.9883E+10	4.5631E-01	4.5631E-01	3.0450E+15	8.1822E+03
170	258	167635	123995	419	6.3793E+10	4.5844E-01	4.5844E-01	3.0450E+15	8.2006E+03
171	259	126881	99986	308	4.6893E+10	4.9910E-01	4.9910E-01	3.0450E+15	8.5538E+03
172	261	137125	106006	334	5.0852E+10	4.7228E-01	4.7228E-01	3.0450E+15	8.3385E+03
173	262	168505	125153	411	6.2575E+10	4.5773E-01	4.5773E-01	3.0450E+15	8.1886E+03
174	263	169975	125941	422	6.4250E+10	4.5509E-01	4.5509E-01	3.0450E+15	8.1669E+03
175	264	171167	126813	413	6.2879E+10	4.5411E-01	4.5411E-01	3.0450E+15	8.1571E+03
176	265	170868	126718	408	6.2118E+10	4.5405E-01	4.5405E-01	3.0450E+15	8.1584E+03
177	266	170404	126337	468	7.1253E+10	4.5547E-01	4.5547E-01	3.0450E+15	8.1733E+03
178	267	170846	126372	430	6.5468E+10	4.5799E-01	4.5799E-01	3.0450E+15	8.1950E+03
179	268	167536	124023	426	6.4858E+10	4.5867E-01	4.5867E-01	3.0450E+15	8.1979E+03
180	269	126884	99942	302	4.5980E+10	4.9454E-01	4.9454E-01	3.0450E+15	8.5109E+03
181	271	136434	105511	297	4.5218E+10	4.7004E-01	4.7004E-01	3.0450E+15	8.3160E+03
182	272	168404	124708	439	6.6838E+10	4.5407E-01	4.5407E-01	3.0450E+15	8.1570E+03
183	273	170401	126230	419	6.3793E+10	4.5544E-01	4.5544E-01	3.0450E+15	8.1716E+03
184	274	171179	126856	427	6.5011E+10	4.5403E-01	4.5403E-01	3.0450E+15	8.1592E+03
185	275	170942	126550	381	5.8007E+10	4.5377E-01	4.5377E-01	3.0450E+15	8.1575E+03
186	276	170332	126193	393	5.9834E+10	4.5311E-01	4.5311E-01	3.0450E+15	8.1504E+03
187	277	169784	125790	473	7.2014E+10	4.5449E-01	4.5449E-01	3.0450E+15	8.1625E+03
188	278	166355	123294	410	6.2422E+10	4.6061E-01	4.6061E-01	3.0450E+15	8.2160E+03
189	279	126549	99801	287	4.3696E+10	4.9748E-01	4.9748E-01	3.0450E+15	8.5387E+03
190	281	135710	104917	287	4.3696E+10	4.7062E-01	4.7062E-01	3.0450E+15	8.3220E+03
191	282	168921	125107	393	5.9834E+10	4.5546E-01	4.5546E-01	3.0450E+15	8.1736E+03

192	283	170882	126413	389	5.9225E+10	4.5322E-01	4.5322E-01	3.0450E+15	8.1544E+03
193	284	170826	126345	419	6.3793E+10	4.5548E-01	4.5548E-01	3.0450E+15	8.1711E+03
194	285	171807	127063	408	6.2118E+10	4.5367E-01	4.5367E-01	3.0450E+15	8.1591E+03
195	286	171250	126746	434	6.6076E+10	4.5163E-01	4.5163E-01	3.0450E+15	8.1396E+03
196	287	169866	126082	447	6.8056E+10	4.5495E-01	4.5495E-01	3.0450E+15	8.1641E+03
197	288	167466	124055	367	5.5876E+10	4.5648E-01	4.5648E-01	3.0450E+15	8.1823E+03
198	289	126694	99705	304	4.6284E+10	4.9463E-01	4.9463E-01	3.0450E+15	8.5157E+03
199	291	136239	105489	323	4.9177E+10	4.7268E-01	4.7268E-01	3.0450E+15	8.3384E+03
200	292	169634	125673	415	6.3184E+10	4.5494E-01	4.5494E-01	3.0450E+15	8.1728E+03
201	293	170949	126642	398	6.0596E+10	4.5379E-01	4.5379E-01	3.0450E+15	8.1569E+03
202	294	170684	126259	402	6.1204E+10	4.5528E-01	4.5528E-01	3.0450E+15	8.1651E+03
203	295	171409	126908	446	6.7904E+10	4.5163E-01	4.5163E-01	3.0450E+15	8.1378E+03
204	296	171493	126615	430	6.5468E+10	4.5344E-01	4.5344E-01	3.0450E+15	8.1548E+03
205	297	170567	126203	423	6.4402E+10	4.5483E-01	4.5483E-01	3.0450E+15	8.1688E+03
206	298	166899	123686	412	6.2727E+10	4.5832E-01	4.5832E-01	3.0450E+15	8.1989E+03
207	299	126809	99729	317	4.8263E+10	4.9678E-01	4.9678E-01	3.0450E+15	8.5332E+03
208	301	136354	105261	331	5.0395E+10	4.7472E-01	4.7472E-01	3.0450E+15	8.3589E+03
209	302	169584	125542	427	6.5011E+10	4.5349E-01	4.5349E-01	3.0450E+15	8.1600E+03
210	303	171931	127466	390	5.9378E+10	4.5416E-01	4.5416E-01	3.0450E+15	8.1611E+03
211	304	170963	126691	410	6.2422E+10	4.5434E-01	4.5434E-01	3.0450E+15	8.1631E+03
212	305	171954	127045	412	6.2727E+10	4.5332E-01	4.5332E-01	3.0450E+15	8.1511E+03
213	306	171694	126799	442	6.7294E+10	4.5451E-01	4.5451E-01	3.0450E+15	8.1611E+03
214	307	169931	125712	455	6.9274E+10	4.5364E-01	4.5364E-01	3.0450E+15	8.1553E+03
215	308	167334	124170	447	6.8056E+10	4.6062E-01	4.6062E-01	3.0450E+15	8.2139E+03
216	309	127260	100206	279	4.2478E+10	4.9832E-01	4.9832E-01	3.0450E+15	8.5446E+03
217	311	136027	105076	334	5.0852E+10	4.6986E-01	4.6986E-01	3.0450E+15	8.3162E+03
218	312	168374	124676	417	6.3488E+10	4.5541E-01	4.5541E-01	3.0450E+15	8.1739E+03
219	313	171284	126654	451	6.8665E+10	4.5458E-01	4.5458E-01	3.0450E+15	8.1642E+03
220	314	172398	127554	423	6.4402E+10	4.5514E-01	4.5514E-01	3.0450E+15	8.1676E+03
221	315	170644	126257	412	6.2727E+10	4.5470E-01	4.5470E-01	3.0450E+15	8.1628E+03
222	316	170011	125872	391	5.9530E+10	4.5300E-01	4.5300E-01	3.0450E+15	8.1528E+03
223	317	170623	126178	383	5.8312E+10	4.5264E-01	4.5264E-01	3.0450E+15	8.1467E+03
224	318	167319	124145	407	6.1966E+10	4.5873E-01	4.5873E-01	3.0450E+15	8.2027E+03
225	319	126841	100024	291	4.4305E+10	4.9596E-01	4.9596E-01	3.0450E+15	8.5247E+03
226	321	134954	104550	312	4.7502E+10	4.7465E-01	4.7465E-01	3.0450E+15	8.3540E+03
227	322	168032	124566	393	5.9834E+10	4.5628E-01	4.5628E-01	3.0450E+15	8.1772E+03
228	323	170621	125949	424	6.4554E+10	4.5484E-01	4.5484E-01	3.0450E+15	8.1653E+03
229	324	171020	126834	418	6.3640E+10	4.5401E-01	4.5401E-01	3.0450E+15	8.1572E+03
230	325	171660	126765	420	6.3945E+10	4.5274E-01	4.5274E-01	3.0450E+15	8.1487E+03
231	326	170601	126164	401	6.1052E+10	4.5316E-01	4.5316E-01	3.0450E+15	8.1535E+03
232	327	170752	126262	394	5.9986E+10	4.5439E-01	4.5439E-01	3.0450E+15	8.1605E+03
233	328	167915	124291	418	6.3640E+10	4.5835E-01	4.5835E-01	3.0450E+15	8.1970E+03
234	329	126239	99601	270	4.1108E+10	4.9864E-01	4.9864E-01	3.0450E+15	8.5497E+03
235	331	133785	103614	296	4.5066E+10	4.7582E-01	4.7582E-01	3.0450E+15	8.3664E+03
236	332	164914	122276	411	6.2575E+10	4.6076E-01	4.6076E-01	3.0450E+15	8.2180E+03
237	333	167252	124220	390	5.9378E+10	4.5873E-01	4.5873E-01	3.0450E+15	8.2028E+03
238	334	168010	124698	456	6.9426E+10	4.5417E-01	4.5417E-01	3.0450E+15	8.1637E+03
239	335	168728	124978	426	6.4858E+10	4.6052E-01	4.6052E-01	3.0450E+15	8.2132E+03
240	336	166897	124130	433	6.5924E+10	4.5903E-01	4.5903E-01	3.0450E+15	8.2038E+03
241	337	166795	123742	397	6.0443E+10	4.5677E-01	4.5677E-01	3.0450E+15	8.1858E+03
242	338	163665	121632	405	6.1661E+10	4.6179E-01	4.6179E-01	3.0450E+15	8.2271E+03
243	339	125664	99397	309	4.7045E+10	5.0012E-01	5.0012E-01	3.0450E+15	8.5615E+03
244	341	104537	86155	217	3.3038E+10	5.1360E-01	5.1360E-01	3.0450E+15	8.6890E+03
245	342	126098	99358	285	4.3391E+10	5.0025E-01	5.0025E-01	3.0450E+15	8.5628E+03
246	343	127063	100023	288	4.3848E+10	4.9589E-01	4.9589E-01	3.0450E+15	8.5285E+03
247	344	127288	100253	292	4.4457E+10	4.9475E-01	4.9475E-01	3.0450E+15	8.5179E+03
248	345	127459	100566	296	4.5066E+10	4.9598E-01	4.9598E-01	3.0450E+15	8.5262E+03
249	346	126256	99655	321	4.8872E+10	4.9687E-01	4.9687E-01	3.0450E+15	8.5311E+03
250	347	126619	100062	299	4.5523E+10	4.9900E-01	4.9900E-01	3.0450E+15	8.5511E+03
251	348	125433	99029	306	4.6588E+10	4.9987E-01	4.9987E-01	3.0450E+15	8.5609E+03
252	349	99211	83372	239	3.6388E+10	5.3518E-01	5.3518E-01	3.0450E+15	8.8656E+03
253	411	110934	88202	193	2.9384E+10	5.0310E-01	5.0310E-01	3.0450E+15	8.6071E+03
254	412	135181	102549	236	3.5931E+10	4.9219E-01	4.9219E-01	3.0450E+15	8.4937E+03
255	413	137819	104276	213	3.2429E+10	4.9235E-01	4.9235E-01	3.0450E+15	8.4984E+03
256	414	137780	104190	235	3.5779E+10	4.9452E-01	4.9452E-01	3.0450E+15	8.5109E+03
257	415	137182	103742	225	3.4256E+10	4.9387E-01	4.9387E-01	3.0450E+15	8.5072E+03
258	416	136484	103409	194	2.9536E+10	4.9386E-01	4.9386E-01	3.0450E+15	8.5097E+03
259	417	136485	103392	240	3.6540E+10	4.9435E-01	4.9435E-01	3.0450E+15	8.5144E+03
260	418	135048	102274	242	3.6844E+10	4.9678E-01	4.9678E-01	3.0450E+15	8.5328E+03
261	419	104718	85132	152	2.3142E+10	5.3026E-01	5.3026E-01	3.0450E+15	8.8204E+03
262	421	144044	107097	252	3.8367E+10	4.7157E-01	4.7157E-01	3.0450E+15	8.3293E+03
263	422	178779	126987	328	4.9938E+10	4.6052E-01	4.6052E-01	3.0450E+15	8.2217E+03
264	423	182885	129466	328	4.9938E+10	4.5676E-01	4.5676E-01	3.0450E+15	8.1850E+03
265	424	183401	129909	346	5.2678E+10	4.5809E-01	4.5809E-01	3.0450E+15	8.1965E+03
266	425	183369	129697	325	4.9481E+10	4.6002E-01	4.6002E-01	3.0450E+15	8.2117E+03
267	426	182455	129372	317	4.8263E+10	4.5821E-01	4.5821E-01	3.0450E+15	8.1919E+03
268	427	182041	128939	291	4.4305E+10	4.5964E-01	4.5964E-01	3.0450E+15	8.2078E+03
269	428	177969	126411	304	4.6284E+10	4.6320E-01	4.6320E-01	3.0450E+15	8.2422E+03

270	429	134185	101877	211	3.2125E+10	4.9878E-01	4.9878E-01	3.0450E+15	8.5480E+03
271	431	146179	108577	227	3.4561E+10	4.6922E-01	4.6922E-01	3.0450E+15	8.3141E+03
272	432	183032	129406	311	4.7350E+10	4.5596E-01	4.5596E-01	3.0450E+15	8.1823E+03
273	433	185918	131218	328	4.9938E+10	4.5340E-01	4.5340E-01	3.0450E+15	8.1526E+03
274	434	186421	131527	317	4.8263E+10	4.5584E-01	4.5584E-01	3.0450E+15	8.1728E+03
275	435	186399	131829	329	5.0090E+10	4.5516E-01	4.5516E-01	3.0450E+15	8.1688E+03
276	436	186863	131961	349	5.3135E+10	4.5507E-01	4.5507E-01	3.0450E+15	8.1700E+03
277	437	185158	131004	344	5.2374E+10	4.5879E-01	4.5879E-01	3.0450E+15	8.1979E+03
278	438	181141	128535	323	4.9177E+10	4.6167E-01	4.6167E-01	3.0450E+15	8.2248E+03
279	439	134866	102832	211	3.2125E+10	4.9616E-01	4.9616E-01	3.0450E+15	8.5285E+03
280	441	146434	108882	246	3.7454E+10	4.6781E-01	4.6781E-01	3.0450E+15	8.3022E+03
281	442	184107	130258	321	4.8872E+10	4.5572E-01	4.5572E-01	3.0450E+15	8.1740E+03
282	443	186311	131781	322	4.9024E+10	4.5315E-01	4.5315E-01	3.0450E+15	8.1544E+03
283	444	186306	131543	322	4.9024E+10	4.5464E-01	4.5464E-01	3.0450E+15	8.1663E+03
284	445	186113	131668	330	5.0242E+10	4.5306E-01	4.5306E-01	3.0450E+15	8.1520E+03
285	446	186801	132361	349	5.3135E+10	4.5399E-01	4.5399E-01	3.0450E+15	8.1601E+03
286	447	186444	131729	329	5.0090E+10	4.5698E-01	4.5698E-01	3.0450E+15	8.1819E+03
287	448	182537	129006	327	4.9786E+10	4.5694E-01	4.5694E-01	3.0450E+15	8.1849E+03
288	449	136317	103225	225	3.4256E+10	4.9424E-01	4.9424E-01	3.0450E+15	8.5158E+03
289	451	146961	109193	261	3.9737E+10	4.6919E-01	4.6919E-01	3.0450E+15	8.3085E+03
290	452	184176	130072	353	5.3744E+10	4.5488E-01	4.5488E-01	3.0450E+15	8.1677E+03
291	453	186172	131523	310	4.7198E+10	4.5307E-01	4.5307E-01	3.0450E+15	8.1505E+03
292	454	186568	131811	337	5.1308E+10	4.5281E-01	4.5281E-01	3.0450E+15	8.1494E+03
293	455	185665	131320	330	5.0242E+10	4.5375E-01	4.5375E-01	3.0450E+15	8.1581E+03
294	456	186438	131764	329	5.0090E+10	4.5359E-01	4.5359E-01	3.0450E+15	8.1593E+03
295	457	186449	131764	309	4.7045E+10	4.5654E-01	4.5654E-01	3.0450E+15	8.1866E+03
296	458	182923	129145	332	5.0547E+10	4.5743E-01	4.5743E-01	3.0450E+15	8.1921E+03
297	459	136300	103269	221	3.3647E+10	4.9601E-01	4.9601E-01	3.0450E+15	8.5257E+03
298	461	148021	109689	248	3.7758E+10	4.6841E-01	4.6841E-01	3.0450E+15	8.3100E+03
299	462	183782	130396	324	4.9329E+10	4.5706E-01	4.5706E-01	3.0450E+15	8.1861E+03
300	463	185430	131119	326	4.9634E+10	4.5439E-01	4.5439E-01	3.0450E+15	8.1615E+03
301	464	186805	132076	330	5.0242E+10	4.5321E-01	4.5321E-01	3.0450E+15	8.1508E+03
302	465	186284	131871	354	5.3896E+10	4.5372E-01	4.5372E-01	3.0450E+15	8.1562E+03
303	466	185901	131698	331	5.0395E+10	4.5410E-01	4.5410E-01	3.0450E+15	8.1625E+03
304	467	186543	131751	345	5.2526E+10	4.5763E-01	4.5763E-01	3.0450E+15	8.1926E+03
305	468	182620	129196	298	4.5370E+10	4.5980E-01	4.5980E-01	3.0450E+15	8.2062E+03
306	469	136405	103262	225	3.4256E+10	4.9111E-01	4.9111E-01	3.0450E+15	8.4834E+03
307	471	147228	109309	255	3.8824E+10	4.6572E-01	4.6572E-01	3.0450E+15	8.2814E+03
308	472	183951	129940	334	5.0852E+10	4.5674E-01	4.5674E-01	3.0450E+15	8.1819E+03
309	473	185941	131567	336	5.1156E+10	4.5686E-01	4.5686E-01	3.0450E+15	8.1845E+03
310	474	186910	132084	328	4.9938E+10	4.5411E-01	4.5411E-01	3.0450E+15	8.1604E+03
311	475	186650	131862	323	4.9177E+10	4.5420E-01	4.5420E-01	3.0450E+15	8.1614E+03
312	476	186120	131577	327	4.9786E+10	4.5362E-01	4.5362E-01	3.0450E+15	8.1574E+03
313	477	185440	131217	310	4.7198E+10	4.5536E-01	4.5536E-01	3.0450E+15	8.1697E+03
314	478	181670	128402	338	5.1460E+10	4.6023E-01	4.6023E-01	3.0450E+15	8.2128E+03
315	479	136063	103055	236	3.5931E+10	4.9587E-01	4.9587E-01	3.0450E+15	8.5241E+03
316	481	146495	108788	259	3.9433E+10	4.6740E-01	4.6740E-01	3.0450E+15	8.2971E+03
317	482	184277	130303	326	4.9634E+10	4.5506E-01	4.5506E-01	3.0450E+15	8.1707E+03
318	483	186497	131807	307	4.6741E+10	4.5478E-01	4.5478E-01	3.0450E+15	8.1674E+03
319	484	186462	131638	324	4.9329E+10	4.5460E-01	4.5460E-01	3.0450E+15	8.1640E+03
320	485	187287	132299	342	5.2070E+10	4.5588E-01	4.5588E-01	3.0450E+15	8.1773E+03
321	486	186934	132098	338	5.1460E+10	4.5129E-01	4.5129E-01	3.0450E+15	8.1359E+03
322	487	185631	131472	349	5.3135E+10	4.5383E-01	4.5383E-01	3.0450E+15	8.1560E+03
323	488	182452	129115	314	4.7806E+10	4.5761E-01	4.5761E-01	3.0450E+15	8.1886E+03
324	489	136051	102982	227	3.4561E+10	4.9142E-01	4.9142E-01	3.0450E+15	8.4880E+03
325	491	147104	109332	228	3.4713E+10	4.6965E-01	4.6965E-01	3.0450E+15	8.3133E+03
326	492	185252	131003	309	4.7045E+10	4.5529E-01	4.5529E-01	3.0450E+15	8.1753E+03
327	493	186539	132005	337	5.1308E+10	4.5501E-01	4.5501E-01	3.0450E+15	8.1656E+03
328	494	186382	131605	332	5.0547E+10	4.5616E-01	4.5616E-01	3.0450E+15	8.1747E+03
329	495	186861	132184	358	5.4506E+10	4.5195E-01	4.5195E-01	3.0450E+15	8.1422E+03
330	496	187291	132096	356	5.4201E+10	4.5438E-01	4.5438E-01	3.0450E+15	8.1650E+03
331	497	186326	131575	321	4.8872E+10	4.5575E-01	4.5575E-01	3.0450E+15	8.1781E+03
332	498	182076	128804	335	5.1004E+10	4.5983E-01	4.5983E-01	3.0450E+15	8.2108E+03
333	499	136393	103073	206	3.1364E+10	4.9478E-01	4.9478E-01	3.0450E+15	8.5153E+03
334	501	147273	108863	261	3.9737E+10	4.6942E-01	4.6942E-01	3.0450E+15	8.3183E+03
335	502	185118	130841	336	5.1156E+10	4.5577E-01	4.5577E-01	3.0450E+15	8.1826E+03
336	503	187674	132795	342	5.2070E+10	4.5323E-01	4.5323E-01	3.0450E+15	8.1550E+03
337	504	186692	132104	325	4.9481E+10	4.5454E-01	4.5454E-01	3.0450E+15	8.1650E+03
338	505	187604	132273	343	5.2222E+10	4.5331E-01	4.5331E-01	3.0450E+15	8.1526E+03
339	506	187521	132225	338	5.1460E+10	4.5457E-01	4.5457E-01	3.0450E+15	8.1634E+03
340	507	185690	131159	298	4.5370E+10	4.5487E-01	4.5487E-01	3.0450E+15	8.1668E+03
341	508	182469	129259	324	4.9329E+10	4.6099E-01	4.6099E-01	3.0450E+15	8.2175E+03
342	509	136840	103497	216	3.2886E+10	4.9529E-01	4.9529E-01	3.0450E+15	8.5195E+03
343	511	146936	108835	267	4.0651E+10	4.6658E-01	4.6658E-01	3.0450E+15	8.2934E+03
344	512	183846	129922	299	4.5523E+10	4.5746E-01	4.5746E-01	3.0450E+15	8.1905E+03
345	513	187028	132012	327	4.9786E+10	4.5346E-01	4.5346E-01	3.0450E+15	8.1558E+03
346	514	188060	132914	318	4.8416E+10	4.5517E-01	4.5517E-01	3.0450E+15	8.1709E+03
347	515	186260	131515	339	5.1613E+10	4.5340E-01	4.5340E-01	3.0450E+15	8.1534E+03

348	516	185625	131227	351	5.3440E+10	4.5405E-01	4.5405E-01	3.0450E+15	8.1595E+03
349	517	186008	131363	310	4.7198E+10	4.5310E-01	4.5310E-01	3.0450E+15	8.1509E+03
350	518	182511	129456	306	4.6588E+10	4.6019E-01	4.6019E-01	3.0450E+15	8.2146E+03
351	519	136415	103356	242	3.6844E+10	4.9516E-01	4.9516E-01	3.0450E+15	8.5202E+03
352	521	145732	108232	238	3.6236E+10	4.6903E-01	4.6903E-01	3.0450E+15	8.3072E+03
353	522	183274	129737	333	5.0699E+10	4.5544E-01	4.5544E-01	3.0450E+15	8.1745E+03
354	523	186266	131309	355	5.4049E+10	4.5307E-01	4.5307E-01	3.0450E+15	8.1528E+03
355	524	186741	132123	303	4.6132E+10	4.5505E-01	4.5505E-01	3.0450E+15	8.1676E+03
356	525	187461	132169	342	5.2070E+10	4.5410E-01	4.5410E-01	3.0450E+15	8.1598E+03
357	526	186183	131420	341	5.1917E+10	4.5265E-01	4.5265E-01	3.0450E+15	8.1534E+03
358	527	186202	131394	360	5.4810E+10	4.5540E-01	4.5540E-01	3.0450E+15	8.1695E+03
359	528	183026	129321	325	4.9481E+10	4.5870E-01	4.5870E-01	3.0450E+15	8.1994E+03
360	529	135629	102968	215	3.2734E+10	4.9481E-01	4.9481E-01	3.0450E+15	8.5182E+03
361	531	144308	107273	235	3.5779E+10	4.7216E-01	4.7216E-01	3.0450E+15	8.3360E+03
362	532	179741	127241	311	4.7350E+10	4.6034E-01	4.6034E-01	3.0450E+15	8.2148E+03
363	533	182264	129342	340	5.1765E+10	4.5987E-01	4.5987E-01	3.0450E+15	8.2110E+03
364	534	183442	129916	334	5.0852E+10	4.5516E-01	4.5516E-01	3.0450E+15	8.1730E+03
365	535	184166	130216	321	4.8872E+10	4.5879E-01	4.5879E-01	3.0450E+15	8.1987E+03
366	536	182099	129263	345	5.2526E+10	4.6106E-01	4.6106E-01	3.0450E+15	8.2215E+03
367	537	181779	128901	315	4.7959E+10	4.5861E-01	4.5861E-01	3.0450E+15	8.2008E+03
368	538	178501	126638	269	4.0955E+10	4.6133E-01	4.6133E-01	3.0450E+15	8.2256E+03
369	539	135098	102724	229	3.4865E+10	4.9829E-01	4.9829E-01	3.0450E+15	8.5459E+03
370	541	110916	88240	160	2.4360E+10	5.0616E-01	5.0616E-01	3.0450E+15	8.6332E+03
371	542	135406	102558	215	3.2734E+10	4.9805E-01	4.9805E-01	3.0450E+15	8.5433E+03
372	543	136632	103291	228	3.4713E+10	4.9245E-01	4.9245E-01	3.0450E+15	8.4996E+03
373	544	136752	103525	232	3.5322E+10	4.9407E-01	4.9407E-01	3.0450E+15	8.5121E+03
374	545	136876	103879	230	3.5018E+10	4.9272E-01	4.9272E-01	3.0450E+15	8.4974E+03
375	546	135763	103023	251	3.8215E+10	4.9380E-01	4.9380E-01	3.0450E+15	8.5076E+03
376	547	136101	103351	221	3.3647E+10	4.9495E-01	4.9495E-01	3.0450E+15	8.5170E+03
377	548	134676	102165	223	3.3952E+10	4.9775E-01	4.9775E-01	3.0450E+15	8.5427E+03
378	549	104526	85213	172	2.6187E+10	5.2993E-01	5.2993E-01	3.0450E+15	8.8222E+03
395	4236	1141685	1027247	838874	6.3859E+13	4.6895E-01	4.6895E-01	3.0450E+15	4.1070E+00
396	4237	1638067	1507070	3762973	1.4323E+14	4.5748E-01	4.5748E-01	3.0450E+15	4.1546E+00
397	4238	1638945	1489550	3774327	7.1830E+13	4.2866E-01	4.2866E-01	3.0450E+15	4.0605E+00
398	4239	1736299	1578587	3983021	3.7901E+13	4.1002E-01	4.1002E-01	3.0450E+15	3.9884E+00
399	4240	1852695	1683906	4249928	2.0220E+13	3.9657E-01	3.9657E-01	3.0450E+15	3.9346E+00
400	4241	1978675	1798980	4545348	1.0813E+13	3.8680E-01	3.8680E-01	3.0450E+15	3.8954E+00
401	4242	2107021	1916897	4834907	5.7509E+12	3.7956E-01	3.7956E-01	3.0450E+15	3.8663E+00
402	4243	2242696	2040809	5157242	3.0671E+12	3.7335E-01	3.7335E-01	3.0450E+15	3.8412E+00
403	4244	2380091	2165774	5470009	1.6266E+12	3.6861E-01	3.6861E-01	3.0450E+15	3.8217E+00
404	4245	2524926	2298414	5812384	8.6419E+11	3.6447E-01	3.6447E-01	3.0450E+15	3.8044E+00
405	4246	2671422	2431428	6150388	4.5722E+11	3.6114E-01	3.6114E-01	3.0450E+15	3.7909E+00
406	4247	2824604	2572165	6509834	2.4197E+11	3.5835E-01	3.5835E-01	3.0450E+15	3.7788E+00
407	4248	2980831	2713491	6864706	1.2758E+11	3.5595E-01	3.5595E-01	3.0450E+15	3.7691E+00
408	4249	3134995	2855322	7237278	6.7253E+10	3.5385E-01	3.5385E-01	3.0450E+15	3.7607E+00
409	4250	3255198	2972203	7494516	3.4822E+10	3.5470E-01	3.5470E-01	3.0450E+15	3.7677E+00
410	4251	3066685	2923713	6933414	1.6107E+10	3.7357E-01	3.7357E-01	3.0450E+15	3.8776E+00
412	9998	4820993	2951790	95367	1.4520E+13	4.9916E-01	4.9916E-01	3.0450E+15	8.5680E+03
413	9997	5331565	3221919	100988	1.5375E+13	4.9071E-01	4.9071E-01	3.0450E+15	8.4936E+03
414	9996	3900184	2421760	71276	1.0852E+13	4.9746E-01	4.9746E-01	3.0450E+15	8.5517E+03
422	9988	1542637	1485680	278337	6.4662E+08	4.8425E-01	4.8425E-01	3.0450E+15	8.8427E+03
431	2001	1042416	968274	183326	4.2589E+08	4.5603E-01	4.5603E-01	3.0450E+15	8.5617E+03
432	2002	956042	844327	461910	1.0731E+09	4.0357E-01	4.0357E-01	3.0450E+15	8.0728E+03
433	2003	849930	704253	488115	1.1340E+09	3.4863E-01	3.4863E-01	3.0450E+15	7.5416E+03
434	2004	781808	616358	836596	1.9435E+09	3.0165E-01	3.0165E-01	3.0450E+15	7.0656E+03
435	2005	665812	500773	802149	1.8635E+09	2.6416E-01	2.6416E-01	3.0450E+15	6.6715E+03
436	2006	550260	403093	715339	1.6618E+09	2.4096E-01	2.4096E-01	3.0450E+15	6.4181E+03
437	2007	443267	319069	606163	1.4082E+09	2.2564E-01	2.2564E-01	3.0450E+15	6.2462E+03
438	2008	342063	248346	699140	1.6242E+09	2.1407E-01	2.1407E-01	3.0450E+15	6.1144E+03
439	2009	230454	165601	487519	1.1326E+09	2.0501E-01	2.0501E-01	3.0450E+15	6.0094E+03
440	2010	147223	107467	403360	9.3707E+08	1.9997E-01	1.9997E-01	3.0450E+15	5.9542E+03
441	2011	80940	58840	224653	5.2190E+08	1.9693E-01	1.9693E-01	3.0450E+15	5.9152E+03
442	2012	43801	31795	121835	2.8304E+08	1.9625E-01	1.9625E-01	3.0450E+15	5.9093E+03
443	2013	23470	17046	66230	1.5386E+08	1.9585E-01	1.9585E-01	3.0450E+15	5.8997E+03
444	2014	12427	9023	35223	8.1828E+07	1.9698E-01	1.9698E-01	3.0450E+15	5.9183E+03
445	2015	5613	4737	30008	6.9713E+07	2.0194E-01	2.0194E-01	3.0450E+15	5.9730E+03
total		127290277	105541740	344973773	3.9171E+16				

```
1tally   2        nps =    20000000
          tally type 2    particle flux averaged over a surface.
          tally for  photons

          this tally is modified by a dose function.

          areas
               surface:     1231
                         1.78374E+06
```

```
 surface  1231
                0.00000E+00 0.0000

 there are no nonzero tallies in the tally fluctuation chart bin for tally   2

1tally  12        nps =    20000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons

           this tally is modified by a dose function.

           areas
                surface:     1227
               segment
                  1       1.00000E+50
                  2       2.56400E+07
                  3       1.03700E+08
                  4       1.60200E+08
                  5       3.92700E+08
                  6       5.49800E+08
                  7       7.06900E+08
                  8       8.63900E+08
                  9       1.59000E+09
                 10       1.94400E+09
                 11       3.14200E+09
                 12       3.77000E+09
                 13       4.39800E+09
                 14       5.02700E+09
                 15       5.65500E+09
                 16       1.68900E+10

 surface  1227
 segment:       -2000
                3.40712E-47 0.0093

 surface  1227
 segment:        2000    -2001
                6.84738E-05 0.0117

 surface  1227
 segment:        2000     2001    -2002
                2.10226E-05 0.0111

 surface  1227
 segment:        2000     2001     2002    -2003
                5.66460E-06 0.0142

 surface  1227
 segment:        2000     2001     2002     2003    -2004
                1.69619E-06 0.0138

 surface  1227
 segment:        2000     2001     2002     2003     2004    -2005
                5.49236E-07 0.0169

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005    -2006
                2.28252E-07 0.0176

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006    -2007
                1.12752E-07 0.0209

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007    -2008
                5.34335E-08 0.0208

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008    -2009
                2.40307E-08 0.0273

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009    -2010
                9.53190E-09 0.0305

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
```

```
    -2011
                3.54144E-09 0.0436

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011    -2012
                1.36459E-09 0.0601

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012    -2013
                5.38018E-10 0.0780

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013    -2014
                2.82215E-10 0.1265

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013     2014
                6.08542E-11 0.1421


    ================================================================================================================
    ====================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  12

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
    merit--      -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
    behavior     slope

 desired      random       <0.10       yes      1/sqrt(nps)       <0.10       yes        1/nps           constant
    random       >3.00
 observed     random        0.14       yes          yes            0.34       yes         yes            constant
    random        0.00
 passed?        yes           no       yes          yes              no       yes         yes               yes
    yes           no


    ================================================================================================================
    ====================


 warning.  the tally in the tally fluctuation chart bin did not pass  3 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  12 with nps =    20000000  print table
    160


 normed average tally per history  = 6.08542E-11          unnormed average tally per history  = 1.02783E+00
 estimated tally relative error    = 0.1421               estimated variance of the variance  = 0.3432
 relative error from zero tallies  = 0.0598               relative error from nonzero scores  = 0.1289

 number of nonzero history tallies =         280          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =     5400762          largest  unnormalized history tally = 2.21748E+06
 (largest  tally)/(average tally)  = 2.15745E+06          (largest  tally)/(avg nonzero tally)= 3.02042E+01

 (confidence interval shift)/mean  = 0.0352               shifted confidence interval center  = 6.29975E-11


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            6.08542E-11            6.74187E-11                   0.107872
      relative error                  1.42072E-01            1.61015E-01                   0.133335
      variance of the variance        3.43155E-01            2.71796E-01                  -0.207950
      shifted center                  6.29975E-11            6.34140E-11                   0.006612
      figure of merit                 2.67663E-01            2.08387E-01                  -0.221455

 there is not enough information in the largest  history scores (usually less than 500 scores) for a reliable
    estimate of the slope.
```

```
 the history score probability density function appears to have an unsampled region at the largest  history scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.081E+05)*( 1.574E-03)**2 = (1.081E+05)*(2.477E-06) =
    2.677E-01

1unnormed tally density for tally  12            nonzero tally mean(m) = 7.342E+04   nps =    20000000  print table
    161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
    bin(d=decade,slope= 0.0)
  tally  number num den log den:d-------------------------d-------------------------d-------------------------d----
    ----------------
 1.58+04     32 4.91-10  -9.309
    ************************|************************|************************|*******************
 2.00+04     39 4.75-10  -9.323
    ************************|************************|************************|*******************
 2.51+04     29 2.81-10  -9.552
    ************************|************************|************************|**************
 3.16+04     32 2.46-10  -9.609
    ************************|************************|************************|************
 3.98+04     25 1.53-10  -9.816
    ************************|************************|************************|******
 5.01+04     26 1.26-10  -9.899 ************************|************************|************************|****
 6.31+04     16 6.16-11 -10.210 ************************|************************|***********************
 7.94+04     22 6.73-11 -10.172 mmmmmmmmmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmmmmmmmm
 1.00+05     16 3.89-11 -10.410 ************************|************************|******************
 1.26+05     15 2.90-11 -10.538 ************************|************************|**************
 1.58+05      2 3.07-12 -11.513 ************************|**************
 2.00+05      6 7.31-12 -11.136 ************************|************************
 2.51+05      6 5.81-12 -11.236 ************************|***********************
 3.16+05      5 3.84-12 -11.415 ************************|*****************
 3.98+05      2 1.22-12 -11.913 ************************|***
 5.01+05      4 1.94-12 -11.712 ************************|*********
 6.31+05      1 3.85-13 -12.414 *****************
 7.94+05      0 0.00+00   0.000
 1.00+06      1 2.43-13 -12.614 ************
 1.26+06      0 0.00+00   0.000
 1.58+06      0 0.00+00   0.000
 2.00+06      0 0.00+00   0.000
 2.51+06      1 9.68-14 -13.014 *
  total     280 1.40-05         d-------------------------d-------------------------d-------------------------d----
    ----------------

1tally  22        nps =    20000000
          tally type 2    particle flux averaged over a surface.
          tally for  photons

          this tally is modified by a dose function.

          areas
               surface:     1227
              segment
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       4.35376E+05
                5       4.35376E+05
                6       4.35376E+05
                7       4.35376E+05
                8       4.35376E+05
                9       4.35376E+05
               10       4.35376E+05
               11       4.35376E+05
               12       4.35376E+05
               13       4.35376E+05
               14       4.35376E+05
               15       4.35376E+05
               16       4.35376E+05
               17       4.35376E+05
               18       4.35376E+05
               19       4.35376E+05
               20       4.35376E+05
               21       4.35376E+05
               22       1.00000E+50

 surface  1227
 segment:        1201
```

```
               9.29305E-49 0.0105

surface  1227
segment:       -1201    -2026
               2.36438E-47 0.0110

surface  1227
segment:       -1201     2026     2027
               2.37327E-47 0.0107

surface  1227
segment:       -1201     2026    -2027     2016
               4.08599E-04 0.0131

surface  1227
segment:       -1201     2026    -2027    -2016     2017
               8.98970E-04 0.0124

surface  1227
segment:       -1201     2026    -2027    -2016    -2017     2018
               9.71746E-04 0.0131

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018     2019
               8.81043E-04 0.0131

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019     2020
               8.01144E-04 0.0158

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020     2021
               6.89033E-04 0.0190

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021     2022
               6.25736E-04 0.0220

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022     2023
               5.61858E-04 0.0246

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     2024
               4.95391E-04 0.0249

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024     2025
               4.42564E-04 0.0285

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025     2028
               3.84271E-04 0.0288

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028     2029
               3.72115E-04 0.0413

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029     2030
               3.16493E-04 0.0409

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030     2031
               2.74712E-04 0.0347

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031     2032
               2.40570E-04 0.0395

surface  1227
```

```
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032     2033
                2.27687E-04 0.0410

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033     2034
                2.11731E-04 0.0527

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034     2035
                1.88904E-04 0.0448

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034    -2035
                9.17696E-48 0.0155


    ================================================================================================================
    ====================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  22

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
    merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
    behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
    random      >3.00
 observed     random        0.02      yes          yes            0.00      yes         yes            constant
    random      10.00
 passed?       yes          yes       yes          yes             yes      yes         yes               yes
    yes         yes


    ================================================================================================================
    ====================


 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to
    verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 9.0371E-48 to 9.3222E-48; 8.8946E-48 to 9.4647E-48; 8.7521E-
    48 to 9.6072E-48
 estimated  symmetric confidence interval(1,2,3 sigma): 9.0345E-48 to 9.3194E-48; 8.8920E-48 to 9.4619E-48; 8.7495E-
    48 to 9.6044E-48

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  22 with nps =    20000000  print table
    160


 normed average tally per history  = 9.17696E-48          unnormed average tally per history  = 9.17696E+02
 estimated tally relative error    = 0.0155               estimated variance of the variance  = 0.0023
 relative error from zero tallies  = 0.0061               relative error from nonzero scores  = 0.0143

 number of nonzero history tallies =       26511          efficiency for the nonzero tallies  = 0.0013
 history number of largest  tally  =      397804          largest  unnormalized history tally = 3.24081E+07
 (largest  tally)/(average tally)  = 3.53146E+04          (largest  tally)/(avg nonzero tally)= 4.68113E+01

 (confidence interval shift)/mean  = 0.0003               shifted confidence interval center  = 9.17966E-48


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            9.17696E-48            9.19316E-48                  0.001766
      relative error                  1.55251E-02            1.55977E-02                  0.004673
      variance of the variance        2.26165E-03            2.36731E-03                  0.046721
```

shifted center	9.17966E-48	9.17973E-48	0.000008
figure of merit	2.24147E+01	2.22067E+01	-0.009280

the estimated slope of the 200 largest tallies starting at 8.47824E+06 appears to be decreasing at least exponentially.
the large score tail of the empirical history score probability density function appears to have no unsampled regions.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.081E+05)*(1.440E-02)**2 = (1.081E+05)*(2.074E-04) = 2.241E+01

1tally 32 nps = 20000000
tally type 2 particle flux averaged over a surface.
tally for photons

this tally is modified by a dose function.

areas

surface:	1201
segment	
1	1.00000E+50
2	1.00000E+50
3	1.00000E+50
4	1.00000E+50
5	6.30000E+05

surface 1201
segment: 1231
3.32368E-47 0.0083

surface 1201
segment: -1231 -2026
2.04818E-48 0.0341

surface 1201
segment: -1231 2026 2027
2.45834E-48 0.0305

surface 1201
segment: -1231 2026 -2027 -1227
0.00000E+00 0.0000

surface 1201
segment: -1231 2026 -2027 1227
2.55268E-03 0.0119

==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 32

tfc bin	--mean--	---------relative error---------			----variance of the variance----			--figure of merit--	-pdf-
behavior	behavior	value	decrease	decrease rate	value	decrease	decrease rate	value	behavior	slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random	>3.00
observed	random	0.01	yes	yes	0.00	yes	yes	constant	random	10.00
passed?	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

==========

this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to verify.
the results in other bins associated with this tally may not meet these statistical criteria.

----- estimated confidence intervals: -----

```
 estimated asymmetric confidence interval(1,2,3 sigma): 2.5225E-03 to 2.5835E-03; 2.4920E-03 to 2.6140E-03; 2.4615E-
    03 to 2.6445E-03
 estimated  symmetric confidence interval(1,2,3 sigma): 2.5222E-03 to 2.5832E-03; 2.4917E-03 to 2.6137E-03; 2.4612E-
    03 to 2.6441E-03

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  32 with nps =    20000000  print table
    160


 normed average tally per history  = 2.55268E-03          unnormed average tally per history  = 1.60819E+03
 estimated tally relative error    = 0.0119               estimated variance of the variance  = 0.0006
 relative error from zero tallies  = 0.0062               relative error from nonzero scores  = 0.0102

 number of nonzero history tallies =       25788          efficiency for the nonzero tallies  = 0.0013
 history number of largest  tally  =     4138101          largest  unnormalized history tally = 2.74239E+07
 (largest  tally)/(average tally)  = 1.70526E+04          (largest  tally)/(avg nonzero tally)= 2.19876E+01

 (confidence interval shift)/mean  = 0.0001               shifted confidence interval center  = 2.55300E-03


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            2.55268E-03            2.55486E-03                   0.000853
      relative error                  1.19431E-02            1.19633E-02                   0.001691
      variance of the variance        6.26272E-04            6.45644E-04                   0.030932
      shifted center                  2.55300E-03            2.55301E-03                   0.000002
      figure of merit                 3.78764E+01            3.77487E+01                  -0.003373

 the estimated slope of the 198 largest  tallies starting at  1.05871E+07 appears to be decreasing at least
    exponentially.
 the large score tail of the empirical history score probability density function appears to have no unsampled
    regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.081E+05)*( 1.872E-02)**2 = (1.081E+05)*(3.505E-04) =
    3.788E+01

1tally  42        nps =    20000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
                 1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
                surface:     2010         2011         2012         2013
               segment
                 1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:        1219
                 1.58297E-47 0.0071

 surface  2003
 segment:       -1219    -1209
                 1.91038E-49 0.0210

 surface  2003
 segment:       -1219     1209     1201
                 6.10540E-50 0.0243

 surface  2003
 segment:       -1219     1209    -1201    -1205
                 1.04098E-48 0.0115
```

```
surface  2003
segment:       -1219     1209    -1201     1205     1206
                9.81405E-49 0.0118

surface  2003
segment:       -1219     1209    -1201     1205    -1206
                2.56347E-05 0.0142

surface  2004
segment:        1219
                1.41686E-47 0.0072

surface  2004
segment:       -1219    -1209
                9.11998E-50 0.0283

surface  2004
segment:       -1219     1209     1201
                3.53930E-50 0.0304

surface  2004
segment:       -1219     1209    -1201    -1205
                5.69581E-49 0.0133

surface  2004
segment:       -1219     1209    -1201     1205     1206
                5.36260E-49 0.0135

surface  2004
segment:       -1219     1209    -1201     1205    -1206
                8.09759E-06 0.0212

surface  2005
segment:        1219
                1.19713E-47 0.0073

surface  2005
segment:       -1219    -1209
                4.88844E-50 0.0331

surface  2005
segment:       -1219     1209     1201
                2.08576E-50 0.0360

surface  2005
segment:       -1219     1209    -1201    -1205
                3.31929E-49 0.0156

surface  2005
segment:       -1219     1209    -1201     1205     1206
                3.16259E-49 0.0160

surface  2005
segment:       -1219     1209    -1201     1205    -1206
                3.27642E-06 0.0289

surface  2006
segment:        1219
                9.71476E-48 0.0075

surface  2006
segment:       -1219    -1209
                2.81539E-50 0.0420

surface  2006
segment:       -1219     1209     1201
                1.21579E-50 0.0478

surface  2006
segment:       -1219     1209    -1201    -1205
                1.94488E-49 0.0181

surface  2006
segment:       -1219     1209    -1201     1205     1206
                1.88680E-49 0.0192

surface  2006
```

```
segment:       -1219     1209    -1201     1205    -1206
                1.48439E-06 0.0393

surface  2007
segment:        1219
                7.72848E-48 0.0076

surface  2007
segment:       -1219    -1209
                1.69551E-50 0.0509

surface  2007
segment:       -1219     1209     1201
                6.70855E-51 0.0739

surface  2007
segment:       -1219     1209    -1201    -1205
                1.21991E-49 0.0218

surface  2007
segment:       -1219     1209    -1201     1205     1206
                1.21854E-49 0.0224

surface  2007
segment:       -1219     1209    -1201     1205    -1206
                7.64868E-07 0.0548

surface  2008
segment:        1219
                5.26052E-48 0.0081

surface  2008
segment:       -1219    -1209
                8.73863E-51 0.0692

surface  2008
segment:       -1219     1209     1201
                3.88526E-51 0.1084

surface  2008
segment:       -1219     1209    -1201    -1205
                6.17417E-50 0.0279

surface  2008
segment:       -1219     1209    -1201     1205     1206
                6.17638E-50 0.0301

surface  2008
segment:       -1219     1209    -1201     1205    -1206
                2.94612E-07 0.0783

surface  2009
segment:        1219
                3.49021E-48 0.0086

surface  2009
segment:       -1219    -1209
                4.50760E-51 0.1013

surface  2009
segment:       -1219     1209     1201
                1.39917E-51 0.1454

surface  2009
segment:       -1219     1209    -1201    -1205
                3.25852E-50 0.0424

surface  2009
segment:       -1219     1209    -1201     1205     1206
                3.09416E-50 0.0397

surface  2009
segment:       -1219     1209    -1201     1205    -1206
                1.47945E-07 0.1076

surface  2010
segment:        1219
                1.94415E-48 0.0097
```

```
surface  2010
segment:       -1219    -1209
                1.61887E-51 0.1387

surface  2010
segment:       -1219     1209     1201
                4.48246E-52 0.2222

surface  2010
segment:       -1219     1209    -1201    -1205
                1.46746E-50 0.0592

surface  2010
segment:       -1219     1209    -1201     1205     1206
                1.32086E-50 0.0581

surface  2010
segment:       -1219     1209    -1201     1205    -1206
                4.94764E-08 0.1693

surface  2011
segment:        1219
                1.07295E-48 0.0113

surface  2011
segment:       -1219    -1209
                1.20140E-51 0.2997

surface  2011
segment:       -1219     1209     1201
                1.31245E-52 0.3463

surface  2011
segment:       -1219     1209    -1201    -1205
                6.12310E-51 0.0844

surface  2011
segment:       -1219     1209    -1201     1205     1206
                5.50336E-51 0.0880

surface  2011
segment:       -1219     1209    -1201     1205    -1206
                2.75530E-08 0.2419

surface  2012
segment:        1219
                5.79752E-49 0.0138

surface  2012
segment:       -1219    -1209
                2.97401E-52 0.3722

surface  2012
segment:       -1219     1209     1201
                3.17653E-53 0.5774

surface  2012
segment:       -1219     1209    -1201    -1205
                3.15859E-51 0.1159

surface  2012
segment:       -1219     1209    -1201     1205     1206
                2.70469E-51 0.1183

surface  2012
segment:       -1219     1209    -1201     1205    -1206
                9.09572E-09 0.3896

surface  2013
segment:        1219
                3.04946E-49 0.0169

surface  2013
segment:       -1219    -1209
                1.90326E-52 0.4794

surface  2013
```

```
 segment:       -1219     1209     1201
                 1.05207E-53 1.0000

 surface  2013
 segment:       -1219     1209    -1201    -1205
                 1.38746E-51 0.1598

 surface  2013
 segment:       -1219     1209    -1201     1205     1206
                 1.30083E-51 0.1725

 surface  2013
 segment:       -1219     1209    -1201     1205    -1206
                 3.46506E-09 0.6608


    ================================================================================================================
    ===================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  42

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
    merit--      -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
    behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
    random      >3.00
 observed     random        0.01      yes          yes            0.00      yes         yes            constant
    random       6.53
 passed?        yes          yes      yes          yes             yes      yes         yes               yes
    yes         yes


    ================================================================================================================
    ===================


 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to
    verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 2.5278E-05 to 2.6004E-05; 2.4914E-05 to 2.6367E-05; 2.4551E-
    05 to 2.6730E-05
 estimated  symmetric confidence interval(1,2,3 sigma): 2.5272E-05 to 2.5998E-05; 2.4909E-05 to 2.6361E-05; 2.4546E-
    05 to 2.6724E-05

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  42 with nps =    20000000  print table
    160


 normed average tally per history  = 2.56347E-05          unnormed average tally per history  = 7.69041E+01
 estimated tally relative error    = 0.0142               estimated variance of the variance  = 0.0018
 relative error from zero tallies  = 0.0087               relative error from nonzero scores  = 0.0112

 number of nonzero history tallies =       13216          efficiency for the nonzero tallies  = 0.0007
 history number of largest  tally  =    10161661          largest  unnormalized history tally = 2.53088E+06
 (largest  tally)/(average tally)  = 3.29096E+04          (largest  tally)/(avg nonzero tally)= 2.17466E+01

 (confidence interval shift)/mean  = 0.0002               shifted confidence interval center  = 2.56407E-05


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            2.56347E-05            2.56769E-05                   0.001645
      relative error                  1.41626E-02            1.42344E-02                   0.005073
      variance of the variance        1.84457E-03            1.97314E-03                   0.069703
      shifted center                  2.56407E-05            2.56409E-05                   0.000008
      figure of merit                 2.69352E+01            2.66640E+01                  -0.010069

 the estimated inverse power slope of the 200 largest  tallies starting at 6.55344E+05 is 6.5303
```

the large score tail of the empirical history score probability density function appears to have no unsampled regions.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.081E+05)*(1.579E-02)**2 = (1.081E+05)*(2.493E-04) = 2.694E+01

1tally 52 nps = 20000000
tally type 2 particle flux averaged over a surface.
tally for photons

this tally is modified by a dose function.

areas

surface:	2003	2004	2005	2006	2007	2008	2009
segment							
1	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
2	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
3	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
4	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
5	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
6	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06

surface:	2010	2011	2012	2013
segment				
1	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
2	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
3	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
4	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
5	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
6	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06

surface 2003
segment: 1219
1.58297E-47 0.0071

surface 2003
segment: -1219 -1209
1.91038E-49 0.0210

surface 2003
segment: -1219 1209 -1201
2.79143E-48 0.0090

surface 2003
segment: -1219 1209 1201 -1205
3.21417E-50 0.0329

surface 2003
segment: -1219 1209 1201 1205 1206
2.66783E-50 0.0358

surface 2003
segment: -1219 1209 1201 1205 -1206
7.44649E-08 0.1225

surface 2004
segment: 1219
1.41686E-47 0.0072

surface 2004
segment: -1219 -1209
9.11998E-50 0.0283

surface 2004
segment: -1219 1209 -1201
1.34877E-48 0.0103

surface 2004
segment: -1219 1209 1201 -1205
1.75931E-50 0.0413

surface 2004
segment: -1219 1209 1201 1205 1206
1.67115E-50 0.0455

surface 2004
segment: -1219 1209 1201 1205 -1206
3.62792E-08 0.1675

```
surface  2005
segment:        1219
                1.19713E-47 0.0073

surface  2005
segment:       -1219    -1209
                4.88844E-50 0.0331

surface  2005
segment:       -1219     1209    -1201
                7.46481E-49 0.0118

surface  2005
segment:       -1219     1209     1201    -1205
                1.05997E-50 0.0516

surface  2005
segment:       -1219     1209     1201     1205     1206
                9.80702E-51 0.0509

surface  2005
segment:       -1219     1209     1201     1205    -1206
                1.50290E-08 0.1886

surface  2006
segment:        1219
                9.71476E-48 0.0075

surface  2006
segment:       -1219    -1209
                2.81539E-50 0.0420

surface  2006
segment:       -1219     1209    -1201
                4.27699E-49 0.0136

surface  2006
segment:       -1219     1209     1201    -1205
                6.10273E-51 0.0658

surface  2006
segment:       -1219     1209     1201     1205     1206
                5.84278E-51 0.0703

surface  2006
segment:       -1219     1209     1201     1205    -1206
                7.08039E-09 0.3040

surface  2007
segment:        1219
                7.72848E-48 0.0076

surface  2007
segment:       -1219    -1209
                1.69551E-50 0.0509

surface  2007
segment:       -1219     1209    -1201
                2.66791E-49 0.0161

surface  2007
segment:       -1219     1209     1201    -1205
                3.92513E-51 0.1060

surface  2007
segment:       -1219     1209     1201     1205     1206
                2.69696E-51 0.0981

surface  2007
segment:       -1219     1209     1201     1205    -1206
                2.88221E-09 0.3931

surface  2008
segment:        1219
                5.26052E-48 0.0081

surface  2008
segment:       -1219    -1209
```

```
                8.73863E-51 0.0692

surface  2008
segment:        -1219     1209    -1201
                1.32344E-49 0.0207

surface  2008
segment:        -1219     1209     1201    -1205
                1.83784E-51 0.1445

surface  2008
segment:        -1219     1209     1201     1205     1206
                2.01351E-51 0.1622

surface  2008
segment:        -1219     1209     1201     1205    -1206
                1.13039E-09 0.5803

surface  2009
segment:        1219
                3.49021E-48 0.0086

surface  2009
segment:        -1219    -1209
                4.50760E-51 0.1013

surface  2009
segment:        -1219     1209    -1201
                6.79651E-50 0.0287

surface  2009
segment:        -1219     1209     1201    -1205
                5.73701E-52 0.1680

surface  2009
segment:        -1219     1209     1201     1205     1206
                8.14451E-52 0.2195

surface  2009
segment:        -1219     1209     1201     1205    -1206
                3.67087E-10 1.0000

surface  2010
segment:        1219
                1.94415E-48 0.0097

surface  2010
segment:        -1219    -1209
                1.61887E-51 0.1387

surface  2010
segment:        -1219     1209    -1201
                2.93675E-50 0.0409

surface  2010
segment:        -1219     1209     1201    -1205
                1.78197E-52 0.3292

surface  2010
segment:        -1219     1209     1201     1205     1206
                2.70049E-52 0.2981

surface  2010
segment:        -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2011
segment:        1219
                1.07295E-48 0.0113

surface  2011
segment:        -1219    -1209
                1.20140E-51 0.2997

surface  2011
segment:        -1219     1209    -1201
                1.24531E-50 0.0596
```

```
surface  2011
segment:       -1219     1209     1201    -1205
                6.86361E-53 0.4764

surface  2011
segment:       -1219     1209     1201     1205     1206
                3.83225E-53 0.5262

surface  2011
segment:       -1219     1209     1201     1205    -1206
                8.09549E-10 1.0000

surface  2012
segment:        1219
                5.79752E-49 0.0138

surface  2012
segment:       -1219    -1209
                2.97401E-52 0.3722

surface  2012
segment:       -1219     1209    -1201
                6.13615E-51 0.0814

surface  2012
segment:       -1219     1209     1201    -1205
                2.11925E-53 0.7071

surface  2012
segment:       -1219     1209     1201     1205     1206
                1.05728E-53 1.0000

surface  2012
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2013
segment:        1219
                3.04946E-49 0.0169

surface  2013
segment:       -1219    -1209
                1.90326E-52 0.4794

surface  2013
segment:       -1219     1209    -1201
                2.79224E-51 0.1156

surface  2013
segment:       -1219     1209     1201    -1205
                0.00000E+00 0.0000

surface  2013
segment:       -1219     1209     1201     1205     1206
                1.05207E-53 1.0000

surface  2013
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000
```

==========

==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 52

tfc bin behavior	--mean-- -pdf- behavior	---------relative error--------- value	decrease	decrease rate	----variance of the variance---- value	decrease	decrease rate	--figure of merit-- behavior	slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random
	>3.00								
observed	random	0.12	yes	yes	0.29	no	no	decrease	random
	0.00								

```
 passed?        yes           no      yes          yes              no       no          no                no
    yes          no

    ================================================================================================================
    ===================

 warning.  the tally in the tally fluctuation chart bin did not pass  6 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  52 with nps =    20000000  print table
    160


 normed average tally per history  = 7.44649E-08          unnormed average tally per history  = 2.23395E-01
 estimated tally relative error    = 0.1225               estimated variance of the variance  = 0.2880
 relative error from zero tallies  = 0.0743               relative error from nonzero scores  = 0.0974

 number of nonzero history tallies =         181          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =    17808805          largest  unnormalized history tally = 3.96354E+05
 (largest  tally)/(average tally)  = 1.77423E+06          (largest  tally)/(avg nonzero tally)= 1.60568E+01

 (confidence interval shift)/mean  = 0.0270               shifted confidence interval center  = 7.64759E-08


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            7.44649E-08            8.10708E-08                  0.088711
      relative error                  1.22536E-01            1.38951E-01                  0.133958
      variance of the variance        2.88030E-01            2.42250E-01                 -0.158943
      shifted center                  7.64759E-08            7.69202E-08                  0.005809
      figure of merit                 3.59812E-01            2.79822E-01                 -0.222311

 there is not enough information in the largest  history scores (usually less than 500 scores) for a reliable
    estimate of the slope.
 the history score probability density function appears to have an unsampled region at the largest  history scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.081E+05)*( 1.825E-03)**2 = (1.081E+05)*(3.330E-06) =
    3.598E-01

1unnormed tally density for tally  52            nonzero tally mean(m) = 2.468E+04   nps =    20000000  print table
    161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
    bin(d=decade,slope= 0.0)
  tally  number num den log den:d-----------------------------d-------------------------------d--------------------
    ---------d------
 1.26+04      3 5.79-11 -10.237 ******************************|*******************************|
    |
 1.58+04     57 8.74-10  -9.058
    ******************************|*******************************|*******************************|******
 2.00+04     43 5.24-10  -9.281
    ******************************|*******************************|*******************************|
 2.51+04     40 3.87-10  -9.412
    mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm     |
 3.16+04     19 1.46-10  -9.835 ******************************|*******************************|*************
    |
 3.98+04      7 4.27-11 -10.369 ******************************|****************************   |
    |
 5.01+04      3 1.46-11 -10.837 ******************************|*************                    |
    |
 6.31+04      3 1.16-11 -10.937 ******************************|**********                       |
    |
 7.94+04      1 3.06-12 -11.514 ************************       |                                 |
    |
 1.00+05      2 4.86-12 -11.313 *************************** |                                 |
    |
 1.26+05      1 1.93-12 -11.714 *****************            |                                 |
    |
 1.58+05      0 0.00+00   0.000                              |                                 |
    |
 2.00+05      1 1.22-12 -11.914 **********                   |                                 |
    |
```

```
 2.51+05      0 0.00+00   0.000                                |                                |
    |
 3.16+05      0 0.00+00   0.000                                |                                |
    |
 3.98+05      1 6.11-13 -12.214 *                              |                                |
    |
  total     181 9.05-06         d------------------------------d--------------------------------d--------------------
    ---------d------

1tally  62        nps =    20000000
           tally type 2    particle flux averaged over a surface.
           tally for  photons

           this tally is modified by a dose function.

           areas
                surface:     1219
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       1.00000E+50
                 5       5.30000E+06

 surface  1219
 segment:       -1205
                1.96460E-53 1.0000

 surface  1219
 segment:        1205     1206
                1.10503E-52 0.4181

 surface  1219
 segment:        1205    -1206     1203
                0.00000E+00 0.0000

 surface  1219
 segment:        1205    -1206    -1203    -1202
                5.85179E-52 0.2028

 surface  1219
 segment:        1205    -1206    -1203     1202
                0.00000E+00 0.0000

 there are no nonzero tallies in the tally fluctuation chart bin for tally  62

1status of the statistical checks used to form confidence intervals for the mean for each tally bin


 tally   result of statistical checks for the tfc bin (the first check not passed is listed) and error magnitude
    check for all bins

     2   no nonzero tallies were made in the tally fluctuation chart bin
         no nonzero tallies were made in any one of the      1 tally bins

    12   missed  3 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint
    detector tallies
         missed all bin error check:    16 tally bins had     0 bins with zeros and     2 bins with relative errors
    exceeding 0.10

    22   passed the 10 statistical checks for the tally fluctuation chart bin result
         passed all bin error check:    22 tally bins all have relative errors less than 0.10 with no zero bins

    32   passed the 10 statistical checks for the tally fluctuation chart bin result
         passed all bin error check:     5 tally bins had     1 bins with zeros and     0 bins with relative errors
    exceeding 0.10

    42   passed the 10 statistical checks for the tally fluctuation chart bin result
         missed all bin error check:    66 tally bins had     0 bins with zeros and    20 bins with relative errors
    exceeding 0.10

    52   missed  6 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint
    detector tallies
         missed all bin error check:    66 tally bins had     4 bins with zeros and    26 bins with relative errors
    exceeding 0.10

    62   no nonzero tallies were made in the tally fluctuation chart bin
```

missed all bin error check: 5 tally bins had 2 bins with zeros and 3 bins with relative errors exceeding 0.10

the 10 statistical checks are only for the tally fluctuation chart bin and do not apply to other tally bins.

the tally bins with zeros may or may not be correct: compare the source, cutoffs, multipliers, et cetera with the tally bins.

warning. 4 of the 7 tally fluctuation chart bins did not pass all 10 statistical checks.
warning. 1 of the 7 tallies were all zeros.
warning. 4 of the 7 tallies had bins with relative errors greater than recommended.
1tally fluctuation charts

	tally 2					tally 12					tally 22				
nps	mean	error	vov	slope	fom	mean	error	vov	slope	fom	mean	error	vov	slope	fom
1024000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	3.3685E-11	0.3018	0.2622	0.0	1.1E+00	9.8632E-48	0.0710	0.0754	3.4	21
2048000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	3.5749E-11	0.2915	0.3590	0.0	6.2E-01	9.0472E-48	0.0510	0.0380	3.3	20
3072000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	3.7477E-11	0.2131	0.2145	0.0	7.8E-01	9.2796E-48	0.0397	0.0208	4.0	22
4096000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	4.5254E-11	0.1919	0.1457	0.0	7.2E-01	9.0294E-48	0.0349	0.0158	3.3	22
5120000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.1539E-11	0.1977	0.2154	0.0	5.4E-01	9.1345E-48	0.0306	0.0113	3.6	23
6144000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.6005E-11	0.3485	0.7486	0.0	1.5E-01	9.1619E-48	0.0279	0.0089	3.9	23
7168000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.5763E-11	0.3032	0.7159	0.0	1.6E-01	9.1084E-48	0.0259	0.0074	4.6	23
8192000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.5820E-11	0.2702	0.6636	0.0	1.8E-01	9.0508E-48	0.0243	0.0068	4.3	22
9216000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.4804E-11	0.2495	0.6082	0.0	1.9E-01	9.1048E-48	0.0229	0.0058	4.3	22
10240000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.3192E-11	0.2324	0.5863	0.0	2.0E-01	9.1979E-48	0.0217	0.0050	5.2	22
11264000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.5936E-11	0.2073	0.5345	0.0	2.2E-01	9.2487E-48	0.0208	0.0045	7.6	22
12288000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.4182E-11	0.1968	0.5173	0.0	2.3E-01	9.3292E-48	0.0198	0.0040	10.0	22
13312000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.1405E-11	0.1903	0.5129	0.0	2.2E-01	9.2911E-48	0.0191	0.0036	10.0	22
14336000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.9857E-11	0.1820	0.5049	0.0	2.3E-01	9.1818E-48	0.0183	0.0033	10.0	23
15360000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.0261E-11	0.1719	0.4697	0.0	2.4E-01	9.1795E-48	0.0177	0.0030	10.0	22
16384000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.4373E-11	0.1608	0.3707	0.0	2.6E-01	9.1556E-48	0.0172	0.0028	10.0	22
17408000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.2080E-11	0.1573	0.3670	0.0	2.5E-01	9.1798E-48	0.0167	0.0027	10.0	22
18432000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.1364E-11	0.1514	0.3569	0.0	2.6E-01	9.1786E-48	0.0162	0.0025	10.0	22
19456000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.0866E-11	0.1454	0.3490	0.0	2.6E-01	9.1743E-48	0.0157	0.0023	10.0	22
20000000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.0854E-11	0.1421	0.3432	0.0	2.7E-01	9.1770E-48	0.0155	0.0023	10.0	22

	tally 32					tally 42					tally 52				
nps	mean	error	vov	slope	fom	mean	error	vov	slope	fom	mean	error	vov	slope	fom
1024000	2.6695E-03	0.0502	0.0074	10.0	41	2.7031E-05	0.0575	0.0141	10.0	32	4.0356E-08	0.3910	0.1862	0.0	6.8E-01
2048000	2.5008E-03	0.0360	0.0043	10.0	41	2.4632E-05	0.0409	0.0078	10.0	32	3.8145E-08	0.2752	0.0916	0.0	7.0E-01
3072000	2.5531E-03	0.0295	0.0037	10.0	41	2.4792E-05	0.0337	0.0054	10.0	31	4.2386E-08	0.2188	0.0555	0.0	7.4E-01
4096000	2.5160E-03	0.0256	0.0026	10.0	40	2.4993E-05	0.0298	0.0041	10.0	30	4.1404E-08	0.1926	0.0470	0.0	7.1E-01
5120000	2.5291E-03	0.0231	0.0024	10.0	40	2.5842E-05	0.0268	0.0035	10.0	30	4.3803E-08	0.1676	0.0346	0.0	7.5E-01
6144000	2.5355E-03	0.0212	0.0020	6.4	39	2.5550E-05	0.0247	0.0035	10.0	29	5.0374E-08	0.1784	0.1798	0.0	5.5E-01
7168000	2.4974E-03	0.0197	0.0018	6.2	39	2.5027E-05	0.0230	0.0030	10.0	29	5.3232E-08	0.1552	0.1378	0.0	6.3E-01
8192000	2.4827E-03	0.0185	0.0016	7.3	39	2.5263E-05	0.0217	0.0035	10.0	28	5.5904E-08	0.1406	0.1019	0.0	6.7E-01
9216000	2.4989E-03	0.0176	0.0015	8.0	38	2.5418E-05	0.0205	0.0032	10.0	28	6.1386E-08	0.1249	0.0738	0.0	7.5E-01
10240000	2.5033E-03	0.0167	0.0013	10.0	38	2.5939E-05	0.0199	0.0042	5.3	27	6.2266E-08	0.1158	0.0627	0.0	7.9E-01
11264000	2.5125E-03	0.0160	0.0012	10.0	38	2.6172E-05	0.0189	0.0036	5.2	27	6.0133E-08	0.1113	0.0579	0.0	7.7E-01
12288000	2.5337E-03	0.0153	0.0011	10.0	38	2.6292E-05	0.0181	0.0032	6.0	27	6.0027E-08	0.1089	0.0504	0.0	7.4E-01
13312000	2.5438E-03	0.0147	0.0010	10.0	38	2.6131E-05	0.0174	0.0029	6.3	27	6.1196E-08	0.1060	0.0471	0.0	7.2E-01

```
 14336000   2.5482E-03 0.0141 0.0009 10.0      38   2.5944E-05 0.0168 0.0027  7.1      27   6.7649E-08 0.0999 0.0382  0.0 7.6E-
01
 15360000   2.5528E-03 0.0137 0.0009 10.0      38   2.5802E-05 0.0162 0.0025  8.3      27   6.9274E-08 0.0965 0.0325  0.0 7.6E-
01
 16384000   2.5425E-03 0.0132 0.0008 10.0      38   2.5616E-05 0.0157 0.0023  7.0      27   7.0050E-08 0.1032 0.0735  0.0 6.2E-
01
 17408000   2.5465E-03 0.0128 0.0007 10.0      38   2.5572E-05 0.0152 0.0022  6.2      27   7.0228E-08 0.0993 0.0675  0.0 6.3E-
01
 18432000   2.5452E-03 0.0124 0.0007 10.0      38   2.5583E-05 0.0148 0.0020  8.3      27   7.5777E-08 0.1291 0.3024  0.0 3.5E-
01
 19456000   2.5461E-03 0.0121 0.0007 10.0      38   2.5655E-05 0.0144 0.0019  6.9      27   7.4978E-08 0.1247 0.2915  0.0 3.6E-
01
 20000000   2.5527E-03 0.0119 0.0006 10.0      38   2.5635E-05 0.0142 0.0018  6.5      27   7.4465E-08 0.1225 0.2880  0.0 3.6E-
01
1tally fluctuation charts

                    tally   62
         nps      mean     error    vov  slope    fom
      1024000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
      2048000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
      3072000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
      4096000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
      5120000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
      6144000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
      7168000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
      8192000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
      9216000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     10240000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     11264000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     12288000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     13312000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     14336000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     15360000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     16384000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     17408000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     18432000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     19456000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     20000000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00


   ********************************************************************************************************************
   *******
 dump no.    5 on file runtpe       nps =    20000000     coll =      344973773     ctm =      185.10   nrn =
   21251626523

 surface-source file wssa     with nps =    20000000 and     1510850 tracks was written for
     surface(s)  -2050

        49 warning messages so far.


 run terminated when    20000000  particle histories were done.

 computer time =  185.43 minutes

 mcnp     version 5     11112005                    03/24/09 11:56:14                    probid =  03/24/09
   08:48:55
```

MCNP Case to Translate the Source to the Side Wall With Shield Bells

```
         Thread Name & Version = mcnp5VE_RSICC, 1.40

         .  _ _   _  .  _   .  _   |_
         |_|_|  (_  |_|  |_)  _)
                         |
 +-------------------------------------------------------------------+
 |   This program was prepared by the Regents of the University of    |
 |California at Los Alamos National Laboratory (the University) under |
 |  contract number W-7405-ENG-36 with the U.S. Department of Energy  |
 |(DoE).  The University has certain rights in the program pursuant to|
 |  the contract and the program should not be copied or distributed  |
 | outside your organization.  All rights in the program are reserved |
 |by the DoE and the University.  Neither the U.S. Government nor the |
 | University makes any warranty, express or implied, or assumes any  |
 |     liability or responsibility for the use of this software.      |
 +-------------------------------------------------------------------+

1mcnp     version 5     ld=11112005                     03/24/09 08:51:07
 ************************************************************************                probid =  03/24/09
   08:51:07
  inp = sbsw.i outp = sbsw.o

    1-       c     Created on: Tuesday, November 11, 2008 at 09:35
    2-       c     Canister Cells
    3-          11     5      -1 -11 1209 -1212
    4-          12     5      -1 -12 1209 -1212
    5-          13     5      -1 -13 1209 -1212
    6-          14     5      -1 -14 1209 -1212
    7-          15     5      -1 -15 1209 -1212
    8-          16     5      -1 -16 1209 -1212
    9-          17     5      -1 -17 1209 -1212
   10-          18     5      -1 -18 1209 -1212
   11-          19     5      -1 -19 1209 -1212
   12-          21     5      -1 -21 1209 -1212
   13-          22     5      -1 -22 1209 -1212
   14-          23     5      -1 -23 1209 -1212
   15-          24     5      -1 -24 1209 -1212
   16-          25     5      -1 -25 1209 -1212
   17-          26     5      -1 -26 1209 -1212
   18-          27     5      -1 -27 1209 -1212
   19-          28     5      -1 -28 1209 -1212
   20-          29     5      -1 -29 1209 -1212
   21-          31     5      -1 -31 1209 -1212
   22-          32     5      -1 -32 1209 -1212
   23-          33     5      -1 -33 1209 -1212
   24-          34     5      -1 -34 1209 -1212
   25-          35     5      -1 -35 1209 -1212
   26-          36     5      -1 -36 1209 -1212
   27-          37     5      -1 -37 1209 -1212
   28-          38     5      -1 -38 1209 -1212
   29-          39     5      -1 -39 1209 -1212
   30-          41     5      -1 -41 1209 -1212
   31-          42     5      -1 -42 1209 -1212
   32-          43     5      -1 -43 1209 -1212
   33-          44     5      -1 -44 1209 -1212
   34-          45     5      -1 -45 1209 -1212
   35-          46     5      -1 -46 1209 -1212
   36-          47     5      -1 -47 1209 -1212
   37-          48     5      -1 -48 1209 -1212
   38-          49     5      -1 -49 1209 -1212
   39-          51     5      -1 -51 1209 -1212
   40-          52     5      -1 -52 1209 -1212
   41-          53     5      -1 -53 1209 -1212
   42-          54     5      -1 -54 1209 -1212
   43-          55     5      -1 -55 1209 -1212
   44-          56     5      -1 -56 1209 -1212
   45-          57     5      -1 -57 1209 -1212
   46-          58     5      -1 -58 1209 -1212
   47-          59     5      -1 -59 1209 -1212
   48-          61     5      -1 -61 1209 -1212
   49-          62     5      -1 -62 1209 -1212
   50-          63     5      -1 -63 1209 -1212
   51-          64     5      -1 -64 1209 -1212
   52-          65     5      -1 -65 1209 -1212
   53-          66     5      -1 -66 1209 -1212
```

```
 54-          67     5      -1 -67 1209 -1212
 55-          68     5      -1 -68 1209 -1212
 56-          69     5      -1 -69 1209 -1212
 57-          71     5      -1 -71 1209 -1212
 58-          72     5      -1 -72 1209 -1212
 59-          73     5      -1 -73 1209 -1212
 60-          74     5      -1 -74 1209 -1212
 61-          75     5      -1 -75 1209 -1212
 62-          76     5      -1 -76 1209 -1212
 63-          77     5      -1 -77 1209 -1212
 64-          78     5      -1 -78 1209 -1212
 65-          79     5      -1 -79 1209 -1212
 66-          81     5      -1 -81 1209 -1212
 67-          82     5      -1 -82 1209 -1212
 68-          83     5      -1 -83 1209 -1212
 69-          84     5      -1 -84 1209 -1212
 70-          85     5      -1 -85 1209 -1212
 71-          86     5      -1 -86 1209 -1212
 72-          87     5      -1 -87 1209 -1212
 73-          88     5      -1 -88 1209 -1212
 74-          89     5      -1 -89 1209 -1212
 75-          91     5      -1 -91 1209 -1212
 76-          92     5      -1 -92 1209 -1212
 77-          93     5      -1 -93 1209 -1212
 78-          94     5      -1 -94 1209 -1212
 79-          95     5      -1 -95 1209 -1212
 80-          96     5      -1 -96 1209 -1212
 81-          97     5      -1 -97 1209 -1212
 82-          98     5      -1 -98 1209 -1212
 83-          99     5      -1 -99 1209 -1212
 84-         101     5      -1 -101 1209 -1212
 85-         102     5      -1 -102 1209 -1212
 86-         103     5      -1 -103 1209 -1212
 87-         104     5      -1 -104 1209 -1212
 88-         105     5      -1 -105 1209 -1212
 89-         106     5      -1 -106 1209 -1212
 90-         107     5      -1 -107 1209 -1212
 91-         108     5      -1 -108 1209 -1212
 92-         109     5      -1 -109 1209 -1212
 93-         111     5      -1 -111 1209 -1212
 94-         112     5      -1 -112 1209 -1212
 95-         113     5      -1 -113 1209 -1212
 96-         114     5      -1 -114 1209 -1212
 97-         115     5      -1 -115 1209 -1212
 98-         116     5      -1 -116 1209 -1212
 99-         117     5      -1 -117 1209 -1212
100-         118     5      -1 -118 1209 -1212
101-         119     5      -1 -119 1209 -1212
102-         121     5      -1 -121 1209 -1212
103-         122     5      -1 -122 1209 -1212
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105-         124     5      -1 -124 1209 -1212
106-         125     5      -1 -125 1209 -1212
107-         126     5      -1 -126 1209 -1212
108-         127     5      -1 -127 1209 -1212
109-         128     5      -1 -128 1209 -1212
110-         129     5      -1 -129 1209 -1212
111-         131     5      -1 -131 1209 -1212
112-         132     5      -1 -132 1209 -1212
113-         133     5      -1 -133 1209 -1212
114-         134     5      -1 -134 1209 -1212
115-         135     5      -1 -135 1209 -1212
116-         136     5      -1 -136 1209 -1212
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119-         139     5      -1 -139 1209 -1212
120-         141     5      -1 -141 1209 -1212
121-         142     5      -1 -142 1209 -1212
122-         143     5      -1 -143 1209 -1212
123-         144     5      -1 -144 1209 -1212
124-         145     5      -1 -145 1209 -1212
125-         146     5      -1 -146 1209 -1212
126-         147     5      -1 -147 1209 -1212
127-         148     5      -1 -148 1209 -1212
128-         149     5      -1 -149 1209 -1212
129-       c     Air  Gap Cells
130-         211     3 -0.001225 -211 1209 -1213 #11
131-         212     3 -0.001225 -212 1209 -1213 #12
```

```
132-          213      3 -0.001225 -213 1209 -1213 #13
133-          214      3 -0.001225 -214 1209 -1213 #14
134-          215      3 -0.001225 -215 1209 -1213 #15
135-          216      3 -0.001225 -216 1209 -1213 #16
136-          217      3 -0.001225 -217 1209 -1213 #17
137-          218      3 -0.001225 -218 1209 -1213 #18
138-          219      3 -0.001225 -219 1209 -1213 #19
139-          221      3 -0.001225 -221 1209 -1213 #21
140-          222      3 -0.001225 -222 1209 -1213 #22
141-          223      3 -0.001225 -223 1209 -1213 #23
142-          224      3 -0.001225 -224 1209 -1213 #24
143-          225      3 -0.001225 -225 1209 -1213 #25
144-          226      3 -0.001225 -226 1209 -1213 #26
145-          227      3 -0.001225 -227 1209 -1213 #27
146-          228      3 -0.001225 -228 1209 -1213 #28
147-          229      3 -0.001225 -229 1209 -1213 #29
148-          231      3 -0.001225 -231 1209 -1213 #31
149-          232      3 -0.001225 -232 1209 -1213 #32
150-          233      3 -0.001225 -233 1209 -1213 #33
151-          234      3 -0.001225 -234 1209 -1213 #34
152-          235      3 -0.001225 -235 1209 -1213 #35
153-          236      3 -0.001225 -236 1209 -1213 #36
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155-          238      3 -0.001225 -238 1209 -1213 #38
156-          239      3 -0.001225 -239 1209 -1213 #39
157-          241      3 -0.001225 -241 1209 -1213 #41
158-          242      3 -0.001225 -242 1209 -1213 #42
159-          243      3 -0.001225 -243 1209 -1213 #43
160-          244      3 -0.001225 -244 1209 -1213 #44
161-          245      3 -0.001225 -245 1209 -1213 #45
162-          246      3 -0.001225 -246 1209 -1213 #46
163-          247      3 -0.001225 -247 1209 -1213 #47
164-          248      3 -0.001225 -248 1209 -1213 #48
165-          249      3 -0.001225 -249 1209 -1213 #49
166-          251      3 -0.001225 -251 1209 -1213 #51
167-          252      3 -0.001225 -252 1209 -1213 #52
168-          253      3 -0.001225 -253 1209 -1213 #53
169-          254      3 -0.001225 -254 1209 -1213 #54
170-          255      3 -0.001225 -255 1209 -1213 #55
171-          256      3 -0.001225 -256 1209 -1213 #56
172-          257      3 -0.001225 -257 1209 -1213 #57
173-          258      3 -0.001225 -258 1209 -1213 #58
174-          259      3 -0.001225 -259 1209 -1213 #59
175-          261      3 -0.001225 -261 1209 -1213 #61
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177-          263      3 -0.001225 -263 1209 -1213 #63
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185-          272      3 -0.001225 -272 1209 -1213 #72
186-          273      3 -0.001225 -273 1209 -1213 #73
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188-          275      3 -0.001225 -275 1209 -1213 #75
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193-          281      3 -0.001225 -281 1209 -1213 #81
194-          282      3 -0.001225 -282 1209 -1213 #82
195-          283      3 -0.001225 -283 1209 -1213 #83
196-          284      3 -0.001225 -284 1209 -1213 #84
197-          285      3 -0.001225 -285 1209 -1213 #85
198-          286      3 -0.001225 -286 1209 -1213 #86
199-          287      3 -0.001225 -287 1209 -1213 #87
200-          288      3 -0.001225 -288 1209 -1213 #88
201-          289      3 -0.001225 -289 1209 -1213 #89
202-          291      3 -0.001225 -291 1209 -1213 #91
203-          292      3 -0.001225 -292 1209 -1213 #92
204-          293      3 -0.001225 -293 1209 -1213 #93
205-          294      3 -0.001225 -294 1209 -1213 #94
206-          295      3 -0.001225 -295 1209 -1213 #95
207-          296      3 -0.001225 -296 1209 -1213 #96
208-          297      3 -0.001225 -297 1209 -1213 #97
209-          298      3 -0.001225 -298 1209 -1213 #98
```

```
210-         299      3 -0.001225 -299 1209 -1213 #99
211-         301      3 -0.001225 -301 1209 -1213 #101
212-         302      3 -0.001225 -302 1209 -1213 #102
213-         303      3 -0.001225 -303 1209 -1213 #103
214-         304      3 -0.001225 -304 1209 -1213 #104
215-         305      3 -0.001225 -305 1209 -1213 #105
216-         306      3 -0.001225 -306 1209 -1213 #106
217-         307      3 -0.001225 -307 1209 -1213 #107
218-         308      3 -0.001225 -308 1209 -1213 #108
219-         309      3 -0.001225 -309 1209 -1213 #109
220-         311      3 -0.001225 -311 1209 -1213 #111
221-         312      3 -0.001225 -312 1209 -1213 #112
222-         313      3 -0.001225 -313 1209 -1213 #113
223-         314      3 -0.001225 -314 1209 -1213 #114
224-         315      3 -0.001225 -315 1209 -1213 #115
225-         316      3 -0.001225 -316 1209 -1213 #116
226-         317      3 -0.001225 -317 1209 -1213 #117
227-         318      3 -0.001225 -318 1209 -1213 #118
228-         319      3 -0.001225 -319 1209 -1213 #119
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231-         323      3 -0.001225 -323 1209 -1213 #123
232-         324      3 -0.001225 -324 1209 -1213 #124
233-         325      3 -0.001225 -325 1209 -1213 #125
234-         326      3 -0.001225 -326 1209 -1213 #126
235-         327      3 -0.001225 -327 1209 -1213 #127
236-         328      3 -0.001225 -328 1209 -1213 #128
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242-         335      3 -0.001225 -335 1209 -1213 #135
243-         336      3 -0.001225 -336 1209 -1213 #136
244-         337      3 -0.001225 -337 1209 -1213 #137
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252-         346      3 -0.001225 -346 1209 -1213 #146
253-         347      3 -0.001225 -347 1209 -1213 #147
254-         348      3 -0.001225 -348 1209 -1213 #148
255-         349      3 -0.001225 -349 1209 -1213 #149
256-       c     Bell Cells
257-         411      4   -7.86 -411 1209 -1214 #211 #11
258-         412      4   -7.86 -412 1209 -1214 #212 #12
259-         413      4   -7.86 -413 1209 -1214 #213 #13
260-         414      4   -7.86 -414 1209 -1214 #214 #14
261-         415      4   -7.86 -415 1209 -1214 #215 #15
262-         416      4   -7.86 -416 1209 -1214 #216 #16
263-         417      4   -7.86 -417 1209 -1214 #217 #17
264-         418      4   -7.86 -418 1209 -1214 #218 #18
265-         419      4   -7.86 -419 1209 -1214 #219 #19
266-         421      4   -7.86 -421 1209 -1214 #221 #21
267-         422      4   -7.86 -422 1209 -1214 #222 #22
268-         423      4   -7.86 -423 1209 -1214 #223 #23
269-         424      4   -7.86 -424 1209 -1214 #224 #24
270-         425      4   -7.86 -425 1209 -1214 #225 #25
271-         426      4   -7.86 -426 1209 -1214 #226 #26
272-         427      4   -7.86 -427 1209 -1214 #227 #27
273-         428      4   -7.86 -428 1209 -1214 #228 #28
274-         429      4   -7.86 -429 1209 -1214 #229 #29
275-         431      4   -7.86 -431 1209 -1214 #231 #31
276-         432      4   -7.86 -432 1209 -1214 #232 #32
277-         433      4   -7.86 -433 1209 -1214 #233 #33
278-         434      4   -7.86 -434 1209 -1214 #234 #34
279-         435      4   -7.86 -435 1209 -1214 #235 #35
280-         436      4   -7.86 -436 1209 -1214 #236 #36
281-         437      4   -7.86 -437 1209 -1214 #237 #37
282-         438      4   -7.86 -438 1209 -1214 #238 #38
283-         439      4   -7.86 -439 1209 -1214 #239 #39
284-         441      4   -7.86 -441 1209 -1214 #241 #41
285-         442      4   -7.86 -442 1209 -1214 #242 #42
286-         443      4   -7.86 -443 1209 -1214 #243 #43
287-         444      4   -7.86 -444 1209 -1214 #244 #44
```

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288-         445     4   -7.86 -445 1209 -1214 #245 #45
289-         446     4   -7.86 -446 1209 -1214 #246 #46
290-         447     4   -7.86 -447 1209 -1214 #247 #47
291-         448     4   -7.86 -448 1209 -1214 #248 #48
292-         449     4   -7.86 -449 1209 -1214 #249 #49
293-         451     4   -7.86 -451 1209 -1214 #251 #51
294-         452     4   -7.86 -452 1209 -1214 #252 #52
295-         453     4   -7.86 -453 1209 -1214 #253 #53
296-         454     4   -7.86 -454 1209 -1214 #254 #54
297-         455     4   -7.86 -455 1209 -1214 #255 #55
298-         456     4   -7.86 -456 1209 -1214 #256 #56
299-         457     4   -7.86 -457 1209 -1214 #257 #57
300-         458     4   -7.86 -458 1209 -1214 #258 #58
301-         459     4   -7.86 -459 1209 -1214 #259 #59
302-         461     4   -7.86 -461 1209 -1214 #261 #61
303-         462     4   -7.86 -462 1209 -1214 #262 #62
304-         463     4   -7.86 -463 1209 -1214 #263 #63
305-         464     4   -7.86 -464 1209 -1214 #264 #64
306-         465     4   -7.86 -465 1209 -1214 #265 #65
307-         466     4   -7.86 -466 1209 -1214 #266 #66
308-         467     4   -7.86 -467 1209 -1214 #267 #67
309-         468     4   -7.86 -468 1209 -1214 #268 #68
310-         469     4   -7.86 -469 1209 -1214 #269 #69
311-         471     4   -7.86 -471 1209 -1214 #271 #71
312-         472     4   -7.86 -472 1209 -1214 #272 #72
313-         473     4   -7.86 -473 1209 -1214 #273 #73
314-         474     4   -7.86 -474 1209 -1214 #274 #74
315-         475     4   -7.86 -475 1209 -1214 #275 #75
316-         476     4   -7.86 -476 1209 -1214 #276 #76
317-         477     4   -7.86 -477 1209 -1214 #277 #77
318-         478     4   -7.86 -478 1209 -1214 #278 #78
319-         479     4   -7.86 -479 1209 -1214 #279 #79
320-         481     4   -7.86 -481 1209 -1214 #281 #81
321-         482     4   -7.86 -482 1209 -1214 #282 #82
322-         483     4   -7.86 -483 1209 -1214 #283 #83
323-         484     4   -7.86 -484 1209 -1214 #284 #84
324-         485     4   -7.86 -485 1209 -1214 #285 #85
325-         486     4   -7.86 -486 1209 -1214 #286 #86
326-         487     4   -7.86 -487 1209 -1214 #287 #87
327-         488     4   -7.86 -488 1209 -1214 #288 #88
328-         489     4   -7.86 -489 1209 -1214 #289 #89
329-         491     4   -7.86 -491 1209 -1214 #291 #91
330-         492     4   -7.86 -492 1209 -1214 #292 #92
331-         493     4   -7.86 -493 1209 -1214 #293 #93
332-         494     4   -7.86 -494 1209 -1214 #294 #94
333-         495     4   -7.86 -495 1209 -1214 #295 #95
334-         496     4   -7.86 -496 1209 -1214 #296 #96
335-         497     4   -7.86 -497 1209 -1214 #297 #97
336-         498     4   -7.86 -498 1209 -1214 #298 #98
337-         499     4   -7.86 -499 1209 -1214 #299 #99
338-         501     4   -7.86 -501 1209 -1214 #301 #101
339-         502     4   -7.86 -502 1209 -1214 #302 #102
340-         503     4   -7.86 -503 1209 -1214 #303 #103
341-         504     4   -7.86 -504 1209 -1214 #304 #104
342-         505     4   -7.86 -505 1209 -1214 #305 #105
343-         506     4   -7.86 -506 1209 -1214 #306 #106
344-         507     4   -7.86 -507 1209 -1214 #307 #107
345-         508     4   -7.86 -508 1209 -1214 #308 #108
346-         509     4   -7.86 -509 1209 -1214 #309 #109
347-         511     4   -7.86 -511 1209 -1214 #311 #111
348-         512     4   -7.86 -512 1209 -1214 #312 #112
349-         513     4   -7.86 -513 1209 -1214 #313 #113
350-         514     4   -7.86 -514 1209 -1214 #314 #114
351-         515     4   -7.86 -515 1209 -1214 #315 #115
352-         516     4   -7.86 -516 1209 -1214 #316 #116
353-         517     4   -7.86 -517 1209 -1214 #317 #117
354-         518     4   -7.86 -518 1209 -1214 #318 #118
355-         519     4   -7.86 -519 1209 -1214 #319 #119
356-         521     4   -7.86 -521 1209 -1214 #321 #121
357-         522     4   -7.86 -522 1209 -1214 #322 #122
358-         523     4   -7.86 -523 1209 -1214 #323 #123
359-         524     4   -7.86 -524 1209 -1214 #324 #124
360-         525     4   -7.86 -525 1209 -1214 #325 #125
361-         526     4   -7.86 -526 1209 -1214 #326 #126
362-         527     4   -7.86 -527 1209 -1214 #327 #127
363-         528     4   -7.86 -528 1209 -1214 #328 #128
364-         529     4   -7.86 -529 1209 -1214 #329 #129
365-         531     4   -7.86 -531 1209 -1214 #331 #131
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366-          532     4   -7.86 -532 1209 -1214 #332 #132
367-          533     4   -7.86 -533 1209 -1214 #333 #133
368-          534     4   -7.86 -534 1209 -1214 #334 #134
369-          535     4   -7.86 -535 1209 -1214 #335 #135
370-          536     4   -7.86 -536 1209 -1214 #336 #136
371-          537     4   -7.86 -537 1209 -1214 #337 #137
372-          538     4   -7.86 -538 1209 -1214 #338 #138
373-          539     4   -7.86 -539 1209 -1214 #339 #139
374-          541     4   -7.86 -541 1209 -1214 #341 #141
375-          542     4   -7.86 -542 1209 -1214 #342 #142
376-          543     4   -7.86 -543 1209 -1214 #343 #143
377-          544     4   -7.86 -544 1209 -1214 #344 #144
378-          545     4   -7.86 -545 1209 -1214 #345 #145
379-          546     4   -7.86 -546 1209 -1214 #346 #146
380-          547     4   -7.86 -547 1209 -1214 #347 #147
381-          548     4   -7.86 -548 1209 -1214 #348 #148
382-          549     4   -7.86 -549 1209 -1214 #349 #149
383-        c Walls
384-         1200     3 -0.001225 1222 -1221 1206 -1208 1220 -1219  $Notch
385-         1201     1  -2.365 1206 -1208 1202 -1203 -1219 1209 #1200  $Inner Wall
386-         1202     1  -2.365 1207 -1233 1219 -1215 -1225 1226  $Top of Back Wall
387-        12021     1  -2.365 1233 -1223 1219 -1215 1226 -1225  $Split in Back Wall
388-         1203     1  -2.365 1207 -1205 -1219 1209 -1203 1202  $Bottom of Back Wall
389-         1204     1  -2.365 1225 -1234 1207 -1218 1219 -1215  $Top Of Right Wall
390-        12041     1  -2.365 1234 -1204 1207 -1218 1219 -1215  $Split in Right Wall
391-         1205     1  -2.365 1203 -1204 1207 -1218 -1219 1209  $Bottom of Right Wall
392-         1206     1  -2.365 1235 -1218 -1225 1226 1219 -1215  $Top of Front Wall
393-        12061     1  -2.365 1224 -1235 -1225 1226 1219 -1215  $Split in Front Wall
394-         1207     1  -2.365 1217 -1218 -1203 1202 -1219 1209  $Bottom of Front Wall
395-         1208     1  -2.365 1201 -1236 -1218 1207 1219 -1215 #10000 $Top of Left Wall
396-                    #10001 #10002 #10003 #10004 #10005
397-        12081     1  -2.365 -1226 1236 -1218 1207 1219 -1215 #10000 $Split in Left Wall
398-                    #10001 #10002 #10003 #10004 #10005
399-        c 1209     1  -2.365 -1202 1201 -1218 1207 -1219 1209  $Bottom of Left Wall
400-         1210     1  -2.365 -1209 1227 1207 -1218 -1204 1201  $Floor
401-         1211     1  -2.328 1215 -1237 1207 -1218 -1204 1201  $Roof
402-        12111     1  -2.328 1237 -1216 1207 -1218 -1204 1201  $Split in Roof
403-        c Splits in left wall
404-         4236     1  -2.365 -1202 2036 -1218 1207 -1219 1209
405-         4237     1  -2.365 -2036 2037 -1218 1207 -1219 1209
406-         4238     1  -2.365 -2037 2038 -1218 1207 -1219 1209
407-         4239     1  -2.365 -2038 2039 -1218 1207 -1219 1209
408-         4240     1  -2.365 -2039 2040 -1218 1207 -1219 1209
409-         4241     1  -2.365 -2040 2041 -1218 1207 -1219 1209
410-         4242     1  -2.365 -2041 2042 -1218 1207 -1219 1209
411-         4243     1  -2.365 -2042 2043 -1218 1207 -1219 1209
412-         4244     1  -2.365 -2043 2044 -1218 1207 -1219 1209
413-         4245     1  -2.365 -2044 2045 -1218 1207 -1219 1209
414-         4246     1  -2.365 -2045 2046 -1218 1207 -1219 1209
415-         4247     1  -2.365 -2046 2047 -1218 1207 -1219 1209
416-         4248     1  -2.365 -2047 2048 -1218 1207 -1219 1209
417-         4249     1  -2.365 -2048 2049 -1218 1207 -1219 1209
418-         4250     1  -2.365 -2049 2050 -1218 1207 -1219 1209
419-         4251     1  -2.365 -2050 1201 -1218 1207 -1219 1209
420-        c   Air
421-         9999     0         2015  $Outside Model
422-         9998     3 -0.001225 1205 -1228 -1220 1209 -1203 1202 #(-445 1209 -1214 )#
423-                    (-446 1209 -1214 )#(-447 1209 -1214 )#(-448 1209 -1214 )#
424-                    (-449 1209 -1214 )#(-451 1209 -1214 )#(-452 1209 -1214 )#
425-                    (-453 1209 -1214 )#(-454 1209 -1214 )#(-455 1209 -1214 )#
426-                    (-456 1209 -1214 )#(-457 1209 -1214 )#(-458 1209 -1214 )#
427-                    (-459 1209 -1214 )#(-411 1209 -1214 )#(-412 1209 -1214 )#
428-                    (-413 1209 -1214 )#(-414 1209 -1214 )#(-415 1209 -1214 )#
429-                    (-416 1209 -1214 )#(-417 1209 -1214 )#(-418 1209 -1214 )#
430-                    (-419 1209 -1214 )#(-421 1209 -1214 )#(-422 1209 -1214 )#
431-                    (-423 1209 -1214 )#(-424 1209 -1214 )#(-425 1209 -1214 )#
432-                    (-426 1209 -1214 )#(-427 1209 -1214 )#(-428 1209 -1214 )#
433-                    (-429 1209 -1214 )#(-431 1209 -1214 )#(-432 1209 -1214 )#
434-                    (-433 1209 -1214 )#(-434 1209 -1214 )#(-435 1209 -1214 )#
435-                    (-436 1209 -1214 )#(-437 1209 -1214 )#(-438 1209 -1214 )#
436-                    (-439 1209 -1214 )#(-441 1209 -1214 )#(-442 1209 -1214 )#
437-                    (-443 1209 -1214 )#(-444 1209 -1214 )
438-         9997     3 -0.001225 1228 -1229 -1220 1209 -1203 1202 #(-497 1209 -1214 )#
439-                    (-498 1209 -1214 )#(-499 1209 -1214 )#(-501 1209 -1214 )#
440-                    (-502 1209 -1214 )#(-503 1209 -1214 )#(-504 1209 -1214 )#
441-                    (-505 1209 -1214 )#(-506 1209 -1214 )#(-507 1209 -1214 )#
442-                    (-508 1209 -1214 )#(-509 1209 -1214 )#(-461 1209 -1214 )#
443-                    (-462 1209 -1214 )#(-463 1209 -1214 )#(-464 1209 -1214 )#
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444-                  (-465 1209 -1214 )#(-466 1209 -1214 )#(-467 1209 -1214 )#
445-                  (-468 1209 -1214 )#(-469 1209 -1214 )#(-471 1209 -1214 )#
446-                  (-472 1209 -1214 )#(-473 1209 -1214 )#(-474 1209 -1214 )#
447-                  (-475 1209 -1214 )#(-476 1209 -1214 )#(-477 1209 -1214 )#
448-                  (-478 1209 -1214 )#(-479 1209 -1214 )#(-481 1209 -1214 )#
449-                  (-482 1209 -1214 )#(-483 1209 -1214 )#(-484 1209 -1214 )#
450-                  (-485 1209 -1214 )#(-486 1209 -1214 )#(-487 1209 -1214 )#
451-                  (-488 1209 -1214 )#(-489 1209 -1214 )#(-491 1209 -1214 )#
452-                  (-492 1209 -1214 )#(-493 1209 -1214 )#(-494 1209 -1214 )#
453-                  (-495 1209 -1214 )#(-496 1209 -1214 )
454-        9996      3 -0.001225 1229 -1206 -1220 1209 -1203 1202 #(-538 1209 -1214 )#
455-                  (-539 1209 -1214 )#(-541 1209 -1214 )#(-542 1209 -1214 )#
456-                  (-543 1209 -1214 )#(-544 1209 -1214 )#(-545 1209 -1214 )#
457-                  (-546 1209 -1214 )#(-547 1209 -1214 )#(-548 1209 -1214 )#
458-                  (-549 1209 -1214 )#(-511 1209 -1214 )#(-512 1209 -1214 )#
459-                  (-513 1209 -1214 )#(-514 1209 -1214 )#(-515 1209 -1214 )#
460-                  (-516 1209 -1214 )#(-517 1209 -1214 )#(-518 1209 -1214 )#
461-                  (-519 1209 -1214 )#(-521 1209 -1214 )#(-522 1209 -1214 )#
462-                  (-523 1209 -1214 )#(-524 1209 -1214 )#(-525 1209 -1214 )#
463-                  (-526 1209 -1214 )#(-527 1209 -1214 )#(-528 1209 -1214 )#
464-                  (-529 1209 -1214 )#(-531 1209 -1214 )#(-532 1209 -1214 )#
465-                  (-533 1209 -1214 )#(-534 1209 -1214 )#(-535 1209 -1214 )#
466-                  (-536 1209 -1214 )#(-537 1209 -1214 )
467-        9995      3 -0.001225 1220 -1219 1205 -1206 -1203 1202  $Notch Air Side A
468-        9994      3 -0.001225 -1215 1219 1223 -1208 -1225 1226  $Air Above Crane Rail
469-        9993      3 -0.001225 1209 -1231 1208 -1217 -1203 1202  $Bottom Air Side B
470-        9992      3 -0.001225 -1230 1231 1208 -1217 -1203 1202  $Air Up to Shield Side B
471-        9991      1  -2.365 -1220 1230 1208 -1217 -1203 1202  $Truck Bay Shield
472-        9990      3 -0.001225 1220 -1219 1208 -1217 -1203 1202  $Notch Air Side B
473-        9989      3 -0.001225 -1215 1219 1208 -1224 -1225 1226  $Notch Air Side B
474-        9988      3 -0.001225 (-2000 -1207 1201 -1204 1227 -1216 ):
475-                  (1218 -2000 1201 -1204 1227 -1216 ):(-2000 -1201 1227 -1216 ):
476-                  (1204 -2000 1227 -1216 ):(1216 -2000 )
477-        9987      0          -1232 -2015  $Bottom Void
478-        9986      3 -0.001225 1232 -1227 -2015  $6 in Ground Air
479-       c       Ductwork Penetrations
480-       10000      3 -0.001225 12441 -12451 12321 -12331 1201 -1226
481-       10001      3 -0.001225 12441 -12451 12341 -12351 1201 -1226
482-       10002      3 -0.001225 12461 -12471 12361 -12371 1201 -1226
483-       10003      3 -0.001225 12441 -12451 12381 -12391 1201 -1226
484-       10004      3 -0.001225 12401 -12411 12441 -12451 1201 -1226
485-       10005      3 -0.001225 12441 -12451 12421 -12431 1201 -1226
486-       c Sphere Detector Cells
487-        2001      3 -0.001225 2000 -2001 1227
488-        2002      3 -0.001225 2001 -2002 1227
489-        2003      3 -0.001225 -2003 2002 1227
490-        2004      3 -0.001225 2003 -2004 1227
491-        2005      3 -0.001225 2004 -2005 1227
492-        2006      3 -0.001225 2005 -2006 1227
493-        2007      3 -0.001225 2006 -2007 1227
494-        2008      3 -0.001225 2007 -2008 1227
495-        2009      3 -0.001225 2008 -2009 1227
496-        2010      3 -0.001225 2009 -2010 1227
497-        2011      3 -0.001225 2010 -2011 1227
498-        2012      3 -0.001225 2011 -2012 1227
499-        2013      3 -0.001225 2012 -2013 1227
500-        2014      3 -0.001225 2013 -2014 1227
501-        2015      3 -0.001225 2014 -2015 1227
502-
503-       c     Source Canisters
504-          11       c/z 198.12 121.92 77.47
505-          12       c/z 198.12 320.04 77.47
506-          13       c/z 198.12 518.16 77.47
507-          14       c/z 198.12 716.28 77.47
508-          15       c/z 198.12 914.4 77.47
509-          16       c/z 198.12 1112.52 77.47
510-          17       c/z 198.12 1310.64 77.47
511-          18       c/z 198.12 1508.76 77.47
512-          19       c/z 198.12 1706.88 77.47
513-          21       c/z 396.24 121.92 77.47
514-          22       c/z 396.24 320.04 77.47
515-          23       c/z 396.24 518.16 77.47
516-          24       c/z 396.24 716.28 77.47
517-          25       c/z 396.24 914.4 77.47
518-          26       c/z 396.24 1112.52 77.47
519-          27       c/z 396.24 1310.64 77.47
520-          28       c/z 396.24 1508.76 77.47
521-          29       c/z 396.24 1706.88 77.47
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522-          31       c/z 594.36 121.92 77.47
523-          32       c/z 594.36 320.04 77.47
524-          33       c/z 594.36 518.16 77.47
525-          34       c/z 594.36 716.28 77.47
526-          35       c/z 594.36 914.4 77.47
527-          36       c/z 594.36 1112.52 77.47
528-          37       c/z 594.36 1310.64 77.47
529-          38       c/z 594.36 1508.76 77.47
530-          39       c/z 594.36 1706.88 77.47
531-          41       c/z 792.48 121.92 77.47
532-          42       c/z 792.48 320.04 77.47
533-          43       c/z 792.48 518.16 77.47
534-          44       c/z 792.48 716.28 77.47
535-          45       c/z 792.48 914.4 77.47
536-          46       c/z 792.48 1112.52 77.47
537-          47       c/z 792.48 1310.64 77.47
538-          48       c/z 792.48 1508.76 77.47
539-          49       c/z 792.48 1706.88 77.47
540-          51       c/z 990.6 121.92 77.47
541-          52       c/z 990.6 320.04 77.47
542-          53       c/z 990.6 518.16 77.47
543-          54       c/z 990.6 716.28 77.47
544-          55       c/z 990.6 914.4 77.47
545-          56       c/z 990.6 1112.52 77.47
546-          57       c/z 990.6 1310.64 77.47
547-          58       c/z 990.6 1508.76 77.47
548-          59       c/z 990.6 1706.88 77.47
549-          61       c/z 1188.72 121.92 77.47
550-          62       c/z 1188.72 320.04 77.47
551-          63       c/z 1188.72 518.16 77.47
552-          64       c/z 1188.72 716.28 77.47
553-          65       c/z 1188.72 914.4 77.47
554-          66       c/z 1188.72 1112.52 77.47
555-          67       c/z 1188.72 1310.64 77.47
556-          68       c/z 1188.72 1508.76 77.47
557-          69       c/z 1188.72 1706.88 77.47
558-          71       c/z 1386.84 121.92 77.47
559-          72       c/z 1386.84 320.04 77.47
560-          73       c/z 1386.84 518.16 77.47
561-          74       c/z 1386.84 716.28 77.47
562-          75       c/z 1386.84 914.4 77.47
563-          76       c/z 1386.84 1112.52 77.47
564-          77       c/z 1386.84 1310.64 77.47
565-          78       c/z 1386.84 1508.76 77.47
566-          79       c/z 1386.84 1706.88 77.47
567-          81       c/z 1584.96 121.92 77.47
568-          82       c/z 1584.96 320.04 77.47
569-          83       c/z 1584.96 518.16 77.47
570-          84       c/z 1584.96 716.28 77.47
571-          85       c/z 1584.96 914.4 77.47
572-          86       c/z 1584.96 1112.52 77.47
573-          87       c/z 1584.96 1310.64 77.47
574-          88       c/z 1584.96 1508.76 77.47
575-          89       c/z 1584.96 1706.88 77.47
576-          91       c/z 1783.08 121.92 77.47
577-          92       c/z 1783.08 320.04 77.47
578-          93       c/z 1783.08 518.16 77.47
579-          94       c/z 1783.08 716.28 77.47
580-          95       c/z 1783.08 914.4 77.47
581-          96       c/z 1783.08 1112.52 77.47
582-          97       c/z 1783.08 1310.64 77.47
583-          98       c/z 1783.08 1508.76 77.47
584-          99       c/z 1783.08 1706.88 77.47
585-         101       c/z 1981.2 121.92 77.47
586-         102       c/z 1981.2 320.04 77.47
587-         103       c/z 1981.2 518.16 77.47
588-         104       c/z 1981.2 716.28 77.47
589-         105       c/z 1981.2 914.4 77.47
590-         106       c/z 1981.2 1112.52 77.47
591-         107       c/z 1981.2 1310.64 77.47
592-         108       c/z 1981.2 1508.76 77.47
593-         109       c/z 1981.2 1706.88 77.47
594-         111       c/z 2179.32 121.92 77.47
595-         112       c/z 2179.32 320.04 77.47
596-         113       c/z 2179.32 518.16 77.47
597-         114       c/z 2179.32 716.28 77.47
598-         115       c/z 2179.32 914.4 77.47
599-         116       c/z 2179.32 1112.52 77.47
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600-         117       c/z 2179.32 1310.64 77.47
601-         118       c/z 2179.32 1508.76 77.47
602-         119       c/z 2179.32 1706.88 77.47
603-         121       c/z 2377.44 121.92 77.47
604-         122       c/z 2377.44 320.04 77.47
605-         123       c/z 2377.44 518.16 77.47
606-         124       c/z 2377.44 716.28 77.47
607-         125       c/z 2377.44 914.4 77.47
608-         126       c/z 2377.44 1112.52 77.47
609-         127       c/z 2377.44 1310.64 77.47
610-         128       c/z 2377.44 1508.76 77.47
611-         129       c/z 2377.44 1706.88 77.47
612-         131       c/z 2575.56 121.92 77.47
613-         132       c/z 2575.56 320.04 77.47
614-         133       c/z 2575.56 518.16 77.47
615-         134       c/z 2575.56 716.28 77.47
616-         135       c/z 2575.56 914.4 77.47
617-         136       c/z 2575.56 1112.52 77.47
618-         137       c/z 2575.56 1310.64 77.47
619-         138       c/z 2575.56 1508.76 77.47
620-         139       c/z 2575.56 1706.88 77.47
621-         141       c/z 2773.68 121.92 77.47
622-         142       c/z 2773.68 320.04 77.47
623-         143       c/z 2773.68 518.16 77.47
624-         144       c/z 2773.68 716.28 77.47
625-         145       c/z 2773.68 914.4 77.47
626-         146       c/z 2773.68 1112.52 77.47
627-         147       c/z 2773.68 1310.64 77.47
628-         148       c/z 2773.68 1508.76 77.47
629-         149       c/z 2773.68 1706.88 77.47
630-       c     Inside of Shield Bell
631-         211       c/z 198.12 121.92 86.36
632-         212       c/z 198.12 320.04 86.36
633-         213       c/z 198.12 518.16 86.36
634-         214       c/z 198.12 716.28 86.36
635-         215       c/z 198.12 914.4 86.36
636-         216       c/z 198.12 1112.52 86.36
637-         217       c/z 198.12 1310.64 86.36
638-         218       c/z 198.12 1508.76 86.36
639-         219       c/z 198.12 1706.88 86.36
640-         221       c/z 396.24 121.92 86.36
641-         222       c/z 396.24 320.04 86.36
642-         223       c/z 396.24 518.16 86.36
643-         224       c/z 396.24 716.28 86.36
644-         225       c/z 396.24 914.4 86.36
645-         226       c/z 396.24 1112.52 86.36
646-         227       c/z 396.24 1310.64 86.36
647-         228       c/z 396.24 1508.76 86.36
648-         229       c/z 396.24 1706.88 86.36
649-         231       c/z 594.36 121.92 86.36
650-         232       c/z 594.36 320.04 86.36
651-         233       c/z 594.36 518.16 86.36
652-         234       c/z 594.36 716.28 86.36
653-         235       c/z 594.36 914.4 86.36
654-         236       c/z 594.36 1112.52 86.36
655-         237       c/z 594.36 1310.64 86.36
656-         238       c/z 594.36 1508.76 86.36
657-         239       c/z 594.36 1706.88 86.36
658-         241       c/z 792.48 121.92 86.36
659-         242       c/z 792.48 320.04 86.36
660-         243       c/z 792.48 518.16 86.36
661-         244       c/z 792.48 716.28 86.36
662-         245       c/z 792.48 914.4 86.36
663-         246       c/z 792.48 1112.52 86.36
664-         247       c/z 792.48 1310.64 86.36
665-         248       c/z 792.48 1508.76 86.36
666-         249       c/z 792.48 1706.88 86.36
667-         251       c/z 990.6 121.92 86.36
668-         252       c/z 990.6 320.04 86.36
669-         253       c/z 990.6 518.16 86.36
670-         254       c/z 990.6 716.28 86.36
671-         255       c/z 990.6 914.4 86.36
672-         256       c/z 990.6 1112.52 86.36
673-         257       c/z 990.6 1310.64 86.36
674-         258       c/z 990.6 1508.76 86.36
675-         259       c/z 990.6 1706.88 86.36
676-         261       c/z 1188.72 121.92 86.36
677-         262       c/z 1188.72 320.04 86.36
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678-          263       c/z 1188.72 518.16 86.36
679-          264       c/z 1188.72 716.28 86.36
680-          265       c/z 1188.72 914.4 86.36
681-          266       c/z 1188.72 1112.52 86.36
682-          267       c/z 1188.72 1310.64 86.36
683-          268       c/z 1188.72 1508.76 86.36
684-          269       c/z 1188.72 1706.88 86.36
685-          271       c/z 1386.84 121.92 86.36
686-          272       c/z 1386.84 320.04 86.36
687-          273       c/z 1386.84 518.16 86.36
688-          274       c/z 1386.84 716.28 86.36
689-          275       c/z 1386.84 914.4 86.36
690-          276       c/z 1386.84 1112.52 86.36
691-          277       c/z 1386.84 1310.64 86.36
692-          278       c/z 1386.84 1508.76 86.36
693-          279       c/z 1386.84 1706.88 86.36
694-          281       c/z 1584.96 121.92 86.36
695-          282       c/z 1584.96 320.04 86.36
696-          283       c/z 1584.96 518.16 86.36
697-          284       c/z 1584.96 716.28 86.36
698-          285       c/z 1584.96 914.4 86.36
699-          286       c/z 1584.96 1112.52 86.36
700-          287       c/z 1584.96 1310.64 86.36
701-          288       c/z 1584.96 1508.76 86.36
702-          289       c/z 1584.96 1706.88 86.36
703-          291       c/z 1783.08 121.92 86.36
704-          292       c/z 1783.08 320.04 86.36
705-          293       c/z 1783.08 518.16 86.36
706-          294       c/z 1783.08 716.28 86.36
707-          295       c/z 1783.08 914.4 86.36
708-          296       c/z 1783.08 1112.52 86.36
709-          297       c/z 1783.08 1310.64 86.36
710-          298       c/z 1783.08 1508.76 86.36
711-          299       c/z 1783.08 1706.88 86.36
712-          301       c/z 1981.2 121.92 86.36
713-          302       c/z 1981.2 320.04 86.36
714-          303       c/z 1981.2 518.16 86.36
715-          304       c/z 1981.2 716.28 86.36
716-          305       c/z 1981.2 914.4 86.36
717-          306       c/z 1981.2 1112.52 86.36
718-          307       c/z 1981.2 1310.64 86.36
719-          308       c/z 1981.2 1508.76 86.36
720-          309       c/z 1981.2 1706.88 86.36
721-          311       c/z 2179.32 121.92 86.36
722-          312       c/z 2179.32 320.04 86.36
723-          313       c/z 2179.32 518.16 86.36
724-          314       c/z 2179.32 716.28 86.36
725-          315       c/z 2179.32 914.4 86.36
726-          316       c/z 2179.32 1112.52 86.36
727-          317       c/z 2179.32 1310.64 86.36
728-          318       c/z 2179.32 1508.76 86.36
729-          319       c/z 2179.32 1706.88 86.36
730-          321       c/z 2377.44 121.92 86.36
731-          322       c/z 2377.44 320.04 86.36
732-          323       c/z 2377.44 518.16 86.36
733-          324       c/z 2377.44 716.28 86.36
734-          325       c/z 2377.44 914.4 86.36
735-          326       c/z 2377.44 1112.52 86.36
736-          327       c/z 2377.44 1310.64 86.36
737-          328       c/z 2377.44 1508.76 86.36
738-          329       c/z 2377.44 1706.88 86.36
739-          331       c/z 2575.56 121.92 86.36
740-          332       c/z 2575.56 320.04 86.36
741-          333       c/z 2575.56 518.16 86.36
742-          334       c/z 2575.56 716.28 86.36
743-          335       c/z 2575.56 914.4 86.36
744-          336       c/z 2575.56 1112.52 86.36
745-          337       c/z 2575.56 1310.64 86.36
746-          338       c/z 2575.56 1508.76 86.36
747-          339       c/z 2575.56 1706.88 86.36
748-          341       c/z 2773.68 121.92 86.36
749-          342       c/z 2773.68 320.04 86.36
750-          343       c/z 2773.68 518.16 86.36
751-          344       c/z 2773.68 716.28 86.36
752-          345       c/z 2773.68 914.4 86.36
753-          346       c/z 2773.68 1112.52 86.36
754-          347       c/z 2773.68 1310.64 86.36
755-          348       c/z 2773.68 1508.76 86.36
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756-         349       c/z 2773.68 1706.88 86.36
757-       c     Outside of Shield Bell
758-         411       c/z 198.12 121.92 92.71
759-         412       c/z 198.12 320.04 92.71
760-         413       c/z 198.12 518.16 92.71
761-         414       c/z 198.12 716.28 92.71
762-         415       c/z 198.12 914.4 92.71
763-         416       c/z 198.12 1112.52 92.71
764-         417       c/z 198.12 1310.64 92.71
765-         418       c/z 198.12 1508.76 92.71
766-         419       c/z 198.12 1706.88 92.71
767-         421       c/z 396.24 121.92 92.71
768-         422       c/z 396.24 320.04 92.71
769-         423       c/z 396.24 518.16 92.71
770-         424       c/z 396.24 716.28 92.71
771-         425       c/z 396.24 914.4 92.71
772-         426       c/z 396.24 1112.52 92.71
773-         427       c/z 396.24 1310.64 92.71
774-         428       c/z 396.24 1508.76 92.71
775-         429       c/z 396.24 1706.88 92.71
776-         431       c/z 594.36 121.92 92.71
777-         432       c/z 594.36 320.04 92.71
778-         433       c/z 594.36 518.16 92.71
779-         434       c/z 594.36 716.28 92.71
780-         435       c/z 594.36 914.4 92.71
781-         436       c/z 594.36 1112.52 92.71
782-         437       c/z 594.36 1310.64 92.71
783-         438       c/z 594.36 1508.76 92.71
784-         439       c/z 594.36 1706.88 92.71
785-         441       c/z 792.48 121.92 92.71
786-         442       c/z 792.48 320.04 92.71
787-         443       c/z 792.48 518.16 92.71
788-         444       c/z 792.48 716.28 92.71
789-         445       c/z 792.48 914.4 92.71
790-         446       c/z 792.48 1112.52 92.71
791-         447       c/z 792.48 1310.64 92.71
792-         448       c/z 792.48 1508.76 92.71
793-         449       c/z 792.48 1706.88 92.71
794-         451       c/z 990.6 121.92 92.71
795-         452       c/z 990.6 320.04 92.71
796-         453       c/z 990.6 518.16 92.71
797-         454       c/z 990.6 716.28 92.71
798-         455       c/z 990.6 914.4 92.71
799-         456       c/z 990.6 1112.52 92.71
800-         457       c/z 990.6 1310.64 92.71
801-         458       c/z 990.6 1508.76 92.71
802-         459       c/z 990.6 1706.88 92.71
803-         461       c/z 1188.72 121.92 92.71
804-         462       c/z 1188.72 320.04 92.71
805-         463       c/z 1188.72 518.16 92.71
806-         464       c/z 1188.72 716.28 92.71
807-         465       c/z 1188.72 914.4 92.71
808-         466       c/z 1188.72 1112.52 92.71
809-         467       c/z 1188.72 1310.64 92.71
810-         468       c/z 1188.72 1508.76 92.71
811-         469       c/z 1188.72 1706.88 92.71
812-         471       c/z 1386.84 121.92 92.71
813-         472       c/z 1386.84 320.04 92.71
814-         473       c/z 1386.84 518.16 92.71
815-         474       c/z 1386.84 716.28 92.71
816-         475       c/z 1386.84 914.4 92.71
817-         476       c/z 1386.84 1112.52 92.71
818-         477       c/z 1386.84 1310.64 92.71
819-         478       c/z 1386.84 1508.76 92.71
820-         479       c/z 1386.84 1706.88 92.71
821-         481       c/z 1584.96 121.92 92.71
822-         482       c/z 1584.96 320.04 92.71
823-         483       c/z 1584.96 518.16 92.71
824-         484       c/z 1584.96 716.28 92.71
825-         485       c/z 1584.96 914.4 92.71
826-         486       c/z 1584.96 1112.52 92.71
827-         487       c/z 1584.96 1310.64 92.71
828-         488       c/z 1584.96 1508.76 92.71
829-         489       c/z 1584.96 1706.88 92.71
830-         491       c/z 1783.08 121.92 92.71
831-         492       c/z 1783.08 320.04 92.71
832-         493       c/z 1783.08 518.16 92.71
833-         494       c/z 1783.08 716.28 92.71
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834-         495       c/z 1783.08 914.4 92.71
835-         496       c/z 1783.08 1112.52 92.71
836-         497       c/z 1783.08 1310.64 92.71
837-         498       c/z 1783.08 1508.76 92.71
838-         499       c/z 1783.08 1706.88 92.71
839-         501       c/z 1981.2 121.92 92.71
840-         502       c/z 1981.2 320.04 92.71
841-         503       c/z 1981.2 518.16 92.71
842-         504       c/z 1981.2 716.28 92.71
843-         505       c/z 1981.2 914.4 92.71
844-         506       c/z 1981.2 1112.52 92.71
845-         507       c/z 1981.2 1310.64 92.71
846-         508       c/z 1981.2 1508.76 92.71
847-         509       c/z 1981.2 1706.88 92.71
848-         511       c/z 2179.32 121.92 92.71
849-         512       c/z 2179.32 320.04 92.71
850-         513       c/z 2179.32 518.16 92.71
851-         514       c/z 2179.32 716.28 92.71
852-         515       c/z 2179.32 914.4 92.71
853-         516       c/z 2179.32 1112.52 92.71
854-         517       c/z 2179.32 1310.64 92.71
855-         518       c/z 2179.32 1508.76 92.71
856-         519       c/z 2179.32 1706.88 92.71
857-         521       c/z 2377.44 121.92 92.71
858-         522       c/z 2377.44 320.04 92.71
859-         523       c/z 2377.44 518.16 92.71
860-         524       c/z 2377.44 716.28 92.71
861-         525       c/z 2377.44 914.4 92.71
862-         526       c/z 2377.44 1112.52 92.71
863-         527       c/z 2377.44 1310.64 92.71
864-         528       c/z 2377.44 1508.76 92.71
865-         529       c/z 2377.44 1706.88 92.71
866-         531       c/z 2575.56 121.92 92.71
867-         532       c/z 2575.56 320.04 92.71
868-         533       c/z 2575.56 518.16 92.71
869-         534       c/z 2575.56 716.28 92.71
870-         535       c/z 2575.56 914.4 92.71
871-         536       c/z 2575.56 1112.52 92.71
872-         537       c/z 2575.56 1310.64 92.71
873-         538       c/z 2575.56 1508.76 92.71
874-         539       c/z 2575.56 1706.88 92.71
875-         541       c/z 2773.68 121.92 92.71
876-         542       c/z 2773.68 320.04 92.71
877-         543       c/z 2773.68 518.16 92.71
878-         544       c/z 2773.68 716.28 92.71
879-         545       c/z 2773.68 914.4 92.71
880-         546       c/z 2773.68 1112.52 92.71
881-         547       c/z 2773.68 1310.64 92.71
882-         548       c/z 2773.68 1508.76 92.71
883-         549       c/z 2773.68 1706.88 92.71
884-       c    Planes
885-        1201        py -76.2  $Outside Left Wall
886-        1202        py 0  $Inside Left Thick Wall
887-        1203        py 1828.8  $Inside Right Thick Wall
888-        1204        py 1905  $Outside Right Wall
889-        1205        px 0  $Inside Back Thick Wall
890-        1206        px 2895.6  $Front of Inner Wall
891-        1207        px -76.2  $Outside Back Wall
892-        1208        px 2971.8  $Back of Inner Wall
893-        1209        pz 0  $Top of Floor
894-        c 1211        pz 190.5  $Top of Bot HIC
895-        1212        pz 381  $Top of Top HIC
896-        1213        pz 388.62  $Bot of Bell Top
897-        1214        pz 396.24  $Top of Bell Top
898-        1215        pz 1455.42  $Bottom of Roof
899-        1216        pz 1493.52  $Top of Roof
900-        1217        px 3947.16  $Inner Truck Bay Wall
901-        1218        px 4023.36  $Outer Truck Bay Wall
902-        1219        pz 1036.32  $Top of Inner Wall
903-        1220        pz 822.96  $Bottom of Notch
904-        1221        py 1760.22  $Right of notch
905-        1222        py 1546.86  $Left of notch
906-        1223        px -38.1  $Inside Back Thin Wall
907-        1224        px 3985.26  $Inside Front Thin Wall
908-        1225        py 1866.9  $Inside Right Thin Wall
909-        1226        py -38.1  $Inside Left Thin Wall
910-        1227        pz -76.2  $Bottom of Floor
911-        1228        px 1089.66  $Zone 1 Air
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912-        1229        px 2080.26  $Zone 2 Air
913-        1230        pz 807.72  $Bottom of Truck Bay Shield
914-        1231        pz 213.36  $7ft Detector Surface
915-        1232        pz -91.44  $Bottom Void
916-        1233        px -57.15  $Split for Back Wall
917-        1234        py 1885.95  $Split for Right Wall
918-        1235        px 4004.31  $Split for Front Wall
919-        1236        py -57.15  $Split for Left Wall
920-        1237        pz 1474.47  $Split for Roof
921-       c    HVAC Duct Openings
922-       12321        px 68.58  $Duct1S1
923-       12331        px 170.18  $Duct1 S2
924-       12341        px 871.22  $Duct2 S1
925-       12351        px 972.82  $Duct2 S2
926-       12361        px 1595.12  $Duct3 S1
927-       12371        px 1747.52  $Duct3 S2
928-       12381        px 1856.74  $Duct4 S1
929-       12391        px 1958.34  $Duct4 S2
930-       12401        px 2720.34  $Duct5 S1
931-       12411        px 2821.94  $Duct5 S2
932-       12421        px 3776.98  $Duct6 S1
933-       12431        px 3878.58  $Duct6 S2
934-       12441        pz 1397  $Small Ducts Bottom
935-       12451        pz 1437.64  $Small Duct Top
936-       12461        pz 1369.06  $Large Ducts Bottom
937-       12471        pz 1445.26  $Large Duct Top
938-       c   Spheres for detectors
939-        2000         s 1973.58 914.4 -72.6 2800  $Closest Sphere
940-        2001         s 1973.58 914.4 -72.6 4000
941-        2002         s 1973.58 914.4 -72.6 7000
942-        2003         s 1973.58 914.4 -72.6 10000
943-        2004         s 1973.58 914.4 -72.6 15000
944-        2005         s 1973.58 914.4 -72.6 20000
945-        2006         s 1973.58 914.4 -72.6 25000
946-        2007         s 1973.58 914.4 -72.6 30000
947-        2008         s 1973.58 914.4 -72.6 37500
948-        2009         s 1973.58 914.4 -72.6 45000
949-        2010         s 1973.58 914.4 -72.6 55000
950-        2011         s 1973.58 914.4 -72.6 65000
951-        2012         s 1973.58 914.4 -72.6 75000
952-        2013         s 1973.58 914.4 -72.6 85000
953-        2014         s 1973.58 914.4 -72.6 95000
954-        2015         s 1973.58 914.4 -72.6 120000
955-        2016        py -276.2
956-        2017        py -476.2
957-        2018        py -676.2
958-        2019        py -876.2
959-        2020        py -1076.2
960-        2021        py -1276.2
961-        2022        py -1476.2
962-        2023        py -1676.2
963-        2024        py -1876.2
964-        2025        py -2076.2
965-        2026        px 359.054
966-        2027        px 2535.94
967-        2028        py -2276.2
968-        2029        py -2476.2
969-        2030        py -2676.2
970-        2031        py -2876.2
971-        2032        py -3076.2
972-        2033        py -3276.2
973-        2034        py -3476.2
974-        2035        py -3676.2
975-       c    Side wall splits for translation
976-        2036        py -1.2
977-        2037        py -6.2
978-        2038        py -11.2
979-        2039        py -16.2
980-        2040        py -21.2
981-        2041        py -26.2
982-        2042        py -31.2
983-        2043        py -36.2
984-        2044        py -41.2
985-        2045        py -46.2
986-        2046        py -51.2
987-        2047        py -56.2
988-        2048        py -61.2
989-        2049        py -66.2
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 990-        2050        py -71.2
 991-
 992-       mode  p
 993-       c  Materials
 994-       m1    1000.            -0.015  $ Concrete from 6.4
 995-             8000.            -1.057 11000.           -0.041 12000.           -0.085
 996-             13000.           -0.137 14000.           -0.487 15000.           -0.002
 997-             16000.           -0.002 19000.           -0.015 20000.           -0.295
 998-             22000.           -0.011 25000.           -0.003 26000.           -0.178
 999-       m2    13000.                1  $ Aluminum
warning. material   2 is not used in the problem.
1000-       m3    7000.           0.78969  $ Air
1001-             8000.           0.21019 6000.           0.00012
1002-       m4    26000.                1  $ Iron
1003-       m5    1000.                 2  $ Water
1004-             8000.                 1
1005-       imp:p              1 251r                    3 125r                    0  $ 11, 1
1006-              15r                      6           12           24           48  $ 1201,
1007-                         96          192          384          768         1536  $ 4240,
1008-                       3072         6144        12288        24576        49152  $ 4245,
1009-                      98304       196608            0            3 2r            $ 4250,
1010-                          0 6r                 196608            0 7r            $ 9995,
1011-                     196608 14r           $ 2001, 2015
1012-       phys:p  100 1 0
1013-       sdef erg=d5 x=d1 y=d2 z=d3 cel=d4 eff=0.0001 wgt=3.045E+15
1014-       si1  0 2895.6
1015-       sp1  0.0 1.0
1016-       si2  0 1828.8
1017-       sp2  0.0 1.0
1018-       si3  0.01 304.8 381.00
1019-       sp3  0.0 0.8 0.2
1020-       si4  L 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 31 32
1021-            33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 51 52 53 54 55
1022-            56 57 58 59 61 62 63 64 65 66 67 68 69 71 72 73 74 75 76 77 78
1023-            79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96 97 98 99 101
1024-            102 103 104 105 106 107 108 109 111 112 113 114 115 116 117 118
1025-            119 121 122 123 124 125 126 127 128 129 131 132 133 134 135 136
1026-            137 138 139 141 142 143 144 145 146 147 148 149
1027-       sp4  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1028-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1029-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1030-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1031-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1032-            1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1033-            1  1  1  1  1  1  1  1  1  1  1  1  1
1034-       si5 l 1.1730 1.3325
1035-       sp5   1      1
1036-       ssw -2050(4251)
1037-       c ssr
1038-       c ===================================================================
1039-       c ===================================================================
1040-       c Truck bay dose rate
1041-       f2:p 1231
warning. without bremsstrahlung, flux estimates will be low.
1042-       c ===================================================================
1043-       c ===================================================================
1044-       c Rings outside the building
1045-       f12:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1046-       fs12 -2000 -2001 -2002 -2003 -2004 -2005 -2006 -2007 -2008 -2009
1047-            -2010 -2011 -2012 -2013 -2014
1048-       sd12 1e50 2.564E+07 1.037e8 1.602e8 3.927e8 5.498e8 7.069e8 8.639e8 1.590e9
1049-            1.944e9 3.142e9 3.770e9 4.398e9 5.027e9 5.655e9 1.689e10
1050-       c ===================================================================
1051-       c ===================================================================
1052-       c Slabs Ajacent to Ventilation Penetration Side
1053-       f22:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1054-       fs22 1201 -2026 2027
1055-            2016 2017 2018 2019 2020
1056-            2021 2022 2023 2024 2025
1057-            2028 2029 2030 2031 2032
1058-            2033 2034 2035
1059-       sd22 1e50 1e50 1e50
1060-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1061-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1062-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1063-            4.35376e5 4.35376e5 4.35376e5 1e50
```

```
1064-       c ===================================================================
1065-       c ===================================================================
1066-       c Dose Rate on Vent Side Wall 7ft up avg
1067-       f32:p 1201
warning. without bremsstrahlung, flux estimates will be low.
1068-       fs32 1231 -2026 2027 -1227
1069-       sd32 1e50 1e50 1e50 1e50 6.30E+05
1070-       c ===================================================================
1071-       c ===================================================================
1072-       c detectors toward north, with HVAC effects
1073-       f42:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1074-       fs42 1219 -1209 1201 -1205 1206
1075-       sd42 1e50 1e50 1e50 1e50 1e50 3.00e06
1076-            1e50 1e50 1e50 1e50 1e50 3.00e06
1077-            1e50 1e50 1e50 1e50 1e50 3.00e06
1078-            1e50 1e50 1e50 1e50 1e50 3.00e06
1079-            1e50 1e50 1e50 1e50 1e50 3.00e06
1080-            1e50 1e50 1e50 1e50 1e50 3.00e06
1081-            1e50 1e50 1e50 1e50 1e50 3.00e06
1082-            1e50 1e50 1e50 1e50 1e50 3.00e06
1083-            1e50 1e50 1e50 1e50 1e50 3.00e06
1084-            1e50 1e50 1e50 1e50 1e50 3.00e06
1085-            1e50 1e50 1e50 1e50 1e50 3.00e06
1086-       c detectors toward sorth, with no HVAC effects
1087-       f52:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1088-       fs52 1219 -1209 -1201 -1205 1206
1089-       sd52 1e50 1e50 1e50 1e50 1e50 3.00e06
1090-            1e50 1e50 1e50 1e50 1e50 3.00e06
1091-            1e50 1e50 1e50 1e50 1e50 3.00e06
1092-            1e50 1e50 1e50 1e50 1e50 3.00e06
1093-            1e50 1e50 1e50 1e50 1e50 3.00e06
1094-            1e50 1e50 1e50 1e50 1e50 3.00e06
1095-            1e50 1e50 1e50 1e50 1e50 3.00e06
1096-            1e50 1e50 1e50 1e50 1e50 3.00e06
1097-            1e50 1e50 1e50 1e50 1e50 3.00e06
1098-            1e50 1e50 1e50 1e50 1e50 3.00e06
1099-            1e50 1e50 1e50 1e50 1e50 3.00e06
1100-       c ===================================================================
1101-       c ===================================================================
1102-       c Detector above the HICS (used as a source check)
1103-       f62:p 1219
warning. without bremsstrahlung, flux estimates will be low.
1104-       fs62 -1205 1206 1203 -1202
1105-       sd62  1e50 1e50 1e50  1e50 5.30E+06
1106-       c ===================================================================
1107-       c ===================================================================
1108-       c Photon Flux to Dose Rate Conversion Factors
1109-       de0 0.01 0.03 0.05 0.07 0.10 0.15 0.20
1110-             0.25 0.30 0.35 0.40 0.45 0.50 0.55
1111-             0.60 0.65 0.70 0.80 1.00 1.40 1.80
1112-             2.20 2.60 2.80 3.25 3.75 4.25 4.75
1113-             5.00 5.25 5.75 6.25 6.75 7.50 9.00
1114-             11.0 13.0 15.0
1115-       df0 LIN 3.96E-06 5.82E-07 2.90E-07 2.58E-07 2.83E-07 3.79E-07 5.01E-07
1116-             6.31e-07 7.59E-07 8.78E-07 9.85E-07 1.08E-06 1.17E-06 1.27E-06
1117-             1.36e-06 1.44E-06 1.52E-06 1.68E-06 1.98E-06 2.51E-06 2.99E-06
1118-             3.42e-06 3.82E-06 4.01E-06 4.41E-06 4.83E-06 5.23E-06 5.60E-06
1119-             5.80e-06 6.01E-06 6.37E-06 6.74E-06 7.11E-06 7.66E-06 8.77E-06
1120-             1.03e-05 1.18E-05 1.33E-05
1121-       nps 20000000

warning. zero photon   importance within non-void cell 1200.

warning. zero photon   importance within non-void cell 1201.

warning. zero photon   importance within non-void cell 1202.

warning. zero photon   importance within non-void cell12021.

warning. zero photon   importance within non-void cell 1203.

warning. zero photon   importance within non-void cell 1204.

warning. zero photon   importance within non-void cell12041.

warning. zero photon   importance within non-void cell 1205.
```

```
 warning. zero photon   importance within non-void cell 1206.

 warning. zero photon   importance within non-void cell12061.

 warning. zero photon   importance within non-void cell 1207.

 warning. zero photon   importance within non-void cell 1208.

 warning. zero photon   importance within non-void cell12081.

 warning. zero photon   importance within non-void cell 1210.

 warning. zero photon   importance within non-void cell 1211.

 warning. zero photon   importance within non-void cell12111.

 warning. zero photon   importance within non-void cell 9995.

 warning. zero photon   importance within non-void cell 9994.

 warning. zero photon   importance within non-void cell 9993.

 warning. zero photon   importance within non-void cell 9992.

 warning. zero photon   importance within non-void cell 9991.

 warning. zero photon   importance within non-void cell 9990.

 warning. zero photon   importance within non-void cell 9989.

 warning. zero photon   importance within non-void cell 9986.

 warning. zero photon   importance within non-void cell10000.

 warning. zero photon   importance within non-void cell10001.

 warning. zero photon   importance within non-void cell10002.

 warning. zero photon   importance within non-void cell10003.

 warning. zero photon   importance within non-void cell10004.

 warning. zero photon   importance within non-void cell10005.

 warning.   2 materials had unnormalized fractions. print table 40.

 warning.   1 of the materials appear at more than one density.

 warning. sum of segment sizes differs from total in  25 cases.
1cells                                                                                                  print table
    60

                    atom        gram                                        photon
       cell  mat    density     density     volume       mass     pieces importance

     1    11    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     2    12    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     3    13    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     4    14    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     5    15    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     6    16    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     7    17    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     8    18    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     9    19    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    10    21    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    11    22    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    12    23    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    13    24    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    14    25    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    15    26    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    16    27    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    17    28    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    18    29    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    19    31    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    20    32    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    21    33    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    22    34    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
```

23	35	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
24	36	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
25	37	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
26	38	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
27	39	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
28	41	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
29	42	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
30	43	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
31	44	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
32	45	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
33	46	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
34	47	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
35	48	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
36	49	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
37	51	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
38	52	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
39	53	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
40	54	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
41	55	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
42	56	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
43	57	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
44	58	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
45	59	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
46	61	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
47	62	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
48	63	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
49	64	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
50	65	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
51	66	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
52	67	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
53	68	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
54	69	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
55	71	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
56	72	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
57	73	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
58	74	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
59	75	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
60	76	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
61	77	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
62	78	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
63	79	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
64	81	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
65	82	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
66	83	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
67	84	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
68	85	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
69	86	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
70	87	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
71	88	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
72	89	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
73	91	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
74	92	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
75	93	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
76	94	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
77	95	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
78	96	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
79	97	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
80	98	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
81	99	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
82	101	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
83	102	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
84	103	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
85	104	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
86	105	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
87	106	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
88	107	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
89	108	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
90	109	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
91	111	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
92	112	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
93	113	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
94	114	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
95	115	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
96	116	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
97	117	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
98	118	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
99	119	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
100	121	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

101	122	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
102	123	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
103	124	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
104	125	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
105	126	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
106	127	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
107	128	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
108	129	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
109	131	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
110	132	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
111	133	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
112	134	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
113	135	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
114	136	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
115	137	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
116	138	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
117	139	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
118	141	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
119	142	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
120	143	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
121	144	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
122	145	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
123	146	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
124	147	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
125	148	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
126	149	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
127	211	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
128	212	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
129	213	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
130	214	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
131	215	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
132	216	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
133	217	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
134	218	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
135	219	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
136	221	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
137	222	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
138	223	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
139	224	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
140	225	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
141	226	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
142	227	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
143	228	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
144	229	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
145	231	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
146	232	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
147	233	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
148	234	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
149	235	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
150	236	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
151	237	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
152	238	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
153	239	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
154	241	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
155	242	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
156	243	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
157	244	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
158	245	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
159	246	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
160	247	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
161	248	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
162	249	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
163	251	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
164	252	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
165	253	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
166	254	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
167	255	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
168	256	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
169	257	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
170	258	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
171	259	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
172	261	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
173	262	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
174	263	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
175	264	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
176	265	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
177	266	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
178	267	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00

179	268	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
180	269	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
181	271	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
182	272	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
183	273	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
184	274	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
185	275	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
186	276	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
187	277	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
188	278	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
189	279	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
190	281	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
191	282	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
192	283	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
193	284	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
194	285	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
195	286	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
196	287	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
197	288	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
198	289	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
199	291	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
200	292	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
201	293	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
202	294	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
203	295	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
204	296	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
205	297	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
206	298	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
207	299	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
208	301	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
209	302	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
210	303	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
211	304	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
212	305	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
213	306	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
214	307	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
215	308	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
216	309	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
217	311	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
218	312	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
219	313	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
220	314	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
221	315	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
222	316	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
223	317	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
224	318	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
225	319	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
226	321	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
227	322	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
228	323	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
229	324	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
230	325	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
231	326	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
232	327	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
233	328	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
234	329	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
235	331	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
236	332	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
237	333	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
238	334	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
239	335	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
240	336	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
241	337	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
242	338	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
243	339	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
244	341	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
245	342	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
246	343	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
247	344	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
248	345	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
249	346	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
250	347	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
251	348	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
252	349	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
253	411	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
254	412	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
255	413	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
256	414	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00

257	415	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
258	416	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
259	417	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
260	418	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
261	419	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
262	421	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
263	422	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
264	423	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
265	424	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
266	425	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
267	426	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
268	427	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
269	428	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
270	429	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
271	431	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
272	432	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
273	433	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
274	434	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
275	435	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
276	436	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
277	437	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
278	438	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
279	439	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
280	441	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
281	442	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
282	443	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
283	444	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
284	445	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
285	446	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
286	447	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
287	448	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
288	449	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
289	451	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
290	452	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
291	453	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
292	454	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
293	455	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
294	456	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
295	457	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
296	458	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
297	459	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
298	461	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
299	462	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
300	463	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
301	464	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
302	465	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
303	466	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
304	467	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
305	468	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
306	469	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
307	471	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
308	472	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
309	473	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
310	474	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
311	475	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
312	476	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
313	477	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
314	478	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
315	479	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
316	481	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
317	482	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
318	483	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
319	484	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
320	485	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
321	486	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
322	487	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
323	488	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
324	489	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
325	491	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
326	492	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
327	493	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
328	494	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
329	495	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
330	496	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
331	497	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
332	498	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
333	499	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
334	501	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00

335	502	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
336	503	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
337	504	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
338	505	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
339	506	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
340	507	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
341	508	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
342	509	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
343	511	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
344	512	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
345	513	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
346	514	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
347	515	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
348	516	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
349	517	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
350	518	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
351	519	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
352	521	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
353	522	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
354	523	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
355	524	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
356	525	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
357	526	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
358	527	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
359	528	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
360	529	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
361	531	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
362	532	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
363	533	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
364	534	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
365	535	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
366	536	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
367	537	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
368	538	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
369	539	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
370	541	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
371	542	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
372	543	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
373	544	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
374	545	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
375	546	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
376	547	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
377	548	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
378	549	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
379	1200	3	5.11393E-05	1.22500E-03	3.46881E+06	4.24930E+03	0	0.0000E+00
380	1201	1	7.34055E-02	2.36500E+00	1.40947E+08	3.33340E+08	0	0.0000E+00
381	1202	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
382	12021	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
383	1203	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	0.0000E+00
384	1204	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	0.0000E+00
385	12041	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	0.0000E+00
386	1205	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	0.0000E+00
387	1206	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
388	12061	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
389	1207	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	0.0000E+00
390	1208	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	0.0000E+00
391	12081	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	0.0000E+00
392	1210	1	7.34055E-02	2.36500E+00	6.18900E+08	1.46370E+09	0	0.0000E+00
393	1211	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	0.0000E+00
394	12111	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	0.0000E+00
395	4236	1	7.34055E-02	2.36500E+00	5.09815E+06	1.20571E+07	0	6.0000E+00
396	4237	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.2000E+01
397	4238	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	2.4000E+01
398	4239	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	4.8000E+01
399	4240	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	9.6000E+01
400	4241	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.9200E+02
401	4242	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	3.8400E+02
402	4243	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	7.6800E+02
403	4244	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.5360E+03
404	4245	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	3.0720E+03
405	4246	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	6.1440E+03
406	4247	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.2288E+04
407	4248	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	2.4576E+04
408	4249	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	4.9152E+04
409	4250	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	9.8304E+04
410	4251	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.9661E+05
411	9999	0	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0	0.0000E+00
412	9998	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	3.0000E+00

413	9997	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	3.0000E+00
414	9996	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	3.0000E+00
415	9995	3	5.11393E-05	1.22500E-03	1.12984E+09	1.38406E+06	0	0.0000E+00
416	9994	3	5.11393E-05	1.22500E-03	2.40306E+09	2.94375E+06	0	0.0000E+00
417	9993	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	0.0000E+00
418	9992	3	5.11393E-05	1.22500E-03	1.06018E+09	1.29872E+06	0	0.0000E+00
419	9991	1	7.34055E-02	2.36500E+00	2.71842E+07	6.42906E+07	0	0.0000E+00
420	9990	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	0.0000E+00
421	9989	3	5.11393E-05	1.22500E-03	8.09132E+08	9.91186E+05	0	0.0000E+00
422	9988	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.9661E+05
423	9987	0	0.00000E+00	0.00000E+00	3.61826E+15	0.00000E+00	1	0.0000E+00
424	9986	3	5.11393E-05	1.22500E-03	6.89441E+11	8.44566E+08	1	0.0000E+00
425	10000	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
426	10001	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
427	10002	3	5.11393E-05	1.22500E-03	4.42451E+05	5.42002E+02	0	0.0000E+00
428	10003	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
429	10004	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
430	10005	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
431	2001	3	5.11393E-05	1.22500E-03	8.81574E+10	1.07993E+08	1	1.9661E+05
432	2002	3	5.11393E-05	1.22500E-03	5.84709E+11	7.16269E+08	1	1.9661E+05
433	2003	3	5.11393E-05	1.22500E-03	1.37659E+12	1.68633E+09	1	1.9661E+05
434	2004	3	5.11393E-05	1.22500E-03	4.97560E+12	6.09511E+09	1	1.9661E+05
435	2005	3	5.11393E-05	1.22500E-03	9.68856E+12	1.18685E+10	1	1.9661E+05
436	2006	3	5.11393E-05	1.22500E-03	1.59723E+13	1.95661E+10	1	1.9661E+05
437	2007	3	5.11393E-05	1.22500E-03	2.38269E+13	2.91879E+10	1	1.9661E+05
438	2008	3	5.11393E-05	1.22500E-03	5.39037E+13	6.60320E+10	1	1.9661E+05
439	2009	3	5.11393E-05	1.22500E-03	8.04121E+13	9.85049E+10	1	1.9661E+05
440	2010	3	5.11393E-05	1.22500E-03	1.57615E+14	1.93078E+11	1	1.9661E+05
441	2011	3	5.11393E-05	1.22500E-03	2.26732E+14	2.77747E+11	1	1.9661E+05
442	2012	3	5.11393E-05	1.22500E-03	3.08416E+14	3.77809E+11	1	1.9661E+05
443	2013	3	5.11393E-05	1.22500E-03	4.02666E+14	4.93265E+11	1	1.9661E+05
444	2014	3	5.11393E-05	1.22500E-03	5.09482E+14	6.24115E+11	1	1.9661E+05
445	2015	3	5.11393E-05	1.22500E-03	1.82349E+15	2.23378E+12	1	1.9661E+05
total					7.23819E+15	4.44214E+12		

minimum source weight = 3.0450E+15 maximum source weight = 3.0450E+15

```
************************************************
* Random Number Generator  =                  1 *
* Random Number Seed       =       19073486328125 *
* Random Number Multiplier =       19073486328125 *
* Random Number Adder      =                  0 *
* Random Number Bits Used  =                 48 *
* Random Number Stride     =             152917 *
************************************************
```

```
       41 warning messages so far.
1cross-section tables                                                                    print table
    100

     table    length

                        tables from file mcplib04

   1000.04p    1898  ENDF/B-VI Release 8 Photoatomic Data for 1-H                              mat 100
    02/07/03
   6000.04p    3152  ENDF/B-VI Release 8 Photoatomic Data for 6-C                              mat 600
    02/07/03
   7000.04p    3194  ENDF/B-VI Release 8 Photoatomic Data for 7-N                              mat 700
    02/07/03
   8000.04p    3272  ENDF/B-VI Release 8 Photoatomic Data for 8-O                              mat 800
    02/07/03
  11000.04p    3995  ENDF/B-VI Release 8 Photoatomic Data for 11-NA                            mat1100
    02/07/03
  12000.04p    3781  ENDF/B-VI Release 8 Photoatomic Data for 12-MG                            mat1200
    02/07/03
  13000.04p    4846  ENDF/B-VI Release 8 Photoatomic Data for 13-AL                            mat1300
    02/07/03
  14000.04p    4792  ENDF/B-VI Release 8 Photoatomic Data for 14-SI                            mat1400
    02/07/03
  15000.04p    4498  ENDF/B-VI Release 8 Photoatomic Data for 15-P                             mat1500
    02/07/03
  16000.04p    4654  ENDF/B-VI Release 8 Photoatomic Data for 16-S                             mat1600
    02/07/03
  19000.04p    5047  ENDF/B-VI Release 8 Photoatomic Data for 19-K                             mat1900
    02/07/03
```

```
 20000.04p    5013  ENDF/B-VI Release 8 Photoatomic Data for 20-CA                              mat2000
   02/07/03
 22000.04p    5742  ENDF/B-VI Release 8 Photoatomic Data for 22-TI                              mat2200
   02/07/03
 25000.04p    5598  ENDF/B-VI Release 8 Photoatomic Data for 25-MN                              mat2500
   02/07/03
 26000.04p    5718  ENDF/B-VI Release 8 Photoatomic Data for 26-FE                              mat2600
   02/07/03

 total       65200

 warning. simple physics turned on for photons > 100 mev.

    ************************************************************************************************************
    *******
 dump no.    1 on file runtpf       nps =           0     coll =              0     ctm =        0.00   nrn =
    0


        42 warning messages so far.

    ************************************************************************************************************
    *******
 dump no.    2 on file runtpf       nps =     9514546     coll =      150552374     ctm =       60.01   nrn =
    9767428666



    ************************************************************************************************************
    *******
 dump no.    3 on file runtpf       nps =    19031961     coll =      301125130     ctm =      120.01   nrn =
    19543270422

1problem summary

      run terminated when    20000000  particle histories were done.
+                                                                                          03/24/09
    10:57:25
      c     Created on: Tuesday, November 11, 2008 at 09:35                          probid =  03/24/09
    08:51:07
0
 photon creation     tracks      weight        energy           photon loss         tracks      weight
    energy
                                (per source particle)                                        (per source
    particle)

 source            20000000    3.0450E+15    1.2527E+00         escape             1184172    1.2340E+14
    2.5964E-02
                                                               energy cutoff            0    0.            0.
                                                               time cutoff              0    0.            0.
 weight window            0    0.            0.               weight window            0    0.            0.
 cell importance   18729482    1.2631E+14    9.4511E-03       cell importance    3116998    1.2617E+14
    9.4338E-03
 weight cutoff            0    0.            0.               weight cutoff            0    0.            0.
 e or t importance        0    0.            0.               e or t importance        0    0.            0.
 dxtran                   0    0.            0.               dxtran                   0    0.            0.
 forced collisions        0    0.            0.               forced collisions        0    0.            0.
 exp. transform           0    0.            0.               exp. transform           0    0.            0.
 from neutrons            0    0.            0.               compton scatter          0    0.
    1.1522E+00
 bremsstrahlung           0    0.            0.               capture           40758056    3.2280E+15
    7.5098E-02
 p-annihilation       37972    3.2590E+12    5.4692E-04       pair production      18986    1.6295E+12
    6.9914E-04
 photonuclear             0    0.            0.               photonuclear abs         0    0.            0.
 electron x-rays          0    0.            0.
 1st fluorescence   6310758    3.0468E+14    6.4314E-04
 2nd fluorescence         0    0.            0.
     total         45078212    3.4792E+15    1.2634E+00            total         45078212    3.4792E+15
    1.2634E+00

   number of photons banked                 10606025       average time of (shakes)              cutoffs
   photon tracks per source particle      2.2539E+00         escape            2.6488E-01         tco   1.0000E+33
   photon collisions per source particle  1.5824E+01         capture           2.5948E-01         eco   1.0000E-03
   total photon collisions                 316482201         capture or escape 2.5968E-01         wc1  -5.0000E-01
                                                             any termination   2.5699E-01         wc2  -2.5000E-01
```

```
computer time so far in this run   126.17 minutes          maximum number ever in bank        17
computer time in mcrun             126.12 minutes          bank overflows to backup file       0
source particles per minute            1.5858E+05
random numbers generated              20537759967          most random numbers used was      107599 in history
   14332430

range of sampled source weights = 3.0450E+15 to 3.0450E+15

source efficiency = 0.0036  in cell    11

source efficiency = 0.0036  in cell    12

source efficiency = 0.0036  in cell    13

source efficiency = 0.0036  in cell    14

source efficiency = 0.0036  in cell    15

source efficiency = 0.0036  in cell    16

source efficiency = 0.0036  in cell    17

source efficiency = 0.0036  in cell    18

source efficiency = 0.0036  in cell    19

source efficiency = 0.0035  in cell    21

source efficiency = 0.0035  in cell    22

source efficiency = 0.0036  in cell    23

source efficiency = 0.0036  in cell    24

source efficiency = 0.0036  in cell    25

source efficiency = 0.0036  in cell    26

source efficiency = 0.0036  in cell    27

source efficiency = 0.0036  in cell    28

source efficiency = 0.0036  in cell    29

source efficiency = 0.0035  in cell    31

source efficiency = 0.0036  in cell    32

source efficiency = 0.0036  in cell    33

source efficiency = 0.0036  in cell    34

source efficiency = 0.0036  in cell    35

source efficiency = 0.0036  in cell    36

source efficiency = 0.0036  in cell    37

source efficiency = 0.0036  in cell    38

source efficiency = 0.0036  in cell    39

source efficiency = 0.0036  in cell    41

source efficiency = 0.0036  in cell    42

source efficiency = 0.0036  in cell    43

source efficiency = 0.0036  in cell    44

source efficiency = 0.0036  in cell    45

source efficiency = 0.0035  in cell    46

source efficiency = 0.0036  in cell    47

source efficiency = 0.0036  in cell    48
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source efficiency = 0.0036  in cell    49
source efficiency = 0.0036  in cell    51
source efficiency = 0.0036  in cell    52
source efficiency = 0.0036  in cell    53
source efficiency = 0.0036  in cell    54
source efficiency = 0.0036  in cell    55
source efficiency = 0.0036  in cell    56
source efficiency = 0.0036  in cell    57
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source efficiency = 0.0036  in cell    62
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source efficiency = 0.0036  in cell    64
source efficiency = 0.0036  in cell    65
source efficiency = 0.0036  in cell    66
source efficiency = 0.0036  in cell    67
source efficiency = 0.0035  in cell    68
source efficiency = 0.0035  in cell    69
source efficiency = 0.0036  in cell    71
source efficiency = 0.0036  in cell    72
source efficiency = 0.0036  in cell    73
source efficiency = 0.0036  in cell    74
source efficiency = 0.0036  in cell    75
source efficiency = 0.0036  in cell    76
source efficiency = 0.0036  in cell    77
source efficiency = 0.0036  in cell    78
source efficiency = 0.0035  in cell    79
source efficiency = 0.0036  in cell    81
source efficiency = 0.0035  in cell    82
source efficiency = 0.0036  in cell    83
source efficiency = 0.0036  in cell    84
source efficiency = 0.0035  in cell    85
source efficiency = 0.0036  in cell    86
source efficiency = 0.0036  in cell    87
source efficiency = 0.0036  in cell    88
source efficiency = 0.0036  in cell    89
source efficiency = 0.0036  in cell    91
source efficiency = 0.0036  in cell    92
```

source efficiency = 0.0035 in cell   93
source efficiency = 0.0036 in cell   94
source efficiency = 0.0036 in cell   95
source efficiency = 0.0036 in cell   96
source efficiency = 0.0035 in cell   97
source efficiency = 0.0036 in cell   98
source efficiency = 0.0036 in cell   99
source efficiency = 0.0035 in cell   101
source efficiency = 0.0036 in cell   102
source efficiency = 0.0036 in cell   103
source efficiency = 0.0036 in cell   104
source efficiency = 0.0036 in cell   105
source efficiency = 0.0036 in cell   106
source efficiency = 0.0036 in cell   107
source efficiency = 0.0035 in cell   108
source efficiency = 0.0036 in cell   109
source efficiency = 0.0035 in cell   111
source efficiency = 0.0036 in cell   112
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source efficiency = 0.0036 in cell   122
source efficiency = 0.0036 in cell   123
source efficiency = 0.0036 in cell   124
source efficiency = 0.0036 in cell   125
source efficiency = 0.0035 in cell   126
source efficiency = 0.0036 in cell   127
source efficiency = 0.0036 in cell   128
source efficiency = 0.0035 in cell   129
source efficiency = 0.0035 in cell   131
source efficiency = 0.0036 in cell   132
source efficiency = 0.0036 in cell   133
source efficiency = 0.0036 in cell   134
source efficiency = 0.0036 in cell   135

source efficiency = 0.0036 in cell 136

source efficiency = 0.0036 in cell 137

source efficiency = 0.0035 in cell 138

source efficiency = 0.0036 in cell 139

source efficiency = 0.0036 in cell 141

source efficiency = 0.0036 in cell 142

source efficiency = 0.0035 in cell 143

source efficiency = 0.0036 in cell 144

source efficiency = 0.0036 in cell 145

source efficiency = 0.0035 in cell 146

source efficiency = 0.0035 in cell 147

source efficiency = 0.0036 in cell 148

source efficiency = 0.0035 in cell 149

warning. importance function may be poor. see print table 120.
1photon activity in each cell print table 126

	cell	tracks entering	population	collisions	collisions * weight (per history)	number weighted energy	flux weighted energy	average track weight (relative)	average track mfp (cm)
1	11	167290	164701	1671372	2.5447E+14	4.4241E-01	4.4241E-01	3.0450E+15	8.8566E+00
2	12	166763	164191	1662440	2.5311E+14	4.4324E-01	4.4324E-01	3.0450E+15	8.8626E+00
3	13	168094	165503	1666132	2.5367E+14	4.4540E-01	4.4540E-01	3.0450E+15	8.8827E+00
4	14	167121	164559	1664191	2.5337E+14	4.4453E-01	4.4453E-01	3.0450E+15	8.8733E+00
5	15	166611	164049	1655970	2.5212E+14	4.4566E-01	4.4566E-01	3.0450E+15	8.8865E+00
6	16	167837	165205	1668394	2.5401E+14	4.4360E-01	4.4360E-01	3.0450E+15	8.8676E+00
7	17	167424	164868	1672616	2.5466E+14	4.4427E-01	4.4427E-01	3.0450E+15	8.8713E+00
8	18	166444	163904	1657050	2.5229E+14	4.4527E-01	4.4527E-01	3.0450E+15	8.8808E+00
9	19	167108	164420	1659689	2.5269E+14	4.4394E-01	4.4394E-01	3.0450E+15	8.8688E+00
10	21	166673	164023	1653191	2.5170E+14	4.4544E-01	4.4544E-01	3.0450E+15	8.8841E+00
11	22	166785	164233	1657095	2.5229E+14	4.4495E-01	4.4495E-01	3.0450E+15	8.8790E+00
12	23	167562	164986	1667203	2.5383E+14	4.4530E-01	4.4530E-01	3.0450E+15	8.8831E+00
13	24	167230	164608	1664919	2.5348E+14	4.4395E-01	4.4395E-01	3.0450E+15	8.8695E+00
14	25	167588	164981	1668805	2.5408E+14	4.4387E-01	4.4387E-01	3.0450E+15	8.8685E+00
15	26	167602	164933	1673503	2.5479E+14	4.4302E-01	4.4302E-01	3.0450E+15	8.8606E+00
16	27	167374	164676	1662797	2.5316E+14	4.4514E-01	4.4514E-01	3.0450E+15	8.8805E+00
17	28	166826	164161	1662302	2.5309E+14	4.4428E-01	4.4428E-01	3.0450E+15	8.8726E+00
18	29	166216	163581	1654264	2.5186E+14	4.4518E-01	4.4518E-01	3.0450E+15	8.8804E+00
19	31	166460	163822	1652184	2.5155E+14	4.4462E-01	4.4462E-01	3.0450E+15	8.8766E+00
20	32	166836	164243	1658508	2.5251E+14	4.4433E-01	4.4433E-01	3.0450E+15	8.8739E+00
21	33	166632	163935	1660857	2.5287E+14	4.4526E-01	4.4526E-01	3.0450E+15	8.8805E+00
22	34	166807	164210	1656539	2.5221E+14	4.4517E-01	4.4517E-01	3.0450E+15	8.8808E+00
23	35	167758	165096	1667950	2.5395E+14	4.4394E-01	4.4394E-01	3.0450E+15	8.8695E+00
24	36	167464	164857	1670954	2.5440E+14	4.4427E-01	4.4427E-01	3.0450E+15	8.8732E+00
25	37	167301	164685	1661167	2.5291E+14	4.4515E-01	4.4515E-01	3.0450E+15	8.8808E+00
26	38	167341	164799	1665100	2.5351E+14	4.4508E-01	4.4508E-01	3.0450E+15	8.8808E+00
27	39	167102	164559	1665485	2.5357E+14	4.4424E-01	4.4424E-01	3.0450E+15	8.8719E+00
28	41	167269	164597	1662516	2.5312E+14	4.4544E-01	4.4544E-01	3.0450E+15	8.8830E+00
29	42	167100	164489	1662568	2.5313E+14	4.4426E-01	4.4426E-01	3.0450E+15	8.8736E+00
30	43	166908	164348	1665686	2.5360E+14	4.4370E-01	4.4370E-01	3.0450E+15	8.8675E+00
31	44	167643	165022	1675089	2.5503E+14	4.4284E-01	4.4284E-01	3.0450E+15	8.8602E+00
32	45	166759	164209	1657989	2.5243E+14	4.4455E-01	4.4455E-01	3.0450E+15	8.8756E+00
33	46	167171	164511	1659858	2.5271E+14	4.4450E-01	4.4450E-01	3.0450E+15	8.8754E+00
34	47	167270	164672	1662880	2.5317E+14	4.4453E-01	4.4453E-01	3.0450E+15	8.8755E+00
35	48	167209	164644	1666773	2.5377E+14	4.4374E-01	4.4374E-01	3.0450E+15	8.8692E+00
36	49	166848	164212	1660895	2.5287E+14	4.4341E-01	4.4341E-01	3.0450E+15	8.8659E+00
37	51	167113	164437	1659164	2.5261E+14	4.4452E-01	4.4452E-01	3.0450E+15	8.8746E+00
38	52	167277	164670	1663895	2.5333E+14	4.4536E-01	4.4536E-01	3.0450E+15	8.8833E+00
39	53	166243	163666	1657782	2.5240E+14	4.4406E-01	4.4406E-01	3.0450E+15	8.8695E+00
40	54	167149	164582	1667457	2.5387E+14	4.4472E-01	4.4472E-01	3.0450E+15	8.8761E+00
41	55	166817	164180	1665490	2.5357E+14	4.4365E-01	4.4365E-01	3.0450E+15	8.8673E+00
42	56	166953	164329	1662225	2.5307E+14	4.4457E-01	4.4457E-01	3.0450E+15	8.8751E+00
43	57	167126	164382	1663450	2.5326E+14	4.4485E-01	4.4485E-01	3.0450E+15	8.8780E+00

44	58	166981	164336	1658305	2.5248E+14	4.4539E-01	4.4539E-01	3.0450E+15	8.8832E+00
45	59	167015	164344	1665031	2.5350E+14	4.4428E-01	4.4428E-01	3.0450E+15	8.8721E+00
46	61	167644	165054	1664897	2.5348E+14	4.4515E-01	4.4515E-01	3.0450E+15	8.8804E+00
47	62	167829	165178	1667764	2.5392E+14	4.4481E-01	4.4481E-01	3.0450E+15	8.8796E+00
48	63	166377	163746	1655582	2.5206E+14	4.4463E-01	4.4463E-01	3.0450E+15	8.8765E+00
49	64	167214	164622	1667331	2.5385E+14	4.4388E-01	4.4388E-01	3.0450E+15	8.8690E+00
50	65	166660	164011	1656135	2.5215E+14	4.4459E-01	4.4459E-01	3.0450E+15	8.8777E+00
51	66	167132	164590	1663723	2.5330E+14	4.4550E-01	4.4550E-01	3.0450E+15	8.8844E+00
52	67	166755	164180	1659133	2.5260E+14	4.4491E-01	4.4491E-01	3.0450E+15	8.8792E+00
53	68	166563	163981	1658176	2.5246E+14	4.4495E-01	4.4495E-01	3.0450E+15	8.8787E+00
54	69	166737	164070	1656363	2.5218E+14	4.4448E-01	4.4448E-01	3.0450E+15	8.8734E+00
55	71	166588	163982	1657339	2.5233E+14	4.4549E-01	4.4549E-01	3.0450E+15	8.8837E+00
56	72	167162	164479	1662366	2.5310E+14	4.4411E-01	4.4411E-01	3.0450E+15	8.8712E+00
57	73	167190	164545	1662758	2.5315E+14	4.4501E-01	4.4501E-01	3.0450E+15	8.8796E+00
58	74	167484	164983	1667287	2.5384E+14	4.4444E-01	4.4444E-01	3.0450E+15	8.8760E+00
59	75	166731	164158	1663330	2.5324E+14	4.4403E-01	4.4403E-01	3.0450E+15	8.8701E+00
60	76	166970	164373	1665278	2.5354E+14	4.4475E-01	4.4475E-01	3.0450E+15	8.8760E+00
61	77	167034	164417	1665337	2.5355E+14	4.4331E-01	4.4331E-01	3.0450E+15	8.8650E+00
62	78	166831	164254	1662365	2.5310E+14	4.4489E-01	4.4489E-01	3.0450E+15	8.8779E+00
63	79	166713	164163	1660767	2.5285E+14	4.4495E-01	4.4495E-01	3.0450E+15	8.8792E+00
64	81	167117	164460	1666084	2.5366E+14	4.4373E-01	4.4373E-01	3.0450E+15	8.8676E+00
65	82	166690	164125	1657180	2.5231E+14	4.4429E-01	4.4429E-01	3.0450E+15	8.8744E+00
66	83	166870	164247	1659960	2.5273E+14	4.4376E-01	4.4376E-01	3.0450E+15	8.8684E+00
67	84	166251	163657	1654080	2.5183E+14	4.4404E-01	4.4404E-01	3.0450E+15	8.8717E+00
68	85	167381	164702	1663928	2.5333E+14	4.4413E-01	4.4413E-01	3.0450E+15	8.8719E+00
69	86	166942	164287	1667948	2.5395E+14	4.4452E-01	4.4452E-01	3.0450E+15	8.8750E+00
70	87	166960	164355	1664941	2.5349E+14	4.4336E-01	4.4336E-01	3.0450E+15	8.8636E+00
71	88	167209	164568	1670500	2.5433E+14	4.4390E-01	4.4390E-01	3.0450E+15	8.8690E+00
72	89	166654	164051	1661021	2.5289E+14	4.4409E-01	4.4409E-01	3.0450E+15	8.8710E+00
73	91	167108	164420	1657945	2.5242E+14	4.4458E-01	4.4458E-01	3.0450E+15	8.8760E+00
74	92	167039	164458	1661966	2.5303E+14	4.4444E-01	4.4444E-01	3.0450E+15	8.8737E+00
75	93	167138	164574	1665504	2.5357E+14	4.4444E-01	4.4444E-01	3.0450E+15	8.8743E+00
76	94	166603	163973	1656919	2.5227E+14	4.4423E-01	4.4423E-01	3.0450E+15	8.8723E+00
77	95	166674	164049	1659027	2.5259E+14	4.4523E-01	4.4523E-01	3.0450E+15	8.8816E+00
78	96	167559	164878	1665298	2.5354E+14	4.4410E-01	4.4410E-01	3.0450E+15	8.8713E+00
79	97	167557	164984	1668349	2.5401E+14	4.4500E-01	4.4500E-01	3.0450E+15	8.8792E+00
80	98	166231	163592	1655692	2.5208E+14	4.4443E-01	4.4443E-01	3.0450E+15	8.8747E+00
81	99	166535	163950	1657620	2.5237E+14	4.4495E-01	4.4495E-01	3.0450E+15	8.8776E+00
82	101	167844	165205	1672922	2.5470E+14	4.4416E-01	4.4416E-01	3.0450E+15	8.8721E+00
83	102	166467	163830	1653179	2.5170E+14	4.4446E-01	4.4446E-01	3.0450E+15	8.8740E+00
84	103	167593	164962	1664691	2.5345E+14	4.4430E-01	4.4430E-01	3.0450E+15	8.8736E+00
85	104	167180	164603	1662092	2.5305E+14	4.4468E-01	4.4468E-01	3.0450E+15	8.8766E+00
86	105	166851	164331	1661016	2.5289E+14	4.4424E-01	4.4424E-01	3.0450E+15	8.8733E+00
87	106	166878	164320	1659037	2.5259E+14	4.4569E-01	4.4569E-01	3.0450E+15	8.8861E+00
88	107	166462	163857	1658095	2.5244E+14	4.4460E-01	4.4460E-01	3.0450E+15	8.8752E+00
89	108	167256	164553	1665206	2.5353E+14	4.4420E-01	4.4420E-01	3.0450E+15	8.8720E+00
90	109	167303	164700	1661703	2.5299E+14	4.4467E-01	4.4467E-01	3.0450E+15	8.8765E+00
91	111	167181	164617	1664813	2.5347E+14	4.4400E-01	4.4400E-01	3.0450E+15	8.8698E+00
92	112	167281	164715	1665197	2.5353E+14	4.4428E-01	4.4428E-01	3.0450E+15	8.8728E+00
93	113	167232	164646	1659762	2.5270E+14	4.4482E-01	4.4482E-01	3.0450E+15	8.8789E+00
94	114	167212	164621	1663068	2.5320E+14	4.4506E-01	4.4506E-01	3.0450E+15	8.8784E+00
95	115	167237	164618	1662660	2.5314E+14	4.4428E-01	4.4428E-01	3.0450E+15	8.8737E+00
96	116	166429	163878	1659088	2.5260E+14	4.4413E-01	4.4413E-01	3.0450E+15	8.8720E+00
97	117	167065	164516	1665244	2.5353E+14	4.4409E-01	4.4409E-01	3.0450E+15	8.8704E+00
98	118	166892	164323	1657136	2.5230E+14	4.4562E-01	4.4562E-01	3.0450E+15	8.8860E+00
99	119	166563	163973	1659980	2.5273E+14	4.4386E-01	4.4386E-01	3.0450E+15	8.8679E+00
100	121	166769	164207	1662065	2.5305E+14	4.4403E-01	4.4403E-01	3.0450E+15	8.8715E+00
101	122	166769	164171	1658052	2.5244E+14	4.4467E-01	4.4467E-01	3.0450E+15	8.8764E+00
102	123	166324	163827	1658328	2.5248E+14	4.4399E-01	4.4399E-01	3.0450E+15	8.8706E+00
103	124	167824	165183	1664399	2.5340E+14	4.4402E-01	4.4402E-01	3.0450E+15	8.8725E+00
104	125	166738	164086	1660218	2.5277E+14	4.4388E-01	4.4388E-01	3.0450E+15	8.8694E+00
105	126	167118	164471	1666452	2.5372E+14	4.4478E-01	4.4478E-01	3.0450E+15	8.8764E+00
106	127	166369	163772	1655576	2.5206E+14	4.4389E-01	4.4389E-01	3.0450E+15	8.8702E+00
107	128	166445	163934	1655998	2.5213E+14	4.4484E-01	4.4484E-01	3.0450E+15	8.8787E+00
108	129	166941	164434	1663682	2.5330E+14	4.4519E-01	4.4519E-01	3.0450E+15	8.8794E+00
109	131	166969	164356	1660515	2.5281E+14	4.4455E-01	4.4455E-01	3.0450E+15	8.8757E+00
110	132	167131	164564	1663920	2.5333E+14	4.4452E-01	4.4452E-01	3.0450E+15	8.8744E+00
111	133	167904	165296	1669344	2.5416E+14	4.4513E-01	4.4513E-01	3.0450E+15	8.8801E+00
112	134	167457	164795	1669993	2.5426E+14	4.4354E-01	4.4354E-01	3.0450E+15	8.8641E+00
113	135	167134	164559	1659446	2.5265E+14	4.4418E-01	4.4418E-01	3.0450E+15	8.8722E+00
114	136	167250	164588	1662180	2.5307E+14	4.4532E-01	4.4532E-01	3.0450E+15	8.8843E+00
115	137	167270	164622	1662023	2.5304E+14	4.4497E-01	4.4497E-01	3.0450E+15	8.8797E+00
116	138	166837	164220	1663663	2.5329E+14	4.4387E-01	4.4387E-01	3.0450E+15	8.8684E+00
117	139	167338	164689	1663596	2.5328E+14	4.4457E-01	4.4457E-01	3.0450E+15	8.8759E+00
118	141	166275	163693	1653833	2.5180E+14	4.4437E-01	4.4437E-01	3.0450E+15	8.8737E+00
119	142	167234	164598	1665408	2.5356E+14	4.4425E-01	4.4425E-01	3.0450E+15	8.8716E+00
120	143	166900	164215	1660922	2.5288E+14	4.4431E-01	4.4431E-01	3.0450E+15	8.8736E+00
121	144	167095	164544	1665982	2.5365E+14	4.4427E-01	4.4427E-01	3.0450E+15	8.8726E+00

122	145	167193	164583	1661387	2.5295E+14	4.4502E-01	4.4502E-01	3.0450E+15	8.8780E+00
123	146	166373	163775	1655402	2.5203E+14	4.4348E-01	4.4348E-01	3.0450E+15	8.8658E+00
124	147	166912	164283	1663510	2.5327E+14	4.4494E-01	4.4494E-01	3.0450E+15	8.8787E+00
125	148	166434	163862	1659602	2.5267E+14	4.4451E-01	4.4451E-01	3.0450E+15	8.8746E+00
126	149	168287	165639	1673643	2.5481E+14	4.4449E-01	4.4449E-01	3.0450E+15	8.8750E+00
127	211	73174	65575	169	2.5730E+10	5.3486E-01	5.3486E-01	3.0450E+15	8.9713E+03
128	212	73065	65548	138	2.1010E+10	5.3956E-01	5.3956E-01	3.0450E+15	9.0069E+03
129	213	74327	66610	164	2.4969E+10	5.3876E-01	5.3876E-01	3.0450E+15	9.0029E+03
130	214	73657	66040	160	2.4360E+10	5.4068E-01	5.4068E-01	3.0450E+15	9.0179E+03
131	215	73301	65656	147	2.2381E+10	5.3988E-01	5.3988E-01	3.0450E+15	9.0169E+03
132	216	73889	66139	169	2.5730E+10	5.3385E-01	5.3385E-01	3.0450E+15	8.9609E+03
133	217	73279	65691	139	2.1163E+10	5.4208E-01	5.4208E-01	3.0450E+15	9.0274E+03
134	218	73081	65473	134	2.0402E+10	5.3818E-01	5.3818E-01	3.0450E+15	9.0019E+03
135	219	73483	65780	165	2.5121E+10	5.4077E-01	5.4077E-01	3.0450E+15	9.0196E+03
136	221	73609	65823	163	2.4817E+10	5.3961E-01	5.3961E-01	3.0450E+15	9.0152E+03
137	222	73458	65797	141	2.1467E+10	5.3625E-01	5.3625E-01	3.0450E+15	8.9857E+03
138	223	73536	65923	133	2.0249E+10	5.3916E-01	5.3916E-01	3.0450E+15	9.0115E+03
139	224	73568	65802	149	2.2685E+10	5.4014E-01	5.4014E-01	3.0450E+15	9.0171E+03
140	225	73627	65830	167	2.5426E+10	5.3631E-01	5.3631E-01	3.0450E+15	8.9869E+03
141	226	73621	65826	126	1.9184E+10	5.3535E-01	5.3535E-01	3.0450E+15	8.9791E+03
142	227	74278	66283	145	2.2076E+10	5.3844E-01	5.3844E-01	3.0450E+15	9.0015E+03
143	228	73200	65501	153	2.3294E+10	5.3682E-01	5.3682E-01	3.0450E+15	8.9914E+03
144	229	73197	65539	161	2.4512E+10	5.3823E-01	5.3823E-01	3.0450E+15	8.9962E+03
145	231	73397	65738	145	2.2076E+10	5.4155E-01	5.4155E-01	3.0450E+15	9.0305E+03
146	232	73438	65735	160	2.4360E+10	5.3901E-01	5.3901E-01	3.0450E+15	9.0053E+03
147	233	73313	65472	178	2.7100E+10	5.3720E-01	5.3720E-01	3.0450E+15	8.9916E+03
148	234	73847	66128	165	2.5121E+10	5.3559E-01	5.3559E-01	3.0450E+15	8.9774E+03
149	235	73981	66163	150	2.2838E+10	5.3787E-01	5.3787E-01	3.0450E+15	8.9989E+03
150	236	73287	65696	165	2.5121E+10	5.4115E-01	5.4115E-01	3.0450E+15	9.0240E+03
151	237	73819	66104	176	2.6796E+10	5.3826E-01	5.3826E-01	3.0450E+15	9.0034E+03
152	238	73681	66024	139	2.1163E+10	5.3796E-01	5.3796E-01	3.0450E+15	9.0022E+03
153	239	73474	65834	143	2.1772E+10	5.3896E-01	5.3896E-01	3.0450E+15	9.0076E+03
154	241	73832	66036	154	2.3446E+10	5.3682E-01	5.3682E-01	3.0450E+15	8.9869E+03
155	242	73717	65929	149	2.2685E+10	5.3575E-01	5.3575E-01	3.0450E+15	8.9825E+03
156	243	73341	65812	157	2.3903E+10	5.4072E-01	5.4072E-01	3.0450E+15	9.0159E+03
157	244	73443	65713	148	2.2533E+10	5.3801E-01	5.3801E-01	3.0450E+15	8.9987E+03
158	245	73519	65921	161	2.4512E+10	5.3584E-01	5.3584E-01	3.0450E+15	8.9855E+03
159	246	74131	66344	137	2.0858E+10	5.3789E-01	5.3789E-01	3.0450E+15	8.9983E+03
160	247	73889	66115	182	2.7710E+10	5.3867E-01	5.3867E-01	3.0450E+15	9.0059E+03
161	248	73377	65817	170	2.5882E+10	5.3617E-01	5.3617E-01	3.0450E+15	8.9844E+03
162	249	73268	65649	140	2.1315E+10	5.3862E-01	5.3862E-01	3.0450E+15	9.0040E+03
163	251	73939	66139	175	2.6644E+10	5.3947E-01	5.3947E-01	3.0450E+15	9.0062E+03
164	252	73732	65919	136	2.0706E+10	5.3719E-01	5.3719E-01	3.0450E+15	8.9957E+03
165	253	73044	65398	146	2.2228E+10	5.3992E-01	5.3992E-01	3.0450E+15	9.0146E+03
166	254	73217	65627	161	2.4512E+10	5.3942E-01	5.3942E-01	3.0450E+15	9.0075E+03
167	255	73284	65424	156	2.3751E+10	5.3605E-01	5.3605E-01	3.0450E+15	8.9837E+03
168	256	73169	65531	145	2.2076E+10	5.3888E-01	5.3888E-01	3.0450E+15	9.0123E+03
169	257	73566	65659	168	2.5578E+10	5.4308E-01	5.4308E-01	3.0450E+15	9.0363E+03
170	258	73425	65666	156	2.3751E+10	5.4040E-01	5.4040E-01	3.0450E+15	9.0208E+03
171	259	73119	65443	168	2.5578E+10	5.3728E-01	5.3728E-01	3.0450E+15	8.9911E+03
172	261	74087	66409	177	2.6948E+10	5.3663E-01	5.3663E-01	3.0450E+15	8.9879E+03
173	262	73952	66161	156	2.3751E+10	5.3778E-01	5.3778E-01	3.0450E+15	8.9977E+03
174	263	73280	65554	153	2.3294E+10	5.3972E-01	5.3972E-01	3.0450E+15	9.0110E+03
175	264	73288	65653	141	2.1467E+10	5.3727E-01	5.3727E-01	3.0450E+15	8.9935E+03
176	265	73644	66017	160	2.4360E+10	5.3771E-01	5.3771E-01	3.0450E+15	8.9924E+03
177	266	73290	65746	154	2.3446E+10	5.4044E-01	5.4044E-01	3.0450E+15	9.0186E+03
178	267	73428	65778	148	2.2533E+10	5.4182E-01	5.4182E-01	3.0450E+15	9.0296E+03
179	268	73185	65548	170	2.5882E+10	5.3974E-01	5.3974E-01	3.0450E+15	9.0152E+03
180	269	73630	65861	165	2.5121E+10	5.3806E-01	5.3806E-01	3.0450E+15	8.9954E+03
181	271	73516	65822	129	1.9640E+10	5.3642E-01	5.3642E-01	3.0450E+15	8.9833E+03
182	272	73770	65942	177	2.6948E+10	5.3650E-01	5.3650E-01	3.0450E+15	8.9840E+03
183	273	73510	65737	160	2.4360E+10	5.3952E-01	5.3952E-01	3.0450E+15	9.0115E+03
184	274	73548	66001	147	2.2381E+10	5.3482E-01	5.3482E-01	3.0450E+15	8.9735E+03
185	275	73089	65579	152	2.3142E+10	5.3948E-01	5.3948E-01	3.0450E+15	9.0097E+03
186	276	73161	65509	151	2.2990E+10	5.4025E-01	5.4025E-01	3.0450E+15	9.0166E+03
187	277	73522	65737	174	2.6492E+10	5.3869E-01	5.3869E-01	3.0450E+15	9.0054E+03
188	278	73221	65575	142	2.1620E+10	5.3873E-01	5.3873E-01	3.0450E+15	9.0080E+03
189	279	73117	65575	162	2.4664E+10	5.3986E-01	5.3986E-01	3.0450E+15	9.0121E+03
190	281	73439	65747	159	2.4208E+10	5.3807E-01	5.3807E-01	3.0450E+15	9.0001E+03
191	282	73406	65821	158	2.4056E+10	5.4109E-01	5.4109E-01	3.0450E+15	9.0216E+03
192	283	73731	65959	155	2.3599E+10	5.3776E-01	5.3776E-01	3.0450E+15	8.9984E+03
193	284	73406	65683	157	2.3903E+10	5.3696E-01	5.3696E-01	3.0450E+15	8.9872E+03
194	285	74102	66159	147	2.2381E+10	5.3335E-01	5.3335E-01	3.0450E+15	8.9637E+03
195	286	73264	65635	169	2.5730E+10	5.3595E-01	5.3595E-01	3.0450E+15	8.9832E+03
196	287	73286	65568	164	2.4969E+10	5.3840E-01	5.3840E-01	3.0450E+15	8.9999E+03
197	288	73369	65694	145	2.2076E+10	5.3762E-01	5.3762E-01	3.0450E+15	8.9967E+03
198	289	72854	65373	159	2.4208E+10	5.4013E-01	5.4013E-01	3.0450E+15	9.0116E+03
199	291	73968	66127	138	2.1010E+10	5.4165E-01	5.4165E-01	3.0450E+15	9.0257E+03

200	292	73658	65982	152	2.3142E+10	5.3893E-01	5.3893E-01	3.0450E+15	9.0075E+03
201	293	73343	65762	160	2.4360E+10	5.3955E-01	5.3955E-01	3.0450E+15	9.0122E+03
202	294	73217	65507	148	2.2533E+10	5.4151E-01	5.4151E-01	3.0450E+15	9.0222E+03
203	295	73502	65755	171	2.6035E+10	5.3950E-01	5.3950E-01	3.0450E+15	9.0093E+03
204	296	73827	66004	160	2.4360E+10	5.4046E-01	5.4046E-01	3.0450E+15	9.0187E+03
205	297	73752	66034	135	2.0554E+10	5.3896E-01	5.3896E-01	3.0450E+15	9.0047E+03
206	298	73217	65466	163	2.4817E+10	5.3997E-01	5.3997E-01	3.0450E+15	9.0144E+03
207	299	72994	65333	140	2.1315E+10	5.3862E-01	5.3862E-01	3.0450E+15	9.0076E+03
208	301	73595	65889	156	2.3751E+10	5.4073E-01	5.4073E-01	3.0450E+15	9.0163E+03
209	302	74038	66258	155	2.3599E+10	5.3744E-01	5.3744E-01	3.0450E+15	8.9950E+03
210	303	74103	66348	141	2.1467E+10	5.3568E-01	5.3568E-01	3.0450E+15	8.9793E+03
211	304	73662	65981	132	2.0097E+10	5.3786E-01	5.3786E-01	3.0450E+15	8.9947E+03
212	305	73474	65915	157	2.3903E+10	5.3883E-01	5.3883E-01	3.0450E+15	9.0051E+03
213	306	73409	65785	165	2.5121E+10	5.3924E-01	5.3924E-01	3.0450E+15	9.0064E+03
214	307	73176	65454	178	2.7100E+10	5.3940E-01	5.3940E-01	3.0450E+15	9.0118E+03
215	308	73558	65627	172	2.6187E+10	5.3869E-01	5.3869E-01	3.0450E+15	9.0043E+03
216	309	73916	66112	160	2.4360E+10	5.3838E-01	5.3838E-01	3.0450E+15	9.0019E+03
217	311	73021	65561	149	2.2685E+10	5.3767E-01	5.3767E-01	3.0450E+15	8.9996E+03
218	312	73610	65970	138	2.1010E+10	5.4042E-01	5.4042E-01	3.0450E+15	9.0197E+03
219	313	73922	66192	145	2.2076E+10	5.3961E-01	5.3961E-01	3.0450E+15	9.0153E+03
220	314	73669	66016	158	2.4056E+10	5.4030E-01	5.4030E-01	3.0450E+15	9.0151E+03
221	315	74059	66173	159	2.4208E+10	5.3757E-01	5.3757E-01	3.0450E+15	8.9987E+03
222	316	73002	65368	143	2.1772E+10	5.3814E-01	5.3814E-01	3.0450E+15	8.9996E+03
223	317	73415	65821	154	2.3446E+10	5.3600E-01	5.3600E-01	3.0450E+15	8.9829E+03
224	318	73373	65737	182	2.7710E+10	5.3886E-01	5.3886E-01	3.0450E+15	9.0057E+03
225	319	73033	65480	164	2.4969E+10	5.4143E-01	5.4143E-01	3.0450E+15	9.0273E+03
226	321	72969	65462	169	2.5730E+10	5.4096E-01	5.4096E-01	3.0450E+15	9.0152E+03
227	322	73630	65939	147	2.2381E+10	5.3824E-01	5.3824E-01	3.0450E+15	9.0018E+03
228	323	72763	65274	177	2.6948E+10	5.4197E-01	5.4197E-01	3.0450E+15	9.0287E+03
229	324	74472	66524	171	2.6035E+10	5.3842E-01	5.3842E-01	3.0450E+15	9.0000E+03
230	325	73397	65645	134	2.0402E+10	5.3826E-01	5.3826E-01	3.0450E+15	8.9997E+03
231	326	73261	65602	143	2.1772E+10	5.4097E-01	5.4097E-01	3.0450E+15	9.0220E+03
232	327	73109	65450	134	2.0402E+10	5.4096E-01	5.4096E-01	3.0450E+15	9.0195E+03
233	328	73283	65725	170	2.5882E+10	5.3809E-01	5.3809E-01	3.0450E+15	9.0009E+03
234	329	73054	65640	142	2.1620E+10	5.4106E-01	5.4106E-01	3.0450E+15	9.0246E+03
235	331	73424	65731	150	2.2838E+10	5.3676E-01	5.3676E-01	3.0450E+15	8.9871E+03
236	332	73389	65635	150	2.2838E+10	5.3938E-01	5.3938E-01	3.0450E+15	9.0098E+03
237	333	73946	66249	158	2.4056E+10	5.3932E-01	5.3932E-01	3.0450E+15	9.0116E+03
238	334	73891	66123	156	2.3751E+10	5.3481E-01	5.3481E-01	3.0450E+15	8.9763E+03
239	335	73765	66093	155	2.3599E+10	5.3902E-01	5.3902E-01	3.0450E+15	9.0053E+03
240	336	73918	66083	182	2.7710E+10	5.3680E-01	5.3680E-01	3.0450E+15	8.9878E+03
241	337	74004	66195	156	2.3751E+10	5.2990E-01	5.2990E-01	3.0450E+15	8.9351E+03
242	338	73258	65634	148	2.2533E+10	5.3969E-01	5.3969E-01	3.0450E+15	9.0095E+03
243	339	73928	66158	156	2.3751E+10	5.3996E-01	5.3996E-01	3.0450E+15	9.0132E+03
244	341	72898	65362	137	2.0858E+10	5.4017E-01	5.4017E-01	3.0450E+15	9.0142E+03
245	342	73459	65757	154	2.3446E+10	5.4004E-01	5.4004E-01	3.0450E+15	9.0143E+03
246	343	73450	65699	137	2.0858E+10	5.3625E-01	5.3625E-01	3.0450E+15	8.9884E+03
247	344	72974	65476	151	2.2990E+10	5.3743E-01	5.3743E-01	3.0450E+15	8.9934E+03
248	345	73804	66152	154	2.3446E+10	5.3768E-01	5.3768E-01	3.0450E+15	8.9963E+03
249	346	73113	65499	189	2.8775E+10	5.3658E-01	5.3658E-01	3.0450E+15	8.9831E+03
250	347	73284	65618	164	2.4969E+10	5.4148E-01	5.4148E-01	3.0450E+15	9.0209E+03
251	348	73106	65509	173	2.6339E+10	5.3825E-01	5.3825E-01	3.0450E+15	9.0002E+03
252	349	73869	66076	172	2.6187E+10	5.3524E-01	5.3524E-01	3.0450E+15	8.9775E+03
253	411	198537	192251	717518	3.6414E+13	5.8345E-01	5.8345E-01	3.0450E+15	1.4623E+00
254	412	200809	194526	727500	3.6921E+13	5.8238E-01	5.8238E-01	3.0450E+15	1.4618E+00
255	413	204091	197506	739084	3.7509E+13	5.8297E-01	5.8297E-01	3.0450E+15	1.4622E+00
256	414	202437	195973	735248	3.7314E+13	5.8395E-01	5.8395E-01	3.0450E+15	1.4640E+00
257	415	201009	194580	730319	3.7064E+13	5.8265E-01	5.8265E-01	3.0450E+15	1.4620E+00
258	416	202971	196411	732538	3.7176E+13	5.8103E-01	5.8103E-01	3.0450E+15	1.4596E+00
259	417	201493	195065	730202	3.7058E+13	5.8355E-01	5.8355E-01	3.0450E+15	1.4629E+00
260	418	200991	194533	728437	3.6968E+13	5.8237E-01	5.8237E-01	3.0450E+15	1.4620E+00
261	419	198982	192785	719440	3.6512E+13	5.8539E-01	5.8539E-01	3.0450E+15	1.4658E+00
262	421	202994	196286	735957	3.7350E+13	5.8064E-01	5.8064E-01	3.0450E+15	1.4586E+00
263	422	205703	198864	749885	3.8057E+13	5.7951E-01	5.7951E-01	3.0450E+15	1.4579E+00
264	423	206484	199632	752301	3.8179E+13	5.8008E-01	5.8008E-01	3.0450E+15	1.4590E+00
265	424	206617	199725	753988	3.8265E+13	5.8046E-01	5.8046E-01	3.0450E+15	1.4592E+00
266	425	206127	199141	748604	3.7992E+13	5.8161E-01	5.8161E-01	3.0450E+15	1.4608E+00
267	426	205992	199024	747642	3.7943E+13	5.8174E-01	5.8174E-01	3.0450E+15	1.4606E+00
268	427	207731	200762	754849	3.8309E+13	5.8060E-01	5.8060E-01	3.0450E+15	1.4594E+00
269	428	204970	198215	745753	3.7847E+13	5.8014E-01	5.8014E-01	3.0450E+15	1.4592E+00
270	429	201106	194735	730968	3.7097E+13	5.8244E-01	5.8244E-01	3.0450E+15	1.4619E+00
271	431	202785	196155	735155	3.7309E+13	5.8218E-01	5.8218E-01	3.0450E+15	1.4617E+00
272	432	205739	198895	749115	3.8018E+13	5.8137E-01	5.8137E-01	3.0450E+15	1.4605E+00
273	433	205159	198359	747168	3.7919E+13	5.8000E-01	5.8000E-01	3.0450E+15	1.4586E+00
274	434	206968	200074	749706	3.8048E+13	5.8044E-01	5.8044E-01	3.0450E+15	1.4586E+00
275	435	207257	200334	753249	3.8227E+13	5.8159E-01	5.8159E-01	3.0450E+15	1.4612E+00
276	436	206034	199284	751211	3.8124E+13	5.7910E-01	5.7910E-01	3.0450E+15	1.4578E+00
277	437	206618	199691	751006	3.8114E+13	5.8168E-01	5.8168E-01	3.0450E+15	1.4605E+00

278	438	206509	199624	751229	3.8125E+13	5.7911E-01	5.7911E-01	3.0450E+15	1.4570E+00
279	439	201826	195271	730200	3.7058E+13	5.8272E-01	5.8272E-01	3.0450E+15	1.4625E+00
280	441	203669	196983	735992	3.7352E+13	5.8036E-01	5.8036E-01	3.0450E+15	1.4581E+00
281	442	206368	199491	747909	3.7956E+13	5.7926E-01	5.7926E-01	3.0450E+15	1.4573E+00
282	443	205607	198991	746742	3.7897E+13	5.8004E-01	5.8004E-01	3.0450E+15	1.4583E+00
283	444	205847	199063	747862	3.7954E+13	5.7949E-01	5.7949E-01	3.0450E+15	1.4571E+00
284	445	205738	198881	748254	3.7974E+13	5.8108E-01	5.8108E-01	3.0450E+15	1.4598E+00
285	446	207612	200769	753669	3.8249E+13	5.8073E-01	5.8073E-01	3.0450E+15	1.4597E+00
286	447	206204	199292	749792	3.8052E+13	5.8010E-01	5.8010E-01	3.0450E+15	1.4592E+00
287	448	205889	199085	744898	3.7804E+13	5.7823E-01	5.7823E-01	3.0450E+15	1.4563E+00
288	449	201285	194943	730050	3.7050E+13	5.8137E-01	5.8137E-01	3.0450E+15	1.4598E+00
289	451	204052	197309	739528	3.7531E+13	5.8217E-01	5.8217E-01	3.0450E+15	1.4611E+00
290	452	206356	199378	750020	3.8064E+13	5.7915E-01	5.7915E-01	3.0450E+15	1.4572E+00
291	453	204587	197770	742242	3.7669E+13	5.8205E-01	5.8205E-01	3.0450E+15	1.4614E+00
292	454	205166	198419	746287	3.7874E+13	5.8125E-01	5.8125E-01	3.0450E+15	1.4601E+00
293	455	205397	198378	742487	3.7681E+13	5.7969E-01	5.7969E-01	3.0450E+15	1.4581E+00
294	456	205242	198531	747856	3.7954E+13	5.7976E-01	5.7976E-01	3.0450E+15	1.4584E+00
295	457	205580	198751	748517	3.7987E+13	5.8281E-01	5.8281E-01	3.0450E+15	1.4626E+00
296	458	205959	199105	751300	3.8128E+13	5.7943E-01	5.7943E-01	3.0450E+15	1.4583E+00
297	459	200785	194332	726720	3.6881E+13	5.8339E-01	5.8339E-01	3.0450E+15	1.4628E+00
298	461	204551	197866	741947	3.7654E+13	5.7999E-01	5.7999E-01	3.0450E+15	1.4580E+00
299	462	207379	200430	753470	3.8239E+13	5.8040E-01	5.8040E-01	3.0450E+15	1.4587E+00
300	463	204876	198047	743642	3.7740E+13	5.8187E-01	5.8187E-01	3.0450E+15	1.4611E+00
301	464	205565	198766	747943	3.7958E+13	5.7973E-01	5.7973E-01	3.0450E+15	1.4581E+00
302	465	206581	199781	750068	3.8066E+13	5.8203E-01	5.8203E-01	3.0450E+15	1.4612E+00
303	466	205735	198967	750693	3.8098E+13	5.7995E-01	5.7995E-01	3.0450E+15	1.4584E+00
304	467	206220	199272	751983	3.8163E+13	5.7989E-01	5.7989E-01	3.0450E+15	1.4588E+00
305	468	205291	198534	745077	3.7813E+13	5.7980E-01	5.7980E-01	3.0450E+15	1.4584E+00
306	469	202150	195654	732928	3.7196E+13	5.8306E-01	5.8306E-01	3.0450E+15	1.4628E+00
307	471	202971	196326	735397	3.7321E+13	5.8303E-01	5.8303E-01	3.0450E+15	1.4621E+00
308	472	206501	199668	748426	3.7983E+13	5.8024E-01	5.8024E-01	3.0450E+15	1.4587E+00
309	473	206278	199411	751391	3.8133E+13	5.8036E-01	5.8036E-01	3.0450E+15	1.4591E+00
310	474	206427	199582	747868	3.7954E+13	5.7843E-01	5.7843E-01	3.0450E+15	1.4561E+00
311	475	205339	198702	745755	3.7847E+13	5.8045E-01	5.8045E-01	3.0450E+15	1.4590E+00
312	476	205321	198575	745869	3.7853E+13	5.8051E-01	5.8051E-01	3.0450E+15	1.4594E+00
313	477	205861	198874	746579	3.7889E+13	5.8036E-01	5.8036E-01	3.0450E+15	1.4593E+00
314	478	204713	197955	743543	3.7735E+13	5.7962E-01	5.7962E-01	3.0450E+15	1.4583E+00
315	479	201039	194607	729667	3.7031E+13	5.8302E-01	5.8302E-01	3.0450E+15	1.4624E+00
316	481	202454	195885	734387	3.7270E+13	5.8218E-01	5.8218E-01	3.0450E+15	1.4611E+00
317	482	206123	199406	748385	3.7981E+13	5.8289E-01	5.8289E-01	3.0450E+15	1.4630E+00
318	483	206411	199539	751146	3.8121E+13	5.8000E-01	5.8000E-01	3.0450E+15	1.4587E+00
319	484	205606	198639	744939	3.7806E+13	5.8203E-01	5.8203E-01	3.0450E+15	1.4613E+00
320	485	207053	200029	748978	3.8011E+13	5.8058E-01	5.8058E-01	3.0450E+15	1.4594E+00
321	486	205619	198878	747846	3.7953E+13	5.7867E-01	5.7867E-01	3.0450E+15	1.4561E+00
322	487	205368	198508	745280	3.7823E+13	5.8049E-01	5.8049E-01	3.0450E+15	1.4590E+00
323	488	205628	198817	744888	3.7803E+13	5.8065E-01	5.8065E-01	3.0450E+15	1.4594E+00
324	489	200352	194069	725497	3.6819E+13	5.8497E-01	5.8497E-01	3.0450E+15	1.4655E+00
325	491	204175	197358	740071	3.7559E+13	5.8226E-01	5.8226E-01	3.0450E+15	1.4612E+00
326	492	206632	199821	754276	3.8280E+13	5.8153E-01	5.8153E-01	3.0450E+15	1.4606E+00
327	493	206100	199304	747911	3.7956E+13	5.8094E-01	5.8094E-01	3.0450E+15	1.4600E+00
328	494	205004	198132	742841	3.7699E+13	5.8275E-01	5.8275E-01	3.0450E+15	1.4627E+00
329	495	205934	199002	749353	3.8030E+13	5.8169E-01	5.8169E-01	3.0450E+15	1.4611E+00
330	496	206609	199698	749286	3.8026E+13	5.8197E-01	5.8197E-01	3.0450E+15	1.4613E+00
331	497	206649	199782	750208	3.8073E+13	5.8173E-01	5.8173E-01	3.0450E+15	1.4611E+00
332	498	205148	198387	747367	3.7929E+13	5.8004E-01	5.8004E-01	3.0450E+15	1.4589E+00
333	499	200544	194033	727478	3.6920E+13	5.8114E-01	5.8114E-01	3.0450E+15	1.4596E+00
334	501	203439	196887	736991	3.7402E+13	5.8284E-01	5.8284E-01	3.0450E+15	1.4624E+00
335	502	207299	200422	753675	3.8249E+13	5.7990E-01	5.7990E-01	3.0450E+15	1.4588E+00
336	503	207348	200434	754308	3.8281E+13	5.8087E-01	5.8087E-01	3.0450E+15	1.4597E+00
337	504	206575	199839	749271	3.8026E+13	5.7976E-01	5.7976E-01	3.0450E+15	1.4582E+00
338	505	205843	199154	746290	3.7874E+13	5.7998E-01	5.7998E-01	3.0450E+15	1.4586E+00
339	506	206100	199275	746902	3.7905E+13	5.8013E-01	5.8013E-01	3.0450E+15	1.4589E+00
340	507	205119	198318	745488	3.7834E+13	5.8192E-01	5.8192E-01	3.0450E+15	1.4616E+00
341	508	206016	199055	747303	3.7926E+13	5.8071E-01	5.8071E-01	3.0450E+15	1.4602E+00
342	509	202900	196321	736491	3.7377E+13	5.8258E-01	5.8258E-01	3.0450E+15	1.4620E+00
343	511	201980	195505	732887	3.7194E+13	5.8095E-01	5.8095E-01	3.0450E+15	1.4597E+00
344	512	206650	199769	751067	3.8117E+13	5.8028E-01	5.8028E-01	3.0450E+15	1.4588E+00
345	513	206540	199625	751715	3.8150E+13	5.7897E-01	5.7897E-01	3.0450E+15	1.4574E+00
346	514	206754	200053	754061	3.8269E+13	5.8141E-01	5.8141E-01	3.0450E+15	1.4606E+00
347	515	206675	199687	749874	3.8056E+13	5.7964E-01	5.7964E-01	3.0450E+15	1.4579E+00
348	516	204753	197925	743760	3.7746E+13	5.8164E-01	5.8164E-01	3.0450E+15	1.4612E+00
349	517	205696	198841	745719	3.7845E+13	5.7945E-01	5.7945E-01	3.0450E+15	1.4577E+00
350	518	206220	199397	746949	3.7908E+13	5.8140E-01	5.8140E-01	3.0450E+15	1.4602E+00
351	519	200953	194546	729288	3.7011E+13	5.8371E-01	5.8371E-01	3.0450E+15	1.4637E+00
352	521	201738	195267	731568	3.7127E+13	5.8282E-01	5.8282E-01	3.0450E+15	1.4619E+00
353	522	206593	199666	748798	3.8001E+13	5.8017E-01	5.8017E-01	3.0450E+15	1.4592E+00
354	523	204397	197577	743484	3.7732E+13	5.8064E-01	5.8064E-01	3.0450E+15	1.4592E+00
355	524	208074	200990	756148	3.8375E+13	5.8077E-01	5.8077E-01	3.0450E+15	1.4593E+00

356	525	205464	198578	745461	3.7832E+13	5.8001E-01	5.8001E-01	3.0450E+15	1.4585E+00
357	526	205349	198626	746220	3.7871E+13	5.8181E-01	5.8181E-01	3.0450E+15	1.4613E+00
358	527	204959	198287	746736	3.7897E+13	5.8191E-01	5.8191E-01	3.0450E+15	1.4611E+00
359	528	205791	198981	748333	3.7978E+13	5.7996E-01	5.7996E-01	3.0450E+15	1.4586E+00
360	529	201040	194682	732268	3.7163E+13	5.8324E-01	5.8324E-01	3.0450E+15	1.4629E+00
361	531	202911	196297	735890	3.7346E+13	5.8246E-01	5.8246E-01	3.0450E+15	1.4614E+00
362	532	205754	198768	749687	3.8047E+13	5.8062E-01	5.8062E-01	3.0450E+15	1.4592E+00
363	533	207416	200556	754841	3.8308E+13	5.8220E-01	5.8220E-01	3.0450E+15	1.4622E+00
364	534	206620	199775	747807	3.7951E+13	5.8041E-01	5.8041E-01	3.0450E+15	1.4590E+00
365	535	207011	200078	751384	3.8133E+13	5.8177E-01	5.8177E-01	3.0450E+15	1.4609E+00
366	536	206700	199783	750655	3.8096E+13	5.7977E-01	5.7977E-01	3.0450E+15	1.4582E+00
367	537	206985	200110	749462	3.8035E+13	5.7819E-01	5.7819E-01	3.0450E+15	1.4558E+00
368	538	205373	198602	745153	3.7817E+13	5.8113E-01	5.8113E-01	3.0450E+15	1.4605E+00
369	539	203049	196591	737818	3.7444E+13	5.8183E-01	5.8183E-01	3.0450E+15	1.4611E+00
370	541	198250	192054	715977	3.6336E+13	5.8459E-01	5.8459E-01	3.0450E+15	1.4645E+00
371	542	201957	195491	733871	3.7244E+13	5.8309E-01	5.8309E-01	3.0450E+15	1.4632E+00
372	543	202003	195440	732189	3.7159E+13	5.8128E-01	5.8128E-01	3.0450E+15	1.4595E+00
373	544	200910	194595	728009	3.6946E+13	5.8241E-01	5.8241E-01	3.0450E+15	1.4613E+00
374	545	202731	196214	733378	3.7219E+13	5.8220E-01	5.8220E-01	3.0450E+15	1.4611E+00
375	546	201025	194656	727542	3.6923E+13	5.8052E-01	5.8052E-01	3.0450E+15	1.4585E+00
376	547	201265	194865	729987	3.7047E+13	5.8392E-01	5.8392E-01	3.0450E+15	1.4638E+00
377	548	201132	194644	730565	3.7076E+13	5.8093E-01	5.8093E-01	3.0450E+15	1.4596E+00
378	549	199599	193321	720999	3.6591E+13	5.8306E-01	5.8306E-01	3.0450E+15	1.4622E+00
395	4236	153924	137586	89522	2.2716E+12	4.8454E-01	4.8454E-01	3.0450E+15	4.4287E+00
396	4237	256559	233618	597662	7.5828E+12	4.2642E-01	4.2642E-01	3.0450E+15	4.1203E+00
397	4238	290281	263339	678518	4.3043E+12	3.8394E-01	3.8394E-01	3.0450E+15	3.9000E+00
398	4239	306393	278770	715486	2.2694E+12	3.6683E-01	3.6683E-01	3.0450E+15	3.8145E+00
399	4240	318614	290039	741250	1.1756E+12	3.5802E-01	3.5802E-01	3.0450E+15	3.7731E+00
400	4241	328470	299105	765566	6.0707E+11	3.5271E-01	3.5271E-01	3.0450E+15	3.7486E+00
401	4242	338973	308762	787898	3.1239E+11	3.4977E-01	3.4977E-01	3.0450E+15	3.7373E+00
402	4243	349183	318348	813692	1.6131E+11	3.4684E-01	3.4684E-01	3.0450E+15	3.7254E+00
403	4244	361385	328881	840906	8.3352E+10	3.4505E-01	3.4505E-01	3.0450E+15	3.7174E+00
404	4245	373105	339652	867734	4.3005E+10	3.4356E-01	3.4356E-01	3.0450E+15	3.7108E+00
405	4246	384824	350620	895137	2.2182E+10	3.4284E-01	3.4284E-01	3.0450E+15	3.7093E+00
406	4247	397898	362555	922794	1.1434E+10	3.4204E-01	3.4204E-01	3.0450E+15	3.7056E+00
407	4248	411127	374715	953665	5.9080E+09	3.4187E-01	3.4187E-01	3.0450E+15	3.7072E+00
408	4249	424375	386915	984996	3.0511E+09	3.4184E-01	3.4184E-01	3.0450E+15	3.7079E+00
409	4250	434253	396953	1004754	1.5561E+09	3.4390E-01	3.4390E-01	3.0450E+15	3.7195E+00
410	4251	405356	386646	920389	7.1273E+08	3.6256E-01	3.6256E-01	3.0450E+15	3.8294E+00
412	9998	652827	553043	7937	4.0280E+11	5.8932E-01	5.8932E-01	3.0450E+15	9.7127E+03
413	9997	703937	591891	7880	3.9991E+11	5.8443E-01	5.8443E-01	3.0450E+15	9.6730E+03
414	9996	528730	449658	5825	2.9562E+11	5.8967E-01	5.8967E-01	3.0450E+15	9.7147E+03
422	9988	201667	194505	35650	2.7607E+07	4.7172E-01	4.7172E-01	3.0450E+15	8.7489E+03
431	2001	128428	119083	22994	1.7806E+07	4.3631E-01	4.3631E-01	3.0450E+15	8.4109E+03
432	2002	117937	103866	58026	4.4934E+07	3.8279E-01	3.8279E-01	3.0450E+15	7.9076E+03
433	2003	105237	87003	60983	4.7224E+07	3.3167E-01	3.3167E-01	3.0450E+15	7.4044E+03
434	2004	97067	76284	105046	8.1346E+07	2.8734E-01	2.8734E-01	3.0450E+15	6.9510E+03
435	2005	82181	61699	99866	7.7335E+07	2.5221E-01	2.5221E-01	3.0450E+15	6.5735E+03
436	2006	67367	49251	88454	6.8497E+07	2.2979E-01	2.2979E-01	3.0450E+15	6.3212E+03
437	2007	54001	38829	74363	5.7585E+07	2.1541E-01	2.1541E-01	3.0450E+15	6.1567E+03
438	2008	41398	29968	84928	6.5767E+07	2.0456E-01	2.0456E-01	3.0450E+15	6.0318E+03
439	2009	27778	19881	58645	4.5414E+07	1.9537E-01	1.9537E-01	3.0450E+15	5.9243E+03
440	2010	17614	12808	48617	3.7648E+07	1.8953E-01	1.8953E-01	3.0450E+15	5.8513E+03
441	2011	9413	6812	26179	2.0273E+07	1.8765E-01	1.8765E-01	3.0450E+15	5.8232E+03
442	2012	5007	3597	14235	1.1023E+07	1.8586E-01	1.8586E-01	3.0450E+15	5.8158E+03
443	2013	2640	1901	7293	5.6476E+06	1.8336E-01	1.8336E-01	3.0450E+15	5.7877E+03
444	2014	1362	984	3858	2.9876E+06	1.8672E-01	1.8672E-01	3.0450E+15	5.8176E+03
445	2015	598	506	3165	2.4509E+06	1.8722E-01	1.8722E-01	3.0450E+15	5.8407E+03
total		64470427	61403546	316482201	3.6664E+16				

1tally 2 nps = 20000000
tally type 2 particle flux averaged over a surface.
tally for photons

this tally is modified by a dose function.

areas
surface: 1231
1.78374E+06

surface 1231
0.00000E+00 0.0000

there are no nonzero tallies in the tally fluctuation chart bin for tally 2

1tally 12 nps = 20000000
tally type 2 particle flux averaged over a surface.

```
          tally for  photons

          this tally is modified by a dose function.

          areas
               surface:     1227
              segment
                1       1.00000E+50
                2       2.56400E+07
                3       1.03700E+08
                4       1.60200E+08
                5       3.92700E+08
                6       5.49800E+08
                7       7.06900E+08
                8       8.63900E+08
                9       1.59000E+09
               10       1.94400E+09
               11       3.14200E+09
               12       3.77000E+09
               13       4.39800E+09
               14       5.02700E+09
               15       5.65500E+09
               16       1.68900E+10

surface  1227
segment:       -2000
                1.78074E-48 0.0239

surface  1227
segment:        2000    -2001
                3.31691E-06 0.0297

surface  1227
segment:        2000     2001    -2002
                9.38220E-07 0.0360

surface  1227
segment:        2000     2001     2002    -2003
                2.20824E-07 0.0405

surface  1227
segment:        2000     2001     2002     2003    -2004
                6.85325E-08 0.0410

surface  1227
segment:        2000     2001     2002     2003     2004    -2005
                2.43426E-08 0.0557

surface  1227
segment:        2000     2001     2002     2003     2004     2005    -2006
                9.32572E-09 0.0530

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006    -2007
                4.58407E-09 0.0565

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007    -2008
                2.10473E-09 0.0568

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008    -2009
                9.33582E-10 0.0835

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009    -2010
                3.70152E-10 0.0736

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
    -2011
                1.29357E-10 0.1382

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011    -2012
                6.42714E-11 0.2115
```

```
 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012    -2013
                2.29090E-11 0.2544

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013    -2014
                9.50528E-12 0.2719

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013     2014
                1.45293E-12 0.3118


    ================================================================================================================
    ===================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  12

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
    merit--      -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
    behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
    random      >3.00
 observed     random        0.31      yes          yes            0.42      yes         yes            constant
    random       0.00
 passed?        yes           no      yes          yes              no      yes         yes               yes
    yes          no


    ================================================================================================================
    ===================


 warning.  the tally in the tally fluctuation chart bin did not pass  3 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  12 with nps =    20000000  print table
    160


 normed average tally per history  = 1.45293E-12          unnormed average tally per history  = 2.45399E-02
 estimated tally relative error    = 0.3118               estimated variance of the variance  = 0.4189
 relative error from zero tallies  = 0.1961               relative error from nonzero scores  = 0.2423

 number of nonzero history tallies =          26          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =    10908241          largest  unnormalized history tally = 1.21803E+05
 (largest  tally)/(average tally)  = 4.96347E+06          (largest  tally)/(avg nonzero tally)= 6.45251E+00

 (confidence interval shift)/mean  = 0.0902               shifted confidence interval center  = 1.58400E-12


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            1.45293E-12            1.81350E-12                  0.248173
      relative error                  3.11756E-01            3.19246E-01                  0.024024
      variance of the variance        4.18940E-01            3.07427E-01                 -0.266181
      shifted center                  1.58400E-12            1.60309E-12                  0.012052
      figure of merit                 8.15790E-02            7.77961E-02                 -0.046371

 there is not enough information in the largest  history scores (usually less than 500 scores) for a reliable
    estimate of the slope.
 the history score probability density function appears to have an unsampled region at the largest  history scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.586E+05)*( 7.172E-04)**2 = (1.586E+05)*(5.144E-07) =
    8.158E-02

1unnormed tally density for tally  12           nonzero tally mean(m) = 1.888E+04   nps =    20000000  print table
    161
```

```
 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
    bin(d=decade,slope= 0.0)
  tally  number num den log den:d----------------------------------------------------d------------------------------
    ----------------
 5.01+03      3 1.46-10  -9.837
    ***************************************************|************************************************
 6.31+03      2 7.71-11 -10.113
    ***************************************************|*********************************
 7.94+03      3 9.18-11 -10.037
    ***************************************************|************************************
 1.00+04      5 1.22-10  -9.915
    ***************************************************|*******************************************
 1.26+04      2 3.86-11 -10.413 ***************************************************|*****************
 1.58+04      3 4.60-11 -10.337 ***************************************************|**********************
 2.00+04      0 0.00+00   0.000                                                    |
 2.51+04      3 2.90-11 -10.537 ***************************************************|**********
 3.16+04      1 7.69-12 -11.114 *********************************                  |
 3.98+04      1 6.11-12 -11.214 ***************************                        |
 5.01+04      2 9.70-12 -11.013 ***************************************            |
 6.31+04      0 0.00+00   0.000                                                    |
 7.94+04      0 0.00+00   0.000                                                    |
 1.00+05      0 0.00+00   0.000                                                    |
 1.26+05      1 1.93-12 -11.714 *                                                  |
  total      26 1.30-06         d----------------------------------------------------d------------------------------
    ----------------

1tally  22        nps =    20000000
          tally type 2    particle flux averaged over a surface.
          tally for  photons

          this tally is modified by a dose function.

          areas
               surface:     1227
              segment
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       4.35376E+05
                5       4.35376E+05
                6       4.35376E+05
                7       4.35376E+05
                8       4.35376E+05
                9       4.35376E+05
               10       4.35376E+05
               11       4.35376E+05
               12       4.35376E+05
               13       4.35376E+05
               14       4.35376E+05
               15       4.35376E+05
               16       4.35376E+05
               17       4.35376E+05
               18       4.35376E+05
               19       4.35376E+05
               20       4.35376E+05
               21       4.35376E+05
               22       1.00000E+50

 surface  1227
 segment:        1201
                 3.84717E-50 0.0290

 surface  1227
 segment:       -1201    -2026
                 1.05387E-48 0.0343

 surface  1227
 segment:       -1201     2026     2027
                 1.02969E-48 0.0292

 surface  1227
 segment:       -1201     2026    -2027     2016
                 2.27695E-05 0.0328

 surface  1227
 segment:       -1201     2026    -2027    -2016     2017
                 4.94500E-05 0.0323
```

```
surface  1227
segment:       -1201     2026    -2027    -2016    -2017     2018
                4.95582E-05 0.0315

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018     2019
                4.52636E-05 0.0319

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019     2020
                4.29366E-05 0.0494

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020     2021
                3.55547E-05 0.0444

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021     2022
                3.13115E-05 0.0626

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022     2023
                3.10920E-05 0.0637

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     2024
                2.56009E-05 0.0728

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024     2025
                2.58408E-05 0.0820

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025     2028
                1.84967E-05 0.0684

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028     2029
                1.65160E-05 0.0858

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029     2030
                1.40017E-05 0.0833

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030     2031
                1.32141E-05 0.0944

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031     2032
                1.27037E-05 0.1086

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032     2033
                1.22028E-05 0.1279

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033     2034
                9.50930E-06 0.1694

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034     2035
                8.81143E-06 0.1425

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034    -2035
```

3.93454E-49 0.0453

==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 22

tfc bin behavior	--mean-- behavior	---------relative error--------- value	decrease	decrease rate	----variance of the variance---- value	decrease	decrease rate	--figure of merit-- -pdf- value
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant
observed	random	0.05	yes	yes	0.02	no	no	constant
passed?	yes	yes	yes	yes	yes	no	no	yes

behavior slope: random >3.00; random 4.03; yes yes

==========

warning. the tally in the tally fluctuation chart bin did not pass 2 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 22 with nps = 20000000 print table 160

normed average tally per history	= 3.93454E-49	unnormed average tally per history	= 3.93454E+01
estimated tally relative error	= 0.0453	estimated variance of the variance	= 0.0245
relative error from zero tallies	= 0.0171	relative error from nonzero scores	= 0.0419
number of nonzero history tallies	= 3424	efficiency for the nonzero tallies	= 0.0002
history number of largest tally	= 15884496	largest unnormalized history tally	= 1.26111E+07
(largest tally)/(average tally)	= 3.20524E+05	(largest tally)/(avg nonzero tally)	= 5.48736E+01
(confidence interval shift)/mean	= 0.0027	shifted confidence interval center	= 3.94510E-49

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	3.93454E-49	3.99760E-49	0.016026
relative error	4.52513E-02	4.72482E-02	0.044129
variance of the variance	2.45113E-02	3.17731E-02	0.296264
shifted center	3.94510E-49	3.94744E-49	0.000592
figure of merit	3.87210E+00	3.55172E+00	-0.082741

the estimated inverse power slope of the 171 largest tallies starting at 1.01046E+06 is 4.0267
the history score probability density function appears to have an unsampled region at the largest history scores: please examine. see print table 161.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.586E+05)*(4.941E-03)**2 = (1.586E+05)*(2.442E-05) = 3.872E+00

1unnormed tally density for tally 22 nonzero tally mean(m) = 2.298E+05 nps = 20000000 print table 161

abscissa bin(d=decade,slope= 4.0) ordinate log plot of tally probability density function in tally fluctuation chart

tally	number	num den	log den:d----------d----------d----------d----------d----------d----------d
5.01+03	127	6.16-09	-8.210
6.31+03	221	8.52-09	-8.070
7.94+03	189	5.78-09	-8.238
1.00+04	217	5.28-09	-8.278

```
 1.26+04    199 3.84-09  -8.415
    ****************|****************|****************|****************|****************|********
 1.58+04    177 2.71-09  -8.566
    ****************|****************|****************|****************|****************|*****
 2.00+04    171 2.08-09  -8.681
    ****************|****************|****************|****************|****************|***
 2.51+04    171 1.65-09  -8.781
    ****************|****************|****************|****************|****************|**
 3.16+04    159 1.22-09  -8.913
    ****************|****************|****************|****************|****************|
 3.98+04    160 9.77-10  -9.010 ****************|****************|****************|****************|***************
    |
 5.01+04    140 6.79-10  -9.168 ****************|****************|****************|****************|************
    |
 6.31+04    111 4.28-10  -9.369 ****************|****************|****************|****************|*********
    |
 7.94+04     87 2.66-10  -9.575 ****************|****************|****************|****************|*****
    |
 1.00+05    115 2.80-10  -9.554 ****************|****************|****************|****************|*****
    |
 1.26+05    121 2.34-10  -9.631 ****************|****************|****************|****************|****
    |
 1.58+05    106 1.63-10  -9.789 ****************|****************|****************|****************|*
    |
 2.00+05     90 1.10-10  -9.960 ****************|****************|****************|***************** |
    |
 2.51+05     74 7.16-11 -10.145 mmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmm     |
    |
 3.16+05    106 8.15-11 -10.089 ****************|****************|****************|**************   |
    |
 3.98+05    106 6.47-11 -10.189 ****************|****************|****************|************     |
    |
 5.01+05    111 5.38-11 -10.269 ****************|****************|****************|***********      |
    |
 6.31+05    136 5.24-11 -10.281 ****************|****************|****************|***********      |
    |
 7.94+05    106 3.24-11 -10.489 ****************|****************|****************|******           |
    |
 1.00+06     52 1.26-11 -10.898 ****************|****************|****************|                 |
    |
 1.26+06     54 1.04-11 -10.982 ****************|****************|**************** |        s        |
    |
 1.58+06     42 6.44-12 -11.191 ****************|****************|************     |     s           |
    |
 2.00+06     20 2.44-12 -11.613 ****************|****************|*****            |  s              |
    |
 2.51+06     13 1.26-12 -11.900 ****************|****************|                s|                 |
    |
 3.16+06     18 1.38-12 -11.859 ****************|****************|*            s    |                 |
    |
 3.98+06     11 6.72-13 -12.173 ****************|************    |         s        |                 |
    |
 5.01+06      8 3.88-13 -12.411 ****************|********        |    s             |                 |
    |
 6.31+06      4 1.54-13 -12.812 ****************|*               |s                 |                 |
    |
 7.94+06      1 3.06-14 -13.514 ******          |            s   |                  |                 |
    |
 1.00+07      0 0.00+00   0.000                 |      s         |                  |                 |
    |
 1.26+07      0 0.00+00   0.000                 | s              |                  |                 |
    |
 1.58+07      1 1.53-14 -13.814 *           s   |                |                  |                 |
    |
  total    3424 1.71-04         d---------------d----------------d-----------------d----------------d---------------
    -d--------------

1tally  32        nps =    20000000
          tally type 2    particle flux averaged over a surface.
          tally for  photons

          this tally is modified by a dose function.

          areas
               surface:     1201
              segment
                1       1.00000E+50
                2       1.00000E+50
```

```
               3       1.00000E+50
               4       1.00000E+50
               5       6.30000E+05

 surface  1201
 segment:        1231
                 1.14461E-48 0.0257

 surface  1201
 segment:       -1231    -2026
                 1.21538E-49 0.0871

 surface  1201
 segment:       -1231     2026     2027
                 1.28914E-49 0.0791

 surface  1201
 segment:       -1231     2026    -2027    -1227
                 0.00000E+00 0.0000

 surface  1201
 segment:       -1231     2026    -2027     1227
                 1.42249E-04 0.0292


    ================================================================================================================
    ==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  32

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
    merit--      -pdf-
 behavior    behavior      value   decrease   decrease rate      value   decrease   decrease rate       value
    behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
    random       >3.00
 observed     random        0.03      yes          yes            0.00      yes         yes            constant
    random       10.00
 passed?       yes           yes      yes          yes             yes      yes         yes               yes
    yes          yes


    ================================================================================================================
    ==================


 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to
    verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 1.3821E-04 to 1.4651E-04; 1.3405E-04 to 1.5067E-04; 1.2990E-
    04 to 1.5482E-04
 estimated  symmetric confidence interval(1,2,3 sigma): 1.3810E-04 to 1.4640E-04; 1.3395E-04 to 1.5055E-04; 1.2979E-
    04 to 1.5470E-04

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  32 with nps =    20000000  print table
    160


 normed average tally per history  = 1.42249E-04          unnormed average tally per history  = 8.96170E+01
 estimated tally relative error    = 0.0292               estimated variance of the variance  = 0.0041
 relative error from zero tallies  = 0.0149               relative error from nonzero scores  = 0.0251

 number of nonzero history tallies =        4506          efficiency for the nonzero tallies  = 0.0002
 history number of largest  tally  =     4914763          largest  unnormalized history tally = 8.33375E+06
 (largest  tally)/(average tally)  = 9.29930E+04          (largest  tally)/(avg nonzero tally)= 2.09513E+01

 (confidence interval shift)/mean  = 0.0008               shifted confidence interval center  = 1.42360E-04


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:
```

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	1.42249E-04	1.42911E-04	0.004650
relative error	2.91844E-02	2.94157E-02	0.007925
variance of the variance	4.12819E-03	4.53910E-03	0.099536
shifted center	1.42360E-04	1.42365E-04	0.000038
figure of merit	9.30911E+00	9.16330E+00	-0.015664

the estimated slope of the 200 largest tallies starting at 1.82867E+06 appears to be decreasing at least exponentially.
the large score tail of the empirical history score probability density function appears to have no unsampled regions.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.586E+05)*(7.662E-03)**2 = (1.586E+05)*(5.870E-05) = 9.309E+00

1tally 42 nps = 20000000
tally type 2 particle flux averaged over a surface.
tally for photons

this tally is modified by a dose function.

areas

surface:	2003	2004	2005	2006	2007	2008	2009
segment							
1	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
2	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
3	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
4	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
5	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
6	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06

surface:	2010	2011	2012	2013
segment				
1	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
2	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
3	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
4	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
5	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
6	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06

surface 2003
segment: 1219
6.19914E-49 0.0200

surface 2003
segment: -1219 -1209
8.59876E-51 0.0584

surface 2003
segment: -1219 1209 1201
2.56342E-51 0.0707

surface 2003
segment: -1219 1209 -1201 -1205
4.74674E-50 0.0327

surface 2003
segment: -1219 1209 -1201 1205 1206
3.99729E-50 0.0313

surface 2003
segment: -1219 1209 -1201 1205 -1206
1.18810E-06 0.0427

surface 2004
segment: 1219
5.60738E-49 0.0203

surface 2004
segment: -1219 -1209
4.89106E-51 0.0777

surface 2004
segment: -1219 1209 1201
1.54917E-51 0.0860

surface 2004
segment: -1219 1209 -1201 -1205

```
                2.60169E-50 0.0391

surface  2004
segment:        -1219     1209    -1201     1205     1206
                2.32546E-50 0.0362

surface  2004
segment:        -1219     1209    -1201     1205    -1206
                3.57785E-07 0.0593

surface  2005
segment:        1219
                4.72440E-49 0.0207

surface  2005
segment:        -1219    -1209
                2.73566E-51 0.0896

surface  2005
segment:        -1219     1209     1201
                9.44059E-52 0.1130

surface  2005
segment:        -1219     1209    -1201    -1205
                1.48091E-50 0.0477

surface  2005
segment:        -1219     1209    -1201     1205     1206
                1.33669E-50 0.0440

surface  2005
segment:        -1219     1209    -1201     1205    -1206
                1.34182E-07 0.0806

surface  2006
segment:        1219
                3.82923E-49 0.0214

surface  2006
segment:        -1219    -1209
                1.45060E-51 0.1189

surface  2006
segment:        -1219     1209     1201
                4.99013E-52 0.1407

surface  2006
segment:        -1219     1209    -1201    -1205
                8.97319E-51 0.0530

surface  2006
segment:        -1219     1209    -1201     1205     1206
                7.60178E-51 0.0524

surface  2006
segment:        -1219     1209    -1201     1205    -1206
                6.03564E-08 0.0963

surface  2007
segment:        1219
                3.02317E-49 0.0219

surface  2007
segment:        -1219    -1209
                8.78780E-52 0.1295

surface  2007
segment:        -1219     1209     1201
                4.17335E-52 0.5008

surface  2007
segment:        -1219     1209    -1201    -1205
                5.40814E-51 0.0653

surface  2007
segment:        -1219     1209    -1201     1205     1206
                5.45452E-51 0.0703
```

```
surface  2007
segment:       -1219     1209    -1201     1205    -1206
                3.22871E-08 0.1393

surface  2008
segment:        1219
                2.05320E-49 0.0231

surface  2008
segment:       -1219    -1209
                4.81036E-52 0.1763

surface  2008
segment:       -1219     1209     1201
                8.66356E-53 0.2617

surface  2008
segment:       -1219     1209    -1201    -1205
                2.95083E-51 0.0749

surface  2008
segment:       -1219     1209    -1201     1205     1206
                2.46366E-51 0.0804

surface  2008
segment:       -1219     1209    -1201     1205    -1206
                1.08948E-08 0.1960

surface  2009
segment:        1219
                1.35502E-49 0.0248

surface  2009
segment:       -1219    -1209
                2.19446E-52 0.2858

surface  2009
segment:       -1219     1209     1201
                8.54211E-53 0.3029

surface  2009
segment:       -1219     1209    -1201    -1205
                1.50882E-51 0.0969

surface  2009
segment:       -1219     1209    -1201     1205     1206
                1.44964E-51 0.0993

surface  2009
segment:       -1219     1209    -1201     1205    -1206
                4.66182E-09 0.3256

surface  2010
segment:        1219
                7.44113E-50 0.0287

surface  2010
segment:       -1219    -1209
                4.51770E-53 0.5726

surface  2010
segment:       -1219     1209     1201
                3.45511E-53 0.6838

surface  2010
segment:       -1219     1209    -1201    -1205
                6.86259E-52 0.1477

surface  2010
segment:       -1219     1209    -1201     1205     1206
                4.02131E-52 0.1832

surface  2010
segment:       -1219     1209    -1201     1205    -1206
                2.37630E-09 0.4332

surface  2011
segment:        1219
```

```
               3.94234E-50 0.0322

surface  2011
segment:       -1219    -1209
               3.09621E-53 0.7076

surface  2011
segment:       -1219     1209     1201
               1.27700E-53 0.7073

surface  2011
segment:       -1219     1209    -1201    -1205
               3.03597E-52 0.2388

surface  2011
segment:       -1219     1209    -1201     1205     1206
               1.60240E-52 0.2842

surface  2011
segment:       -1219     1209    -1201     1205    -1206
               9.18458E-10 0.6775

surface  2012
segment:       1219
               2.13801E-50 0.0397

surface  2012
segment:       -1219    -1209
               3.35425E-53 0.5294

surface  2012
segment:       -1219     1209     1201
               0.00000E+00 0.0000

surface  2012
segment:       -1219     1209    -1201    -1205
               9.31753E-53 0.3853

surface  2012
segment:       -1219     1209    -1201     1205     1206
               5.94913E-53 0.4199

surface  2012
segment:       -1219     1209    -1201     1205    -1206
               0.00000E+00 0.0000

surface  2013
segment:       1219
               1.09608E-50 0.0506

surface  2013
segment:       -1219    -1209
               0.00000E+00 0.0000

surface  2013
segment:       -1219     1209     1201
               0.00000E+00 0.0000

surface  2013
segment:       -1219     1209    -1201    -1205
               2.96900E-53 0.6201

surface  2013
segment:       -1219     1209    -1201     1205     1206
               5.11442E-53 0.4748

surface  2013
segment:       -1219     1209    -1201     1205    -1206
               0.00000E+00 0.0000

 ================================================================================================================
 ==================

       results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
 tally  42
```

tfc bin	--mean--	---------relative error---------			----variance of the variance----			--figure of merit--
behavior	behavior	value	decrease	decrease rate	value	decrease	decrease rate	value
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant
observed	random	0.04	yes	yes	0.02	yes	yes	constant
passed?	yes	yes	yes	yes	yes	yes	yes	yes

-pdf- behavior	-pdf- slope
random	>3.00
random	3.75
yes	yes

==========

this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to verify.
the results in other bins associated with this tally may not meet these statistical criteria.

----- estimated confidence intervals: -----

estimated asymmetric confidence interval(1,2,3 sigma): 1.1398E-06 to 1.2416E-06; 1.0890E-06 to 1.2924E-06; 1.0381E-06 to 1.3433E-06
estimated symmetric confidence interval(1,2,3 sigma): 1.1373E-06 to 1.2389E-06; 1.0866E-06 to 1.2896E-06; 1.0358E-06 to 1.3404E-06

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 42 with nps = 20000000 print table 160

normed average tally per history	= 1.18810E-06	unnormed average tally per history	= 3.56431E+00
estimated tally relative error	= 0.0427	estimated variance of the variance	= 0.0156
relative error from zero tallies	= 0.0241	relative error from nonzero scores	= 0.0353
number of nonzero history tallies	= 1723	efficiency for the nonzero tallies	= 0.0001
history number of largest tally	= 13038667	largest unnormalized history tally	= 7.82681E+05
(largest tally)/(average tally)	= 2.19588E+05	(largest tally)/(avg nonzero tally)	= 1.89175E+01
(confidence interval shift)/mean	= 0.0022	shifted confidence interval center	= 1.19070E-06

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	1.18810E-06	1.20115E-06	0.010979
relative error	4.27252E-02	4.36343E-02	0.021278
variance of the variance	1.56066E-02	1.75702E-02	0.125823
shifted center	1.19070E-06	1.19094E-06	0.000204
figure of merit	4.34351E+00	4.16441E+00	-0.041234

the estimated inverse power slope of the 86 largest tallies starting at 1.33490E+05 is 3.7483
the large score tail of the empirical history score probability density function appears to have no unsampled regions.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.586E+05)*(5.234E-03)**2 = (1.586E+05)*(2.739E-05) = 4.344E+00

1tally 52 nps = 20000000
tally type 2 particle flux averaged over a surface.
tally for photons

this tally is modified by a dose function.

areas

surface:	2003	2004	2005	2006	2007	2008	2009
segment							
1	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
2	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
3	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
4	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
5	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
6	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06

surface:	2010	2011	2012	2013
segment				

```
                1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

surface  2003
segment:        1219
                6.19914E-49 0.0200

surface  2003
segment:       -1219    -1209
                8.59876E-51 0.0584

surface  2003
segment:       -1219     1209    -1201
                1.23083E-49 0.0261

surface  2003
segment:       -1219     1209     1201    -1205
                1.36522E-51 0.0840

surface  2003
segment:       -1219     1209     1201     1205     1206
                1.14968E-51 0.1184

surface  2003
segment:       -1219     1209     1201     1205    -1206
                1.61735E-09 0.2779

surface  2004
segment:        1219
                5.60738E-49 0.0203

surface  2004
segment:       -1219    -1209
                4.89106E-51 0.0777

surface  2004
segment:       -1219     1209    -1201
                6.00050E-50 0.0289

surface  2004
segment:       -1219     1209     1201    -1205
                7.66048E-52 0.0884

surface  2004
segment:       -1219     1209     1201     1205     1206
                7.28089E-52 0.1520

surface  2004
segment:       -1219     1209     1201     1205    -1206
                1.83455E-09 0.3178

surface  2005
segment:        1219
                4.72440E-49 0.0207

surface  2005
segment:       -1219    -1209
                2.73566E-51 0.0896

surface  2005
segment:       -1219     1209    -1201
                3.22015E-50 0.0341

surface  2005
segment:       -1219     1209     1201    -1205
                5.46280E-52 0.1523

surface  2005
segment:       -1219     1209     1201     1205     1206
                3.83899E-52 0.1723

surface  2005
segment:       -1219     1209     1201     1205    -1206
                4.62685E-10 0.5035
```

```
surface  2006
segment:        1219
                3.82923E-49 0.0214

surface  2006
segment:       -1219    -1209
                1.45060E-51 0.1189

surface  2006
segment:       -1219     1209    -1201
                1.83857E-50 0.0387

surface  2006
segment:       -1219     1209     1201    -1205
                2.92849E-52 0.2046

surface  2006
segment:       -1219     1209     1201     1205     1206
                2.02734E-52 0.1799

surface  2006
segment:       -1219     1209     1201     1205    -1206
                1.14327E-10 1.0000

surface  2007
segment:        1219
                3.02317E-49 0.0219

surface  2007
segment:       -1219    -1209
                8.78780E-52 0.1295

surface  2007
segment:       -1219     1209    -1201
                1.18313E-50 0.0489

surface  2007
segment:       -1219     1209     1201    -1205
                3.18842E-52 0.6501

surface  2007
segment:       -1219     1209     1201     1205     1206
                9.12615E-53 0.2842

surface  2007
segment:       -1219     1209     1201     1205    -1206
                2.41047E-10 1.0000

surface  2008
segment:        1219
                2.05320E-49 0.0231

surface  2008
segment:       -1219    -1209
                4.81036E-52 0.1763

surface  2008
segment:       -1219     1209    -1201
                5.74132E-51 0.0544

surface  2008
segment:       -1219     1209     1201    -1205
                5.85881E-53 0.3227

surface  2008
segment:       -1219     1209     1201     1205     1206
                2.80475E-53 0.4462

surface  2008
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2009
segment:        1219
                1.35502E-49 0.0248

surface  2009
```

```
segment:       -1219    -1209
                2.19446E-52 0.2858

surface  2009
segment:       -1219     1209    -1201
                3.09831E-51 0.0700

surface  2009
segment:       -1219     1209     1201    -1205
                8.25549E-53 0.3115

surface  2009
segment:       -1219     1209     1201     1205     1206
                2.86628E-54 1.0000

surface  2009
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2010
segment:        1219
                7.44113E-50 0.0287

surface  2010
segment:       -1219    -1209
                4.51770E-53 0.5726

surface  2010
segment:       -1219     1209    -1201
                1.15968E-51 0.1137

surface  2010
segment:       -1219     1209     1201    -1205
                2.75288E-53 0.8385

surface  2010
segment:       -1219     1209     1201     1205     1206
                7.02230E-54 0.7159

surface  2010
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2011
segment:        1219
                3.94234E-50 0.0322

surface  2011
segment:       -1219    -1209
                3.09621E-53 0.7076

surface  2011
segment:       -1219     1209    -1201
                4.91391E-52 0.1783

surface  2011
segment:       -1219     1209     1201    -1205
                1.27700E-53 0.7073

surface  2011
segment:       -1219     1209     1201     1205     1206
                0.00000E+00 0.0000

surface  2011
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2012
segment:        1219
                2.13801E-50 0.0397

surface  2012
segment:       -1219    -1209
                3.35425E-53 0.5294

surface  2012
segment:       -1219     1209    -1201
                1.52667E-52 0.2865
```

```
 surface  2012
 segment:       -1219     1209     1201    -1205
                 0.00000E+00 0.0000

 surface  2012
 segment:       -1219     1209     1201     1205     1206
                 0.00000E+00 0.0000

 surface  2012
 segment:       -1219     1209     1201     1205    -1206
                 0.00000E+00 0.0000

 surface  2013
 segment:        1219
                 1.09608E-50 0.0506

 surface  2013
 segment:       -1219    -1209
                 0.00000E+00 0.0000

 surface  2013
 segment:       -1219     1209    -1201
                 8.08342E-53 0.3770

 surface  2013
 segment:       -1219     1209     1201    -1205
                 0.00000E+00 0.0000

 surface  2013
 segment:       -1219     1209     1201     1205     1206
                 0.00000E+00 0.0000

 surface  2013
 segment:       -1219     1209     1201     1205    -1206
                 0.00000E+00 0.0000


    ================================================================================================================
    ====================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  52

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
    merit--     -pdf-
 behavior    behavior      value   decrease   decrease rate      value   decrease   decrease rate       value
    behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
    random      >3.00
 observed     random        0.28      yes          yes            0.10      yes         yes            constant
    random       0.00
 passed?        yes           no      yes          yes             yes      yes         yes               yes
    yes          no


    ================================================================================================================
    ====================


 warning.  the tally in the tally fluctuation chart bin did not pass  2 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  52 with nps =    20000000  print table
    160


 normed average tally per history  = 1.61735E-09          unnormed average tally per history  = 4.85205E-03
 estimated tally relative error    = 0.2779               estimated variance of the variance  = 0.0984
 relative error from zero tallies  = 0.2673               relative error from nonzero scores  = 0.0763

 number of nonzero history tallies =          14          efficiency for the nonzero tallies  = 0.0000
 history number of largest  tally  =     1619421          largest  unnormalized history tally = 1.22139E+04
 (largest  tally)/(average tally)  = 2.51726E+06          (largest  tally)/(avg nonzero tally)= 1.76208E+00

 (confidence interval shift)/mean  = 0.0419               shifted confidence interval center  = 1.68507E-09
```

```
 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            1.61735E-09            1.82092E-09                  0.125863
      relative error                  2.77929E-01            2.70992E-01                 -0.024959
      variance of the variance        9.84021E-02            9.67212E-02                 -0.017082
      shifted center                  1.68507E-09            1.69087E-09                  0.003440
      figure of merit                 1.02646E-01            1.07968E-01                  0.051851

 there is not enough information in the largest  history scores (usually less than 500 scores) for a reliable
    estimate of the slope.
 the large score tail of the empirical history score probability density function appears to have no unsampled
    regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.586E+05)*( 8.045E-04)**2 = (1.586E+05)*(6.473E-07) =
    1.026E-01

1unnormed tally density for tally  52            nonzero tally mean(m) = 6.932E+03   nps =    20000000  print table
    161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
    bin(d=decade,slope= 0.0)
  tally  number num den log den:d-------------------------------------------------------------------------------
    ----------------
 5.01+03      3 1.46-10  -9.837
    ********************************************************************************
 6.31+03      2 7.71-11 -10.113 ************************************************************
 7.94+03      6 1.84-10  -9.736
    mmmm
```

tally result of statistical checks for the tfc bin (the first check not passed is listed) and error magnitude check for all bins

2 no nonzero tallies were made in the tally fluctuation chart bin
no nonzero tallies were made in any one of the 1 tally bins

12 missed 3 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint detector tallies
missed all bin error check: 16 tally bins had 0 bins with zeros and 5 bins with relative errors exceeding 0.10

22 missed 2 of 10 tfc bin checks: the variance of the variance does not monotonically decrease over the last half of problem
missed all bin error check: 22 tally bins had 0 bins with zeros and 4 bins with relative errors exceeding 0.10

32 passed the 10 statistical checks for the tally fluctuation chart bin result
passed all bin error check: 5 tally bins had 1 bins with zeros and 0 bins with relative errors exceeding 0.10

42 passed the 10 statistical checks for the tally fluctuation chart bin result
missed all bin error check: 66 tally bins had 5 bins with zeros and 27 bins with relative errors exceeding 0.10

52 missed 2 of 10 tfc bin checks: the relative error exceeds the recommended value of 0.1 for nonpoint detector tallies
missed all bin error check: 66 tally bins had 12 bins with zeros and 31 bins with relative errors exceeding 0.10

62 no nonzero tallies were made in the tally fluctuation chart bin
missed all bin error check: 5 tally bins had 3 bins with zeros and 2 bins with relative errors exceeding 0.10

the 10 statistical checks are only for the tally fluctuation chart bin and do not apply to other tally bins.

the tally bins with zeros may or may not be correct: compare the source, cutoffs, multipliers, et cetera with the tally bins.

warning. 5 of the 7 tally fluctuation chart bins did not pass all 10 statistical checks.
warning. 1 of the 7 tallies were all zeros.
warning. 5 of the 7 tallies had bins with relative errors greater than recommended.

1tally fluctuation charts

	tally 2					tally 12					tally 22				
nps	mean	error	vov	slope	fom	mean	error	vov	slope	fom	mean	error	vov	slope	fom
1024000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	3.6466E-49	0.1821	0.1259	0.0	4.7E+00
2048000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.5817E-13	1.0000	1.0000	0.0	7.7E-02	3.7217E-49	0.1286	0.0619	0.0	4.7E+00
3072000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.0544E-13	1.0000	1.0000	0.0	5.2E-02	3.7400E-49	0.1004	0.0378	10.0	5.1E+00
4096000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	7.4812E-13	0.8094	0.9382	0.0	5.9E-02	3.7948E-49	0.0894	0.0338	10.0	4.8E+00
5120000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	8.9213E-13	0.5803	0.7268	0.0	9.2E-02	3.6622E-49	0.0788	0.0278	10.0	5.0E+00
6144000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	8.3267E-13	0.5291	0.6701	0.0	9.2E-02	3.6355E-49	0.0717	0.0228	10.0	5.0E+00
7168000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	7.1372E-13	0.5291	0.6701	0.0	7.9E-02	3.8255E-49	0.0686	0.0321	8.1	4.7E+00
8192000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	7.7043E-13	0.4688	0.4958	0.0	8.8E-02	3.7847E-49	0.0636	0.0273	8.9	4.8E+00
9216000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.8483E-13	0.4688	0.4958	0.0	7.8E-02	3.7463E-49	0.0592	0.0242	7.4	4.9E+00
10240000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.4303E-13	0.4513	0.4876	0.0	7.6E-02	3.6659E-49	0.0562	0.0217	9.8	4.9E+00
11264000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.5080E-12	0.4756	0.6469	0.0	6.2E-02	3.7126E-49	0.0546	0.0198	7.8	4.7E+00
12288000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.5541E-12	0.4313	0.5997	0.0	6.9E-02	3.7514E-49	0.0529	0.0174	7.0	4.6E+00
13312000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.5391E-12	0.4050	0.5826	0.0	7.3E-02	3.7865E-49	0.0508	0.0160	7.0	4.6E+00
14336000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.6990E-12	0.3609	0.4709	0.0	8.5E-02	3.7684E-49	0.0493	0.0161	5.0	4.6E+00
15360000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.6144E-12	0.3549	0.4686	0.0	8.2E-02	3.7903E-49	0.0479	0.0147	5.4	4.5E+00
16384000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.5300E-12	0.3512	0.4677	0.0	7.8E-02	3.8446E-49	0.0499	0.0356	4.1	3.9E+00
17408000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.4631E-12	0.3461	0.4658	0.0	7.6E-02	3.8849E-49	0.0483	0.0313	4.2	3.9E+00
18432000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	1.5229E-12	0.3218	0.4241	0.0	8.3E-02	3.9131E-49	0.0475	0.0278	3.8	3.8E+00

```
 19456000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   1.4644E-12 0.3173 0.4222  0.0 8.1E-02   3.9159E-49 0.0462 0.0255  3.9
3.8E+00
 20000000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   1.4529E-12 0.3118 0.4189  0.0 8.2E-02   3.9345E-49 0.0453 0.0245  4.0
3.9E+00


                tally   32                                  tally   42                                  tally   52
      nps      mean     error   vov  slope    fom      mean     error   vov  slope    fom      mean     error   vov  slope
fom
  1024000   1.5323E-04 0.1553 0.1117  0.0 6.4E+00   1.7290E-06 0.2078 0.1894  0.0 3.6E+00   3.8065E-09 0.7316 0.6230  0.0 2.9E-
01
  2048000   1.4910E-04 0.0994 0.0515  0.0 7.8E+00   1.4765E-06 0.1437 0.1266  0.0 3.8E+00   4.6199E-09 0.5485 0.4423  0.0 2.6E-
01
  3072000   1.3912E-04 0.0803 0.0347  5.7 8.0E+00   1.2861E-06 0.1198 0.0961  0.0 3.6E+00   3.0799E-09 0.5485 0.4423  0.0 1.7E-
01
  4096000   1.3456E-04 0.0704 0.0247 10.0 7.8E+00   1.2304E-06 0.1038 0.0790  0.0 3.6E+00   2.3100E-09 0.5485 0.4423  0.0 1.3E-
01
  5120000   1.3696E-04 0.0645 0.0227  5.7 7.4E+00   1.2854E-06 0.0908 0.0541  0.0 3.7E+00   1.8480E-09 0.5485 0.4423  0.0 1.0E-
01
  6144000   1.4034E-04 0.0571 0.0173  5.8 7.9E+00   1.2789E-06 0.0808 0.0445  4.8 3.9E+00   1.5400E-09 0.5485 0.4423  0.0 8.6E-
02
  7168000   1.3952E-04 0.0521 0.0143  6.6 8.1E+00   1.2265E-06 0.0743 0.0399  2.8 4.0E+00   2.0098E-09 0.4345 0.2583  0.0 1.2E-
01
  8192000   1.4071E-04 0.0479 0.0120 10.0 8.4E+00   1.2023E-06 0.0689 0.0349  2.3 4.1E+00   1.9784E-09 0.4019 0.2262  0.0 1.2E-
01
  9216000   1.4117E-04 0.0449 0.0105 10.0 8.5E+00   1.2036E-06 0.0638 0.0300  3.0 4.2E+00   1.7586E-09 0.4019 0.2262  0.0 1.1E-
01
 10240000   1.3925E-04 0.0423 0.0094 10.0 8.7E+00   1.1744E-06 0.0605 0.0274  3.0 4.2E+00   1.7796E-09 0.3742 0.1960  0.0 1.1E-
01
 11264000   1.3934E-04 0.0399 0.0083 10.0 8.8E+00   1.1829E-06 0.0570 0.0242  3.2 4.3E+00   1.6178E-09 0.3742 0.1960  0.0 1.0E-
01
 12288000   1.3926E-04 0.0378 0.0074 10.0 9.1E+00   1.1667E-06 0.0545 0.0220  3.3 4.3E+00   1.4830E-09 0.3742 0.1960  0.0 9.2E-
02
 13312000   1.3771E-04 0.0360 0.0069 10.0 9.2E+00   1.1719E-06 0.0538 0.0261  2.8 4.1E+00   1.7608E-09 0.3314 0.1445  0.0 1.1E-
01
 14336000   1.3805E-04 0.0347 0.0064 10.0 9.2E+00   1.1633E-06 0.0515 0.0240  2.9 4.2E+00   1.8237E-09 0.3146 0.1266  0.0 1.1E-
01
 15360000   1.3926E-04 0.0333 0.0058 10.0 9.3E+00   1.1589E-06 0.0491 0.0224  3.1 4.3E+00   1.7021E-09 0.3146 0.1266  0.0 1.0E-
01
 16384000   1.3913E-04 0.0322 0.0053 10.0 9.3E+00   1.1555E-06 0.0477 0.0211  3.0 4.3E+00   1.7431E-09 0.3002 0.1136  0.0 1.1E-
01
 17408000   1.3922E-04 0.0312 0.0049 10.0 9.3E+00   1.1614E-06 0.0455 0.0196  2.9 4.4E+00   1.7657E-09 0.2878 0.1039  0.0 1.1E-
01
 18432000   1.3921E-04 0.0305 0.0047 10.0 9.3E+00   1.1607E-06 0.0449 0.0184  3.1 4.3E+00   1.6676E-09 0.2878 0.1039  0.0 1.0E-
01
 19456000   1.4075E-04 0.0296 0.0043 10.0 9.3E+00   1.1768E-06 0.0436 0.0164  3.7 4.3E+00   1.6626E-09 0.2779 0.0984  0.0 1.1E-
01
 20000000   1.4225E-04 0.0292 0.0041 10.0 9.3E+00   1.1881E-06 0.0427 0.0156  3.7 4.3E+00   1.6174E-09 0.2779 0.0984  0.0 1.0E-
01
1tally fluctuation charts

                    tally   62
       nps      mean     error   vov  slope    fom
   1024000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
   2048000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
   3072000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
   4096000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
   5120000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
   6144000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
   7168000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
   8192000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
   9216000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  10240000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  11264000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  12288000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  13312000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  14336000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  15360000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  16384000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  17408000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  18432000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  19456000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
  20000000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00


   ********************************************************************************************************************
   *******
 dump no.    4 on file runtpf       nps =    20000000     coll =      316482201     ctm =      126.12    nrn =
   20537759967

 surface-source file wssa     with nps =    20000000 and      199848 tracks was written for
    surface(s)  -2050

        49 warning messages so far.
```

```
run terminated when    20000000  particle histories were done.

computer time =  126.18 minutes

mcnp     version 5     11112005                    03/24/09 10:57:27                    probid =  03/24/09
   08:51:07
```

MCNP Case With Translated Source Without Shield Bells
(Direct dose through wall)

```
         Thread Name & Version = mcnp5VE_RSICC, 1.40

 +---------------------------------------------------------------------+
 |   This program was prepared by the Regents of the University of     |
 |California at Los Alamos National Laboratory (the University) under  |
 |  contract number W-7405-ENG-36 with the U.S. Department of Energy    |
 |(DoE).  The University has certain rights in the program pursuant to |
 |  the contract and the program should not be copied or distributed    |
 | outside your organization.  All rights in the program are reserved   |
 |by the DoE and the University.  Neither the U.S. Government nor the   |
 | University makes any warranty, express or implied, or assumes any    |
 |     liability or responsibility for the use of this software.        |
 +---------------------------------------------------------------------+

1mcnp     version 5     ld=11112005                    03/24/09 13:46:16
 ***********************************************************************                probid =  03/24/09
13:46:16
  inp = NSBWT.i outp = NSBWT.o rssa = NSWwssa

    1-       c     Created on: Tuesday, November 11, 2008 at 09:35
    2-       c     Canister Cells
    3-          11     5      -1 -11 1209 -1212
    4-          12     5      -1 -12 1209 -1212
    5-          13     5      -1 -13 1209 -1212
    6-          14     5      -1 -14 1209 -1212
    7-          15     5      -1 -15 1209 -1212
    8-          16     5      -1 -16 1209 -1212
    9-          17     5      -1 -17 1209 -1212
   10-          18     5      -1 -18 1209 -1212
   11-          19     5      -1 -19 1209 -1212
   12-          21     5      -1 -21 1209 -1212
   13-          22     5      -1 -22 1209 -1212
   14-          23     5      -1 -23 1209 -1212
   15-          24     5      -1 -24 1209 -1212
   16-          25     5      -1 -25 1209 -1212
   17-          26     5      -1 -26 1209 -1212
   18-          27     5      -1 -27 1209 -1212
   19-          28     5      -1 -28 1209 -1212
   20-          29     5      -1 -29 1209 -1212
   21-          31     5      -1 -31 1209 -1212
   22-          32     5      -1 -32 1209 -1212
   23-          33     5      -1 -33 1209 -1212
   24-          34     5      -1 -34 1209 -1212
   25-          35     5      -1 -35 1209 -1212
   26-          36     5      -1 -36 1209 -1212
   27-          37     5      -1 -37 1209 -1212
   28-          38     5      -1 -38 1209 -1212
   29-          39     5      -1 -39 1209 -1212
   30-          41     5      -1 -41 1209 -1212
   31-          42     5      -1 -42 1209 -1212
   32-          43     5      -1 -43 1209 -1212
   33-          44     5      -1 -44 1209 -1212
   34-          45     5      -1 -45 1209 -1212
   35-          46     5      -1 -46 1209 -1212
   36-          47     5      -1 -47 1209 -1212
   37-          48     5      -1 -48 1209 -1212
   38-          49     5      -1 -49 1209 -1212
   39-          51     5      -1 -51 1209 -1212
   40-          52     5      -1 -52 1209 -1212
   41-          53     5      -1 -53 1209 -1212
   42-          54     5      -1 -54 1209 -1212
   43-          55     5      -1 -55 1209 -1212
   44-          56     5      -1 -56 1209 -1212
   45-          57     5      -1 -57 1209 -1212
   46-          58     5      -1 -58 1209 -1212
   47-          59     5      -1 -59 1209 -1212
   48-          61     5      -1 -61 1209 -1212
   49-          62     5      -1 -62 1209 -1212
   50-          63     5      -1 -63 1209 -1212
   51-          64     5      -1 -64 1209 -1212
```

```
 52-          65      5       -1 -65 1209 -1212
 53-          66      5       -1 -66 1209 -1212
 54-          67      5       -1 -67 1209 -1212
 55-          68      5       -1 -68 1209 -1212
 56-          69      5       -1 -69 1209 -1212
 57-          71      5       -1 -71 1209 -1212
 58-          72      5       -1 -72 1209 -1212
 59-          73      5       -1 -73 1209 -1212
 60-          74      5       -1 -74 1209 -1212
 61-          75      5       -1 -75 1209 -1212
 62-          76      5       -1 -76 1209 -1212
 63-          77      5       -1 -77 1209 -1212
 64-          78      5       -1 -78 1209 -1212
 65-          79      5       -1 -79 1209 -1212
 66-          81      5       -1 -81 1209 -1212
 67-          82      5       -1 -82 1209 -1212
 68-          83      5       -1 -83 1209 -1212
 69-          84      5       -1 -84 1209 -1212
 70-          85      5       -1 -85 1209 -1212
 71-          86      5       -1 -86 1209 -1212
 72-          87      5       -1 -87 1209 -1212
 73-          88      5       -1 -88 1209 -1212
 74-          89      5       -1 -89 1209 -1212
 75-          91      5       -1 -91 1209 -1212
 76-          92      5       -1 -92 1209 -1212
 77-          93      5       -1 -93 1209 -1212
 78-          94      5       -1 -94 1209 -1212
 79-          95      5       -1 -95 1209 -1212
 80-          96      5       -1 -96 1209 -1212
 81-          97      5       -1 -97 1209 -1212
 82-          98      5       -1 -98 1209 -1212
 83-          99      5       -1 -99 1209 -1212
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 86-         103      5       -1 -103 1209 -1212
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 96-         114      5       -1 -114 1209 -1212
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 98-         116      5       -1 -116 1209 -1212
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114-         134      5       -1 -134 1209 -1212
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117-         137      5       -1 -137 1209 -1212
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122-         143      5       -1 -143 1209 -1212
123-         144      5       -1 -144 1209 -1212
124-         145      5       -1 -145 1209 -1212
125-         146      5       -1 -146 1209 -1212
126-         147      5       -1 -147 1209 -1212
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128-         149      5       -1 -149 1209 -1212
129-       c     Air  Gap Cells
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133-         214      3 -0.001225 -214 1209 -1213 #14
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139-         221      3 -0.001225 -221 1209 -1213 #21
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213-         303      3 -0.001225 -303 1209 -1213 #103
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375-         542     3 -0.001225 -542 1209 -1214 #342 #142
376-         543     3 -0.001225 -543 1209 -1214 #343 #143
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378-         545     3 -0.001225 -545 1209 -1214 #345 #145
379-         546     3 -0.001225 -546 1209 -1214 #346 #146
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382-         549     3 -0.001225 -549 1209 -1214 #349 #149
383-       c Walls
384-        1200     3 -0.001225 1222 -1221 1206 -1208 1220 -1219  $Notch
385-        1201     1  -2.365 1206 -1208 1202 -1203 -1219 1209 #1200  $Inner Wall
386-        1202     1  -2.365 1207 -1233 1219 -1215 -1225 1226  $Top of Back Wall
387-       12021     1  -2.365 1233 -1223 1219 -1215 1226 -1225  $Split in Back Wall
388-        1203     1  -2.365 1207 -1205 -1219 1209 -1203 1202  $Bottom of Back Wall
389-        1204     1  -2.365 1225 -1234 1207 -1218 1219 -1215  $Top Of Right Wall
390-       12041     1  -2.365 1234 -1204 1207 -1218 1219 -1215  $Split in Right Wall
391-        1205     1  -2.365 1203 -1204 1207 -1218 -1219 1209  $Bottom of Right Wall
392-        1206     1  -2.365 1235 -1218 -1225 1226 1219 -1215  $Top of Front Wall
393-       12061     1  -2.365 1224 -1235 -1225 1226 1219 -1215  $Split in Front Wall
394-        1207     1  -2.365 1217 -1218 -1203 1202 -1219 1209  $Bottom of Front Wall
395-        1208     1  -2.365 1201 -1236 -1218 1207 1219 -1215 #10000 $Top of Left Wall
396-                    #10001 #10002 #10003 #10004 #10005
397-       12081     1  -2.365 -1226 1236 -1218 1207 1219 -1215 #10000 $Split in Left Wall
398-                    #10001 #10002 #10003 #10004 #10005
399-       c 1209     1  -2.365 -1202 1201 -1218 1207 -1219 1209  $Bottom of Left Wall
400-        1210     1  -2.365 -1209 1227 1207 -1218 -1204 1201  $Floor
401-        1211     1  -2.328 1215 -1237 1207 -1218 -1204 1201  $Roof
402-       12111     1  -2.328 1237 -1216 1207 -1218 -1204 1201  $Split in Roof
403-       c Splits in left wall
404-        4236     1  -2.365 -1202 2036 -1218 1207 -1219 1209
405-        4237     1  -2.365 -2036 2037 -1218 1207 -1219 1209
406-        4238     1  -2.365 -2037 2038 -1218 1207 -1219 1209
407-        4239     1  -2.365 -2038 2039 -1218 1207 -1219 1209
408-        4240     1  -2.365 -2039 2040 -1218 1207 -1219 1209
409-        4241     1  -2.365 -2040 2041 -1218 1207 -1219 1209
410-        4242     1  -2.365 -2041 2042 -1218 1207 -1219 1209
411-        4243     1  -2.365 -2042 2043 -1218 1207 -1219 1209
412-        4244     1  -2.365 -2043 2044 -1218 1207 -1219 1209
413-        4245     1  -2.365 -2044 2045 -1218 1207 -1219 1209
414-        4246     1  -2.365 -2045 2046 -1218 1207 -1219 1209
415-        4247     1  -2.365 -2046 2047 -1218 1207 -1219 1209
416-        4248     1  -2.365 -2047 2048 -1218 1207 -1219 1209
417-        4249     1  -2.365 -2048 2049 -1218 1207 -1219 1209
418-        4250     1  -2.365 -2049 2050 -1218 1207 -1219 1209
419-        4251     1  -2.365 -2050 1201 -1218 1207 -1219 1209
420-       c   Air
421-        9999     0         2015  $Outside Model
422-        9998     3 -0.001225 1205 -1228 -1220 1209 -1203 1202 #(-447 1209 -1214 )#
423-                   (-448 1209 -1214 )#(-449 1209 -1214 )#(-451 1209 -1214 )#
424-                   (-452 1209 -1214 )#(-453 1209 -1214 )#(-454 1209 -1214 )#
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428-                   (-415 1209 -1214 )#(-416 1209 -1214 )#(-417 1209 -1214 )#
429-                   (-418 1209 -1214 )#(-419 1209 -1214 )#(-421 1209 -1214 )#
430-                   (-422 1209 -1214 )#(-423 1209 -1214 )#(-424 1209 -1214 )#
431-                   (-425 1209 -1214 )#(-426 1209 -1214 )#(-427 1209 -1214 )#
432-                   (-428 1209 -1214 )#(-429 1209 -1214 )#(-431 1209 -1214 )#
433-                   (-432 1209 -1214 )#(-433 1209 -1214 )#(-434 1209 -1214 )#
434-                   (-435 1209 -1214 )#(-436 1209 -1214 )#(-437 1209 -1214 )#
435-                   (-438 1209 -1214 )#(-439 1209 -1214 )#(-441 1209 -1214 )#
436-                   (-442 1209 -1214 )#(-443 1209 -1214 )#(-444 1209 -1214 )#
437-                   (-445 1209 -1214 )#(-446 1209 -1214 )
438-        9997     3 -0.001225 1228 -1229 -1220 1209 -1203 1202 #(-499 1209 -1214 )#
439-                   (-501 1209 -1214 )#(-502 1209 -1214 )#(-503 1209 -1214 )#
440-                   (-504 1209 -1214 )#(-505 1209 -1214 )#(-506 1209 -1214 )#
441-                   (-507 1209 -1214 )#(-508 1209 -1214 )#(-509 1209 -1214 )#
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                  (-461 1209 -1214 )#(-462 1209 -1214 )#(-463 1209 -1214 )#
                  (-464 1209 -1214 )#(-465 1209 -1214 )#(-466 1209 -1214 )#
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                  (-471 1209 -1214 )#(-472 1209 -1214 )#(-473 1209 -1214 )#
                  (-474 1209 -1214 )#(-475 1209 -1214 )#(-476 1209 -1214 )#
                  (-477 1209 -1214 )#(-478 1209 -1214 )#(-479 1209 -1214 )#
                  (-481 1209 -1214 )#(-482 1209 -1214 )#(-483 1209 -1214 )#
                  (-484 1209 -1214 )#(-485 1209 -1214 )#(-486 1209 -1214 )#
                  (-487 1209 -1214 )#(-488 1209 -1214 )#(-489 1209 -1214 )#
                  (-491 1209 -1214 )#(-492 1209 -1214 )#(-493 1209 -1214 )#
                  (-494 1209 -1214 )#(-495 1209 -1214 )#(-496 1209 -1214 )#
                  (-497 1209 -1214 )#(-498 1209 -1214 )
       9996     3 -0.001225 1229 -1206 -1220 1209 -1203 1202 #(-541 1209 -1214 )#
                  (-542 1209 -1214 )#(-543 1209 -1214 )#(-544 1209 -1214 )#
                  (-545 1209 -1214 )#(-546 1209 -1214 )#(-547 1209 -1214 )#
                  (-548 1209 -1214 )#(-549 1209 -1214 )#(-511 1209 -1214 )#
                  (-512 1209 -1214 )#(-513 1209 -1214 )#(-514 1209 -1214 )#
                  (-515 1209 -1214 )#(-516 1209 -1214 )#(-517 1209 -1214 )#
                  (-518 1209 -1214 )#(-519 1209 -1214 )#(-521 1209 -1214 )#
                  (-522 1209 -1214 )#(-523 1209 -1214 )#(-524 1209 -1214 )#
                  (-525 1209 -1214 )#(-526 1209 -1214 )#(-527 1209 -1214 )#
                  (-528 1209 -1214 )#(-529 1209 -1214 )#(-531 1209 -1214 )#
                  (-532 1209 -1214 )#(-533 1209 -1214 )#(-534 1209 -1214 )#
                  (-535 1209 -1214 )#(-536 1209 -1214 )#(-537 1209 -1214 )#
                  (-538 1209 -1214 )#(-539 1209 -1214 )
       9995     3 -0.001225 1220 -1219 1205 -1206 -1203 1202  $Notch Air Side A
       9994     3 -0.001225 -1215 1219 1223 -1208 -1225 1226  $Air Above Crane Rail
       9993     3 -0.001225 1209 -1231 1208 -1217 -1203 1202  $Bottom Air Side B
       9992     3 -0.001225 -1230 1231 1208 -1217 -1203 1202  $Air Up to Shield Side B
       9991     1  -2.365 -1220 1230 1208 -1217 -1203 1202  $Truck Bay Shield
       9990     3 -0.001225 1220 -1219 1208 -1217 -1203 1202  $Notch Air Side B
       9989     3 -0.001225 -1215 1219 1208 -1224 -1225 1226  $Notch Air Side B
       9988     3 -0.001225 (-2000 -1207 1201 -1204 1227 -1216 ):
                  (1218 -2000 1201 -1204 1227 -1216 ):(-2000 -1201 1227 -1216 ):
                  (1204 -2000 1227 -1216 ):(1216 -2000 )
       9987     0         -1232 -2015  $Bottom Void
       9986     3 -0.001225 1232 -1227 -2015  $6 in Ground Air
c      Ductwork Penetrations
      10000     3 -0.001225 12441 -12451 12321 -12331 1201 -1226
      10001     3 -0.001225 12441 -12451 12341 -12351 1201 -1226
      10002     3 -0.001225 12461 -12471 12361 -12371 1201 -1226
      10003     3 -0.001225 12441 -12451 12381 -12391 1201 -1226
      10004     3 -0.001225 12401 -12411 12441 -12451 1201 -1226
      10005     3 -0.001225 12441 -12451 12421 -12431 1201 -1226
c Sphere Detector Cells
       2001     3 -0.001225 2000 -2001 1227
       2002     3 -0.001225 2001 -2002 1227
       2003     3 -0.001225 -2003 2002 1227
       2004     3 -0.001225 2003 -2004 1227
       2005     3 -0.001225 2004 -2005 1227
       2006     3 -0.001225 2005 -2006 1227
       2007     3 -0.001225 2006 -2007 1227
       2008     3 -0.001225 2007 -2008 1227
       2009     3 -0.001225 2008 -2009 1227
       2010     3 -0.001225 2009 -2010 1227
       2011     3 -0.001225 2010 -2011 1227
       2012     3 -0.001225 2011 -2012 1227
       2013     3 -0.001225 2012 -2013 1227
       2014     3 -0.001225 2013 -2014 1227
       2015     3 -0.001225 2014 -2015 1227

c     Source Canisters
         11       c/z 198.12 121.92 77.47
         12       c/z 198.12 320.04 77.47
         13       c/z 198.12 518.16 77.47
         14       c/z 198.12 716.28 77.47
         15       c/z 198.12 914.4 77.47
         16       c/z 198.12 1112.52 77.47
         17       c/z 198.12 1310.64 77.47
         18       c/z 198.12 1508.76 77.47
         19       c/z 198.12 1706.88 77.47
         21       c/z 396.24 121.92 77.47
         22       c/z 396.24 320.04 77.47
         23       c/z 396.24 518.16 77.47
         24       c/z 396.24 716.28 77.47
         25       c/z 396.24 914.4 77.47
         26       c/z 396.24 1112.52 77.47
         27       c/z 396.24 1310.64 77.47
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520-          28       c/z 396.24 1508.76 77.47
521-          29       c/z 396.24 1706.88 77.47
522-          31       c/z 594.36 121.92 77.47
523-          32       c/z 594.36 320.04 77.47
524-          33       c/z 594.36 518.16 77.47
525-          34       c/z 594.36 716.28 77.47
526-          35       c/z 594.36 914.4 77.47
527-          36       c/z 594.36 1112.52 77.47
528-          37       c/z 594.36 1310.64 77.47
529-          38       c/z 594.36 1508.76 77.47
530-          39       c/z 594.36 1706.88 77.47
531-          41       c/z 792.48 121.92 77.47
532-          42       c/z 792.48 320.04 77.47
533-          43       c/z 792.48 518.16 77.47
534-          44       c/z 792.48 716.28 77.47
535-          45       c/z 792.48 914.4 77.47
536-          46       c/z 792.48 1112.52 77.47
537-          47       c/z 792.48 1310.64 77.47
538-          48       c/z 792.48 1508.76 77.47
539-          49       c/z 792.48 1706.88 77.47
540-          51       c/z 990.6 121.92 77.47
541-          52       c/z 990.6 320.04 77.47
542-          53       c/z 990.6 518.16 77.47
543-          54       c/z 990.6 716.28 77.47
544-          55       c/z 990.6 914.4 77.47
545-          56       c/z 990.6 1112.52 77.47
546-          57       c/z 990.6 1310.64 77.47
547-          58       c/z 990.6 1508.76 77.47
548-          59       c/z 990.6 1706.88 77.47
549-          61       c/z 1188.72 121.92 77.47
550-          62       c/z 1188.72 320.04 77.47
551-          63       c/z 1188.72 518.16 77.47
552-          64       c/z 1188.72 716.28 77.47
553-          65       c/z 1188.72 914.4 77.47
554-          66       c/z 1188.72 1112.52 77.47
555-          67       c/z 1188.72 1310.64 77.47
556-          68       c/z 1188.72 1508.76 77.47
557-          69       c/z 1188.72 1706.88 77.47
558-          71       c/z 1386.84 121.92 77.47
559-          72       c/z 1386.84 320.04 77.47
560-          73       c/z 1386.84 518.16 77.47
561-          74       c/z 1386.84 716.28 77.47
562-          75       c/z 1386.84 914.4 77.47
563-          76       c/z 1386.84 1112.52 77.47
564-          77       c/z 1386.84 1310.64 77.47
565-          78       c/z 1386.84 1508.76 77.47
566-          79       c/z 1386.84 1706.88 77.47
567-          81       c/z 1584.96 121.92 77.47
568-          82       c/z 1584.96 320.04 77.47
569-          83       c/z 1584.96 518.16 77.47
570-          84       c/z 1584.96 716.28 77.47
571-          85       c/z 1584.96 914.4 77.47
572-          86       c/z 1584.96 1112.52 77.47
573-          87       c/z 1584.96 1310.64 77.47
574-          88       c/z 1584.96 1508.76 77.47
575-          89       c/z 1584.96 1706.88 77.47
576-          91       c/z 1783.08 121.92 77.47
577-          92       c/z 1783.08 320.04 77.47
578-          93       c/z 1783.08 518.16 77.47
579-          94       c/z 1783.08 716.28 77.47
580-          95       c/z 1783.08 914.4 77.47
581-          96       c/z 1783.08 1112.52 77.47
582-          97       c/z 1783.08 1310.64 77.47
583-          98       c/z 1783.08 1508.76 77.47
584-          99       c/z 1783.08 1706.88 77.47
585-         101       c/z 1981.2 121.92 77.47
586-         102       c/z 1981.2 320.04 77.47
587-         103       c/z 1981.2 518.16 77.47
588-         104       c/z 1981.2 716.28 77.47
589-         105       c/z 1981.2 914.4 77.47
590-         106       c/z 1981.2 1112.52 77.47
591-         107       c/z 1981.2 1310.64 77.47
592-         108       c/z 1981.2 1508.76 77.47
593-         109       c/z 1981.2 1706.88 77.47
594-         111       c/z 2179.32 121.92 77.47
595-         112       c/z 2179.32 320.04 77.47
596-         113       c/z 2179.32 518.16 77.47
597-         114       c/z 2179.32 716.28 77.47
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598-         115       c/z 2179.32 914.4 77.47
599-         116       c/z 2179.32 1112.52 77.47
600-         117       c/z 2179.32 1310.64 77.47
601-         118       c/z 2179.32 1508.76 77.47
602-         119       c/z 2179.32 1706.88 77.47
603-         121       c/z 2377.44 121.92 77.47
604-         122       c/z 2377.44 320.04 77.47
605-         123       c/z 2377.44 518.16 77.47
606-         124       c/z 2377.44 716.28 77.47
607-         125       c/z 2377.44 914.4 77.47
608-         126       c/z 2377.44 1112.52 77.47
609-         127       c/z 2377.44 1310.64 77.47
610-         128       c/z 2377.44 1508.76 77.47
611-         129       c/z 2377.44 1706.88 77.47
612-         131       c/z 2575.56 121.92 77.47
613-         132       c/z 2575.56 320.04 77.47
614-         133       c/z 2575.56 518.16 77.47
615-         134       c/z 2575.56 716.28 77.47
616-         135       c/z 2575.56 914.4 77.47
617-         136       c/z 2575.56 1112.52 77.47
618-         137       c/z 2575.56 1310.64 77.47
619-         138       c/z 2575.56 1508.76 77.47
620-         139       c/z 2575.56 1706.88 77.47
621-         141       c/z 2773.68 121.92 77.47
622-         142       c/z 2773.68 320.04 77.47
623-         143       c/z 2773.68 518.16 77.47
624-         144       c/z 2773.68 716.28 77.47
625-         145       c/z 2773.68 914.4 77.47
626-         146       c/z 2773.68 1112.52 77.47
627-         147       c/z 2773.68 1310.64 77.47
628-         148       c/z 2773.68 1508.76 77.47
629-         149       c/z 2773.68 1706.88 77.47
630-       c     Inside of Shield Bell
631-         211       c/z 198.12 121.92 86.36
632-         212       c/z 198.12 320.04 86.36
633-         213       c/z 198.12 518.16 86.36
634-         214       c/z 198.12 716.28 86.36
635-         215       c/z 198.12 914.4 86.36
636-         216       c/z 198.12 1112.52 86.36
637-         217       c/z 198.12 1310.64 86.36
638-         218       c/z 198.12 1508.76 86.36
639-         219       c/z 198.12 1706.88 86.36
640-         221       c/z 396.24 121.92 86.36
641-         222       c/z 396.24 320.04 86.36
642-         223       c/z 396.24 518.16 86.36
643-         224       c/z 396.24 716.28 86.36
644-         225       c/z 396.24 914.4 86.36
645-         226       c/z 396.24 1112.52 86.36
646-         227       c/z 396.24 1310.64 86.36
647-         228       c/z 396.24 1508.76 86.36
648-         229       c/z 396.24 1706.88 86.36
649-         231       c/z 594.36 121.92 86.36
650-         232       c/z 594.36 320.04 86.36
651-         233       c/z 594.36 518.16 86.36
652-         234       c/z 594.36 716.28 86.36
653-         235       c/z 594.36 914.4 86.36
654-         236       c/z 594.36 1112.52 86.36
655-         237       c/z 594.36 1310.64 86.36
656-         238       c/z 594.36 1508.76 86.36
657-         239       c/z 594.36 1706.88 86.36
658-         241       c/z 792.48 121.92 86.36
659-         242       c/z 792.48 320.04 86.36
660-         243       c/z 792.48 518.16 86.36
661-         244       c/z 792.48 716.28 86.36
662-         245       c/z 792.48 914.4 86.36
663-         246       c/z 792.48 1112.52 86.36
664-         247       c/z 792.48 1310.64 86.36
665-         248       c/z 792.48 1508.76 86.36
666-         249       c/z 792.48 1706.88 86.36
667-         251       c/z 990.6 121.92 86.36
668-         252       c/z 990.6 320.04 86.36
669-         253       c/z 990.6 518.16 86.36
670-         254       c/z 990.6 716.28 86.36
671-         255       c/z 990.6 914.4 86.36
672-         256       c/z 990.6 1112.52 86.36
673-         257       c/z 990.6 1310.64 86.36
674-         258       c/z 990.6 1508.76 86.36
675-         259       c/z 990.6 1706.88 86.36
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676-          261       c/z 1188.72 121.92 86.36
677-          262       c/z 1188.72 320.04 86.36
678-          263       c/z 1188.72 518.16 86.36
679-          264       c/z 1188.72 716.28 86.36
680-          265       c/z 1188.72 914.4 86.36
681-          266       c/z 1188.72 1112.52 86.36
682-          267       c/z 1188.72 1310.64 86.36
683-          268       c/z 1188.72 1508.76 86.36
684-          269       c/z 1188.72 1706.88 86.36
685-          271       c/z 1386.84 121.92 86.36
686-          272       c/z 1386.84 320.04 86.36
687-          273       c/z 1386.84 518.16 86.36
688-          274       c/z 1386.84 716.28 86.36
689-          275       c/z 1386.84 914.4 86.36
690-          276       c/z 1386.84 1112.52 86.36
691-          277       c/z 1386.84 1310.64 86.36
692-          278       c/z 1386.84 1508.76 86.36
693-          279       c/z 1386.84 1706.88 86.36
694-          281       c/z 1584.96 121.92 86.36
695-          282       c/z 1584.96 320.04 86.36
696-          283       c/z 1584.96 518.16 86.36
697-          284       c/z 1584.96 716.28 86.36
698-          285       c/z 1584.96 914.4 86.36
699-          286       c/z 1584.96 1112.52 86.36
700-          287       c/z 1584.96 1310.64 86.36
701-          288       c/z 1584.96 1508.76 86.36
702-          289       c/z 1584.96 1706.88 86.36
703-          291       c/z 1783.08 121.92 86.36
704-          292       c/z 1783.08 320.04 86.36
705-          293       c/z 1783.08 518.16 86.36
706-          294       c/z 1783.08 716.28 86.36
707-          295       c/z 1783.08 914.4 86.36
708-          296       c/z 1783.08 1112.52 86.36
709-          297       c/z 1783.08 1310.64 86.36
710-          298       c/z 1783.08 1508.76 86.36
711-          299       c/z 1783.08 1706.88 86.36
712-          301       c/z 1981.2 121.92 86.36
713-          302       c/z 1981.2 320.04 86.36
714-          303       c/z 1981.2 518.16 86.36
715-          304       c/z 1981.2 716.28 86.36
716-          305       c/z 1981.2 914.4 86.36
717-          306       c/z 1981.2 1112.52 86.36
718-          307       c/z 1981.2 1310.64 86.36
719-          308       c/z 1981.2 1508.76 86.36
720-          309       c/z 1981.2 1706.88 86.36
721-          311       c/z 2179.32 121.92 86.36
722-          312       c/z 2179.32 320.04 86.36
723-          313       c/z 2179.32 518.16 86.36
724-          314       c/z 2179.32 716.28 86.36
725-          315       c/z 2179.32 914.4 86.36
726-          316       c/z 2179.32 1112.52 86.36
727-          317       c/z 2179.32 1310.64 86.36
728-          318       c/z 2179.32 1508.76 86.36
729-          319       c/z 2179.32 1706.88 86.36
730-          321       c/z 2377.44 121.92 86.36
731-          322       c/z 2377.44 320.04 86.36
732-          323       c/z 2377.44 518.16 86.36
733-          324       c/z 2377.44 716.28 86.36
734-          325       c/z 2377.44 914.4 86.36
735-          326       c/z 2377.44 1112.52 86.36
736-          327       c/z 2377.44 1310.64 86.36
737-          328       c/z 2377.44 1508.76 86.36
738-          329       c/z 2377.44 1706.88 86.36
739-          331       c/z 2575.56 121.92 86.36
740-          332       c/z 2575.56 320.04 86.36
741-          333       c/z 2575.56 518.16 86.36
742-          334       c/z 2575.56 716.28 86.36
743-          335       c/z 2575.56 914.4 86.36
744-          336       c/z 2575.56 1112.52 86.36
745-          337       c/z 2575.56 1310.64 86.36
746-          338       c/z 2575.56 1508.76 86.36
747-          339       c/z 2575.56 1706.88 86.36
748-          341       c/z 2773.68 121.92 86.36
749-          342       c/z 2773.68 320.04 86.36
750-          343       c/z 2773.68 518.16 86.36
751-          344       c/z 2773.68 716.28 86.36
752-          345       c/z 2773.68 914.4 86.36
753-          346       c/z 2773.68 1112.52 86.36
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754-         347       c/z 2773.68 1310.64 86.36
755-         348       c/z 2773.68 1508.76 86.36
756-         349       c/z 2773.68 1706.88 86.36
757-       c     Outside of Shield Bell
758-         411       c/z 198.12 121.92 92.71
759-         412       c/z 198.12 320.04 92.71
760-         413       c/z 198.12 518.16 92.71
761-         414       c/z 198.12 716.28 92.71
762-         415       c/z 198.12 914.4 92.71
763-         416       c/z 198.12 1112.52 92.71
764-         417       c/z 198.12 1310.64 92.71
765-         418       c/z 198.12 1508.76 92.71
766-         419       c/z 198.12 1706.88 92.71
767-         421       c/z 396.24 121.92 92.71
768-         422       c/z 396.24 320.04 92.71
769-         423       c/z 396.24 518.16 92.71
770-         424       c/z 396.24 716.28 92.71
771-         425       c/z 396.24 914.4 92.71
772-         426       c/z 396.24 1112.52 92.71
773-         427       c/z 396.24 1310.64 92.71
774-         428       c/z 396.24 1508.76 92.71
775-         429       c/z 396.24 1706.88 92.71
776-         431       c/z 594.36 121.92 92.71
777-         432       c/z 594.36 320.04 92.71
778-         433       c/z 594.36 518.16 92.71
779-         434       c/z 594.36 716.28 92.71
780-         435       c/z 594.36 914.4 92.71
781-         436       c/z 594.36 1112.52 92.71
782-         437       c/z 594.36 1310.64 92.71
783-         438       c/z 594.36 1508.76 92.71
784-         439       c/z 594.36 1706.88 92.71
785-         441       c/z 792.48 121.92 92.71
786-         442       c/z 792.48 320.04 92.71
787-         443       c/z 792.48 518.16 92.71
788-         444       c/z 792.48 716.28 92.71
789-         445       c/z 792.48 914.4 92.71
790-         446       c/z 792.48 1112.52 92.71
791-         447       c/z 792.48 1310.64 92.71
792-         448       c/z 792.48 1508.76 92.71
793-         449       c/z 792.48 1706.88 92.71
794-         451       c/z 990.6 121.92 92.71
795-         452       c/z 990.6 320.04 92.71
796-         453       c/z 990.6 518.16 92.71
797-         454       c/z 990.6 716.28 92.71
798-         455       c/z 990.6 914.4 92.71
799-         456       c/z 990.6 1112.52 92.71
800-         457       c/z 990.6 1310.64 92.71
801-         458       c/z 990.6 1508.76 92.71
802-         459       c/z 990.6 1706.88 92.71
803-         461       c/z 1188.72 121.92 92.71
804-         462       c/z 1188.72 320.04 92.71
805-         463       c/z 1188.72 518.16 92.71
806-         464       c/z 1188.72 716.28 92.71
807-         465       c/z 1188.72 914.4 92.71
808-         466       c/z 1188.72 1112.52 92.71
809-         467       c/z 1188.72 1310.64 92.71
810-         468       c/z 1188.72 1508.76 92.71
811-         469       c/z 1188.72 1706.88 92.71
812-         471       c/z 1386.84 121.92 92.71
813-         472       c/z 1386.84 320.04 92.71
814-         473       c/z 1386.84 518.16 92.71
815-         474       c/z 1386.84 716.28 92.71
816-         475       c/z 1386.84 914.4 92.71
817-         476       c/z 1386.84 1112.52 92.71
818-         477       c/z 1386.84 1310.64 92.71
819-         478       c/z 1386.84 1508.76 92.71
820-         479       c/z 1386.84 1706.88 92.71
821-         481       c/z 1584.96 121.92 92.71
822-         482       c/z 1584.96 320.04 92.71
823-         483       c/z 1584.96 518.16 92.71
824-         484       c/z 1584.96 716.28 92.71
825-         485       c/z 1584.96 914.4 92.71
826-         486       c/z 1584.96 1112.52 92.71
827-         487       c/z 1584.96 1310.64 92.71
828-         488       c/z 1584.96 1508.76 92.71
829-         489       c/z 1584.96 1706.88 92.71
830-         491       c/z 1783.08 121.92 92.71
831-         492       c/z 1783.08 320.04 92.71
```

```
832-         493       c/z 1783.08 518.16 92.71
833-         494       c/z 1783.08 716.28 92.71
834-         495       c/z 1783.08 914.4 92.71
835-         496       c/z 1783.08 1112.52 92.71
836-         497       c/z 1783.08 1310.64 92.71
837-         498       c/z 1783.08 1508.76 92.71
838-         499       c/z 1783.08 1706.88 92.71
839-         501       c/z 1981.2 121.92 92.71
840-         502       c/z 1981.2 320.04 92.71
841-         503       c/z 1981.2 518.16 92.71
842-         504       c/z 1981.2 716.28 92.71
843-         505       c/z 1981.2 914.4 92.71
844-         506       c/z 1981.2 1112.52 92.71
845-         507       c/z 1981.2 1310.64 92.71
846-         508       c/z 1981.2 1508.76 92.71
847-         509       c/z 1981.2 1706.88 92.71
848-         511       c/z 2179.32 121.92 92.71
849-         512       c/z 2179.32 320.04 92.71
850-         513       c/z 2179.32 518.16 92.71
851-         514       c/z 2179.32 716.28 92.71
852-         515       c/z 2179.32 914.4 92.71
853-         516       c/z 2179.32 1112.52 92.71
854-         517       c/z 2179.32 1310.64 92.71
855-         518       c/z 2179.32 1508.76 92.71
856-         519       c/z 2179.32 1706.88 92.71
857-         521       c/z 2377.44 121.92 92.71
858-         522       c/z 2377.44 320.04 92.71
859-         523       c/z 2377.44 518.16 92.71
860-         524       c/z 2377.44 716.28 92.71
861-         525       c/z 2377.44 914.4 92.71
862-         526       c/z 2377.44 1112.52 92.71
863-         527       c/z 2377.44 1310.64 92.71
864-         528       c/z 2377.44 1508.76 92.71
865-         529       c/z 2377.44 1706.88 92.71
866-         531       c/z 2575.56 121.92 92.71
867-         532       c/z 2575.56 320.04 92.71
868-         533       c/z 2575.56 518.16 92.71
869-         534       c/z 2575.56 716.28 92.71
870-         535       c/z 2575.56 914.4 92.71
871-         536       c/z 2575.56 1112.52 92.71
872-         537       c/z 2575.56 1310.64 92.71
873-         538       c/z 2575.56 1508.76 92.71
874-         539       c/z 2575.56 1706.88 92.71
875-         541       c/z 2773.68 121.92 92.71
876-         542       c/z 2773.68 320.04 92.71
877-         543       c/z 2773.68 518.16 92.71
878-         544       c/z 2773.68 716.28 92.71
879-         545       c/z 2773.68 914.4 92.71
880-         546       c/z 2773.68 1112.52 92.71
881-         547       c/z 2773.68 1310.64 92.71
882-         548       c/z 2773.68 1508.76 92.71
883-         549       c/z 2773.68 1706.88 92.71
884-       c    Planes
885-        1201        py -76.2  $Outside Left Wall
886-        1202        py 0  $Inside Left Thick Wall
887-        1203        py 1828.8  $Inside Right Thick Wall
888-        1204        py 1905  $Outside Right Wall
889-        1205        px 0  $Inside Back Thick Wall
890-        1206        px 2895.6  $Front of Inner Wall
891-        1207        px -76.2  $Outside Back Wall
892-        1208        px 2971.8  $Back of Inner Wall
893-        1209        pz 0  $Top of Floor
894-        c 1211        pz 190.5  $Top of Bot HIC
895-        1212        pz 381  $Top of Top HIC
896-        1213        pz 388.62  $Bot of Bell Top
897-        1214        pz 396.24  $Top of Bell Top
898-        1215        pz 1455.42  $Bottom of Roof
899-        1216        pz 1493.52  $Top of Roof
900-        1217        px 3947.16  $Inner Truck Bay Wall
901-        1218        px 4023.36  $Outer Truck Bay Wall
902-        1219        pz 1036.32  $Top of Inner Wall
903-        1220        pz 822.96  $Bottom of Notch
904-        1221        py 1760.22  $Right of notch
905-        1222        py 1546.86  $Left of notch
906-        1223        px -38.1  $Inside Back Thin Wall
907-        1224        px 3985.26  $Inside Front Thin Wall
908-        1225        py 1866.9  $Inside Right Thin Wall
909-        1226        py -38.1  $Inside Left Thin Wall
```

```
910-        1227         pz -76.2  $Bottom of Floor
911-        1228         px 1089.66  $Zone 1 Air
912-        1229         px 2080.26  $Zone 2 Air
913-        1230         pz 807.72  $Bottom of Truck Bay Shield
914-        1231         pz 213.36  $7ft Detector Surface
915-        1232         pz -91.44  $Bottom Void
916-        1233         px -57.15  $Split for Back Wall
917-        1234         py 1885.95  $Split for Right Wall
918-        1235         px 4004.31  $Split for Front Wall
919-        1236         py -57.15  $Split for Left Wall
920-        1237         pz 1474.47  $Split for Roof
921-       c    HVAC Duct Openings
922-       12321         px 68.58  $Duct1S1
923-       12331         px 170.18  $Duct1 S2
924-       12341         px 871.22  $Duct2 S1
925-       12351         px 972.82  $Duct2 S2
926-       12361         px 1595.12  $Duct3 S1
927-       12371         px 1747.52  $Duct3 S2
928-       12381         px 1856.74  $Duct4 S1
929-       12391         px 1958.34  $Duct4 S2
930-       12401         px 2720.34  $Duct5 S1
931-       12411         px 2821.94  $Duct5 S2
932-       12421         px 3776.98  $Duct6 S1
933-       12431         px 3878.58  $Duct6 S2
934-       12441         pz 1397  $Small Ducts Bottom
935-       12451         pz 1437.64  $Small Duct Top
936-       12461         pz 1369.06  $Large Ducts Bottom
937-       12471         pz 1445.26  $Large Duct Top
938-       c   Spheres for detectors
939-        2000          s 1973.58 914.4 -72.6 2800  $Closest Sphere
940-        2001          s 1973.58 914.4 -72.6 4000
941-        2002          s 1973.58 914.4 -72.6 7000
942-        2003          s 1973.58 914.4 -72.6 10000
943-        2004          s 1973.58 914.4 -72.6 15000
944-        2005          s 1973.58 914.4 -72.6 20000
945-        2006          s 1973.58 914.4 -72.6 25000
946-        2007          s 1973.58 914.4 -72.6 30000
947-        2008          s 1973.58 914.4 -72.6 37500
948-        2009          s 1973.58 914.4 -72.6 45000
949-        2010          s 1973.58 914.4 -72.6 55000
950-        2011          s 1973.58 914.4 -72.6 65000
951-        2012          s 1973.58 914.4 -72.6 75000
952-        2013          s 1973.58 914.4 -72.6 85000
953-        2014          s 1973.58 914.4 -72.6 95000
954-        2015          s 1973.58 914.4 -72.6 120000
955-        2016         py -276.2
956-        2017         py -476.2
957-        2018         py -676.2
958-        2019         py -876.2
959-        2020         py -1076.2
960-        2021         py -1276.2
961-        2022         py -1476.2
962-        2023         py -1676.2
963-        2024         py -1876.2
964-        2025         py -2076.2
965-        2026         px 359.054
966-        2027         px 2535.94
967-        2028         py -2276.2
968-        2029         py -2476.2
969-        2030         py -2676.2
970-        2031         py -2876.2
971-        2032         py -3076.2
972-        2033         py -3276.2
973-        2034         py -3476.2
974-        2035         py -3676.2
975-       c    Side wall splits for translation
976-        2036         py -1.2
977-        2037         py -6.2
978-        2038         py -11.2
979-        2039         py -16.2
980-        2040         py -21.2
981-        2041         py -26.2
982-        2042         py -31.2
983-        2043         py -36.2
984-        2044         py -41.2
985-        2045         py -46.2
986-        2046         py -51.2
987-        2047         py -56.2
```

```
 988-        2048        py -61.2
 989-        2049        py -66.2
 990-        2050        py -71.2
 991-
 992-       mode  p
 993-       c  Materials
 994-       m1    1000.            -0.015  $ Concrete from 6.4
 995-             8000.            -1.057 11000.           -0.041 12000.           -0.085
 996-             13000.           -0.137 14000.           -0.487 15000.           -0.002
 997-             16000.           -0.002 19000.           -0.015 20000.           -0.295
 998-             22000.           -0.011 25000.           -0.003 26000.           -0.178
 999-       m2    13000.                1  $ Aluminum
warning. material   2 is not used in the problem.
1000-       m3    7000.           0.78969  $ Air
1001-             8000.           0.21019 6000.           0.00012
1002-       m4    26000.                1  $ Iron
warning. material   4 is not used in the problem.
1003-       m5    1000.                 2  $ Water
1004-             8000.                 1
1005-       imp:p             1 377r                    0 15r                     2  $ 11, 4
1006-                         4           8           16           32           64  $ 4237,
1007-                       128         256          512         1024         2048  $ 4242,
1008-                      4096        8192        16384        32768        65536  $ 4247,
1009-                         0           1 2r                     0 6r           $ 9999,
1010-                     65536           0 7r                 65536 14r          $ 9988,
1011-       phys:p  100 1 0
1012-       c sdef erg=d5 x=d1 y=d2 z=d3 cel=d4 eff=0.0001 wgt=3.045E+15
1013-       c si1  0 2895.6
1014-       c sp1  0.0 1.0
1015-       c si2  0 1828.8
1016-       c sp2  0.0 1.0
1017-       c si3  0.01 304.8 381.00
1018-       c sp3  0.0 0.8 0.2
1019-       c si4  L 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 31 32
1020-       c      33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 51 52 53 54 55
1021-       c      56 57 58 59 61 62 63 64 65 66 67 68 69 71 72 73 74 75 76 77 78
1022-       c      79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96 97 98 99 101
1023-       c      102 103 104 105 106 107 108 109 111 112 113 114 115 116 117 118
1024-       c      119 121 122 123 124 125 126 127 128 129 131 132 133 134 135 136
1025-       c      137 138 139 141 142 143 144 145 146 147 148 149
1026-       c sp4  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1027-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1028-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1029-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1030-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1031-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1032-       c      1  1  1  1  1  1  1  1  1  1  1  1  1
1033-       c si5 l 1.1730 1.3325
1034-       c sp5   1      1
1035-       c ssw -2050(4251)
1036-       ssr
1037-       c ===================================================================
1038-       c ===================================================================
1039-       c Truck bay dose rate
1040-       f2:p 1231
warning. without bremsstrahlung, flux estimates will be low.
1041-       c ===================================================================
1042-       c ===================================================================
1043-       c Rings outside the building
1044-       f12:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1045-       fs12 -2000 -2001 -2002 -2003 -2004 -2005 -2006 -2007 -2008 -2009
1046-            -2010 -2011 -2012 -2013 -2014
1047-       sd12 1e50 2.564E+07 1.037e8 1.602e8 3.927e8 5.498e8 7.069e8 8.639e8 1.590e9
1048-            1.944e9 3.142e9 3.770e9 4.398e9 5.027e9 5.655e9 1.689e10
1049-       c ===================================================================
1050-       c ===================================================================
1051-       c Slabs Ajacent to Ventilation Penetration Side
1052-       f22:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1053-       fs22 1201 -2026 2027
1054-            2016 2017 2018 2019 2020
1055-            2021 2022 2023 2024 2025
1056-            2028 2029 2030 2031 2032
1057-            2033 2034 2035
1058-       sd22 1e50 1e50 1e50
1059-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1060-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
```

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1061-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1062-            4.35376e5 4.35376e5 4.35376e5 1e50
1063-       c ===================================================================
1064-       c ===================================================================
1065-       c Dose Rate on Vent Side Wall 7ft up avg
1066-       f32:p 1201
warning. without bremsstrahlung, flux estimates will be low.
1067-       fs32 1231 -2026 2027 -1227
1068-       sd32 1e50 1e50 1e50 1e50 6.30E+05
1069-       c ===================================================================
1070-       c ===================================================================
1071-       c detectors toward north, with HVAC effects
1072-       f42:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1073-       fs42 1219 -1209 1201 -1205 1206
1074-       sd42 1e50 1e50 1e50 1e50 1e50 3.00e06
1075-            1e50 1e50 1e50 1e50 1e50 3.00e06
1076-            1e50 1e50 1e50 1e50 1e50 3.00e06
1077-            1e50 1e50 1e50 1e50 1e50 3.00e06
1078-            1e50 1e50 1e50 1e50 1e50 3.00e06
1079-            1e50 1e50 1e50 1e50 1e50 3.00e06
1080-            1e50 1e50 1e50 1e50 1e50 3.00e06
1081-            1e50 1e50 1e50 1e50 1e50 3.00e06
1082-            1e50 1e50 1e50 1e50 1e50 3.00e06
1083-            1e50 1e50 1e50 1e50 1e50 3.00e06
1084-            1e50 1e50 1e50 1e50 1e50 3.00e06
1085-       c detectors toward sorth, with no HVAC effects
1086-       f52:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1087-       fs52 1219 -1209 -1201 -1205 1206
1088-       sd52 1e50 1e50 1e50 1e50 1e50 3.00e06
1089-            1e50 1e50 1e50 1e50 1e50 3.00e06
1090-            1e50 1e50 1e50 1e50 1e50 3.00e06
1091-            1e50 1e50 1e50 1e50 1e50 3.00e06
1092-            1e50 1e50 1e50 1e50 1e50 3.00e06
1093-            1e50 1e50 1e50 1e50 1e50 3.00e06
1094-            1e50 1e50 1e50 1e50 1e50 3.00e06
1095-            1e50 1e50 1e50 1e50 1e50 3.00e06
1096-            1e50 1e50 1e50 1e50 1e50 3.00e06
1097-            1e50 1e50 1e50 1e50 1e50 3.00e06
1098-            1e50 1e50 1e50 1e50 1e50 3.00e06
1099-       c ===================================================================
1100-       c ===================================================================
1101-       c Detector above the HICS (used as a source check)
1102-       f62:p 1219
warning. without bremsstrahlung, flux estimates will be low.
1103-       fs62 -1205 1206 1203 -1202
1104-       sd62  1e50 1e50 1e50  1e50 5.30E+06
1105-       c ===================================================================
1106-       c ===================================================================
1107-       c Photon Flux to Dose Rate Conversion Factors
1108-       de0 0.01 0.03 0.05 0.07 0.10 0.15 0.20
1109-             0.25 0.30 0.35 0.40 0.45 0.50 0.55
1110-             0.60 0.65 0.70 0.80 1.00 1.40 1.80
1111-             2.20 2.60 2.80 3.25 3.75 4.25 4.75
1112-             5.00 5.25 5.75 6.25 6.75 7.50 9.00
1113-             11.0 13.0 15.0
1114-       df0 LIN 3.96E-06 5.82E-07 2.90E-07 2.58E-07 2.83E-07 3.79E-07 5.01E-07
1115-             6.31e-07 7.59E-07 8.78E-07 9.85E-07 1.08E-06 1.17E-06 1.27E-06
1116-             1.36e-06 1.44E-06 1.52E-06 1.68E-06 1.98E-06 2.51E-06 2.99E-06
1117-             3.42e-06 3.82E-06 4.01E-06 4.41E-06 4.83E-06 5.23E-06 5.60E-06
1118-             5.80e-06 6.01E-06 6.37E-06 6.74E-06 7.11E-06 7.66E-06 8.77E-06
1119-             1.03e-05 1.18E-05 1.33E-05
1120-       nps 4.00E08

 warning. zero photon   importance within non-void cell 1200.

 warning. zero photon   importance within non-void cell 1201.

 warning. zero photon   importance within non-void cell 1202.

 warning. zero photon   importance within non-void cell12021.

 warning. zero photon   importance within non-void cell 1203.

 warning. zero photon   importance within non-void cell 1204.

 warning. zero photon   importance within non-void cell12041.
```

```
 warning. zero photon   importance within non-void cell 1205.

 warning. zero photon   importance within non-void cell 1206.

 warning. zero photon   importance within non-void cell12061.

 warning. zero photon   importance within non-void cell 1207.

 warning. zero photon   importance within non-void cell 1208.

 warning. zero photon   importance within non-void cell12081.

 warning. zero photon   importance within non-void cell 1210.

 warning. zero photon   importance within non-void cell 1211.

 warning. zero photon   importance within non-void cell12111.

 warning. zero photon   importance within non-void cell 9995.

 warning. zero photon   importance within non-void cell 9994.

 warning. zero photon   importance within non-void cell 9993.

 warning. zero photon   importance within non-void cell 9992.

 warning. zero photon   importance within non-void cell 9991.

 warning. zero photon   importance within non-void cell 9990.

 warning. zero photon   importance within non-void cell 9989.

 warning. zero photon   importance within non-void cell 9986.

 warning. zero photon   importance within non-void cell10000.

 warning. zero photon   importance within non-void cell10001.

 warning. zero photon   importance within non-void cell10002.

 warning. zero photon   importance within non-void cell10003.

 warning. zero photon   importance within non-void cell10004.

 warning. zero photon   importance within non-void cell10005.


 information from the header of surface-source file NSWwssa

 the file was written by mcnp     version 5     with probid =  03/24/09 08:48:55  and ending with dump no.     5
 the title of the creation run was     c     Created on: Tuesday, November 11, 2008 at 09:35
 the original number of histories was    20000000
 the total number of tracks recorded was     1510850 from       71864 independent histories.

 this ssr problem will use the following particles if available: photon

 warning.   2 materials had unnormalized fractions. print table 40.

 warning.   1 of the materials appear at more than one density.

 warning. sum of segment sizes differs from total in  25 cases.
1cells                                                                                                                print
table 60

                      atom        gram                                                  photon
        cell  mat    density     density     volume       mass     pieces importance

     1    11    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     2    12    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     3    13    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     4    14    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     5    15    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     6    16    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     7    17    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     8    18    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
     9    19    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
    10    21    5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06     1  1.0000E+00
```

11	22	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
12	23	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
13	24	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
14	25	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
15	26	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
16	27	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
17	28	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
18	29	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
19	31	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
20	32	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
21	33	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
22	34	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
23	35	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
24	36	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
25	37	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
26	38	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
27	39	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
28	41	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
29	42	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
30	43	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
31	44	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
32	45	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
33	46	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
34	47	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
35	48	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
36	49	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
37	51	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
38	52	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
39	53	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
40	54	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
41	55	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
42	56	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
43	57	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
44	58	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
45	59	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
46	61	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
47	62	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
48	63	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
49	64	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
50	65	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
51	66	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
52	67	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
53	68	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
54	69	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
55	71	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
56	72	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
57	73	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
58	74	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
59	75	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
60	76	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
61	77	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
62	78	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
63	79	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
64	81	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
65	82	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
66	83	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
67	84	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
68	85	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
69	86	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
70	87	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
71	88	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
72	89	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
73	91	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
74	92	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
75	93	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
76	94	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
77	95	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
78	96	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
79	97	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
80	98	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
81	99	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
82	101	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
83	102	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
84	103	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
85	104	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
86	105	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
87	106	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
88	107	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

89	108	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
90	109	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
91	111	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
92	112	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
93	113	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
94	114	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
95	115	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
96	116	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
97	117	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
98	118	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
99	119	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
100	121	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
101	122	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
102	123	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
103	124	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
104	125	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
105	126	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
106	127	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
107	128	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
108	129	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
109	131	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
110	132	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
111	133	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
112	134	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
113	135	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
114	136	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
115	137	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
116	138	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
117	139	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
118	141	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
119	142	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
120	143	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
121	144	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
122	145	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
123	146	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
124	147	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
125	148	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
126	149	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
127	211	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
128	212	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
129	213	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
130	214	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
131	215	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
132	216	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
133	217	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
134	218	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
135	219	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
136	221	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
137	222	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
138	223	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
139	224	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
140	225	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
141	226	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
142	227	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
143	228	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
144	229	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
145	231	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
146	232	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
147	233	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
148	234	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
149	235	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
150	236	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
151	237	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
152	238	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
153	239	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
154	241	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
155	242	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
156	243	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
157	244	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
158	245	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
159	246	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
160	247	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
161	248	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
162	249	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
163	251	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
164	252	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
165	253	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
166	254	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00

167	255	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
168	256	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
169	257	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
170	258	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
171	259	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
172	261	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
173	262	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
174	263	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
175	264	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
176	265	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
177	266	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
178	267	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
179	268	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
180	269	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
181	271	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
182	272	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
183	273	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
184	274	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
185	275	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
186	276	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
187	277	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
188	278	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
189	279	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
190	281	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
191	282	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
192	283	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
193	284	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
194	285	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
195	286	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
196	287	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
197	288	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
198	289	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
199	291	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
200	292	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
201	293	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
202	294	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
203	295	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
204	296	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
205	297	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
206	298	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
207	299	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
208	301	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
209	302	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
210	303	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
211	304	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
212	305	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
213	306	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
214	307	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
215	308	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
216	309	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
217	311	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
218	312	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
219	313	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
220	314	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
221	315	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
222	316	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
223	317	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
224	318	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
225	319	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
226	321	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
227	322	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
228	323	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
229	324	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
230	325	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
231	326	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
232	327	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
233	328	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
234	329	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
235	331	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
236	332	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
237	333	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
238	334	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
239	335	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
240	336	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
241	337	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
242	338	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
243	339	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
244	341	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00

245	342	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
246	343	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
247	344	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
248	345	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
249	346	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
250	347	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
251	348	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
252	349	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
253	411	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
254	412	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
255	413	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
256	414	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
257	415	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
258	416	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
259	417	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
260	418	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
261	419	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
262	421	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
263	422	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
264	423	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
265	424	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
266	425	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
267	426	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
268	427	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
269	428	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
270	429	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
271	431	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
272	432	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
273	433	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
274	434	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
275	435	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
276	436	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
277	437	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
278	438	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
279	439	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
280	441	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
281	442	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
282	443	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
283	444	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
284	445	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
285	446	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
286	447	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
287	448	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
288	449	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
289	451	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
290	452	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
291	453	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
292	454	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
293	455	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
294	456	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
295	457	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
296	458	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
297	459	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
298	461	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
299	462	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
300	463	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
301	464	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
302	465	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
303	466	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
304	467	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
305	468	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
306	469	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
307	471	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
308	472	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
309	473	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
310	474	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
311	475	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
312	476	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
313	477	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
314	478	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
315	479	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
316	481	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
317	482	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
318	483	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
319	484	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
320	485	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
321	486	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
322	487	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00

323	488	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
324	489	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
325	491	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
326	492	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
327	493	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
328	494	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
329	495	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
330	496	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
331	497	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
332	498	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
333	499	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
334	501	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
335	502	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
336	503	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
337	504	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
338	505	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
339	506	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
340	507	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
341	508	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
342	509	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
343	511	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
344	512	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
345	513	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
346	514	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
347	515	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
348	516	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
349	517	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
350	518	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
351	519	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
352	521	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
353	522	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
354	523	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
355	524	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
356	525	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
357	526	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
358	527	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
359	528	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
360	529	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
361	531	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
362	532	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
363	533	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
364	534	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
365	535	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
366	536	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
367	537	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
368	538	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
369	539	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
370	541	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
371	542	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
372	543	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
373	544	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
374	545	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
375	546	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
376	547	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
377	548	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
378	549	3	5.11393E-05	1.22500E-03	1.59402E+06	1.95268E+03	1	1.0000E+00
379	1200	3	5.11393E-05	1.22500E-03	3.46881E+06	4.24930E+03	0	0.0000E+00
380	1201	1	7.34055E-02	2.36500E+00	1.40947E+08	3.33340E+08	0	0.0000E+00
381	1202	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
382	12021	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
383	1203	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	0.0000E+00
384	1204	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	0.0000E+00
385	12041	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	0.0000E+00
386	1205	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	0.0000E+00
387	1206	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
388	12061	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
389	1207	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	0.0000E+00
390	1208	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	0.0000E+00
391	12081	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	0.0000E+00
392	1210	1	7.34055E-02	2.36500E+00	6.18900E+08	1.46370E+09	0	0.0000E+00
393	1211	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	0.0000E+00
394	12111	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	0.0000E+00
395	4236	1	7.34055E-02	2.36500E+00	5.09815E+06	1.20571E+07	0	2.0000E+00
396	4237	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	4.0000E+00
397	4238	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	8.0000E+00
398	4239	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.6000E+01
399	4240	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	3.2000E+01
400	4241	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	6.4000E+01

```
   401  4242    1  7.34055E-02 2.36500E+00 2.12423E+07 5.02380E+07     0  1.2800E+02
   402  4243    1  7.34055E-02 2.36500E+00 2.12423E+07 5.02380E+07     0  2.5600E+02
   403  4244    1  7.34055E-02 2.36500E+00 2.12423E+07 5.02380E+07     0  5.1200E+02
   404  4245    1  7.34055E-02 2.36500E+00 2.12423E+07 5.02380E+07     0  1.0240E+03
   405  4246    1  7.34055E-02 2.36500E+00 2.12423E+07 5.02380E+07     0  2.0480E+03
   406  4247    1  7.34055E-02 2.36500E+00 2.12423E+07 5.02380E+07     0  4.0960E+03
   407  4248    1  7.34055E-02 2.36500E+00 2.12423E+07 5.02380E+07     0  8.1920E+03
   408  4249    1  7.34055E-02 2.36500E+00 2.12423E+07 5.02380E+07     0  1.6384E+04
   409  4250    1  7.34055E-02 2.36500E+00 2.12423E+07 5.02380E+07     0  3.2768E+04
   410  4251    1  7.34055E-02 2.36500E+00 2.12423E+07 5.02380E+07     0  6.5536E+04
   411  9999    0  0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00     0  0.0000E+00
   412  9998    3  5.11393E-05 1.22500E-03 0.00000E+00 0.00000E+00     0  1.0000E+00
   413  9997    3  5.11393E-05 1.22500E-03 0.00000E+00 0.00000E+00     0  1.0000E+00
   414  9996    3  5.11393E-05 1.22500E-03 0.00000E+00 0.00000E+00     0  1.0000E+00
   415  9995    3  5.11393E-05 1.22500E-03 1.12984E+09 1.38406E+06     0  0.0000E+00
   416  9994    3  5.11393E-05 1.22500E-03 2.40306E+09 2.94375E+06     0  0.0000E+00
   417  9993    3  5.11393E-05 1.22500E-03 3.80578E+08 4.66209E+05     0  0.0000E+00
   418  9992    3  5.11393E-05 1.22500E-03 1.06018E+09 1.29872E+06     0  0.0000E+00
   419  9991    1  7.34055E-02 2.36500E+00 2.71842E+07 6.42906E+07     0  0.0000E+00
   420  9990    3  5.11393E-05 1.22500E-03 3.80578E+08 4.66209E+05     0  0.0000E+00
   421  9989    3  5.11393E-05 1.22500E-03 8.09132E+08 9.91186E+05     0  0.0000E+00
   422  9988    3  5.11393E-05 1.22500E-03 0.00000E+00 0.00000E+00     0  6.5536E+04
   423  9987    0  0.00000E+00 0.00000E+00 3.61826E+15 0.00000E+00     1  0.0000E+00
   424  9986    3  5.11393E-05 1.22500E-03 6.89441E+11 8.44566E+08     1  0.0000E+00
   425 10000    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  0.0000E+00
   426 10001    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  0.0000E+00
   427 10002    3  5.11393E-05 1.22500E-03 4.42451E+05 5.42002E+02     0  0.0000E+00
   428 10003    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  0.0000E+00
   429 10004    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  0.0000E+00
   430 10005    3  5.11393E-05 1.22500E-03 1.57316E+05 1.92712E+02     0  0.0000E+00
   431  2001    3  5.11393E-05 1.22500E-03 8.81574E+10 1.07993E+08     1  6.5536E+04
   432  2002    3  5.11393E-05 1.22500E-03 5.84709E+11 7.16269E+08     1  6.5536E+04
   433  2003    3  5.11393E-05 1.22500E-03 1.37659E+12 1.68633E+09     1  6.5536E+04
   434  2004    3  5.11393E-05 1.22500E-03 4.97560E+12 6.09511E+09     1  6.5536E+04
   435  2005    3  5.11393E-05 1.22500E-03 9.68856E+12 1.18685E+10     1  6.5536E+04
   436  2006    3  5.11393E-05 1.22500E-03 1.59723E+13 1.95661E+10     1  6.5536E+04
   437  2007    3  5.11393E-05 1.22500E-03 2.38269E+13 2.91879E+10     1  6.5536E+04
   438  2008    3  5.11393E-05 1.22500E-03 5.39037E+13 6.60320E+10     1  6.5536E+04
   439  2009    3  5.11393E-05 1.22500E-03 8.04121E+13 9.85049E+10     1  6.5536E+04
   440  2010    3  5.11393E-05 1.22500E-03 1.57615E+14 1.93078E+11     1  6.5536E+04
   441  2011    3  5.11393E-05 1.22500E-03 2.26732E+14 2.77747E+11     1  6.5536E+04
   442  2012    3  5.11393E-05 1.22500E-03 3.08416E+14 3.77809E+11     1  6.5536E+04
   443  2013    3  5.11393E-05 1.22500E-03 4.02666E+14 4.93265E+11     1  6.5536E+04
   444  2014    3  5.11393E-05 1.22500E-03 5.09482E+14 6.24115E+11     1  6.5536E+04
   445  2015    3  5.11393E-05 1.22500E-03 1.82349E+15 2.23378E+12     1  6.5536E+04

 total                                    7.23819E+15 4.44056E+12

 ************************************************
 * Random Number Generator  =                  1 *
 * Random Number Seed       =       19073486328125 *
 * Random Number Multiplier =       19073486328125 *
 * Random Number Adder      =                  0 *
 * Random Number Bits Used  =                 48 *
 * Random Number Stride     =             152917 *
 ************************************************


        42 warning messages so far.
1cross-section tables                                                                                print
table 100

     table    length

                        tables from file mcplib04

   1000.04p    1898  ENDF/B-VI Release 8 Photoatomic Data for 1-H                                    mat 100
02/07/03
   6000.04p    3152  ENDF/B-VI Release 8 Photoatomic Data for 6-C                                    mat 600
02/07/03
   7000.04p    3194  ENDF/B-VI Release 8 Photoatomic Data for 7-N                                    mat 700
02/07/03
   8000.04p    3272  ENDF/B-VI Release 8 Photoatomic Data for 8-O                                    mat 800
02/07/03
  11000.04p    3995  ENDF/B-VI Release 8 Photoatomic Data for 11-NA                                  mat1100
02/07/03
  12000.04p    3781  ENDF/B-VI Release 8 Photoatomic Data for 12-MG                                  mat1200
02/07/03
```

```
  13000.04p    4846  ENDF/B-VI Release 8 Photoatomic Data for 13-AL                                mat1300
02/07/03
  14000.04p    4792  ENDF/B-VI Release 8 Photoatomic Data for 14-SI                                mat1400
02/07/03
  15000.04p    4498  ENDF/B-VI Release 8 Photoatomic Data for 15-P                                 mat1500
02/07/03
  16000.04p    4654  ENDF/B-VI Release 8 Photoatomic Data for 16-S                                 mat1600
02/07/03
  19000.04p    5047  ENDF/B-VI Release 8 Photoatomic Data for 19-K                                 mat1900
02/07/03
  20000.04p    5013  ENDF/B-VI Release 8 Photoatomic Data for 20-CA                                mat2000
02/07/03
  22000.04p    5742  ENDF/B-VI Release 8 Photoatomic Data for 22-TI                                mat2200
02/07/03
  25000.04p    5598  ENDF/B-VI Release 8 Photoatomic Data for 25-MN                                mat2500
02/07/03
  26000.04p    5718  ENDF/B-VI Release 8 Photoatomic Data for 26-FE                                mat2600
02/07/03

  total       65200

 warning. simple physics turned on for photons > 100 mev.


************************************************************************************************************
*******
 dump no.    1 on file runtpe       nps =           0     coll =              0     ctm =        0.00   nrn =
0


        43 warning messages so far.
1problem summary                                  source particle weight for summary table normalization =
20000000.00

      run terminated at end of surface-source input file.
+                                                                                              03/24/09
14:29:27
      c     Created on: Tuesday, November 11, 2008 at 09:35                              probid =  03/24/09
13:46:16
0
 photon creation     tracks      weight        energy           photon loss         tracks      weight
energy
                                (per source particle)                                          (per source
particle)

 source             30217000    7.0199E+09    4.9060E-01          escape            11208294    2.6049E+09
1.2923E-01
                                                                 energy cutoff            0    0.            0.
                                                                 time cutoff              0    0.            0.
 weight window            0    0.            0.                 weight window            0    0.            0.
 cell importance    1159843    1.1669E+09    2.4928E-02         cell importance    4342662    1.1656E+09
2.4923E-02
 weight cutoff            0    0.            0.                 weight cutoff            0    0.            0.
 e or t importance        0    0.            0.                 e or t importance        0    0.            0.
 dxtran                   0    0.            0.                 dxtran                   0    0.            0.
 forced collisions        0    0.            0.                 forced collisions        0    0.            0.
 exp. transform           0    0.            0.                 exp. transform           0    0.            0.
 from neutrons            0    0.            0.                 compton scatter          0    0.
3.1025E-01
 bremsstrahlung           0    0.            0.                 capture           18193844    5.1091E+09
5.1643E-02
 p-annihilation        2144    4.9808E+05    3.6258E-05         pair production       1072    2.4904E+05
4.5819E-05
 photonuclear             0    0.            0.                 photonuclear abs         0    0.            0.
 electron x-rays          0    0.            0.
 1st fluorescence   2366885    6.9268E+08    5.2840E-04
 2nd fluorescence         0    0.            0.
     total         33745872    8.8799E+09    5.1609E-01             total         33745872    8.8799E+09
5.1609E-01

   number of photons banked                 2671597        average time of (shakes)              cutoffs
   photon tracks per source particle      1.6873E+00         escape            3.8837E+01         tco
1.0000E+33
   photon collisions per source particle  7.5893E+00         capture           4.0204E+01         eco
1.0000E-03
   total photon collisions                 151785730         capture or escape 3.9743E+01         wc1  -
5.0000E-01
```

any termination 3.4734E+01 wc2 - 2.5000E-01

computer time so far in this run 42.93 minutes
computer time in mcrun 42.79 minutes
source particles per minute 1.6795E+03
random numbers generated 1893328643

maximum number ever in bank 376
bank overflows to backup file 0
most random numbers used was 523560 in history 25250

warning. random number stride 152917 exceeded 794 times.

range of sampled source weights = 4.6463E+09 to 4.6463E+09

warning. importance function may be poor. see print table 120.

1photon activity in each cell print table 126

	cell	tracks entering	population	collisions	collisions * weight (per history)	number weighted energy	flux weighted energy	average track weight (relative)	average track mfp (cm)
1	11	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
2	12	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
3	13	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
4	14	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5	15	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6	16	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7	17	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8	18	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9	19	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10	21	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
11	22	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12	23	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13	24	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
14	25	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
15	26	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
16	27	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
17	28	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
18	29	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
19	31	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
20	32	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
21	33	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
22	34	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
23	35	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
24	36	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
25	37	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
26	38	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
27	39	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
28	41	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
29	42	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
30	43	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
31	44	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
32	45	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
33	46	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
34	47	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
35	48	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
36	49	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
37	51	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
38	52	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
39	53	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
40	54	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
41	55	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
42	56	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
43	57	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
44	58	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
45	59	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
46	61	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
47	62	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
48	63	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
49	64	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
50	65	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
51	66	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
52	67	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
53	68	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
54	69	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
55	71	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
56	72	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
57	73	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
58	74	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
59	75	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
60	76	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
61	77	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
62	78	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
63	79	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
64	81	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
65	82	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
66	83	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

67	84	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
68	85	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
69	86	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
70	87	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
71	88	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
72	89	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
73	91	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
74	92	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
75	93	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
76	94	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
77	95	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
78	96	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
79	97	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
80	98	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
81	99	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
82	101	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
83	102	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
84	103	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
85	104	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
86	105	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
87	106	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
88	107	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
89	108	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
90	109	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
91	111	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
92	112	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
93	113	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
94	114	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
95	115	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
96	116	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
97	117	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
98	118	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
99	119	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
100	121	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
101	122	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
102	123	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
103	124	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
104	125	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
105	126	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
106	127	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
107	128	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
108	129	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
109	131	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
110	132	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
111	133	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
112	134	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
113	135	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
114	136	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
115	137	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
116	138	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
117	139	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
118	141	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
119	142	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
120	143	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
121	144	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
122	145	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
123	146	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
124	147	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
125	148	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
126	149	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
127	211	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
128	212	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
129	213	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
130	214	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
131	215	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
132	216	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
133	217	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
134	218	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
135	219	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
136	221	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
137	222	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
138	223	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
139	224	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
140	225	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
141	226	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
142	227	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
143	228	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
144	229	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
145	231	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
146	232	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
147	233	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
148	234	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
149	235	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
150	236	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
151	237	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
152	238	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
153	239	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
154	241	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
155	242	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
156	243	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

157	244	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
158	245	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
159	246	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
160	247	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
161	248	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
162	249	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
163	251	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
164	252	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
165	253	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
166	254	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
167	255	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
168	256	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
169	257	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
170	258	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
171	259	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
172	261	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
173	262	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
174	263	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
175	264	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
176	265	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
177	266	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
178	267	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
179	268	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
180	269	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
181	271	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
182	272	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
183	273	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
184	274	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
185	275	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
186	276	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
187	277	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
188	278	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
189	279	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
190	281	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
191	282	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
192	283	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
193	284	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
194	285	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
195	286	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
196	287	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
197	288	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
198	289	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
199	291	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
200	292	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
201	293	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
202	294	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
203	295	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
204	296	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
205	297	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
206	298	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
207	299	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
208	301	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
209	302	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
210	303	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
211	304	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
212	305	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
213	306	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
214	307	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
215	308	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
216	309	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
217	311	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
218	312	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
219	313	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
220	314	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
221	315	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
222	316	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
223	317	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
224	318	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
225	319	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
226	321	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
227	322	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
228	323	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
229	324	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
230	325	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
231	326	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
232	327	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
233	328	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
234	329	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
235	331	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
236	332	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
237	333	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
238	334	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
239	335	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
240	336	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
241	337	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
242	338	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
243	339	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
244	341	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
245	342	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
246	343	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

247	344	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
248	345	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
249	346	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
250	347	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
251	348	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
252	349	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
253	411	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
254	412	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
255	413	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
256	414	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
257	415	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
258	416	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
259	417	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
260	418	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
261	419	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
262	421	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
263	422	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
264	423	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
265	424	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
266	425	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
267	426	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
268	427	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
269	428	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
270	429	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
271	431	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
272	432	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
273	433	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
274	434	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
275	435	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
276	436	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
277	437	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
278	438	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
279	439	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
280	441	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
281	442	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
282	443	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
283	444	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
284	445	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
285	446	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
286	447	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
287	448	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
288	449	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
289	451	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
290	452	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
291	453	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
292	454	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
293	455	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
294	456	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
295	457	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
296	458	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
297	459	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
298	461	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
299	462	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
300	463	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
301	464	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
302	465	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
303	466	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
304	467	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
305	468	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
306	469	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
307	471	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
308	472	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
309	473	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
310	474	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
311	475	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
312	476	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
313	477	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
314	478	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
315	479	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
316	481	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
317	482	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
318	483	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
319	484	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
320	485	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
321	486	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
322	487	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
323	488	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
324	489	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
325	491	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
326	492	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
327	493	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
328	494	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
329	495	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
330	496	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
331	497	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
332	498	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
333	499	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
334	501	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
335	502	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
336	503	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

337	504	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
338	505	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
339	506	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
340	507	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
341	508	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
342	509	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
343	511	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
344	512	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
345	513	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
346	514	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
347	515	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
348	516	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
349	517	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
350	518	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
351	519	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
352	521	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
353	522	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
354	523	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
355	524	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
356	525	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
357	526	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
358	527	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
359	528	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
360	529	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
361	531	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
362	532	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
363	533	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
364	534	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
365	535	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
366	536	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
367	537	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
368	538	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
369	539	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
370	541	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
371	542	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
372	543	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
373	544	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
374	545	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
375	546	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
376	547	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
377	548	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
378	549	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
395	4236	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
396	4237	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
397	4238	1	1	2	3.8062E+06	7.1358E-02	7.1358E-02	3.0450E+14	1.4961E+00
398	4239	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
399	4240	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
400	4241	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
401	4242	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
402	4243	4	4	15	8.9209E+05	1.1337E-01	1.1337E-01	3.0450E+14	2.2382E+00
403	4244	22	22	41	1.2192E+06	1.5026E-01	1.5026E-01	3.0450E+14	2.6891E+00
404	4245	122	114	297	4.4158E+06	1.3540E-01	1.3540E-01	3.0450E+14	2.5097E+00
405	4246	1054	1004	2767	2.0570E+07	1.2998E-01	1.2998E-01	3.0450E+14	2.4529E+00
406	4247	7848	7448	20208	7.5114E+07	1.3074E-01	1.3074E-01	3.0450E+14	2.4614E+00
407	4248	58974	55879	151729	2.8199E+08	1.3133E-01	1.3133E-01	3.0450E+14	2.4635E+00
408	4249	455415	431509	1175931	1.0927E+09	1.3297E-01	1.3297E-01	3.0450E+14	2.4749E+00
409	4250	4063807	3844606	10615220	4.9322E+09	1.4080E-01	1.4080E-01	3.0450E+14	2.5340E+00
410	4251	32758105	31269563	74554096	1.7320E+10	3.6239E-01	3.6239E-01	3.0450E+14	3.8044E+00
412	9998	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
413	9997	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
414	9996	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
422	9988	15697585	15113057	2864538	6.6548E+08	4.7731E-01	4.7731E-01	3.0450E+14	8.7785E+03
431	2001	10581193	9819286	1883567	4.3758E+08	4.4955E-01	4.4955E-01	3.0450E+14	8.5009E+03
432	2002	9701350	8560709	4719152	1.0963E+09	3.9787E-01	3.9787E-01	3.0450E+14	8.0169E+03
433	2003	8616941	7135711	4980066	1.1569E+09	3.4455E-01	3.4455E-01	3.0450E+14	7.4996E+03
434	2004	7912210	6239998	8519599	1.9792E+09	2.9884E-01	2.9884E-01	3.0450E+14	7.0355E+03
435	2005	6721067	5059346	8131130	1.8890E+09	2.6238E-01	2.6238E-01	3.0450E+14	6.6505E+03
436	2006	5552587	4064401	7237919	1.6815E+09	2.3952E-01	2.3952E-01	3.0450E+14	6.4006E+03
437	2007	4464571	3210928	6108147	1.4190E+09	2.2473E-01	2.2473E-01	3.0450E+14	6.2346E+03
438	2008	3439872	2493197	7051519	1.6382E+09	2.1325E-01	2.1325E-01	3.0450E+14	6.1041E+03
439	2009	2310888	1659696	4872692	1.1320E+09	2.0476E-01	2.0476E-01	3.0450E+14	6.0067E+03
440	2010	1476466	1077983	4051992	9.4134E+08	1.9960E-01	1.9960E-01	3.0450E+14	5.9470E+03
441	2011	814545	591455	2271257	5.2765E+08	1.9667E-01	1.9667E-01	3.0450E+14	5.9130E+03
442	2012	441388	318639	1238277	2.8767E+08	1.9539E-01	1.9539E-01	3.0450E+14	5.8984E+03
443	2013	236789	170465	672697	1.5628E+08	1.9480E-01	1.9480E-01	3.0450E+14	5.8895E+03
444	2014	125984	90071	358814	8.3358E+07	1.9445E-01	1.9445E-01	3.0450E+14	5.8868E+03
445	2015	56179	47581	304058	7.0637E+07	2.0086E-01	2.0086E-01	3.0450E+14	5.9594E+03
total		115494967	101262673	151785730	3.8895E+10				

1tally 2 nps = 71864
tally type 2 particle flux averaged over a surface.
tally for photons
number of histories used for normalizing tallies = 20000000.00

this tally is modified by a dose function.

areas

```
               surface:     1231
                        1.78374E+06

 surface  1231
                0.00000E+00 0.0000

 there are no nonzero tallies in the tally fluctuation chart bin for tally   2

1tally  12        nps =       71864
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     20000000.00

           this tally is modified by a dose function.

           areas
                surface:     1227
               segment
                  1       1.00000E+50
                  2       2.56400E+07
                  3       1.03700E+08
                  4       1.60200E+08
                  5       3.92700E+08
                  6       5.49800E+08
                  7       7.06900E+08
                  8       8.63900E+08
                  9       1.59000E+09
                 10       1.94400E+09
                 11       3.14200E+09
                 12       3.77000E+09
                 13       4.39800E+09
                 14       5.02700E+09
                 15       5.65500E+09
                 16       1.68900E+10

 surface  1227
 segment:       -2000
                3.43465E-47 0.0092

 surface  1227
 segment:       2000    -2001
                6.84847E-05 0.0111

 surface  1227
 segment:       2000     2001    -2002
                2.09044E-05 0.0103

 surface  1227
 segment:       2000     2001     2002    -2003
                5.74006E-06 0.0121

 surface  1227
 segment:       2000     2001     2002     2003    -2004
                1.70070E-06 0.0115

 surface  1227
 segment:       2000     2001     2002     2003     2004    -2005
                5.62672E-07 0.0129

 surface  1227
 segment:       2000     2001     2002     2003     2004     2005    -2006
                2.34307E-07 0.0119

 surface  1227
 segment:       2000     2001     2002     2003     2004     2005     2006    -2007
                1.15521E-07 0.0125

 surface  1227
 segment:       2000     2001     2002     2003     2004     2005     2006     2007    -2008
                5.25979E-08 0.0112

 surface  1227
 segment:       2000     2001     2002     2003     2004     2005     2006     2007     2008    -2009
                2.24291E-08 0.0123

 surface  1227
 segment:       2000     2001     2002     2003     2004     2005     2006     2007     2008     2009    -2010
                9.18677E-09 0.0132
```

```
 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     -2011
                 3.49395E-09 0.0163

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011    -2012
                 1.41025E-09 0.0229

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012    -2013
                 5.75088E-10 0.0289

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013    -2014
                 2.45461E-10 0.0410

 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013     2014
                 5.96063E-11 0.0458


================================================================================================================================
==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  12

 tfc bin      --mean--       ---------relative error---------       ----variance of the variance----       --figure
of merit--      -pdf-
 behavior     behavior       value    decrease    decrease rate       value    decrease    decrease rate        value
behavior     slope

 desired       random        <0.10       yes       1/sqrt(nps)        <0.10       yes         1/nps            constant
random       >3.00
 observed      random         0.05       yes           yes             0.02       yes          yes             constant
random       3.12
 passed?         yes           yes       yes           yes               yes       yes          yes                yes
yes          yes

================================================================================================================================
==================


 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart
to verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 5.7040E-11 to 6.2515E-11; 5.4302E-11 to 6.5253E-11;
5.1564E-11 to 6.7990E-11
 estimated  symmetric confidence interval(1,2,3 sigma): 5.6876E-11 to 6.2336E-11; 5.4147E-11 to 6.5066E-11;
5.1417E-11 to 6.7796E-11

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  12 with nps =       71864  print
table 160


 normed average tally per history  = 5.96063E-11          unnormed average tally per history  = 1.00675E+00
 estimated tally relative error    = 0.0458               estimated variance of the variance  = 0.0214
 relative error from zero tallies  = 0.0200               relative error from nonzero scores  = 0.0412

 number of nonzero history tallies =        2502          efficiency for the nonzero tallies  = 0.0001
 history number of largest  tally  =       42976          largest  unnormalized history tally = 2.10238E+05
 (largest  tally)/(average tally)  = 2.08828E+05          (largest  tally)/(avg nonzero tally)= 2.61244E+01

 (confidence interval shift)/mean  = 0.0029               shifted confidence interval center  = 5.97774E-11
```

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	5.96063E-11	2.32812E-10	2.905826
relative error	4.57982E-02	4.63386E-02	0.011800
variance of the variance	2.14350E-02	2.19260E-02	0.022907
shifted center	5.97774E-11	1.09465E-10	0.831203
figure of merit	1.11423E+01	1.08840E+01	-0.023188

the estimated inverse power slope of the 125 largest tallies starting at 2.83995E+04 is 3.1180
the large score tail of the empirical history score probability density function appears to have no unsampled regions.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (4.674E+05)*(4.882E-03)**2 = (4.674E+05)*(2.384E-05) = 1.114E+01

1tally 22 nps = 71864
tally type 2 particle flux averaged over a surface.
tally for photons
number of histories used for normalizing tallies = 20000000.00

this tally is modified by a dose function.

areas

surface:	1227
segment	
1	1.00000E+50
2	1.00000E+50
3	1.00000E+50
4	4.35376E+05
5	4.35376E+05
6	4.35376E+05
7	4.35376E+05
8	4.35376E+05
9	4.35376E+05
10	4.35376E+05
11	4.35376E+05
12	4.35376E+05
13	4.35376E+05
14	4.35376E+05
15	4.35376E+05
16	4.35376E+05
17	4.35376E+05
18	4.35376E+05
19	4.35376E+05
20	4.35376E+05
21	4.35376E+05
22	1.00000E+50

surface 1227
segment: 1201
9.39180E-49 0.0068

surface 1227
segment: -1201 -2026
2.36257E-47 0.0104

surface 1227
segment: -1201 2026 2027
2.37934E-47 0.0101

surface 1227
segment: -1201 2026 -2027 2016
4.11440E-04 0.0124

surface 1227
segment: -1201 2026 -2027 -2016 2017
9.15980E-04 0.0119

surface 1227
segment: -1201 2026 -2027 -2016 -2017 2018
9.71405E-04 0.0122

surface 1227
segment: -1201 2026 -2027 -2016 -2017 -2018 2019
8.86059E-04 0.0122

```
surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019     2020
               8.10524E-04 0.0147

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020     2021
               6.97289E-04 0.0174

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021     2022
               6.24226E-04 0.0222

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022     2023
               5.72633E-04 0.0234

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     2024
               4.96358E-04 0.0238

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024     2025
               4.47864E-04 0.0262

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025     2028
               3.88425E-04 0.0262

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028     2029
               3.65230E-04 0.0402

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029     2030
               3.10864E-04 0.0384

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030     2031
               2.81579E-04 0.0312

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031     2032
               2.41244E-04 0.0372

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032     2033
               2.19367E-04 0.0375

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033     2034
               2.11905E-04 0.0473

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034     2035
               1.89195E-04 0.0450

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034    -2035
               9.29044E-48 0.0140
```

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results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 22

tfc bin behavior	--mean-- behavior	---------relative error--------- value	decrease	decrease rate	----variance of the variance---- value	decrease	decrease rate	--figure of merit-- -pdf- behavior	slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random	>3.00
observed	random	0.01	yes	yes	0.00	yes	yes	constant	random	10.00
passed?	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

==========

this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to verify.
the results in other bins associated with this tally may not meet these statistical criteria.

----- estimated confidence intervals: -----

estimated asymmetric confidence interval(1,2,3 sigma): 9.1633E-48 to 9.4233E-48; 9.0333E-48 to 9.5533E-48; 8.9033E-48 to 9.6833E-48
estimated symmetric confidence interval(1,2,3 sigma): 9.1605E-48 to 9.4204E-48; 9.0305E-48 to 9.5504E-48; 8.9006E-48 to 9.6803E-48

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 22 with nps = 71864 print table 160

normed average tally per history	= 9.29044E-48	unnormed average tally per history	= 9.29044E+02
estimated tally relative error	= 0.0140	estimated variance of the variance	= 0.0033
relative error from zero tallies	= 0.0042	relative error from nonzero scores	= 0.0133
number of nonzero history tallies	= 56247	efficiency for the nonzero tallies	= 0.0028
history number of largest tally	= 59646	largest unnormalized history tally	= 4.29877E+07
(largest tally)/(average tally)	= 4.62709E+04	(largest tally)/(avg nonzero tally)	= 1.30130E+02
(confidence interval shift)/mean	= 0.0003	shifted confidence interval center	= 9.29328E-48

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	9.29044E-48	1.52720E-47	0.643844
relative error	1.39887E-02	1.36471E-02	-0.024418
variance of the variance	3.25179E-03	4.15834E-03	0.278785
shifted center	9.29328E-48	1.02033E-47	0.097918
figure of merit	1.19431E+02	1.25485E+02	0.050685

the estimated slope of the 200 largest tallies starting at 7.54214E+06 appears to be decreasing at least exponentially.
the large score tail of the empirical history score probability density function appears to have no unsampled regions.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (4.674E+05)*(1.598E-02)**2 = (4.674E+05)*(2.555E-04) = 1.194E+02

1tally 32 nps = 71864
tally type 2 particle flux averaged over a surface.
tally for photons
number of histories used for normalizing tallies = 20000000.00

this tally is modified by a dose function.

areas

surface:	1201
segment	
1	1.00000E+50
2	1.00000E+50
3	1.00000E+50

```
                4       1.00000E+50
                5       6.30000E+05

 surface  1201
 segment:       1231
                3.34234E-47 0.0082

 surface  1201
 segment:      -1231    -2026
                2.04859E-48 0.0339

 surface  1201
 segment:      -1231     2026     2027
                2.46558E-48 0.0303

 surface  1201
 segment:      -1231     2026    -2027    -1227
                0.00000E+00 0.0000

 surface  1201
 segment:      -1231     2026    -2027     1227
                2.57521E-03 0.0119


================================================================================================================
====================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  32

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.01      yes          yes            0.00      yes         yes            constant
random      10.00
 passed?        yes          yes      yes          yes              yes      yes         yes               yes
yes         yes


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 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart
to verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 2.5449E-03 to 2.6062E-03; 2.5143E-03 to 2.6368E-03;
2.4836E-03 to 2.6674E-03
 estimated  symmetric confidence interval(1,2,3 sigma): 2.5446E-03 to 2.6058E-03; 2.5139E-03 to 2.6365E-03;
2.4833E-03 to 2.6671E-03

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  32 with nps =       71864  print
table 160


 normed average tally per history  = 2.57521E-03          unnormed average tally per history  = 1.62238E+03
 estimated tally relative error    = 0.0119               estimated variance of the variance  = 0.0006
 relative error from zero tallies  = 0.0047               relative error from nonzero scores  = 0.0109

 number of nonzero history tallies =       44366          efficiency for the nonzero tallies  = 0.0022
 history number of largest  tally  =       14863          largest  unnormalized history tally = 2.76590E+07
 (largest  tally)/(average tally)  = 1.70484E+04          (largest  tally)/(avg nonzero tally)= 3.78184E+01

 (confidence interval shift)/mean  = 0.0001               shifted confidence interval center  = 2.57553E-03


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1           value(nps+1)/value(nps)-1.
```

```
      mean                            2.57521E-03            3.18609E-03                    0.237214
      relative error                  1.18960E-02            1.13197E-02                   -0.048450
      variance of the variance        6.21375E-04            6.62220E-04                    0.065732
      shifted center                  2.57553E-03            2.67637E-03                    0.039153
      figure of merit                 1.65146E+02            1.82391E+02                    0.104426

 the estimated slope of the 200 largest  tallies starting at  1.05423E+07 appears to be decreasing at least
exponentially.
 the large score tail of the empirical history score probability density function appears to have no unsampled
regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (4.674E+05)*( 1.880E-02)**2 = (4.674E+05)*(3.533E-
04) = 1.651E+02

1tally  42        nps =       71864
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     20000000.00

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
                 1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                 2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                 3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                 4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                 5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                 6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
3.00000E+06
                surface:     2010         2011         2012         2013
               segment
                 1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:        1219
                 1.59190E-47 0.0070

 surface  2003
 segment:       -1219    -1209
                 1.89996E-49 0.0166

 surface  2003
 segment:       -1219     1209     1201
                 5.99750E-50 0.0092

 surface  2003
 segment:       -1219     1209    -1201    -1205
                 1.04522E-48 0.0100

 surface  2003
 segment:       -1219     1209    -1201     1205     1206
                 9.88151E-49 0.0102

 surface  2003
 segment:       -1219     1209    -1201     1205    -1206
                 2.54871E-05 0.0126

 surface  2004
 segment:        1219
                 1.42382E-47 0.0070

 surface  2004
 segment:       -1219    -1209
                 9.56165E-50 0.0206
```

```
surface  2004
segment:       -1219     1209     1201
                3.54891E-50 0.0111

surface  2004
segment:       -1219     1209    -1201    -1205
                5.70038E-49 0.0106

surface  2004
segment:       -1219     1209    -1201     1205     1206
                5.43727E-49 0.0110

surface  2004
segment:       -1219     1209    -1201     1205    -1206
                8.14003E-06 0.0170

surface  2005
segment:        1219
                1.20152E-47 0.0070

surface  2005
segment:       -1219    -1209
                5.05415E-50 0.0201

surface  2005
segment:       -1219     1209     1201
                2.11659E-50 0.0136

surface  2005
segment:       -1219     1209    -1201    -1205
                3.29774E-49 0.0113

surface  2005
segment:       -1219     1209    -1201     1205     1206
                3.13862E-49 0.0119

surface  2005
segment:       -1219     1209    -1201     1205    -1206
                3.25939E-06 0.0211

surface  2006
segment:        1219
                9.76474E-48 0.0071

surface  2006
segment:       -1219    -1209
                3.04455E-50 0.0230

surface  2006
segment:       -1219     1209     1201
                1.20794E-50 0.0177

surface  2006
segment:       -1219     1209    -1201    -1205
                1.98644E-49 0.0120

surface  2006
segment:       -1219     1209    -1201     1205     1206
                1.91495E-49 0.0130

surface  2006
segment:       -1219     1209    -1201     1205    -1206
                1.49667E-06 0.0240

surface  2007
segment:        1219
                7.75080E-48 0.0072

surface  2007
segment:       -1219    -1209
                1.78419E-50 0.0245

surface  2007
segment:       -1219     1209     1201
                6.85662E-51 0.0224

surface  2007
segment:       -1219     1209    -1201    -1205
```

```
                1.23547E-49 0.0130

surface  2007
segment:       -1219     1209    -1201     1205     1206
                1.19611E-49 0.0137

surface  2007
segment:       -1219     1209    -1201     1205    -1206
                7.58689E-07 0.0281

surface  2008
segment:        1219
                5.27267E-48 0.0074

surface  2008
segment:       -1219    -1209
                8.95098E-51 0.0315

surface  2008
segment:       -1219     1209     1201
                3.08703E-51 0.0312

surface  2008
segment:       -1219     1209    -1201    -1205
                6.25989E-50 0.0143

surface  2008
segment:       -1219     1209    -1201     1205     1206
                5.98600E-50 0.0153

surface  2008
segment:       -1219     1209    -1201     1205    -1206
                3.00806E-07 0.0346

surface  2009
segment:        1219
                3.48947E-48 0.0076

surface  2009
segment:       -1219    -1209
                4.34958E-51 0.0391

surface  2009
segment:       -1219     1209     1201
                1.21678E-51 0.0466

surface  2009
segment:       -1219     1209    -1201    -1205
                3.37568E-50 0.0170

surface  2009
segment:       -1219     1209    -1201     1205     1206
                3.18385E-50 0.0176

surface  2009
segment:       -1219     1209    -1201     1205    -1206
                1.31741E-07 0.0474

surface  2010
segment:        1219
                1.95298E-48 0.0080

surface  2010
segment:       -1219    -1209
                1.96491E-51 0.0513

surface  2010
segment:       -1219     1209     1201
                3.46438E-52 0.0758

surface  2010
segment:       -1219     1209    -1201    -1205
                1.46248E-50 0.0214

surface  2010
segment:       -1219     1209    -1201     1205     1206
                1.46100E-50 0.0238
```

```
surface  2010
segment:       -1219     1209    -1201     1205    -1206
                3.92152E-08 0.0713

surface  2011
segment:        1219
                1.07310E-48 0.0084

surface  2011
segment:       -1219    -1209
                9.08494E-52 0.0729

surface  2011
segment:       -1219     1209     1201
                1.07235E-52 0.1318

surface  2011
segment:       -1219     1209    -1201    -1205
                6.19478E-51 0.0318

surface  2011
segment:       -1219     1209    -1201     1205     1206
                6.44965E-51 0.0300

surface  2011
segment:       -1219     1209    -1201     1205    -1206
                1.66288E-08 0.0981

surface  2012
segment:        1219
                5.80716E-49 0.0090

surface  2012
segment:       -1219    -1209
                3.97574E-52 0.0990

surface  2012
segment:       -1219     1209     1201
                3.36266E-53 0.2827

surface  2012
segment:       -1219     1209    -1201    -1205
                3.26874E-51 0.0393

surface  2012
segment:       -1219     1209    -1201     1205     1206
                2.93365E-51 0.0432

surface  2012
segment:       -1219     1209    -1201     1205    -1206
                6.12076E-09 0.1540

surface  2013
segment:        1219
                3.12718E-49 0.0098

surface  2013
segment:       -1219    -1209
                1.61746E-52 0.1551

surface  2013
segment:       -1219     1209     1201
                1.48172E-53 0.3574

surface  2013
segment:       -1219     1209    -1201    -1205
                1.38866E-51 0.0607

surface  2013
segment:       -1219     1209    -1201     1205     1206
                1.23805E-51 0.0696

surface  2013
segment:       -1219     1209    -1201     1205    -1206
                2.80201E-09 0.2078
```

```
================================================================================================================================
==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  42

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.01      yes          yes            0.00      yes         yes            constant
random       7.67
 passed?        yes          yes      yes          yes             yes      yes         yes               yes
yes         yes


================================================================================================================================
==================


 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart
to verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 2.5173E-05 to 2.5813E-05; 2.4853E-05 to 2.6133E-05;
2.4533E-05 to 2.6453E-05
 estimated  symmetric confidence interval(1,2,3 sigma): 2.5167E-05 to 2.5807E-05; 2.4847E-05 to 2.6127E-05;
2.4527E-05 to 2.6447E-05

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  42 with nps =       71864  print
table 160


 normed average tally per history  = 2.54871E-05          unnormed average tally per history  = 7.64613E+01
 estimated tally relative error    = 0.0126               estimated variance of the variance  = 0.0022
 relative error from zero tallies  = 0.0051               relative error from nonzero scores  = 0.0115

 number of nonzero history tallies =       39024          efficiency for the nonzero tallies  = 0.0020
 history number of largest  tally  =       36621          largest  unnormalized history tally = 2.35264E+06
 (largest  tally)/(average tally)  = 3.07690E+04          (largest  tally)/(avg nonzero tally)= 6.00365E+01

 (confidence interval shift)/mean  = 0.0002               shifted confidence interval center  = 2.54929E-05


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities          value at nps          value at nps+1          value(nps+1)/value(nps)-1.

      mean                           2.54871E-05            3.63991E-05                  0.428136
      relative error                 1.25556E-02            1.20687E-02                 -0.038779
      variance of the variance       2.19659E-03            2.61852E-03                  0.192081
      shifted center                 2.54929E-05            2.73211E-05                  0.071716
      figure of merit                1.48252E+02            1.60455E+02                  0.082316

 the estimated inverse power slope of the 200 largest  tallies starting at 5.66369E+05 is 7.6651
 the large score tail of the empirical history score probability density function appears to have no unsampled
regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (4.674E+05)*( 1.781E-02)**2 = (4.674E+05)*(3.172E-
04) = 1.483E+02

1tally  52        nps =       71864
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     20000000.00

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
```

```
                1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
3.00000E+06
              surface:     2010         2011         2012         2013
             segment
                1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:        1219
                 1.59190E-47 0.0070

 surface  2003
 segment:       -1219    -1209
                 1.89996E-49 0.0166

 surface  2003
 segment:       -1219     1209    -1201
                 2.79798E-48 0.0083

 surface  2003
 segment:       -1219     1209     1201    -1205
                 3.13399E-50 0.0113

 surface  2003
 segment:       -1219     1209     1201     1205     1206
                 2.61259E-50 0.0122

 surface  2003
 segment:       -1219     1209     1201     1205    -1206
                 8.36419E-08 0.0334

 surface  2004
 segment:        1219
                 1.42382E-47 0.0070

 surface  2004
 segment:       -1219    -1209
                 9.56165E-50 0.0206

 surface  2004
 segment:       -1219     1209    -1201
                 1.35797E-48 0.0089

 surface  2004
 segment:       -1219     1209     1201    -1205
                 1.82062E-50 0.0142

 surface  2004
 segment:       -1219     1209     1201     1205     1206
                 1.62507E-50 0.0152

 surface  2004
 segment:       -1219     1209     1201     1205    -1206
                 3.44058E-08 0.0459

 surface  2005
 segment:        1219
                 1.20152E-47 0.0070

 surface  2005
 segment:       -1219    -1209
                 5.05415E-50 0.0201

 surface  2005
```

```
segment:       -1219     1209    -1201
                7.41418E-49 0.0094

surface  2005
segment:       -1219     1209     1201    -1205
                1.10369E-50 0.0181

surface  2005
segment:       -1219     1209     1201     1205     1206
                9.64912E-51 0.0189

surface  2005
segment:       -1219     1209     1201     1205    -1206
                1.59965E-08 0.0629

surface  2006
segment:        1219
                9.76474E-48 0.0071

surface  2006
segment:       -1219    -1209
                3.04455E-50 0.0230

surface  2006
segment:       -1219     1209    -1201
                4.35039E-49 0.0099

surface  2006
segment:       -1219     1209     1201    -1205
                6.26840E-51 0.0244

surface  2006
segment:       -1219     1209     1201     1205     1206
                5.63725E-51 0.0248

surface  2006
segment:       -1219     1209     1201     1205    -1206
                5.79198E-09 0.0973

surface  2007
segment:        1219
                7.75080E-48 0.0072

surface  2007
segment:       -1219    -1209
                1.78419E-50 0.0245

surface  2007
segment:       -1219     1209    -1201
                2.65919E-49 0.0105

surface  2007
segment:       -1219     1209     1201    -1205
                3.53875E-51 0.0314

surface  2007
segment:       -1219     1209     1201     1205     1206
                3.20472E-51 0.0305

surface  2007
segment:       -1219     1209     1201     1205    -1206
                3.77157E-09 0.2329

surface  2008
segment:        1219
                5.27267E-48 0.0074

surface  2008
segment:       -1219    -1209
                8.95098E-51 0.0315

surface  2008
segment:       -1219     1209    -1201
                1.31483E-49 0.0115

surface  2008
segment:       -1219     1209     1201    -1205
                1.61113E-51 0.0438
```

```
surface  2008
segment:       -1219     1209     1201     1205     1206
                1.44861E-51 0.0439

surface  2008
segment:       -1219     1209     1201     1205    -1206
                9.10083E-10 0.3044

surface  2009
segment:        1219
                3.48947E-48 0.0076

surface  2009
segment:       -1219    -1209
                4.34958E-51 0.0391

surface  2009
segment:       -1219     1209    -1201
                6.95476E-50 0.0130

surface  2009
segment:       -1219     1209     1201    -1205
                5.95858E-52 0.0621

surface  2009
segment:       -1219     1209     1201     1205     1206
                6.16886E-52 0.0693

surface  2009
segment:       -1219     1209     1201     1205    -1206
                1.34662E-10 0.5229

surface  2010
segment:        1219
                1.95298E-48 0.0080

surface  2010
segment:       -1219    -1209
                1.96491E-51 0.0513

surface  2010
segment:       -1219     1209    -1201
                3.04112E-50 0.0165

surface  2010
segment:       -1219     1209     1201    -1205
                1.69404E-52 0.1039

surface  2010
segment:       -1219     1209     1201     1205     1206
                1.74826E-52 0.1108

surface  2010
segment:       -1219     1209     1201     1205    -1206
                7.35988E-11 1.0000

surface  2011
segment:        1219
                1.07310E-48 0.0084

surface  2011
segment:       -1219    -1209
                9.08494E-52 0.0729

surface  2011
segment:       -1219     1209    -1201
                1.31433E-50 0.0222

surface  2011
segment:       -1219     1209     1201    -1205
                3.87450E-53 0.2057

surface  2011
segment:       -1219     1209     1201     1205     1206
                6.84904E-53 0.1704

surface  2011
```

```
 segment:       -1219     1209     1201     1205    -1206
                 0.00000E+00 0.0000

 surface  2012
 segment:        1219
                 5.80716E-49 0.0090

 surface  2012
 segment:       -1219    -1209
                 3.97574E-52 0.0990

 surface  2012
 segment:       -1219     1209    -1201
                 6.38601E-51 0.0293

 surface  2012
 segment:       -1219     1209     1201    -1205
                 2.16459E-53 0.3847

 surface  2012
 segment:       -1219     1209     1201     1205     1206
                 1.19807E-53 0.3829

 surface  2012
 segment:       -1219     1209     1201     1205    -1206
                 0.00000E+00 0.0000

 surface  2013
 segment:        1219
                 3.12718E-49 0.0098

 surface  2013
 segment:       -1219    -1209
                 1.61746E-52 0.1551

 surface  2013
 segment:       -1219     1209    -1201
                 2.71078E-51 0.0451

 surface  2013
 segment:       -1219     1209     1201    -1205
                 1.33235E-53 0.3814

 surface  2013
 segment:       -1219     1209     1201     1205     1206
                 1.49374E-54 1.0000

 surface  2013
 segment:       -1219     1209     1201     1205    -1206
                 0.00000E+00 0.0000


================================================================================================================
==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  52

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value   decrease   decrease rate      value   decrease   decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.03      yes          yes            0.02      yes         yes            constant
random       2.37
 passed?        yes          yes      yes          yes              yes      yes         yes               yes
yes          no


================================================================================================================
==================

 warning.  the tally in the tally fluctuation chart bin did not pass  1 of the 10 statistical checks.
```

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 52 with nps =   71864 print table 160

normed average tally per history	= 8.36419E-08	unnormed average tally per history	= 2.50926E-01
estimated tally relative error	= 0.0334	estimated variance of the variance	= 0.0173
relative error from zero tallies	= 0.0232	relative error from nonzero scores	= 0.0240
number of nonzero history tallies	= 1850	efficiency for the nonzero tallies	= 0.0001
history number of largest tally	= 71102	largest unnormalized history tally	= 4.34704E+04
(largest tally)/(average tally)	= 1.73240E+05	(largest tally)/(avg nonzero tally)	= 1.60247E+01
(confidence interval shift)/mean	= 0.0017	shifted confidence interval center	= 8.37812E-08

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	8.36419E-08	2.85271E-07	2.410622
relative error	3.34361E-02	3.40402E-02	0.018067
variance of the variance	1.72936E-02	1.94140E-02	0.122612
shifted center	8.37812E-08	1.26824E-07	0.513753
figure of merit	2.09046E+01	2.01692E+01	-0.035179

the estimated inverse power slope of the 92 largest tallies starting at 5.87134E+03 is 2.3659
the history score probability density function appears to have an unsampled region at the largest history scores:
please examine. see print table 161.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (4.674E+05)*(6.688E-03)**2 = (4.674E+05)*(4.472E-05) = 2.090E+01

1unnormed tally density for tally 52   nonzero tally mean(m) = 2.713E+03   nps =   71864 print table 161

abscissa ordinate log plot of tally probability density function in tally fluctuation chart bin(d=decade,slope= 2.4)

tally	number	num den	log den	d	d	d	d
1.26+03	20	3.86-09	-8.413	**********	**********	**********	|
1.58+03	468	7.18-08	-7.144	**********	**********	**********	*****
2.00+03	410	5.00-08	-7.301	**********	**********	**********	*
2.51+03	344	3.33-08	-7.478	**********	**********	**********	
3.16+03	253	1.94-08	-7.711	mmmmmmmmmm	mmmmmmmmmm	mmmmmmmmmm	mmmmmmmmmm
3.98+03	121	7.39-09	-8.131	**********	**********	**********	******
5.01+03	96	4.66-09	-8.332	**********	**********	**********	*
6.31+03	63	2.43-09	-8.615	**********	**********	**********	s
7.94+03	34	1.04-09	-8.983	**********	**********	*********	s
1.00+04	10	2.43-10	-9.614	**********	**********	s	
1.26+04	11	2.12-10	-9.673	**********	**********	s	
1.58+04	8	1.23-10	-9.911	**********	**********	s	
2.00+04	2	2.44-11	-10.613	**********	s		
2.51+04	0	0.00+00	0.000	s			
3.16+04	4	3.08-11	-10.512	**********	s		
3.98+04	5	3.05-11	-10.515	**********	s		
5.01+04	1	4.85-12	-11.314	*	s		
total	1850	9.25-05		d	d	d	d

```
1tally  62        nps =       71864
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     20000000.00

           this tally is modified by a dose function.

           areas
                surface:     1219
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       1.00000E+50
                 5       5.30000E+06

 surface  1219
 segment:       -1205
                2.59117E-54 0.7102

 surface  1219
 segment:        1205     1206
                1.00431E-52 0.1696

 surface  1219
 segment:        1205    -1206     1203
                0.00000E+00 0.0000

 surface  1219
 segment:        1205    -1206    -1203    -1202
                8.79308E-52 0.0766

 surface  1219
 segment:        1205    -1206    -1203     1202
                0.00000E+00 0.0000

 there are no nonzero tallies in the tally fluctuation chart bin for tally  62

1status of the statistical checks used to form confidence intervals for the mean for each tally bin


 tally   result of statistical checks for the tfc bin (the first check not passed is listed) and error magnitude
check for all bins

     2   no nonzero tallies were made in the tally fluctuation chart bin
         no nonzero tallies were made in any one of the      1 tally bins

    12   passed the 10 statistical checks for the tally fluctuation chart bin result
         passed all bin error check:    16 tally bins all have relative errors less than 0.10 with no zero bins

    22   passed the 10 statistical checks for the tally fluctuation chart bin result
         passed all bin error check:    22 tally bins all have relative errors less than 0.10 with no zero bins

    32   passed the 10 statistical checks for the tally fluctuation chart bin result
         passed all bin error check:     5 tally bins had     1 bins with zeros and     0 bins with relative
errors exceeding 0.10

    42   passed the 10 statistical checks for the tally fluctuation chart bin result
         missed all bin error check:    66 tally bins had     0 bins with zeros and     6 bins with relative
errors exceeding 0.10

    52   missed  1 of 10 tfc bin checks: the slope of decrease of largest tallies is less than the minimum
acceptable value of 3.0
         missed all bin error check:    66 tally bins had     3 bins with zeros and    13 bins with relative
errors exceeding 0.10

    62   no nonzero tallies were made in the tally fluctuation chart bin
         missed all bin error check:     5 tally bins had     2 bins with zeros and     2 bins with relative
errors exceeding 0.10


 the 10 statistical checks are only for the tally fluctuation chart bin and do not apply to other tally bins.

 the tally bins with zeros may or may not be correct: compare the source, cutoffs, multipliers, et cetera with
the tally bins.

 warning.     3 of the   7 tally fluctuation chart bins did not pass all 10 statistical checks.
 warning.     1 of the   7 tallies were all zeros.
```

warning. 3 of the 7 tallies had bins with relative errors greater than recommended.
1tally fluctuation charts

nps	tally 2 mean	error	vov	slope	fom	tally 12 mean	error	vov	slope	fom	tally 22 mean	error	vov	slope	fom
4000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.5952E-11	0.1909	0.3472	0.0	12	9.5709E-48	0.0646	0.0806	3.4	101
8000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.8133E-11	0.1446	0.2285	0.0	10	9.0300E-48	0.0440	0.0423	3.8	110
12000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.1943E-11	0.1174	0.1265	0.0	10	9.0343E-48	0.0354	0.0244	3.1	114
16000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.4180E-11	0.1066	0.0947	3.7	9.2E+00	9.1008E-48	0.0300	0.0165	4.3	117
20000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.0801E-11	0.0924	0.0858	2.7	9.9E+00	9.0695E-48	0.0265	0.0123	4.4	120
24000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.9249E-11	0.0824	0.0736	2.8	10	9.1495E-48	0.0242	0.0095	4.0	120
28000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.8764E-11	0.0766	0.0598	3.0	10	9.0941E-48	0.0226	0.0087	3.7	117
32000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.7245E-11	0.0706	0.0540	3.1	11	9.1033E-48	0.0210	0.0074	3.8	120
36000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.6242E-11	0.0653	0.0501	3.1	11	9.1847E-48	0.0200	0.0064	3.8	117
40000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.8165E-11	0.0633	0.0403	3.2	11	9.2223E-48	0.0188	0.0056	5.2	119
44000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.8754E-11	0.0610	0.0377	3.1	10	9.3572E-48	0.0180	0.0049	9.2	118
48000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.8355E-11	0.0586	0.0339	3.1	10	9.3566E-48	0.0172	0.0043	9.9	119
52000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.9409E-11	0.0547	0.0302	3.1	11	9.2548E-48	0.0164	0.0040	10.0	121
56000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.9512E-11	0.0519	0.0276	3.3	11	9.2395E-48	0.0158	0.0036	10.0	121
60000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.0233E-11	0.0502	0.0254	3.3	11	9.3032E-48	0.0154	0.0041	10.0	118
64000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.0239E-11	0.0485	0.0239	2.9	11	9.2739E-48	0.0149	0.0038	10.0	118
68000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	6.0234E-11	0.0472	0.0227	3.0	11	9.2766E-48	0.0143	0.0036	10.0	120
71864	0.0000E+00	0.0000	0.0000	0.0	0.0E+00	5.9606E-11	0.0458	0.0214	3.1	11	9.2904E-48	0.0140	0.0033	10.0	119

nps	tally 32 mean	error	vov	slope	fom	tally 42 mean	error	vov	slope	fom	tally 52 mean	error	vov	slope	fom
4000	2.6485E-03	0.0483	0.0071	10.0	180	2.5220E-05	0.0519	0.0274	4.0	156	9.8378E-08	0.1687	0.2219	0.0	15
8000	2.5653E-03	0.0346	0.0049	10.0	178	2.4481E-05	0.0349	0.0111	6.2	175	8.9252E-08	0.1158	0.1132	0.0	16
12000	2.5557E-03	0.0282	0.0032	10.0	179	2.4647E-05	0.0283	0.0065	10.0	178	8.2577E-08	0.0892	0.0882	0.0	18
16000	2.5478E-03	0.0247	0.0028	10.0	172	2.5341E-05	0.0254	0.0054	10.0	163	8.5426E-08	0.0761	0.0731	0.0	18
20000	2.5500E-03	0.0222	0.0022	10.0	171	2.5525E-05	0.0231	0.0049	10.0	157	8.2148E-08	0.0679	0.0574	0.0	18
24000	2.5534E-03	0.0204	0.0019	8.0	169	2.5242E-05	0.0212	0.0049	10.0	156	8.0464E-08	0.0599	0.0501	2.1	20
28000	2.5033E-03	0.0188	0.0016	8.4	170	2.4953E-05	0.0194	0.0041	10.0	160	8.2138E-08	0.0557	0.0390	2.2	19
32000	2.5127E-03	0.0178	0.0015	7.4	166	2.5179E-05	0.0183	0.0037	10.0	157	8.2734E-08	0.0507	0.0324	2.7	20
36000	2.5124E-03	0.0168	0.0013	9.3	165	2.5588E-05	0.0176	0.0041	5.9	151	8.0916E-08	0.0475	0.0293	2.5	21
40000	2.5343E-03	0.0161	0.0012	10.0	163	2.5788E-05	0.0169	0.0042	5.6	147	8.2154E-08	0.0452	0.0269	2.5	21
44000	2.5540E-03	0.0153	0.0011	10.0	163	2.5918E-05	0.0161	0.0036	7.5	148	8.4936E-08	0.0431	0.0239	3.0	21
48000	2.5655E-03	0.0147	0.0010	10.0	164	2.5876E-05	0.0155	0.0033	8.3	147	8.4806E-08	0.0408	0.0213	3.2	21
52000	2.5743E-03	0.0140	0.0009	10.0	165	2.5691E-05	0.0149	0.0032	6.8	146	8.3155E-08	0.0391	0.0197	3.1	21
56000	2.5719E-03	0.0135	0.0008	10.0	165	2.5591E-05	0.0143	0.0029	7.1	148	8.2600E-08	0.0373	0.0181	2.9	22
60000	2.5733E-03	0.0131	0.0008	10.0	165	2.5434E-05	0.0138	0.0027	7.9	147	8.2742E-08	0.0355	0.0167	2.8	22
64000	2.5610E-03	0.0126	0.0007	10.0	166	2.5401E-05	0.0133	0.0025	7.3	148	8.1318E-08	0.0343	0.0158	2.7	22
68000	2.5742E-03	0.0122	0.0007	10.0	165	2.5451E-05	0.0129	0.0023	7.9	149	8.2360E-08	0.0328	0.0143	2.6	23
71864	2.5752E-03	0.0119	0.0006	10.0	165	2.5487E-05	0.0126	0.0022	7.7	148	8.3642E-08	0.0334	0.0173	2.4	21

1tally fluctuation charts

nps	tally 62 mean	error	vov	slope	fom
4000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00
8000	0.0000E+00	0.0000	0.0000	0.0	0.0E+00

```
        12000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        16000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        20000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        24000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        28000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        32000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        36000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        40000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        44000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        48000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        52000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        56000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        60000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        64000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        68000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
        71864   0.0000E+00 0.0000 0.0000  0.0 0.0E+00

************************************************************************************************************************
*******
 dump no.    2 on file runtpe       nps =       71864     coll =      151785730     ctm =       42.79   nrn =
1893328643


        49 warning messages so far.


 run terminated at end of surface-source input file.

 computer time =   42.93 minutes

 mcnp     version 5     11112005                    03/24/09 14:29:29                    probid =  03/24/09
13:46:16
```

URS
Washington Division

MCNP Case With Translated Source With Shield Bells
(Direct dose through wall)

```
 Thread Name & Version = mcnp5VE_RSICC, 1.40
```



```
 +--------------------------------------------------------------------+
 |   This program was prepared by the Regents of the University of    |
 |California at Los Alamos National Laboratory (the University) under |
 |  contract number W-7405-ENG-36 with the U.S. Department of Energy  |
 |(DoE).  The University has certain rights in the program pursuant to|
 |  the contract and the program should not be copied or distributed  |
 | outside your organization.  All rights in the program are reserved |
 |by the DoE and the University.  Neither the U.S. Government nor the |
 | University makes any warranty, express or implied, or assumes any  |
 |     liability or responsibility for the use of this software.      |
 +--------------------------------------------------------------------+

1mcnp     version 5     ld=11112005                    03/24/09 13:40:42
 ******************************************************************************                probid =  03/24/09
   13:40:42
  inp = SBSWt.i outp = SBSWt.o rssa = sbswssa

    1-       c     Created on: Tuesday, November 11, 2008 at 09:35
    2-       c     Canister Cells
    3-          11     5      -1 -11 1209 -1212
    4-          12     5      -1 -12 1209 -1212
    5-          13     5      -1 -13 1209 -1212
    6-          14     5      -1 -14 1209 -1212
    7-          15     5      -1 -15 1209 -1212
    8-          16     5      -1 -16 1209 -1212
    9-          17     5      -1 -17 1209 -1212
   10-          18     5      -1 -18 1209 -1212
   11-          19     5      -1 -19 1209 -1212
   12-          21     5      -1 -21 1209 -1212
   13-          22     5      -1 -22 1209 -1212
   14-          23     5      -1 -23 1209 -1212
   15-          24     5      -1 -24 1209 -1212
   16-          25     5      -1 -25 1209 -1212
   17-          26     5      -1 -26 1209 -1212
   18-          27     5      -1 -27 1209 -1212
   19-          28     5      -1 -28 1209 -1212
   20-          29     5      -1 -29 1209 -1212
   21-          31     5      -1 -31 1209 -1212
   22-          32     5      -1 -32 1209 -1212
   23-          33     5      -1 -33 1209 -1212
   24-          34     5      -1 -34 1209 -1212
   25-          35     5      -1 -35 1209 -1212
   26-          36     5      -1 -36 1209 -1212
   27-          37     5      -1 -37 1209 -1212
   28-          38     5      -1 -38 1209 -1212
   29-          39     5      -1 -39 1209 -1212
   30-          41     5      -1 -41 1209 -1212
   31-          42     5      -1 -42 1209 -1212
   32-          43     5      -1 -43 1209 -1212
   33-          44     5      -1 -44 1209 -1212
   34-          45     5      -1 -45 1209 -1212
   35-          46     5      -1 -46 1209 -1212
   36-          47     5      -1 -47 1209 -1212
   37-          48     5      -1 -48 1209 -1212
   38-          49     5      -1 -49 1209 -1212
   39-          51     5      -1 -51 1209 -1212
   40-          52     5      -1 -52 1209 -1212
   41-          53     5      -1 -53 1209 -1212
   42-          54     5      -1 -54 1209 -1212
   43-          55     5      -1 -55 1209 -1212
   44-          56     5      -1 -56 1209 -1212
   45-          57     5      -1 -57 1209 -1212
   46-          58     5      -1 -58 1209 -1212
   47-          59     5      -1 -59 1209 -1212
   48-          61     5      -1 -61 1209 -1212
   49-          62     5      -1 -62 1209 -1212
   50-          63     5      -1 -63 1209 -1212
   51-          64     5      -1 -64 1209 -1212
   52-          65     5      -1 -65 1209 -1212
```

```
 53-          66      5       -1 -66 1209 -1212
 54-          67      5       -1 -67 1209 -1212
 55-          68      5       -1 -68 1209 -1212
 56-          69      5       -1 -69 1209 -1212
 57-          71      5       -1 -71 1209 -1212
 58-          72      5       -1 -72 1209 -1212
 59-          73      5       -1 -73 1209 -1212
 60-          74      5       -1 -74 1209 -1212
 61-          75      5       -1 -75 1209 -1212
 62-          76      5       -1 -76 1209 -1212
 63-          77      5       -1 -77 1209 -1212
 64-          78      5       -1 -78 1209 -1212
 65-          79      5       -1 -79 1209 -1212
 66-          81      5       -1 -81 1209 -1212
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 69-          84      5       -1 -84 1209 -1212
 70-          85      5       -1 -85 1209 -1212
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 76-          92      5       -1 -92 1209 -1212
 77-          93      5       -1 -93 1209 -1212
 78-          94      5       -1 -94 1209 -1212
 79-          95      5       -1 -95 1209 -1212
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 81-          97      5       -1 -97 1209 -1212
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 84-         101      5       -1 -101 1209 -1212
 85-         102      5       -1 -102 1209 -1212
 86-         103      5       -1 -103 1209 -1212
 87-         104      5       -1 -104 1209 -1212
 88-         105      5       -1 -105 1209 -1212
 89-         106      5       -1 -106 1209 -1212
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100-         118      5       -1 -118 1209 -1212
101-         119      5       -1 -119 1209 -1212
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103-         122      5       -1 -122 1209 -1212
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123-         144      5       -1 -144 1209 -1212
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126-         147      5       -1 -147 1209 -1212
127-         148      5       -1 -148 1209 -1212
128-         149      5       -1 -149 1209 -1212
129-       c     Air  Gap Cells
130-         211      3 -0.001225 -211 1209 -1213 #11
```

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131-          212      3 -0.001225 -212 1209 -1213 #12
132-          213      3 -0.001225 -213 1209 -1213 #13
133-          214      3 -0.001225 -214 1209 -1213 #14
134-          215      3 -0.001225 -215 1209 -1213 #15
135-          216      3 -0.001225 -216 1209 -1213 #16
136-          217      3 -0.001225 -217 1209 -1213 #17
137-          218      3 -0.001225 -218 1209 -1213 #18
138-          219      3 -0.001225 -219 1209 -1213 #19
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140-          222      3 -0.001225 -222 1209 -1213 #22
141-          223      3 -0.001225 -223 1209 -1213 #23
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143-          225      3 -0.001225 -225 1209 -1213 #25
144-          226      3 -0.001225 -226 1209 -1213 #26
145-          227      3 -0.001225 -227 1209 -1213 #27
146-          228      3 -0.001225 -228 1209 -1213 #28
147-          229      3 -0.001225 -229 1209 -1213 #29
148-          231      3 -0.001225 -231 1209 -1213 #31
149-          232      3 -0.001225 -232 1209 -1213 #32
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151-          234      3 -0.001225 -234 1209 -1213 #34
152-          235      3 -0.001225 -235 1209 -1213 #35
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159-          243      3 -0.001225 -243 1209 -1213 #43
160-          244      3 -0.001225 -244 1209 -1213 #44
161-          245      3 -0.001225 -245 1209 -1213 #45
162-          246      3 -0.001225 -246 1209 -1213 #46
163-          247      3 -0.001225 -247 1209 -1213 #47
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171-          256      3 -0.001225 -256 1209 -1213 #56
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196-          284      3 -0.001225 -284 1209 -1213 #84
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199-          287      3 -0.001225 -287 1209 -1213 #87
200-          288      3 -0.001225 -288 1209 -1213 #88
201-          289      3 -0.001225 -289 1209 -1213 #89
202-          291      3 -0.001225 -291 1209 -1213 #91
203-          292      3 -0.001225 -292 1209 -1213 #92
204-          293      3 -0.001225 -293 1209 -1213 #93
205-          294      3 -0.001225 -294 1209 -1213 #94
206-          295      3 -0.001225 -295 1209 -1213 #95
207-          296      3 -0.001225 -296 1209 -1213 #96
208-          297      3 -0.001225 -297 1209 -1213 #97
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210-         299      3 -0.001225 -299 1209 -1213 #99
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213-         303      3 -0.001225 -303 1209 -1213 #103
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216-         306      3 -0.001225 -306 1209 -1213 #106
217-         307      3 -0.001225 -307 1209 -1213 #107
218-         308      3 -0.001225 -308 1209 -1213 #108
219-         309      3 -0.001225 -309 1209 -1213 #109
220-         311      3 -0.001225 -311 1209 -1213 #111
221-         312      3 -0.001225 -312 1209 -1213 #112
222-         313      3 -0.001225 -313 1209 -1213 #113
223-         314      3 -0.001225 -314 1209 -1213 #114
224-         315      3 -0.001225 -315 1209 -1213 #115
225-         316      3 -0.001225 -316 1209 -1213 #116
226-         317      3 -0.001225 -317 1209 -1213 #117
227-         318      3 -0.001225 -318 1209 -1213 #118
228-         319      3 -0.001225 -319 1209 -1213 #119
229-         321      3 -0.001225 -321 1209 -1213 #121
230-         322      3 -0.001225 -322 1209 -1213 #122
231-         323      3 -0.001225 -323 1209 -1213 #123
232-         324      3 -0.001225 -324 1209 -1213 #124
233-         325      3 -0.001225 -325 1209 -1213 #125
234-         326      3 -0.001225 -326 1209 -1213 #126
235-         327      3 -0.001225 -327 1209 -1213 #127
236-         328      3 -0.001225 -328 1209 -1213 #128
237-         329      3 -0.001225 -329 1209 -1213 #129
238-         331      3 -0.001225 -331 1209 -1213 #131
239-         332      3 -0.001225 -332 1209 -1213 #132
240-         333      3 -0.001225 -333 1209 -1213 #133
241-         334      3 -0.001225 -334 1209 -1213 #134
242-         335      3 -0.001225 -335 1209 -1213 #135
243-         336      3 -0.001225 -336 1209 -1213 #136
244-         337      3 -0.001225 -337 1209 -1213 #137
245-         338      3 -0.001225 -338 1209 -1213 #138
246-         339      3 -0.001225 -339 1209 -1213 #139
247-         341      3 -0.001225 -341 1209 -1213 #141
248-         342      3 -0.001225 -342 1209 -1213 #142
249-         343      3 -0.001225 -343 1209 -1213 #143
250-         344      3 -0.001225 -344 1209 -1213 #144
251-         345      3 -0.001225 -345 1209 -1213 #145
252-         346      3 -0.001225 -346 1209 -1213 #146
253-         347      3 -0.001225 -347 1209 -1213 #147
254-         348      3 -0.001225 -348 1209 -1213 #148
255-         349      3 -0.001225 -349 1209 -1213 #149
256-       c     Bell Cells
257-         411      4   -7.86 -411 1209 -1214 #211 #11
258-         412      4   -7.86 -412 1209 -1214 #212 #12
259-         413      4   -7.86 -413 1209 -1214 #213 #13
260-         414      4   -7.86 -414 1209 -1214 #214 #14
261-         415      4   -7.86 -415 1209 -1214 #215 #15
262-         416      4   -7.86 -416 1209 -1214 #216 #16
263-         417      4   -7.86 -417 1209 -1214 #217 #17
264-         418      4   -7.86 -418 1209 -1214 #218 #18
265-         419      4   -7.86 -419 1209 -1214 #219 #19
266-         421      4   -7.86 -421 1209 -1214 #221 #21
267-         422      4   -7.86 -422 1209 -1214 #222 #22
268-         423      4   -7.86 -423 1209 -1214 #223 #23
269-         424      4   -7.86 -424 1209 -1214 #224 #24
270-         425      4   -7.86 -425 1209 -1214 #225 #25
271-         426      4   -7.86 -426 1209 -1214 #226 #26
272-         427      4   -7.86 -427 1209 -1214 #227 #27
273-         428      4   -7.86 -428 1209 -1214 #228 #28
274-         429      4   -7.86 -429 1209 -1214 #229 #29
275-         431      4   -7.86 -431 1209 -1214 #231 #31
276-         432      4   -7.86 -432 1209 -1214 #232 #32
277-         433      4   -7.86 -433 1209 -1214 #233 #33
278-         434      4   -7.86 -434 1209 -1214 #234 #34
279-         435      4   -7.86 -435 1209 -1214 #235 #35
280-         436      4   -7.86 -436 1209 -1214 #236 #36
281-         437      4   -7.86 -437 1209 -1214 #237 #37
282-         438      4   -7.86 -438 1209 -1214 #238 #38
283-         439      4   -7.86 -439 1209 -1214 #239 #39
284-         441      4   -7.86 -441 1209 -1214 #241 #41
285-         442      4   -7.86 -442 1209 -1214 #242 #42
286-         443      4   -7.86 -443 1209 -1214 #243 #43
```

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287-         444     4   -7.86 -444 1209 -1214 #244 #44
288-         445     4   -7.86 -445 1209 -1214 #245 #45
289-         446     4   -7.86 -446 1209 -1214 #246 #46
290-         447     4   -7.86 -447 1209 -1214 #247 #47
291-         448     4   -7.86 -448 1209 -1214 #248 #48
292-         449     4   -7.86 -449 1209 -1214 #249 #49
293-         451     4   -7.86 -451 1209 -1214 #251 #51
294-         452     4   -7.86 -452 1209 -1214 #252 #52
295-         453     4   -7.86 -453 1209 -1214 #253 #53
296-         454     4   -7.86 -454 1209 -1214 #254 #54
297-         455     4   -7.86 -455 1209 -1214 #255 #55
298-         456     4   -7.86 -456 1209 -1214 #256 #56
299-         457     4   -7.86 -457 1209 -1214 #257 #57
300-         458     4   -7.86 -458 1209 -1214 #258 #58
301-         459     4   -7.86 -459 1209 -1214 #259 #59
302-         461     4   -7.86 -461 1209 -1214 #261 #61
303-         462     4   -7.86 -462 1209 -1214 #262 #62
304-         463     4   -7.86 -463 1209 -1214 #263 #63
305-         464     4   -7.86 -464 1209 -1214 #264 #64
306-         465     4   -7.86 -465 1209 -1214 #265 #65
307-         466     4   -7.86 -466 1209 -1214 #266 #66
308-         467     4   -7.86 -467 1209 -1214 #267 #67
309-         468     4   -7.86 -468 1209 -1214 #268 #68
310-         469     4   -7.86 -469 1209 -1214 #269 #69
311-         471     4   -7.86 -471 1209 -1214 #271 #71
312-         472     4   -7.86 -472 1209 -1214 #272 #72
313-         473     4   -7.86 -473 1209 -1214 #273 #73
314-         474     4   -7.86 -474 1209 -1214 #274 #74
315-         475     4   -7.86 -475 1209 -1214 #275 #75
316-         476     4   -7.86 -476 1209 -1214 #276 #76
317-         477     4   -7.86 -477 1209 -1214 #277 #77
318-         478     4   -7.86 -478 1209 -1214 #278 #78
319-         479     4   -7.86 -479 1209 -1214 #279 #79
320-         481     4   -7.86 -481 1209 -1214 #281 #81
321-         482     4   -7.86 -482 1209 -1214 #282 #82
322-         483     4   -7.86 -483 1209 -1214 #283 #83
323-         484     4   -7.86 -484 1209 -1214 #284 #84
324-         485     4   -7.86 -485 1209 -1214 #285 #85
325-         486     4   -7.86 -486 1209 -1214 #286 #86
326-         487     4   -7.86 -487 1209 -1214 #287 #87
327-         488     4   -7.86 -488 1209 -1214 #288 #88
328-         489     4   -7.86 -489 1209 -1214 #289 #89
329-         491     4   -7.86 -491 1209 -1214 #291 #91
330-         492     4   -7.86 -492 1209 -1214 #292 #92
331-         493     4   -7.86 -493 1209 -1214 #293 #93
332-         494     4   -7.86 -494 1209 -1214 #294 #94
333-         495     4   -7.86 -495 1209 -1214 #295 #95
334-         496     4   -7.86 -496 1209 -1214 #296 #96
335-         497     4   -7.86 -497 1209 -1214 #297 #97
336-         498     4   -7.86 -498 1209 -1214 #298 #98
337-         499     4   -7.86 -499 1209 -1214 #299 #99
338-         501     4   -7.86 -501 1209 -1214 #301 #101
339-         502     4   -7.86 -502 1209 -1214 #302 #102
340-         503     4   -7.86 -503 1209 -1214 #303 #103
341-         504     4   -7.86 -504 1209 -1214 #304 #104
342-         505     4   -7.86 -505 1209 -1214 #305 #105
343-         506     4   -7.86 -506 1209 -1214 #306 #106
344-         507     4   -7.86 -507 1209 -1214 #307 #107
345-         508     4   -7.86 -508 1209 -1214 #308 #108
346-         509     4   -7.86 -509 1209 -1214 #309 #109
347-         511     4   -7.86 -511 1209 -1214 #311 #111
348-         512     4   -7.86 -512 1209 -1214 #312 #112
349-         513     4   -7.86 -513 1209 -1214 #313 #113
350-         514     4   -7.86 -514 1209 -1214 #314 #114
351-         515     4   -7.86 -515 1209 -1214 #315 #115
352-         516     4   -7.86 -516 1209 -1214 #316 #116
353-         517     4   -7.86 -517 1209 -1214 #317 #117
354-         518     4   -7.86 -518 1209 -1214 #318 #118
355-         519     4   -7.86 -519 1209 -1214 #319 #119
356-         521     4   -7.86 -521 1209 -1214 #321 #121
357-         522     4   -7.86 -522 1209 -1214 #322 #122
358-         523     4   -7.86 -523 1209 -1214 #323 #123
359-         524     4   -7.86 -524 1209 -1214 #324 #124
360-         525     4   -7.86 -525 1209 -1214 #325 #125
361-         526     4   -7.86 -526 1209 -1214 #326 #126
362-         527     4   -7.86 -527 1209 -1214 #327 #127
363-         528     4   -7.86 -528 1209 -1214 #328 #128
364-         529     4   -7.86 -529 1209 -1214 #329 #129
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365-         531     4   -7.86 -531 1209 -1214 #331 #131
366-         532     4   -7.86 -532 1209 -1214 #332 #132
367-         533     4   -7.86 -533 1209 -1214 #333 #133
368-         534     4   -7.86 -534 1209 -1214 #334 #134
369-         535     4   -7.86 -535 1209 -1214 #335 #135
370-         536     4   -7.86 -536 1209 -1214 #336 #136
371-         537     4   -7.86 -537 1209 -1214 #337 #137
372-         538     4   -7.86 -538 1209 -1214 #338 #138
373-         539     4   -7.86 -539 1209 -1214 #339 #139
374-         541     4   -7.86 -541 1209 -1214 #341 #141
375-         542     4   -7.86 -542 1209 -1214 #342 #142
376-         543     4   -7.86 -543 1209 -1214 #343 #143
377-         544     4   -7.86 -544 1209 -1214 #344 #144
378-         545     4   -7.86 -545 1209 -1214 #345 #145
379-         546     4   -7.86 -546 1209 -1214 #346 #146
380-         547     4   -7.86 -547 1209 -1214 #347 #147
381-         548     4   -7.86 -548 1209 -1214 #348 #148
382-         549     4   -7.86 -549 1209 -1214 #349 #149
383-       c Walls
384-        1200     3 -0.001225 1222 -1221 1206 -1208 1220 -1219  $Notch
385-        1201     1  -2.365 1206 -1208 1202 -1203 -1219 1209 #1200  $Inner Wall
386-        1202     1  -2.365 1207 -1233 1219 -1215 -1225 1226  $Top of Back Wall
387-       12021     1  -2.365 1233 -1223 1219 -1215 1226 -1225  $Split in Back Wall
388-        1203     1  -2.365 1207 -1205 -1219 1209 -1203 1202  $Bottom of Back Wall
389-        1204     1  -2.365 1225 -1234 1207 -1218 1219 -1215  $Top Of Right Wall
390-       12041     1  -2.365 1234 -1204 1207 -1218 1219 -1215  $Split in Right Wall
391-        1205     1  -2.365 1203 -1204 1207 -1218 -1219 1209  $Bottom of Right Wall
392-        1206     1  -2.365 1235 -1218 -1225 1226 1219 -1215  $Top of Front Wall
393-       12061     1  -2.365 1224 -1235 -1225 1226 1219 -1215  $Split in Front Wall
394-        1207     1  -2.365 1217 -1218 -1203 1202 -1219 1209  $Bottom of Front Wall
395-        1208     1  -2.365 1201 -1236 -1218 1207 1219 -1215 #10000 $Top of Left Wall
396-                   #10001 #10002 #10003 #10004 #10005
397-       12081     1  -2.365 -1226 1236 -1218 1207 1219 -1215 #10000 $Split in Left Wall
398-                   #10001 #10002 #10003 #10004 #10005
399-       c 1209     1  -2.365 -1202 1201 -1218 1207 -1219 1209  $Bottom of Left Wall
400-        1210     1  -2.365 -1209 1227 1207 -1218 -1204 1201  $Floor
401-        1211     1  -2.328 1215 -1237 1207 -1218 -1204 1201  $Roof
402-       12111     1  -2.328 1237 -1216 1207 -1218 -1204 1201  $Split in Roof
403-       c Splits in left wall
404-        4236     1  -2.365 -1202 2036 -1218 1207 -1219 1209
405-        4237     1  -2.365 -2036 2037 -1218 1207 -1219 1209
406-        4238     1  -2.365 -2037 2038 -1218 1207 -1219 1209
407-        4239     1  -2.365 -2038 2039 -1218 1207 -1219 1209
408-        4240     1  -2.365 -2039 2040 -1218 1207 -1219 1209
409-        4241     1  -2.365 -2040 2041 -1218 1207 -1219 1209
410-        4242     1  -2.365 -2041 2042 -1218 1207 -1219 1209
411-        4243     1  -2.365 -2042 2043 -1218 1207 -1219 1209
412-        4244     1  -2.365 -2043 2044 -1218 1207 -1219 1209
413-        4245     1  -2.365 -2044 2045 -1218 1207 -1219 1209
414-        4246     1  -2.365 -2045 2046 -1218 1207 -1219 1209
415-        4247     1  -2.365 -2046 2047 -1218 1207 -1219 1209
416-        4248     1  -2.365 -2047 2048 -1218 1207 -1219 1209
417-        4249     1  -2.365 -2048 2049 -1218 1207 -1219 1209
418-        4250     1  -2.365 -2049 2050 -1218 1207 -1219 1209
419-        4251     1  -2.365 -2050 1201 -1218 1207 -1219 1209
420-       c   Air
421-        9999     0         2015  $Outside Model
422-        9998     3 -0.001225 1205 -1228 -1220 1209 -1203 1202 #(-445 1209 -1214 )#
423-                   (-446 1209 -1214 )#(-447 1209 -1214 )#(-448 1209 -1214 )#
424-                   (-449 1209 -1214 )#(-451 1209 -1214 )#(-452 1209 -1214 )#
425-                   (-453 1209 -1214 )#(-454 1209 -1214 )#(-455 1209 -1214 )#
426-                   (-456 1209 -1214 )#(-457 1209 -1214 )#(-458 1209 -1214 )#
427-                   (-459 1209 -1214 )#(-411 1209 -1214 )#(-412 1209 -1214 )#
428-                   (-413 1209 -1214 )#(-414 1209 -1214 )#(-415 1209 -1214 )#
429-                   (-416 1209 -1214 )#(-417 1209 -1214 )#(-418 1209 -1214 )#
430-                   (-419 1209 -1214 )#(-421 1209 -1214 )#(-422 1209 -1214 )#
431-                   (-423 1209 -1214 )#(-424 1209 -1214 )#(-425 1209 -1214 )#
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435-                   (-436 1209 -1214 )#(-437 1209 -1214 )#(-438 1209 -1214 )#
436-                   (-439 1209 -1214 )#(-441 1209 -1214 )#(-442 1209 -1214 )#
437-                   (-443 1209 -1214 )#(-444 1209 -1214 )
438-        9997     3 -0.001225 1228 -1229 -1220 1209 -1203 1202 #(-497 1209 -1214 )#
439-                   (-498 1209 -1214 )#(-499 1209 -1214 )#(-501 1209 -1214 )#
440-                   (-502 1209 -1214 )#(-503 1209 -1214 )#(-504 1209 -1214 )#
441-                   (-505 1209 -1214 )#(-506 1209 -1214 )#(-507 1209 -1214 )#
442-                   (-508 1209 -1214 )#(-509 1209 -1214 )#(-461 1209 -1214 )#
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                  (-462 1209 -1214 )#(-463 1209 -1214 )#(-464 1209 -1214 )#
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        9996      3 -0.001225 1229 -1206 -1220 1209 -1203 1202 #(-538 1209 -1214 )#
                  (-539 1209 -1214 )#(-541 1209 -1214 )#(-542 1209 -1214 )#
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                  (-533 1209 -1214 )#(-534 1209 -1214 )#(-535 1209 -1214 )#
                  (-536 1209 -1214 )#(-537 1209 -1214 )
        9995      3 -0.001225 1220 -1219 1205 -1206 -1203 1202  $Notch Air Side A
        9994      3 -0.001225 -1215 1219 1223 -1208 -1225 1226  $Air Above Crane Rail
        9993      3 -0.001225 1209 -1231 1208 -1217 -1203 1202  $Bottom Air Side B
        9992      3 -0.001225 -1230 1231 1208 -1217 -1203 1202  $Air Up to Shield Side B
        9991      1  -2.365 -1220 1230 1208 -1217 -1203 1202  $Truck Bay Shield
        9990      3 -0.001225 1220 -1219 1208 -1217 -1203 1202  $Notch Air Side B
        9989      3 -0.001225 -1215 1219 1208 -1224 -1225 1226  $Notch Air Side B
        9988      3 -0.001225 (-2000 -1207 1201 -1204 1227 -1216 ):
                  (1218 -2000 1201 -1204 1227 -1216 ):(-2000 -1201 1227 -1216 ):
                  (1204 -2000 1227 -1216 ):(1216 -2000 )
        9987      0          -1232 -2015  $Bottom Void
        9986      3 -0.001225 1232 -1227 -2015  $6 in Ground Air
       c      Ductwork Penetrations
       10000      3 -0.001225 12441 -12451 12321 -12331 1201 -1226
       10001      3 -0.001225 12441 -12451 12341 -12351 1201 -1226
       10002      3 -0.001225 12461 -12471 12361 -12371 1201 -1226
       10003      3 -0.001225 12441 -12451 12381 -12391 1201 -1226
       10004      3 -0.001225 12401 -12411 12441 -12451 1201 -1226
       10005      3 -0.001225 12441 -12451 12421 -12431 1201 -1226
       c Sphere Detector Cells
        2001      3 -0.001225 2000 -2001 1227
        2002      3 -0.001225 2001 -2002 1227
        2003      3 -0.001225 -2003 2002 1227
        2004      3 -0.001225 2003 -2004 1227
        2005      3 -0.001225 2004 -2005 1227
        2006      3 -0.001225 2005 -2006 1227
        2007      3 -0.001225 2006 -2007 1227
        2008      3 -0.001225 2007 -2008 1227
        2009      3 -0.001225 2008 -2009 1227
        2010      3 -0.001225 2009 -2010 1227
        2011      3 -0.001225 2010 -2011 1227
        2012      3 -0.001225 2011 -2012 1227
        2013      3 -0.001225 2012 -2013 1227
        2014      3 -0.001225 2013 -2014 1227
        2015      3 -0.001225 2014 -2015 1227

       c     Source Canisters
          11       c/z 198.12 121.92 77.47
          12       c/z 198.12 320.04 77.47
          13       c/z 198.12 518.16 77.47
          14       c/z 198.12 716.28 77.47
          15       c/z 198.12 914.4 77.47
          16       c/z 198.12 1112.52 77.47
          17       c/z 198.12 1310.64 77.47
          18       c/z 198.12 1508.76 77.47
          19       c/z 198.12 1706.88 77.47
          21       c/z 396.24 121.92 77.47
          22       c/z 396.24 320.04 77.47
          23       c/z 396.24 518.16 77.47
          24       c/z 396.24 716.28 77.47
          25       c/z 396.24 914.4 77.47
          26       c/z 396.24 1112.52 77.47
          27       c/z 396.24 1310.64 77.47
          28       c/z 396.24 1508.76 77.47
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521-          29       c/z 396.24 1706.88 77.47
522-          31       c/z 594.36 121.92 77.47
523-          32       c/z 594.36 320.04 77.47
524-          33       c/z 594.36 518.16 77.47
525-          34       c/z 594.36 716.28 77.47
526-          35       c/z 594.36 914.4 77.47
527-          36       c/z 594.36 1112.52 77.47
528-          37       c/z 594.36 1310.64 77.47
529-          38       c/z 594.36 1508.76 77.47
530-          39       c/z 594.36 1706.88 77.47
531-          41       c/z 792.48 121.92 77.47
532-          42       c/z 792.48 320.04 77.47
533-          43       c/z 792.48 518.16 77.47
534-          44       c/z 792.48 716.28 77.47
535-          45       c/z 792.48 914.4 77.47
536-          46       c/z 792.48 1112.52 77.47
537-          47       c/z 792.48 1310.64 77.47
538-          48       c/z 792.48 1508.76 77.47
539-          49       c/z 792.48 1706.88 77.47
540-          51       c/z 990.6 121.92 77.47
541-          52       c/z 990.6 320.04 77.47
542-          53       c/z 990.6 518.16 77.47
543-          54       c/z 990.6 716.28 77.47
544-          55       c/z 990.6 914.4 77.47
545-          56       c/z 990.6 1112.52 77.47
546-          57       c/z 990.6 1310.64 77.47
547-          58       c/z 990.6 1508.76 77.47
548-          59       c/z 990.6 1706.88 77.47
549-          61       c/z 1188.72 121.92 77.47
550-          62       c/z 1188.72 320.04 77.47
551-          63       c/z 1188.72 518.16 77.47
552-          64       c/z 1188.72 716.28 77.47
553-          65       c/z 1188.72 914.4 77.47
554-          66       c/z 1188.72 1112.52 77.47
555-          67       c/z 1188.72 1310.64 77.47
556-          68       c/z 1188.72 1508.76 77.47
557-          69       c/z 1188.72 1706.88 77.47
558-          71       c/z 1386.84 121.92 77.47
559-          72       c/z 1386.84 320.04 77.47
560-          73       c/z 1386.84 518.16 77.47
561-          74       c/z 1386.84 716.28 77.47
562-          75       c/z 1386.84 914.4 77.47
563-          76       c/z 1386.84 1112.52 77.47
564-          77       c/z 1386.84 1310.64 77.47
565-          78       c/z 1386.84 1508.76 77.47
566-          79       c/z 1386.84 1706.88 77.47
567-          81       c/z 1584.96 121.92 77.47
568-          82       c/z 1584.96 320.04 77.47
569-          83       c/z 1584.96 518.16 77.47
570-          84       c/z 1584.96 716.28 77.47
571-          85       c/z 1584.96 914.4 77.47
572-          86       c/z 1584.96 1112.52 77.47
573-          87       c/z 1584.96 1310.64 77.47
574-          88       c/z 1584.96 1508.76 77.47
575-          89       c/z 1584.96 1706.88 77.47
576-          91       c/z 1783.08 121.92 77.47
577-          92       c/z 1783.08 320.04 77.47
578-          93       c/z 1783.08 518.16 77.47
579-          94       c/z 1783.08 716.28 77.47
580-          95       c/z 1783.08 914.4 77.47
581-          96       c/z 1783.08 1112.52 77.47
582-          97       c/z 1783.08 1310.64 77.47
583-          98       c/z 1783.08 1508.76 77.47
584-          99       c/z 1783.08 1706.88 77.47
585-         101       c/z 1981.2 121.92 77.47
586-         102       c/z 1981.2 320.04 77.47
587-         103       c/z 1981.2 518.16 77.47
588-         104       c/z 1981.2 716.28 77.47
589-         105       c/z 1981.2 914.4 77.47
590-         106       c/z 1981.2 1112.52 77.47
591-         107       c/z 1981.2 1310.64 77.47
592-         108       c/z 1981.2 1508.76 77.47
593-         109       c/z 1981.2 1706.88 77.47
594-         111       c/z 2179.32 121.92 77.47
595-         112       c/z 2179.32 320.04 77.47
596-         113       c/z 2179.32 518.16 77.47
597-         114       c/z 2179.32 716.28 77.47
598-         115       c/z 2179.32 914.4 77.47
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599-         116       c/z 2179.32 1112.52 77.47
600-         117       c/z 2179.32 1310.64 77.47
601-         118       c/z 2179.32 1508.76 77.47
602-         119       c/z 2179.32 1706.88 77.47
603-         121       c/z 2377.44 121.92 77.47
604-         122       c/z 2377.44 320.04 77.47
605-         123       c/z 2377.44 518.16 77.47
606-         124       c/z 2377.44 716.28 77.47
607-         125       c/z 2377.44 914.4 77.47
608-         126       c/z 2377.44 1112.52 77.47
609-         127       c/z 2377.44 1310.64 77.47
610-         128       c/z 2377.44 1508.76 77.47
611-         129       c/z 2377.44 1706.88 77.47
612-         131       c/z 2575.56 121.92 77.47
613-         132       c/z 2575.56 320.04 77.47
614-         133       c/z 2575.56 518.16 77.47
615-         134       c/z 2575.56 716.28 77.47
616-         135       c/z 2575.56 914.4 77.47
617-         136       c/z 2575.56 1112.52 77.47
618-         137       c/z 2575.56 1310.64 77.47
619-         138       c/z 2575.56 1508.76 77.47
620-         139       c/z 2575.56 1706.88 77.47
621-         141       c/z 2773.68 121.92 77.47
622-         142       c/z 2773.68 320.04 77.47
623-         143       c/z 2773.68 518.16 77.47
624-         144       c/z 2773.68 716.28 77.47
625-         145       c/z 2773.68 914.4 77.47
626-         146       c/z 2773.68 1112.52 77.47
627-         147       c/z 2773.68 1310.64 77.47
628-         148       c/z 2773.68 1508.76 77.47
629-         149       c/z 2773.68 1706.88 77.47
630-       c     Inside of Shield Bell
631-         211       c/z 198.12 121.92 86.36
632-         212       c/z 198.12 320.04 86.36
633-         213       c/z 198.12 518.16 86.36
634-         214       c/z 198.12 716.28 86.36
635-         215       c/z 198.12 914.4 86.36
636-         216       c/z 198.12 1112.52 86.36
637-         217       c/z 198.12 1310.64 86.36
638-         218       c/z 198.12 1508.76 86.36
639-         219       c/z 198.12 1706.88 86.36
640-         221       c/z 396.24 121.92 86.36
641-         222       c/z 396.24 320.04 86.36
642-         223       c/z 396.24 518.16 86.36
643-         224       c/z 396.24 716.28 86.36
644-         225       c/z 396.24 914.4 86.36
645-         226       c/z 396.24 1112.52 86.36
646-         227       c/z 396.24 1310.64 86.36
647-         228       c/z 396.24 1508.76 86.36
648-         229       c/z 396.24 1706.88 86.36
649-         231       c/z 594.36 121.92 86.36
650-         232       c/z 594.36 320.04 86.36
651-         233       c/z 594.36 518.16 86.36
652-         234       c/z 594.36 716.28 86.36
653-         235       c/z 594.36 914.4 86.36
654-         236       c/z 594.36 1112.52 86.36
655-         237       c/z 594.36 1310.64 86.36
656-         238       c/z 594.36 1508.76 86.36
657-         239       c/z 594.36 1706.88 86.36
658-         241       c/z 792.48 121.92 86.36
659-         242       c/z 792.48 320.04 86.36
660-         243       c/z 792.48 518.16 86.36
661-         244       c/z 792.48 716.28 86.36
662-         245       c/z 792.48 914.4 86.36
663-         246       c/z 792.48 1112.52 86.36
664-         247       c/z 792.48 1310.64 86.36
665-         248       c/z 792.48 1508.76 86.36
666-         249       c/z 792.48 1706.88 86.36
667-         251       c/z 990.6 121.92 86.36
668-         252       c/z 990.6 320.04 86.36
669-         253       c/z 990.6 518.16 86.36
670-         254       c/z 990.6 716.28 86.36
671-         255       c/z 990.6 914.4 86.36
672-         256       c/z 990.6 1112.52 86.36
673-         257       c/z 990.6 1310.64 86.36
674-         258       c/z 990.6 1508.76 86.36
675-         259       c/z 990.6 1706.88 86.36
676-         261       c/z 1188.72 121.92 86.36
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677-          262       c/z 1188.72 320.04 86.36
678-          263       c/z 1188.72 518.16 86.36
679-          264       c/z 1188.72 716.28 86.36
680-          265       c/z 1188.72 914.4 86.36
681-          266       c/z 1188.72 1112.52 86.36
682-          267       c/z 1188.72 1310.64 86.36
683-          268       c/z 1188.72 1508.76 86.36
684-          269       c/z 1188.72 1706.88 86.36
685-          271       c/z 1386.84 121.92 86.36
686-          272       c/z 1386.84 320.04 86.36
687-          273       c/z 1386.84 518.16 86.36
688-          274       c/z 1386.84 716.28 86.36
689-          275       c/z 1386.84 914.4 86.36
690-          276       c/z 1386.84 1112.52 86.36
691-          277       c/z 1386.84 1310.64 86.36
692-          278       c/z 1386.84 1508.76 86.36
693-          279       c/z 1386.84 1706.88 86.36
694-          281       c/z 1584.96 121.92 86.36
695-          282       c/z 1584.96 320.04 86.36
696-          283       c/z 1584.96 518.16 86.36
697-          284       c/z 1584.96 716.28 86.36
698-          285       c/z 1584.96 914.4 86.36
699-          286       c/z 1584.96 1112.52 86.36
700-          287       c/z 1584.96 1310.64 86.36
701-          288       c/z 1584.96 1508.76 86.36
702-          289       c/z 1584.96 1706.88 86.36
703-          291       c/z 1783.08 121.92 86.36
704-          292       c/z 1783.08 320.04 86.36
705-          293       c/z 1783.08 518.16 86.36
706-          294       c/z 1783.08 716.28 86.36
707-          295       c/z 1783.08 914.4 86.36
708-          296       c/z 1783.08 1112.52 86.36
709-          297       c/z 1783.08 1310.64 86.36
710-          298       c/z 1783.08 1508.76 86.36
711-          299       c/z 1783.08 1706.88 86.36
712-          301       c/z 1981.2 121.92 86.36
713-          302       c/z 1981.2 320.04 86.36
714-          303       c/z 1981.2 518.16 86.36
715-          304       c/z 1981.2 716.28 86.36
716-          305       c/z 1981.2 914.4 86.36
717-          306       c/z 1981.2 1112.52 86.36
718-          307       c/z 1981.2 1310.64 86.36
719-          308       c/z 1981.2 1508.76 86.36
720-          309       c/z 1981.2 1706.88 86.36
721-          311       c/z 2179.32 121.92 86.36
722-          312       c/z 2179.32 320.04 86.36
723-          313       c/z 2179.32 518.16 86.36
724-          314       c/z 2179.32 716.28 86.36
725-          315       c/z 2179.32 914.4 86.36
726-          316       c/z 2179.32 1112.52 86.36
727-          317       c/z 2179.32 1310.64 86.36
728-          318       c/z 2179.32 1508.76 86.36
729-          319       c/z 2179.32 1706.88 86.36
730-          321       c/z 2377.44 121.92 86.36
731-          322       c/z 2377.44 320.04 86.36
732-          323       c/z 2377.44 518.16 86.36
733-          324       c/z 2377.44 716.28 86.36
734-          325       c/z 2377.44 914.4 86.36
735-          326       c/z 2377.44 1112.52 86.36
736-          327       c/z 2377.44 1310.64 86.36
737-          328       c/z 2377.44 1508.76 86.36
738-          329       c/z 2377.44 1706.88 86.36
739-          331       c/z 2575.56 121.92 86.36
740-          332       c/z 2575.56 320.04 86.36
741-          333       c/z 2575.56 518.16 86.36
742-          334       c/z 2575.56 716.28 86.36
743-          335       c/z 2575.56 914.4 86.36
744-          336       c/z 2575.56 1112.52 86.36
745-          337       c/z 2575.56 1310.64 86.36
746-          338       c/z 2575.56 1508.76 86.36
747-          339       c/z 2575.56 1706.88 86.36
748-          341       c/z 2773.68 121.92 86.36
749-          342       c/z 2773.68 320.04 86.36
750-          343       c/z 2773.68 518.16 86.36
751-          344       c/z 2773.68 716.28 86.36
752-          345       c/z 2773.68 914.4 86.36
753-          346       c/z 2773.68 1112.52 86.36
754-          347       c/z 2773.68 1310.64 86.36
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755-         348       c/z 2773.68 1508.76 86.36
756-         349       c/z 2773.68 1706.88 86.36
757-       c     Outside of Shield Bell
758-         411       c/z 198.12 121.92 92.71
759-         412       c/z 198.12 320.04 92.71
760-         413       c/z 198.12 518.16 92.71
761-         414       c/z 198.12 716.28 92.71
762-         415       c/z 198.12 914.4 92.71
763-         416       c/z 198.12 1112.52 92.71
764-         417       c/z 198.12 1310.64 92.71
765-         418       c/z 198.12 1508.76 92.71
766-         419       c/z 198.12 1706.88 92.71
767-         421       c/z 396.24 121.92 92.71
768-         422       c/z 396.24 320.04 92.71
769-         423       c/z 396.24 518.16 92.71
770-         424       c/z 396.24 716.28 92.71
771-         425       c/z 396.24 914.4 92.71
772-         426       c/z 396.24 1112.52 92.71
773-         427       c/z 396.24 1310.64 92.71
774-         428       c/z 396.24 1508.76 92.71
775-         429       c/z 396.24 1706.88 92.71
776-         431       c/z 594.36 121.92 92.71
777-         432       c/z 594.36 320.04 92.71
778-         433       c/z 594.36 518.16 92.71
779-         434       c/z 594.36 716.28 92.71
780-         435       c/z 594.36 914.4 92.71
781-         436       c/z 594.36 1112.52 92.71
782-         437       c/z 594.36 1310.64 92.71
783-         438       c/z 594.36 1508.76 92.71
784-         439       c/z 594.36 1706.88 92.71
785-         441       c/z 792.48 121.92 92.71
786-         442       c/z 792.48 320.04 92.71
787-         443       c/z 792.48 518.16 92.71
788-         444       c/z 792.48 716.28 92.71
789-         445       c/z 792.48 914.4 92.71
790-         446       c/z 792.48 1112.52 92.71
791-         447       c/z 792.48 1310.64 92.71
792-         448       c/z 792.48 1508.76 92.71
793-         449       c/z 792.48 1706.88 92.71
794-         451       c/z 990.6 121.92 92.71
795-         452       c/z 990.6 320.04 92.71
796-         453       c/z 990.6 518.16 92.71
797-         454       c/z 990.6 716.28 92.71
798-         455       c/z 990.6 914.4 92.71
799-         456       c/z 990.6 1112.52 92.71
800-         457       c/z 990.6 1310.64 92.71
801-         458       c/z 990.6 1508.76 92.71
802-         459       c/z 990.6 1706.88 92.71
803-         461       c/z 1188.72 121.92 92.71
804-         462       c/z 1188.72 320.04 92.71
805-         463       c/z 1188.72 518.16 92.71
806-         464       c/z 1188.72 716.28 92.71
807-         465       c/z 1188.72 914.4 92.71
808-         466       c/z 1188.72 1112.52 92.71
809-         467       c/z 1188.72 1310.64 92.71
810-         468       c/z 1188.72 1508.76 92.71
811-         469       c/z 1188.72 1706.88 92.71
812-         471       c/z 1386.84 121.92 92.71
813-         472       c/z 1386.84 320.04 92.71
814-         473       c/z 1386.84 518.16 92.71
815-         474       c/z 1386.84 716.28 92.71
816-         475       c/z 1386.84 914.4 92.71
817-         476       c/z 1386.84 1112.52 92.71
818-         477       c/z 1386.84 1310.64 92.71
819-         478       c/z 1386.84 1508.76 92.71
820-         479       c/z 1386.84 1706.88 92.71
821-         481       c/z 1584.96 121.92 92.71
822-         482       c/z 1584.96 320.04 92.71
823-         483       c/z 1584.96 518.16 92.71
824-         484       c/z 1584.96 716.28 92.71
825-         485       c/z 1584.96 914.4 92.71
826-         486       c/z 1584.96 1112.52 92.71
827-         487       c/z 1584.96 1310.64 92.71
828-         488       c/z 1584.96 1508.76 92.71
829-         489       c/z 1584.96 1706.88 92.71
830-         491       c/z 1783.08 121.92 92.71
831-         492       c/z 1783.08 320.04 92.71
832-         493       c/z 1783.08 518.16 92.71
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833-         494       c/z 1783.08 716.28 92.71
834-         495       c/z 1783.08 914.4 92.71
835-         496       c/z 1783.08 1112.52 92.71
836-         497       c/z 1783.08 1310.64 92.71
837-         498       c/z 1783.08 1508.76 92.71
838-         499       c/z 1783.08 1706.88 92.71
839-         501       c/z 1981.2 121.92 92.71
840-         502       c/z 1981.2 320.04 92.71
841-         503       c/z 1981.2 518.16 92.71
842-         504       c/z 1981.2 716.28 92.71
843-         505       c/z 1981.2 914.4 92.71
844-         506       c/z 1981.2 1112.52 92.71
845-         507       c/z 1981.2 1310.64 92.71
846-         508       c/z 1981.2 1508.76 92.71
847-         509       c/z 1981.2 1706.88 92.71
848-         511       c/z 2179.32 121.92 92.71
849-         512       c/z 2179.32 320.04 92.71
850-         513       c/z 2179.32 518.16 92.71
851-         514       c/z 2179.32 716.28 92.71
852-         515       c/z 2179.32 914.4 92.71
853-         516       c/z 2179.32 1112.52 92.71
854-         517       c/z 2179.32 1310.64 92.71
855-         518       c/z 2179.32 1508.76 92.71
856-         519       c/z 2179.32 1706.88 92.71
857-         521       c/z 2377.44 121.92 92.71
858-         522       c/z 2377.44 320.04 92.71
859-         523       c/z 2377.44 518.16 92.71
860-         524       c/z 2377.44 716.28 92.71
861-         525       c/z 2377.44 914.4 92.71
862-         526       c/z 2377.44 1112.52 92.71
863-         527       c/z 2377.44 1310.64 92.71
864-         528       c/z 2377.44 1508.76 92.71
865-         529       c/z 2377.44 1706.88 92.71
866-         531       c/z 2575.56 121.92 92.71
867-         532       c/z 2575.56 320.04 92.71
868-         533       c/z 2575.56 518.16 92.71
869-         534       c/z 2575.56 716.28 92.71
870-         535       c/z 2575.56 914.4 92.71
871-         536       c/z 2575.56 1112.52 92.71
872-         537       c/z 2575.56 1310.64 92.71
873-         538       c/z 2575.56 1508.76 92.71
874-         539       c/z 2575.56 1706.88 92.71
875-         541       c/z 2773.68 121.92 92.71
876-         542       c/z 2773.68 320.04 92.71
877-         543       c/z 2773.68 518.16 92.71
878-         544       c/z 2773.68 716.28 92.71
879-         545       c/z 2773.68 914.4 92.71
880-         546       c/z 2773.68 1112.52 92.71
881-         547       c/z 2773.68 1310.64 92.71
882-         548       c/z 2773.68 1508.76 92.71
883-         549       c/z 2773.68 1706.88 92.71
884-       c    Planes
885-        1201        py -76.2  $Outside Left Wall
886-        1202        py 0  $Inside Left Thick Wall
887-        1203        py 1828.8  $Inside Right Thick Wall
888-        1204        py 1905  $Outside Right Wall
889-        1205        px 0  $Inside Back Thick Wall
890-        1206        px 2895.6  $Front of Inner Wall
891-        1207        px -76.2  $Outside Back Wall
892-        1208        px 2971.8  $Back of Inner Wall
893-        1209        pz 0  $Top of Floor
894-        c 1211        pz 190.5  $Top of Bot HIC
895-        1212        pz 381  $Top of Top HIC
896-        1213        pz 388.62  $Bot of Bell Top
897-        1214        pz 396.24  $Top of Bell Top
898-        1215        pz 1455.42  $Bottom of Roof
899-        1216        pz 1493.52  $Top of Roof
900-        1217        px 3947.16  $Inner Truck Bay Wall
901-        1218        px 4023.36  $Outer Truck Bay Wall
902-        1219        pz 1036.32  $Top of Inner Wall
903-        1220        pz 822.96  $Bottom of Notch
904-        1221        py 1760.22  $Right of notch
905-        1222        py 1546.86  $Left of notch
906-        1223        px -38.1  $Inside Back Thin Wall
907-        1224        px 3985.26  $Inside Front Thin Wall
908-        1225        py 1866.9  $Inside Right Thin Wall
909-        1226        py -38.1  $Inside Left Thin Wall
910-        1227        pz -76.2  $Bottom of Floor
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911-        1228         px 1089.66  $Zone 1 Air
912-        1229         px 2080.26  $Zone 2 Air
913-        1230         pz 807.72  $Bottom of Truck Bay Shield
914-        1231         pz 213.36  $7ft Detector Surface
915-        1232         pz -91.44  $Bottom Void
916-        1233         px -57.15  $Split for Back Wall
917-        1234         py 1885.95  $Split for Right Wall
918-        1235         px 4004.31  $Split for Front Wall
919-        1236         py -57.15  $Split for Left Wall
920-        1237         pz 1474.47  $Split for Roof
921-       c    HVAC Duct Openings
922-       12321         px 68.58  $Duct1S1
923-       12331         px 170.18  $Duct1 S2
924-       12341         px 871.22  $Duct2 S1
925-       12351         px 972.82  $Duct2 S2
926-       12361         px 1595.12  $Duct3 S1
927-       12371         px 1747.52  $Duct3 S2
928-       12381         px 1856.74  $Duct4 S1
929-       12391         px 1958.34  $Duct4 S2
930-       12401         px 2720.34  $Duct5 S1
931-       12411         px 2821.94  $Duct5 S2
932-       12421         px 3776.98  $Duct6 S1
933-       12431         px 3878.58  $Duct6 S2
934-       12441         pz 1397  $Small Ducts Bottom
935-       12451         pz 1437.64  $Small Duct Top
936-       12461         pz 1369.06  $Large Ducts Bottom
937-       12471         pz 1445.26  $Large Duct Top
938-       c   Spheres for detectors
939-        2000          s 1973.58 914.4 -72.6 2800  $Closest Sphere
940-        2001          s 1973.58 914.4 -72.6 4000
941-        2002          s 1973.58 914.4 -72.6 7000
942-        2003          s 1973.58 914.4 -72.6 10000
943-        2004          s 1973.58 914.4 -72.6 15000
944-        2005          s 1973.58 914.4 -72.6 20000
945-        2006          s 1973.58 914.4 -72.6 25000
946-        2007          s 1973.58 914.4 -72.6 30000
947-        2008          s 1973.58 914.4 -72.6 37500
948-        2009          s 1973.58 914.4 -72.6 45000
949-        2010          s 1973.58 914.4 -72.6 55000
950-        2011          s 1973.58 914.4 -72.6 65000
951-        2012          s 1973.58 914.4 -72.6 75000
952-        2013          s 1973.58 914.4 -72.6 85000
953-        2014          s 1973.58 914.4 -72.6 95000
954-        2015          s 1973.58 914.4 -72.6 120000
955-        2016         py -276.2
956-        2017         py -476.2
957-        2018         py -676.2
958-        2019         py -876.2
959-        2020         py -1076.2
960-        2021         py -1276.2
961-        2022         py -1476.2
962-        2023         py -1676.2
963-        2024         py -1876.2
964-        2025         py -2076.2
965-        2026         px 359.054
966-        2027         px 2535.94
967-        2028         py -2276.2
968-        2029         py -2476.2
969-        2030         py -2676.2
970-        2031         py -2876.2
971-        2032         py -3076.2
972-        2033         py -3276.2
973-        2034         py -3476.2
974-        2035         py -3676.2
975-       c    Side wall splits for translation
976-        2036         py -1.2
977-        2037         py -6.2
978-        2038         py -11.2
979-        2039         py -16.2
980-        2040         py -21.2
981-        2041         py -26.2
982-        2042         py -31.2
983-        2043         py -36.2
984-        2044         py -41.2
985-        2045         py -46.2
986-        2046         py -51.2
987-        2047         py -56.2
988-        2048         py -61.2
```

```
 989-        2049        py -66.2
 990-        2050        py -71.2
 991-
 992-       mode  p
 993-       c  Materials
 994-       m1    1000.            -0.015  $ Concrete from 6.4
 995-             8000.            -1.057 11000.           -0.041 12000.           -0.085
 996-             13000.           -0.137 14000.           -0.487 15000.           -0.002
 997-             16000.           -0.002 19000.           -0.015 20000.           -0.295
 998-             22000.           -0.011 25000.           -0.003 26000.           -0.178
 999-       m2    13000.                1  $ Aluminum
warning. material   2 is not used in the problem.
1000-       m3    7000.           0.78969  $ Air
1001-             8000.           0.21019 6000.           0.00012
1002-       m4    26000.                1  $ Iron
1003-       m5    1000.                 2  $ Water
1004-             8000.                 1
1005-       imp:p             1 251r                    3 125r                    0  $ 11, 1
1006-              15r                      6           12           24           48  $ 1201,
1007-                        96          192          384          768         1536  $ 4240,
1008-                      3072         6144        12288        24576        49152  $ 4245,
1009-                     98304       196608            0            3 2r            $ 4250,
1010-                       0 6r                  196608            0 7r            $ 9995,
1011-                    196608 14r           $ 2001, 2015
1012-       phys:p  100 1 0
1013-       c sdef erg=d5 x=d1 y=d2 z=d3 cel=d4 eff=0.0001 wgt=3.045E+15
1014-       c si1  0 2895.6
1015-       c sp1  0.0 1.0
1016-       c si2  0 1828.8
1017-       c sp2  0.0 1.0
1018-       c si3  0.01 304.8 381.00
1019-       c sp3  0.0 0.8 0.2
1020-       c si4  L 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 31 32
1021-       c      33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 51 52 53 54 55
1022-       c      56 57 58 59 61 62 63 64 65 66 67 68 69 71 72 73 74 75 76 77 78
1023-       c      79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96 97 98 99 101
1024-       c      102 103 104 105 106 107 108 109 111 112 113 114 115 116 117 118
1025-       c      119 121 122 123 124 125 126 127 128 129 131 132 133 134 135 136
1026-       c      137 138 139 141 142 143 144 145 146 147 148 149
1027-       c sp4  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1028-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1029-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1030-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1031-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1032-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
1033-       c      1  1  1  1  1  1  1  1  1  1  1  1  1
1034-       c si5 l 1.1730 1.3325
1035-       c sp5   1      1
1036-       c ssw -2050(4251)
1037-       ssr
1038-       c ===================================================================
1039-       c ===================================================================
1040-       c Truck bay dose rate
1041-       f2:p 1231
warning. without bremsstrahlung, flux estimates will be low.
1042-       c ===================================================================
1043-       c ===================================================================
1044-       c Rings outside the building
1045-       f12:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1046-       fs12 -2000 -2001 -2002 -2003 -2004 -2005 -2006 -2007 -2008 -2009
1047-            -2010 -2011 -2012 -2013 -2014
1048-       sd12 1e50 2.564E+07 1.037e8 1.602e8 3.927e8 5.498e8 7.069e8 8.639e8 1.590e9
1049-            1.944e9 3.142e9 3.770e9 4.398e9 5.027e9 5.655e9 1.689e10
1050-       c ===================================================================
1051-       c ===================================================================
1052-       c Slabs Ajacent to Ventilation Penetration Side
1053-       f22:p 1227
warning. without bremsstrahlung, flux estimates will be low.
1054-       fs22 1201 -2026 2027
1055-            2016 2017 2018 2019 2020
1056-            2021 2022 2023 2024 2025
1057-            2028 2029 2030 2031 2032
1058-            2033 2034 2035
1059-       sd22 1e50 1e50 1e50
1060-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1061-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
1062-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
```

```
1063-            4.35376e5 4.35376e5 4.35376e5 1e50
1064-       c ===================================================================
1065-       c ===================================================================
1066-       c Dose Rate on Vent Side Wall 7ft up avg
1067-       f32:p 1201
warning. without bremsstrahlung, flux estimates will be low.
1068-       fs32 1231 -2026 2027 -1227
1069-       sd32 1e50 1e50 1e50 1e50 6.30E+05
1070-       c ===================================================================
1071-       c ===================================================================
1072-       c detectors toward north, with HVAC effects
1073-       f42:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1074-       fs42 1219 -1209 1201 -1205 1206
1075-       sd42 1e50 1e50 1e50 1e50 1e50 3.00e06
1076-            1e50 1e50 1e50 1e50 1e50 3.00e06
1077-            1e50 1e50 1e50 1e50 1e50 3.00e06
1078-            1e50 1e50 1e50 1e50 1e50 3.00e06
1079-            1e50 1e50 1e50 1e50 1e50 3.00e06
1080-            1e50 1e50 1e50 1e50 1e50 3.00e06
1081-            1e50 1e50 1e50 1e50 1e50 3.00e06
1082-            1e50 1e50 1e50 1e50 1e50 3.00e06
1083-            1e50 1e50 1e50 1e50 1e50 3.00e06
1084-            1e50 1e50 1e50 1e50 1e50 3.00e06
1085-            1e50 1e50 1e50 1e50 1e50 3.00e06
1086-       c detectors toward sorth, with no HVAC effects
1087-       f52:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
1088-       fs52 1219 -1209 -1201 -1205 1206
1089-       sd52 1e50 1e50 1e50 1e50 1e50 3.00e06
1090-            1e50 1e50 1e50 1e50 1e50 3.00e06
1091-            1e50 1e50 1e50 1e50 1e50 3.00e06
1092-            1e50 1e50 1e50 1e50 1e50 3.00e06
1093-            1e50 1e50 1e50 1e50 1e50 3.00e06
1094-            1e50 1e50 1e50 1e50 1e50 3.00e06
1095-            1e50 1e50 1e50 1e50 1e50 3.00e06
1096-            1e50 1e50 1e50 1e50 1e50 3.00e06
1097-            1e50 1e50 1e50 1e50 1e50 3.00e06
1098-            1e50 1e50 1e50 1e50 1e50 3.00e06
1099-            1e50 1e50 1e50 1e50 1e50 3.00e06
1100-       c ===================================================================
1101-       c ===================================================================
1102-       c Detector above the HICS (used as a source check)
1103-       f62:p 1219
warning. without bremsstrahlung, flux estimates will be low.
1104-       fs62 -1205 1206 1203 -1202
1105-       sd62  1e50 1e50 1e50  1e50 5.30E+06
1106-       c ===================================================================
1107-       c ===================================================================
1108-       c Photon Flux to Dose Rate Conversion Factors
1109-       de0 0.01 0.03 0.05 0.07 0.10 0.15 0.20
1110-             0.25 0.30 0.35 0.40 0.45 0.50 0.55
1111-             0.60 0.65 0.70 0.80 1.00 1.40 1.80
1112-             2.20 2.60 2.80 3.25 3.75 4.25 4.75
1113-             5.00 5.25 5.75 6.25 6.75 7.50 9.00
1114-             11.0 13.0 15.0
1115-       df0 LIN 3.96E-06 5.82E-07 2.90E-07 2.58E-07 2.83E-07 3.79E-07 5.01E-07
1116-             6.31e-07 7.59E-07 8.78E-07 9.85E-07 1.08E-06 1.17E-06 1.27E-06
1117-             1.36e-06 1.44E-06 1.52E-06 1.68E-06 1.98E-06 2.51E-06 2.99E-06
1118-             3.42e-06 3.82E-06 4.01E-06 4.41E-06 4.83E-06 5.23E-06 5.60E-06
1119-             5.80e-06 6.01E-06 6.37E-06 6.74E-06 7.11E-06 7.66E-06 8.77E-06
1120-             1.03e-05 1.18E-05 1.33E-05
1121-       nps 9000000000

warning. zero photon   importance within non-void cell 1200.

warning. zero photon   importance within non-void cell 1201.

warning. zero photon   importance within non-void cell 1202.

warning. zero photon   importance within non-void cell12021.

warning. zero photon   importance within non-void cell 1203.

warning. zero photon   importance within non-void cell 1204.

warning. zero photon   importance within non-void cell12041.
```

```
 warning. zero photon   importance within non-void cell 1205.

 warning. zero photon   importance within non-void cell 1206.

 warning. zero photon   importance within non-void cell12061.

 warning. zero photon   importance within non-void cell 1207.

 warning. zero photon   importance within non-void cell 1208.

 warning. zero photon   importance within non-void cell12081.

 warning. zero photon   importance within non-void cell 1210.

 warning. zero photon   importance within non-void cell 1211.

 warning. zero photon   importance within non-void cell12111.

 warning. zero photon   importance within non-void cell 9995.

 warning. zero photon   importance within non-void cell 9994.

 warning. zero photon   importance within non-void cell 9993.

 warning. zero photon   importance within non-void cell 9992.

 warning. zero photon   importance within non-void cell 9991.

 warning. zero photon   importance within non-void cell 9990.

 warning. zero photon   importance within non-void cell 9989.

 warning. zero photon   importance within non-void cell 9986.

 warning. zero photon   importance within non-void cell10000.

 warning. zero photon   importance within non-void cell10001.

 warning. zero photon   importance within non-void cell10002.

 warning. zero photon   importance within non-void cell10003.

 warning. zero photon   importance within non-void cell10004.

 warning. zero photon   importance within non-void cell10005.


 information from the header of surface-source file sbswssa

 the file was written by mcnp     version 5     with probid =  03/24/09 08:51:07  and ending with dump no.     4
 the title of the creation run was     c     Created on: Tuesday, November 11, 2008 at 09:35
 the original number of histories was    20000000
 the total number of tracks recorded was      199848 from       10459 independent histories.

 this ssr problem will use the following particles if available: photon

 warning.   2 materials had unnormalized fractions. print table 40.

 warning.   1 of the materials appear at more than one density.

 warning. sum of segment sizes differs from total in  25 cases.
1cells                                                                                                print table
    60

                      atom        gram                                        photon
       cell  mat     density     density     volume       mass      pieces importance

     1    11     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     2    12     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     3    13     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     4    14     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     5    15     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     6    16     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     7    17     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     8    18     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
     9    19     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    10    21     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
    11    22     5  1.00282E-01 1.00000E+00 7.18360E+06 7.18360E+06      1  1.0000E+00
```

12	23	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
13	24	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
14	25	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
15	26	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
16	27	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
17	28	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
18	29	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
19	31	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
20	32	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
21	33	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
22	34	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
23	35	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
24	36	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
25	37	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
26	38	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
27	39	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
28	41	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
29	42	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
30	43	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
31	44	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
32	45	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
33	46	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
34	47	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
35	48	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
36	49	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
37	51	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
38	52	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
39	53	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
40	54	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
41	55	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
42	56	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
43	57	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
44	58	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
45	59	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
46	61	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
47	62	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
48	63	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
49	64	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
50	65	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
51	66	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
52	67	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
53	68	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
54	69	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
55	71	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
56	72	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
57	73	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
58	74	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
59	75	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
60	76	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
61	77	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
62	78	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
63	79	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
64	81	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
65	82	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
66	83	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
67	84	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
68	85	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
69	86	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
70	87	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
71	88	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
72	89	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
73	91	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
74	92	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
75	93	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
76	94	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
77	95	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
78	96	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
79	97	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
80	98	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
81	99	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
82	101	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
83	102	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
84	103	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
85	104	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
86	105	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
87	106	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
88	107	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
89	108	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

90	109	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
91	111	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
92	112	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
93	113	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
94	114	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
95	115	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
96	116	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
97	117	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
98	118	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
99	119	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
100	121	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
101	122	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
102	123	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
103	124	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
104	125	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
105	126	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
106	127	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
107	128	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
108	129	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
109	131	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
110	132	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
111	133	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
112	134	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
113	135	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
114	136	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
115	137	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
116	138	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
117	139	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
118	141	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
119	142	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
120	143	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
121	144	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
122	145	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
123	146	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
124	147	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
125	148	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
126	149	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
127	211	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
128	212	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
129	213	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
130	214	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
131	215	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
132	216	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
133	217	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
134	218	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
135	219	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
136	221	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
137	222	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
138	223	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
139	224	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
140	225	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
141	226	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
142	227	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
143	228	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
144	229	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
145	231	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
146	232	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
147	233	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
148	234	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
149	235	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
150	236	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
151	237	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
152	238	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
153	239	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
154	241	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
155	242	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
156	243	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
157	244	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
158	245	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
159	246	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
160	247	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
161	248	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
162	249	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
163	251	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
164	252	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
165	253	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
166	254	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
167	255	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00

168	256	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
169	257	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
170	258	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
171	259	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
172	261	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
173	262	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
174	263	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
175	264	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
176	265	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
177	266	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
178	267	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
179	268	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
180	269	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
181	271	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
182	272	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
183	273	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
184	274	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
185	275	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
186	276	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
187	277	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
188	278	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
189	279	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
190	281	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
191	282	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
192	283	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
193	284	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
194	285	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
195	286	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
196	287	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
197	288	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
198	289	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
199	291	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
200	292	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
201	293	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
202	294	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
203	295	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
204	296	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
205	297	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
206	298	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
207	299	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
208	301	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
209	302	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
210	303	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
211	304	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
212	305	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
213	306	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
214	307	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
215	308	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
216	309	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
217	311	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
218	312	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
219	313	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
220	314	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
221	315	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
222	316	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
223	317	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
224	318	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
225	319	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
226	321	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
227	322	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
228	323	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
229	324	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
230	325	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
231	326	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
232	327	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
233	328	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
234	329	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
235	331	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
236	332	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
237	333	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
238	334	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
239	335	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
240	336	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
241	337	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
242	338	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
243	339	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
244	341	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
245	342	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00

246	343	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
247	344	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
248	345	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
249	346	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
250	347	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
251	348	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
252	349	3	5.11393E-05	1.22500E-03	1.92183E+06	2.35424E+03	1	1.0000E+00
253	411	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
254	412	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
255	413	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
256	414	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
257	415	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
258	416	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
259	417	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
260	418	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
261	419	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
262	421	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
263	422	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
264	423	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
265	424	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
266	425	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
267	426	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
268	427	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
269	428	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
270	429	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
271	431	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
272	432	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
273	433	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
274	434	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
275	435	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
276	436	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
277	437	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
278	438	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
279	439	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
280	441	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
281	442	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
282	443	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
283	444	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
284	445	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
285	446	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
286	447	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
287	448	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
288	449	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
289	451	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
290	452	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
291	453	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
292	454	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
293	455	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
294	456	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
295	457	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
296	458	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
297	459	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
298	461	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
299	462	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
300	463	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
301	464	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
302	465	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
303	466	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
304	467	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
305	468	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
306	469	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
307	471	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
308	472	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
309	473	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
310	474	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
311	475	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
312	476	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
313	477	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
314	478	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
315	479	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
316	481	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
317	482	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
318	483	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
319	484	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
320	485	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
321	486	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
322	487	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
323	488	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00

324	489	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
325	491	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
326	492	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
327	493	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
328	494	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
329	495	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
330	496	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
331	497	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
332	498	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
333	499	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
334	501	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
335	502	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
336	503	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
337	504	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
338	505	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
339	506	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
340	507	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
341	508	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
342	509	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
343	511	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
344	512	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
345	513	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
346	514	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
347	515	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
348	516	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
349	517	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
350	518	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
351	519	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
352	521	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
353	522	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
354	523	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
355	524	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
356	525	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
357	526	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
358	527	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
359	528	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
360	529	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
361	531	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
362	532	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
363	533	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
364	534	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
365	535	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
366	536	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
367	537	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
368	538	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
369	539	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
370	541	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
371	542	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
372	543	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
373	544	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
374	545	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
375	546	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
376	547	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
377	548	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
378	549	4	8.47555E-02	7.86000E+00	1.59402E+06	1.25290E+07	1	3.0000E+00
379	1200	3	5.11393E-05	1.22500E-03	3.46881E+06	4.24930E+03	0	0.0000E+00
380	1201	1	7.34055E-02	2.36500E+00	1.40947E+08	3.33340E+08	0	0.0000E+00
381	1202	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
382	12021	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
383	1203	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	0.0000E+00
384	1204	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	0.0000E+00
385	12041	1	7.34055E-02	2.36500E+00	3.27303E+07	7.74071E+07	0	0.0000E+00
386	1205	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	0.0000E+00
387	1206	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
388	12061	1	7.34055E-02	2.36500E+00	1.52092E+07	3.59699E+07	0	0.0000E+00
389	1207	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	0.0000E+00
390	1208	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	0.0000E+00
391	12081	1	7.34055E-02	2.36500E+00	3.21158E+07	7.59538E+07	0	0.0000E+00
392	1210	1	7.34055E-02	2.36500E+00	6.18900E+08	1.46370E+09	0	0.0000E+00
393	1211	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	0.0000E+00
394	12111	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	0.0000E+00
395	4236	1	7.34055E-02	2.36500E+00	5.09815E+06	1.20571E+07	0	6.0000E+00
396	4237	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.2000E+01
397	4238	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	2.4000E+01
398	4239	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	4.8000E+01
399	4240	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	9.6000E+01
400	4241	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.9200E+02
401	4242	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	3.8400E+02

402	4243	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	7.6800E+02
403	4244	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.5360E+03
404	4245	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	3.0720E+03
405	4246	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	6.1440E+03
406	4247	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.2288E+04
407	4248	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	2.4576E+04
408	4249	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	4.9152E+04
409	4250	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	9.8304E+04
410	4251	1	7.34055E-02	2.36500E+00	2.12423E+07	5.02380E+07	0	1.9661E+05
411	9999	0	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0	0.0000E+00
412	9998	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	3.0000E+00
413	9997	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	3.0000E+00
414	9996	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	3.0000E+00
415	9995	3	5.11393E-05	1.22500E-03	1.12984E+09	1.38406E+06	0	0.0000E+00
416	9994	3	5.11393E-05	1.22500E-03	2.40306E+09	2.94375E+06	0	0.0000E+00
417	9993	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	0.0000E+00
418	9992	3	5.11393E-05	1.22500E-03	1.06018E+09	1.29872E+06	0	0.0000E+00
419	9991	1	7.34055E-02	2.36500E+00	2.71842E+07	6.42906E+07	0	0.0000E+00
420	9990	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	0.0000E+00
421	9989	3	5.11393E-05	1.22500E-03	8.09132E+08	9.91186E+05	0	0.0000E+00
422	9988	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.9661E+05
423	9987	0	0.00000E+00	0.00000E+00	3.61826E+15	0.00000E+00	1	0.0000E+00
424	9986	3	5.11393E-05	1.22500E-03	6.89441E+11	8.44566E+08	1	0.0000E+00
425	10000	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
426	10001	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
427	10002	3	5.11393E-05	1.22500E-03	4.42451E+05	5.42002E+02	0	0.0000E+00
428	10003	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
429	10004	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
430	10005	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	0.0000E+00
431	2001	3	5.11393E-05	1.22500E-03	8.81574E+10	1.07993E+08	1	1.9661E+05
432	2002	3	5.11393E-05	1.22500E-03	5.84709E+11	7.16269E+08	1	1.9661E+05
433	2003	3	5.11393E-05	1.22500E-03	1.37659E+12	1.68633E+09	1	1.9661E+05
434	2004	3	5.11393E-05	1.22500E-03	4.97560E+12	6.09511E+09	1	1.9661E+05
435	2005	3	5.11393E-05	1.22500E-03	9.68856E+12	1.18685E+10	1	1.9661E+05
436	2006	3	5.11393E-05	1.22500E-03	1.59723E+13	1.95661E+10	1	1.9661E+05
437	2007	3	5.11393E-05	1.22500E-03	2.38269E+13	2.91879E+10	1	1.9661E+05
438	2008	3	5.11393E-05	1.22500E-03	5.39037E+13	6.60320E+10	1	1.9661E+05
439	2009	3	5.11393E-05	1.22500E-03	8.04121E+13	9.85049E+10	1	1.9661E+05
440	2010	3	5.11393E-05	1.22500E-03	1.57615E+14	1.93078E+11	1	1.9661E+05
441	2011	3	5.11393E-05	1.22500E-03	2.26732E+14	2.77747E+11	1	1.9661E+05
442	2012	3	5.11393E-05	1.22500E-03	3.08416E+14	3.77809E+11	1	1.9661E+05
443	2013	3	5.11393E-05	1.22500E-03	4.02666E+14	4.93265E+11	1	1.9661E+05
444	2014	3	5.11393E-05	1.22500E-03	5.09482E+14	6.24115E+11	1	1.9661E+05
445	2015	3	5.11393E-05	1.22500E-03	1.82349E+15	2.23378E+12	1	1.9661E+05
total					7.23819E+15	4.44214E+12		

```
 ************************************************
 * Random Number Generator  =                  1 *
 * Random Number Seed       =       19073486328125 *
 * Random Number Multiplier =       19073486328125 *
 * Random Number Adder      =                  0 *
 * Random Number Bits Used  =                 48 *
 * Random Number Stride     =             152917 *
 ************************************************


        41 warning messages so far.
1cross-section tables                                                                    print table
    100

     table    length

                        tables from file mcplib04

   1000.04p    1898  ENDF/B-VI Release 8 Photoatomic Data for 1-H                        mat 100
    02/07/03
   6000.04p    3152  ENDF/B-VI Release 8 Photoatomic Data for 6-C                        mat 600
    02/07/03
   7000.04p    3194  ENDF/B-VI Release 8 Photoatomic Data for 7-N                        mat 700
    02/07/03
   8000.04p    3272  ENDF/B-VI Release 8 Photoatomic Data for 8-O                        mat 800
    02/07/03
  11000.04p    3995  ENDF/B-VI Release 8 Photoatomic Data for 11-NA                      mat1100
    02/07/03
  12000.04p    3781  ENDF/B-VI Release 8 Photoatomic Data for 12-MG                      mat1200
    02/07/03
```

```
 13000.04p    4846  ENDF/B-VI Release 8 Photoatomic Data for 13-AL                              mat1300
   02/07/03
 14000.04p    4792  ENDF/B-VI Release 8 Photoatomic Data for 14-SI                              mat1400
   02/07/03
 15000.04p    4498  ENDF/B-VI Release 8 Photoatomic Data for 15-P                               mat1500
   02/07/03
 16000.04p    4654  ENDF/B-VI Release 8 Photoatomic Data for 16-S                               mat1600
   02/07/03
 19000.04p    5047  ENDF/B-VI Release 8 Photoatomic Data for 19-K                               mat1900
   02/07/03
 20000.04p    5013  ENDF/B-VI Release 8 Photoatomic Data for 20-CA                              mat2000
   02/07/03
 22000.04p    5742  ENDF/B-VI Release 8 Photoatomic Data for 22-TI                              mat2200
   02/07/03
 25000.04p    5598  ENDF/B-VI Release 8 Photoatomic Data for 25-MN                              mat2500
   02/07/03
 26000.04p    5718  ENDF/B-VI Release 8 Photoatomic Data for 26-FE                              mat2600
   02/07/03

 total       65200

 warning. simple physics turned on for photons > 100 mev.

    ************************************************************************************************************
    *******
 dump no.    1 on file runtpe       nps =           0     coll =              0     ctm =        0.00   nrn =
    0


        42 warning messages so far.

    ************************************************************************************************************
    *******
 dump no.    2 on file runtpe       nps =        8590     coll =      356397267     ctm =       60.01   nrn =
    4433900979

1problem summary                                source particle weight for summary table normalization =
    20000000.00

      run terminated at end of surface-source input file.
+                                                                                          03/24/09
    14:54:46
      c     Created on: Tuesday, November 11, 2008 at 09:35                          probid =  03/24/09
    13:40:42
0
 photon creation     tracks      weight        energy            photon loss         tracks      weight
    energy
                                (per source particle)                                          (per source
    particle)

 source            89931600    3.0952E+08    4.7426E-01          escape            33608886    1.1574E+08
    1.3275E-01
                                                                  energy cutoff            0    0.            0.
                                                                  time cutoff              0    0.            0.
 weight window            0    0.            0.                  weight window            0    0.            0.
 cell importance    3435385    5.1300E+07    2.4634E-02          cell importance   12948030    5.1315E+07
    2.4637E-02
 weight cutoff            0    0.            0.                  weight cutoff            0    0.            0.
 e or t importance        0    0.            0.                  e or t importance        0    0.            0.
 dxtran                   0    0.            0.                  dxtran                   0    0.            0.
 forced collisions        0    0.            0.                  forced collisions        0    0.            0.
 exp. transform           0    0.            0.                  exp. transform           0    0.            0.
 from neutrons            0    0.            0.                  compton scatter          0    0.
    2.9039E-01
 bremsstrahlung           0    0.            0.                  capture           53939988    2.2460E+08
    5.1642E-02
 p-annihilation        5168    1.7787E+04    2.9366E-05          pair production       2584    8.8934E+03
    3.6945E-05
 photonuclear             0    0.            0.                  photonuclear abs         0    0.            0.
 electron x-rays          0    0.            0.
 1st fluorescence   7127335    3.0827E+07    5.3341E-04
 2nd fluorescence         0    0.            0.
     total        100499488    3.9166E+08    4.9945E-01              total        100499488    3.9166E+08
    4.9945E-01

   number of photons banked                 3637613        average time of (shakes)              cutoffs
```

photon tracks per source particle	5.0250E+00	escape	3.5412E+01	tco	1.0000E+33
photon collisions per source particle	2.1941E+01	capture	3.6503E+01	eco	1.0000E-03
total photon collisions	438813125	capture or escape	3.6132E+01	wc1	-5.0000E-01
		any termination	3.1510E+01	wc2	-2.5000E-01

computer time so far in this run	73.87 minutes	maximum number ever in bank	317
computer time in mcrun	73.82 minutes	bank overflows to backup file	0
source particles per minute	1.4169E+02		
random numbers generated	5459386639	most random numbers used was	9336119 in history 4669

warning. random number stride 152917 exceeded 6626 times.

range of sampled source weights = 6.8834E+07 to 6.8834E+07

warning. importance function may be poor. see print table 120.

1photon activity in each cell print table 126

	cell	tracks entering	population	collisions	collisions * weight (per history)	number weighted energy	flux weighted energy	average track weight (relative)	average track mfp (cm)
1	11	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
2	12	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
3	13	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
4	14	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
5	15	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
6	16	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
7	17	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
8	18	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
9	19	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10	21	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
11	22	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
12	23	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
13	24	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
14	25	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
15	26	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
16	27	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
17	28	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
18	29	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
19	31	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
20	32	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
21	33	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
22	34	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
23	35	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
24	36	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
25	37	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
26	38	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
27	39	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
28	41	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
29	42	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
30	43	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
31	44	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
32	45	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
33	46	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
34	47	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
35	48	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
36	49	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
37	51	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
38	52	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
39	53	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
40	54	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
41	55	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
42	56	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
43	57	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
44	58	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
45	59	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
46	61	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
47	62	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
48	63	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
49	64	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
50	65	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
51	66	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
52	67	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
53	68	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
54	69	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
55	71	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

56	72	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
57	73	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
58	74	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
59	75	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
60	76	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
61	77	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
62	78	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
63	79	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
64	81	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
65	82	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
66	83	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
67	84	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
68	85	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
69	86	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
70	87	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
71	88	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
72	89	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
73	91	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
74	92	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
75	93	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
76	94	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
77	95	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
78	96	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
79	97	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
80	98	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
81	99	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
82	101	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
83	102	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
84	103	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
85	104	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
86	105	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
87	106	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
88	107	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
89	108	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
90	109	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
91	111	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
92	112	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
93	113	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
94	114	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
95	115	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
96	116	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
97	117	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
98	118	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
99	119	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
100	121	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
101	122	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
102	123	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
103	124	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
104	125	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
105	126	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
106	127	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
107	128	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
108	129	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
109	131	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
110	132	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
111	133	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
112	134	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
113	135	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
114	136	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
115	137	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
116	138	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
117	139	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
118	141	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
119	142	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
120	143	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
121	144	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
122	145	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
123	146	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
124	147	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
125	148	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
126	149	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
127	211	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
128	212	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
129	213	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
130	214	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
131	215	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
132	216	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
133	217	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

134	218	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
135	219	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
136	221	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
137	222	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
138	223	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
139	224	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
140	225	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
141	226	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
142	227	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
143	228	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
144	229	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
145	231	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
146	232	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
147	233	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
148	234	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
149	235	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
150	236	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
151	237	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
152	238	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
153	239	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
154	241	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
155	242	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
156	243	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
157	244	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
158	245	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
159	246	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
160	247	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
161	248	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
162	249	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
163	251	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
164	252	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
165	253	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
166	254	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
167	255	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
168	256	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
169	257	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
170	258	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
171	259	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
172	261	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
173	262	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
174	263	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
175	264	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
176	265	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
177	266	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
178	267	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
179	268	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
180	269	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
181	271	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
182	272	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
183	273	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
184	274	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
185	275	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
186	276	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
187	277	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
188	278	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
189	279	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
190	281	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
191	282	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
192	283	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
193	284	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
194	285	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
195	286	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
196	287	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
197	288	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
198	289	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
199	291	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
200	292	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
201	293	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
202	294	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
203	295	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
204	296	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
205	297	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
206	298	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
207	299	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
208	301	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
209	302	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
210	303	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
211	304	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

212	305	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
213	306	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
214	307	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
215	308	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
216	309	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
217	311	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
218	312	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
219	313	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
220	314	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
221	315	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
222	316	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
223	317	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
224	318	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
225	319	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
226	321	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
227	322	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
228	323	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
229	324	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
230	325	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
231	326	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
232	327	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
233	328	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
234	329	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
235	331	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
236	332	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
237	333	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
238	334	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
239	335	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
240	336	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
241	337	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
242	338	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
243	339	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
244	341	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
245	342	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
246	343	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
247	344	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
248	345	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
249	346	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
250	347	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
251	348	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
252	349	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
253	411	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
254	412	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
255	413	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
256	414	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
257	415	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
258	416	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
259	417	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
260	418	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
261	419	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
262	421	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
263	422	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
264	423	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
265	424	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
266	425	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
267	426	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
268	427	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
269	428	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
270	429	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
271	431	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
272	432	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
273	433	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
274	434	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
275	435	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
276	436	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
277	437	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
278	438	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
279	439	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
280	441	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
281	442	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
282	443	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
283	444	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
284	445	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
285	446	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
286	447	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
287	448	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
288	449	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
289	451	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

290	452	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
291	453	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
292	454	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
293	455	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
294	456	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
295	457	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
296	458	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
297	459	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
298	461	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
299	462	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
300	463	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
301	464	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
302	465	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
303	466	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
304	467	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
305	468	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
306	469	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
307	471	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
308	472	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
309	473	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
310	474	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
311	475	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
312	476	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
313	477	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
314	478	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
315	479	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
316	481	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
317	482	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
318	483	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
319	484	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
320	485	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
321	486	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
322	487	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
323	488	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
324	489	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
325	491	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
326	492	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
327	493	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
328	494	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
329	495	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
330	496	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
331	497	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
332	498	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
333	499	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
334	501	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
335	502	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
336	503	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
337	504	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
338	505	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
339	506	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
340	507	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
341	508	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
342	509	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
343	511	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
344	512	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
345	513	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
346	514	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
347	515	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
348	516	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
349	517	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
350	518	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
351	519	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
352	521	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
353	522	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
354	523	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
355	524	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
356	525	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
357	526	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
358	527	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
359	528	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
360	529	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
361	531	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
362	532	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
363	533	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
364	534	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
365	535	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
366	536	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
367	537	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

368	538	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
369	539	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
370	541	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
371	542	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
372	543	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
373	544	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
374	545	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
375	546	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
376	547	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
377	548	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
378	549	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
395	4236	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
396	4237	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
397	4238	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
398	4239	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
399	4240	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
400	4241	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
401	4242	2	2	7	1.2335E+04	1.0716E-01	1.0716E-01	1.3533E+13	2.2330E+00
402	4243	10	10	27	2.3789E+04	1.2105E-01	1.2105E-01	1.3533E+13	2.3838E+00
403	4244	55	53	113	4.9781E+04	1.2793E-01	1.2793E-01	1.3533E+13	2.4161E+00
404	4245	437	414	1113	2.4516E+05	1.3222E-01	1.3222E-01	1.3533E+13	2.4935E+00
405	4246	3217	3038	8160	8.9870E+05	1.3071E-01	1.3071E-01	1.3533E+13	2.4651E+00
406	4247	22824	21583	58001	3.1940E+06	1.3009E-01	1.3009E-01	1.3533E+13	2.4567E+00
407	4248	172057	163017	440524	1.2129E+07	1.3039E-01	1.3039E-01	1.3533E+13	2.4554E+00
408	4249	1341348	1270890	3462409	4.7666E+07	1.3201E-01	1.3201E-01	1.3533E+13	2.4659E+00
409	4250	12105175	11462168	31598238	2.1750E+08	1.3949E-01	1.3949E-01	1.3533E+13	2.5217E+00
410	4251	97424158	93052897	222908666	7.6719E+08	3.5164E-01	3.5164E-01	1.3533E+13	3.7568E+00
412	9998	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
413	9997	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
414	9996	0	0	0	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
422	9988	46067836	44416919	8222080	2.8298E+07	4.6483E-01	4.6483E-01	1.3533E+13	8.6857E+03
431	2001	29292229	27143799	5290138	1.8207E+07	4.2969E-01	4.2969E-01	1.3533E+13	8.3490E+03
432	2002	26911935	23688468	13349538	4.5945E+07	3.7802E-01	3.7802E-01	1.3533E+13	7.8627E+03
433	2003	24009029	19837185	14073402	4.8436E+07	3.2744E-01	3.2744E-01	1.3533E+13	7.3641E+03
434	2004	22027637	17338465	23988724	8.2562E+07	2.8418E-01	2.8418E-01	1.3533E+13	6.9162E+03
435	2005	18623728	13999260	22793636	7.8449E+07	2.4958E-01	2.4958E-01	1.3533E+13	6.5425E+03
436	2006	15290600	11184313	20124527	6.9263E+07	2.2814E-01	2.2814E-01	1.3533E+13	6.3021E+03
437	2007	12211924	8780088	16873368	5.8073E+07	2.1423E-01	2.1423E-01	1.3533E+13	6.1422E+03
438	2008	9326657	6768872	19257972	6.6280E+07	2.0361E-01	2.0361E-01	1.3533E+13	6.0170E+03
439	2009	6194170	4456446	13162559	4.5302E+07	1.9582E-01	1.9582E-01	1.3533E+13	5.9238E+03
440	2010	3909766	2860327	10795636	3.7155E+07	1.9129E-01	1.9129E-01	1.3533E+13	5.8682E+03
441	2011	2119281	1542082	5927586	2.0401E+07	1.8900E-01	1.8900E-01	1.3533E+13	5.8404E+03
442	2012	1126705	815399	3176521	1.0933E+07	1.8854E-01	1.8854E-01	1.3533E+13	5.8333E+03
443	2013	593120	427923	1685382	5.8006E+06	1.8830E-01	1.8830E-01	1.3533E+13	5.8295E+03
444	2014	309217	222861	883203	3.0397E+06	1.8898E-01	1.8898E-01	1.3533E+13	5.8347E+03
445	2015	135763	115641	731595	2.5179E+06	1.9653E-01	1.9653E-01	1.3533E+13	5.9232E+03
total		329218880	289572120	438813125	1.6696E+09				

```
1tally   2        nps =       10459
          tally type 2    particle flux averaged over a surface.
          tally for  photons
 number of histories used for normalizing tallies =     20000000.00

          this tally is modified by a dose function.

          areas
               surface:     1231
                        1.78374E+06

 surface  1231
                0.00000E+00 0.0000

 there are no nonzero tallies in the tally fluctuation chart bin for tally   2

1tally  12        nps =       10459
          tally type 2    particle flux averaged over a surface.
          tally for  photons
 number of histories used for normalizing tallies =     20000000.00

          this tally is modified by a dose function.

          areas
               surface:     1227
              segment
                1       1.00000E+50
                2       2.56400E+07
                3       1.03700E+08
```

```
               4       1.60200E+08
               5       3.92700E+08
               6       5.49800E+08
               7       7.06900E+08
               8       8.63900E+08
               9       1.59000E+09
              10       1.94400E+09
              11       3.14200E+09
              12       3.77000E+09
              13       4.39800E+09
              14       5.02700E+09
              15       5.65500E+09
              16       1.68900E+10

surface  1227
segment:       -2000
               1.77605E-48 0.0234

surface  1227
segment:        2000    -2001
               3.29232E-06 0.0277

surface  1227
segment:        2000     2001    -2002
               9.32817E-07 0.0288

surface  1227
segment:        2000     2001     2002    -2003
               2.24659E-07 0.0363

surface  1227
segment:        2000     2001     2002     2003    -2004
               6.74494E-08 0.0350

surface  1227
segment:        2000     2001     2002     2003     2004    -2005
               2.23623E-08 0.0406

surface  1227
segment:        2000     2001     2002     2003     2004     2005    -2006
               9.25033E-09 0.0293

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006    -2007
               4.58477E-09 0.0370

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007    -2008
               2.14133E-09 0.0272

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008    -2009
               9.36166E-10 0.0331

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009    -2010
               3.67039E-10 0.0253

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
    -2011
               1.37735E-10 0.0284

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011    -2012
               5.39047E-11 0.0301

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012    -2013
               2.26293E-11 0.0349

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012     2013    -2014
               9.26636E-12 0.0396
```

```
 surface  1227
 segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
      2011     2012     2013     2014
                2.35190E-12 0.0442


    ================================================================================================================
    ==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  12

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
    merit--      -pdf-
 behavior    behavior      value   decrease   decrease rate      value   decrease   decrease rate       value
    behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
    random      >3.00
 observed    increase       0.04      yes          yes            0.04       no          no            constant
    random       7.56
 passed?        no           yes      yes          yes             yes       no          no               yes
    yes         yes


    ================================================================================================================
    ==================


 warning.  the tally in the tally fluctuation chart bin did not pass  3 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  12 with nps =       10459  print table
    160


 normed average tally per history  = 2.35190E-12          unnormed average tally per history  = 3.97236E-02
 estimated tally relative error    = 0.0442               estimated variance of the variance  = 0.0372
 relative error from zero tallies  = 0.0199               relative error from nonzero scores  = 0.0395

 number of nonzero history tallies =        2527          efficiency for the nonzero tallies  = 0.0001
 history number of largest  tally  =        8899          largest  unnormalized history tally = 1.47854E+04
 (largest  tally)/(average tally)  = 3.72206E+05          (largest  tally)/(avg nonzero tally)= 4.70283E+01

 (confidence interval shift)/mean  = 0.0030               shifted confidence interval center  = 2.35891E-12


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            2.35190E-12            8.60413E-11                   35.583687
      relative error                  4.42341E-02            4.60876E-02                    0.041901
      variance of the variance        3.72088E-02            5.25067E-02                    0.411135
      shifted center                  2.35891E-12            2.08065E-11                    7.820393
      figure of merit                 6.92350E+00            6.37783E+00                   -0.078814

 the estimated inverse power slope of the 126 largest  tallies starting at 1.26243E+03 is 7.5559
 the history score probability density function appears to have an unsampled region at the largest  history scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (2.709E+05)*( 5.055E-03)**2 = (2.709E+05)*(2.555E-05) =
    6.924E+00

1unnormed tally density for tally  12            nonzero tally mean(m) = 3.144E+02   nps =       10459  print table
    161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
    bin(d=decade,slope= 7.6)
  tally  number num den log den:d------------------d------------------d------------------d------------------d-----
    -------------d-
 2.00+01     44 5.36-07  -6.271
    ******************|******************|******************|******************|************       |
 2.51+01    154 1.49-06  -5.827
    ******************|******************|******************|******************|******************|*
 3.16+01    187 1.44-06  -5.842
    ******************|******************|******************|******************|******************|*
```

```
 3.98+01    146 8.92-07  -6.050
    ********************|********************|********************|******************|*****************  |
 5.01+01    162 7.86-07  -6.105
    ********************|********************|********************|******************|***************    |
 6.31+01    158 6.09-07  -6.216
    ********************|********************|********************|******************|*************      |
 7.94+01    162 4.96-07  -6.305
    ********************|********************|********************|******************|************       |
 1.00+02    162 3.94-07  -6.405
    ********************|********************|********************|******************|**********         |
 1.26+02    180 3.48-07  -6.459
    ********************|********************|********************|******************|********           |
 1.58+02    141 2.16-07  -6.665 ********************|********************|********************|******************|****
    |
 2.00+02    142 1.73-07  -6.762 ********************|********************|********************|******************|**
    |
 2.51+02    142 1.37-07  -6.862 ********************|********************|********************|******************|
    |
 3.16+02    133 1.02-07  -6.990 mmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmm  |
    |
 3.98+02    104 6.35-08  -7.197 ********************|********************|********************|*************      |
    |
 5.01+02    101 4.90-08  -7.310 ********************|********************|********************|***********        |
    |
 6.31+02     84 3.24-08  -7.490 ********************|********************|********************|*******            |
    |
 7.94+02     77 2.36-08  -7.628 ********************|********************|********************|****               |
    |
 1.00+03     79 1.92-08  -7.717 ********************|********************|********************|**                 |
    |
 1.26+03     42 8.11-09  -8.091 ********************|********************|****************    |                   |
    |
 1.58+03     39 5.98-09  -8.223 ********************|********************|*************       | s                 |
    |
 2.00+03     25 3.05-09  -8.516 ********************|********************|*******           s|                   |
    |
 2.51+03     23 2.23-09  -8.652 ********************|********************|****          s    |                   |
    |
 3.16+03     16 1.23-09  -8.910 ********************|********************|          s         |                   |
    |
 3.98+03     15 9.16-10  -9.038 ********************|*****************   |     s              |                   |
    |
 5.01+03      6 2.91-10  -9.536 ********************|******              |s                   |                   |
    |
 6.31+03      2 7.71-11 -10.113 ***************     |             s      |                    |                   |
    |
 7.94+03      0 0.00+00   0.000                     |      s             |                    |                   |
    |
 1.00+04      0 0.00+00   0.000                  s  |                    |                    |                   |
    |
 1.26+04      0 0.00+00   0.000         s           |                    |                    |                   |
    |
 1.58+04      1 1.53-11 -10.814 *                  |                    |                    |                   |
    |
  total    2527 1.26-04         d------------------d--------------------d--------------------d------------------d-----
    --------------d-

1tally  22        nps =       10459
          tally type 2    particle flux averaged over a surface.
          tally for  photons
 number of histories used for normalizing tallies =     20000000.00

          this tally is modified by a dose function.

          areas
               surface:     1227
              segment
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       4.35376E+05
                5       4.35376E+05
                6       4.35376E+05
                7       4.35376E+05
                8       4.35376E+05
                9       4.35376E+05
               10       4.35376E+05
               11       4.35376E+05
```

```
               12       4.35376E+05
               13       4.35376E+05
               14       4.35376E+05
               15       4.35376E+05
               16       4.35376E+05
               17       4.35376E+05
               18       4.35376E+05
               19       4.35376E+05
               20       4.35376E+05
               21       4.35376E+05
               22       1.00000E+50

surface  1227
segment:        1201
                3.86043E-50 0.0174

surface  1227
segment:       -1201    -2026
                1.03866E-48 0.0288

surface  1227
segment:       -1201     2026     2027
                1.03080E-48 0.0273

surface  1227
segment:       -1201     2026    -2027     2016
                2.28969E-05 0.0304

surface  1227
segment:       -1201     2026    -2027    -2016     2017
                4.97417E-05 0.0316

surface  1227
segment:       -1201     2026    -2027    -2016    -2017     2018
                4.98639E-05 0.0298

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018     2019
                4.44527E-05 0.0293

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019     2020
                4.25291E-05 0.0453

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020     2021
                3.61317E-05 0.0403

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021     2022
                3.18583E-05 0.0521

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022     2023
                2.92729E-05 0.0582

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     2024
                2.48161E-05 0.0643

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024     2025
                2.50407E-05 0.0802

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025     2028
                1.85836E-05 0.0636

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028     2029
                1.70021E-05 0.0778

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
```

```
    -2024    -2025    -2028    -2029     2030
                1.46997E-05 0.0662

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030     2031
                1.23133E-05 0.0817

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031     2032
                1.21699E-05 0.0966

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032     2033
                1.21281E-05 0.0997

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033     2034
                9.80089E-06 0.1753

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034     2035
                9.36056E-06 0.1324

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
    -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034    -2035
                3.91268E-49 0.0408


    ================================================================================================================
    ===================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  22

 tfc bin      --mean--       ---------relative error---------       ----variance of the variance----       --figure of
    merit--      -pdf-
 behavior     behavior       value    decrease    decrease rate       value    decrease    decrease rate        value
    behavior      slope

 desired       random        <0.10       yes       1/sqrt(nps)        <0.10       yes         1/nps            constant
    random       >3.00
 observed      random         0.04       yes           yes             0.03       yes          yes             constant
    random        3.18
 passed?         yes           yes       yes           yes               yes       yes          yes                yes
    yes          yes

    ================================================================================================================
    ===================


 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to
    verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 3.7628E-49 to 4.0829E-49; 3.6028E-49 to 4.2429E-49; 3.4428E-
    49 to 4.4029E-49
 estimated  symmetric confidence interval(1,2,3 sigma): 3.7531E-49 to 4.0723E-49; 3.5935E-49 to 4.2319E-49; 3.4339E-
    49 to 4.3915E-49

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  22 with nps =       10459  print table
    160


 normed average tally per history  = 3.91268E-49          unnormed average tally per history  = 3.91268E+01
 estimated tally relative error    = 0.0408               estimated variance of the variance  = 0.0254
 relative error from zero tallies  = 0.0099               relative error from nonzero scores  = 0.0396

 number of nonzero history tallies =       10281          efficiency for the nonzero tallies  = 0.0005
```

```
 history number of largest  tally  =        8326          largest  unnormalized history tally = 1.01612E+07
 (largest  tally)/(average tally)  = 2.59701E+05          (largest  tally)/(avg nonzero tally)= 1.33499E+02

 (confidence interval shift)/mean  = 0.0026               shifted confidence interval center  = 3.92286E-49


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            3.91268E-49            1.01056E-47                  24.827881
      relative error                  4.07911E-02            4.11132E-02                   0.007895
      variance of the variance        2.53661E-02            3.13350E-02                   0.235309
      shifted center                  3.92286E-49            2.73281E-48                   5.966364
      figure of merit                 8.14161E+00            8.01455E+00                  -0.015605

 the estimated inverse power slope of the 200 largest  tallies starting at 7.68215E+05 is 3.1757
 the history score probability density function appears to have an unsampled region at the largest  history scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (2.709E+05)*( 5.482E-03)**2 = (2.709E+05)*(3.005E-05) =
    8.142E+00

1tally  32        nps =       10459
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     20000000.00

           this tally is modified by a dose function.

           areas
                surface:     1201
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       1.00000E+50
                 5       6.30000E+05

 surface  1201
 segment:        1231
                 1.15519E-48 0.0255

 surface  1201
 segment:       -1231    -2026
                 1.22145E-49 0.0859

 surface  1201
 segment:       -1231     2026     2027
                 1.29295E-49 0.0784

 surface  1201
 segment:       -1231     2026    -2027    -1227
                 0.00000E+00 0.0000

 surface  1201
 segment:       -1231     2026    -2027     1227
                 1.42138E-04 0.0291


    ================================================================================================================
    ==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  32

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
    merit--     -pdf-
 behavior    behavior      value   decrease   decrease rate      value   decrease   decrease rate       value
    behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
    random      >3.00
 observed     random        0.03      yes          yes            0.00      yes         yes            constant
    random      10.00
```

```
 passed?        yes          yes      yes          yes             yes      yes         yes              yes
    yes         yes

    ================================================================================================================
    ===================

 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to
    verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 1.3811E-04 to 1.4638E-04; 1.3397E-04 to 1.5052E-04; 1.2984E-
    04 to 1.5466E-04
 estimated  symmetric confidence interval(1,2,3 sigma): 1.3800E-04 to 1.4627E-04; 1.3387E-04 to 1.5040E-04; 1.2974E-
    04 to 1.5454E-04

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  32 with nps =       10459  print table
    160


 normed average tally per history  = 1.42138E-04          unnormed average tally per history  = 8.95467E+01
 estimated tally relative error    = 0.0291               estimated variance of the variance  = 0.0040
 relative error from zero tallies  = 0.0100               relative error from nonzero scores  = 0.0273

 number of nonzero history tallies =       10030          efficiency for the nonzero tallies  = 0.0005
 history number of largest  tally  =        2569          largest  unnormalized history tally = 8.02036E+06
 (largest  tally)/(average tally)  = 8.95663E+04          (largest  tally)/(avg nonzero tally)= 4.49175E+01

 (confidence interval shift)/mean  = 0.0008               shifted confidence interval center  = 1.42247E-04


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
    as follows:

      estimated quantities          value at nps          value at nps+1          value(nps+1)/value(nps)-1.

      mean                           1.42138E-04            1.35921E-03                  8.562649
      relative error                 2.90785E-02            2.76109E-02                 -0.050471
      variance of the variance       4.00408E-03            4.59707E-03                  0.148095
      shifted center                 1.42247E-04            3.90657E-04                  1.746328
      figure of merit                1.60212E+01            1.77697E+01                  0.109133

 the estimated slope of the 200 largest  tallies starting at  1.84570E+06 appears to be decreasing at least
    exponentially.
 the large score tail of the empirical history score probability density function appears to have no unsampled
    regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (2.709E+05)*( 7.690E-03)**2 = (2.709E+05)*(5.913E-05) =
    1.602E+01

1tally  42        nps =       10459
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     20000000.00

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
                 1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
                surface:     2010         2011         2012         2013
               segment
                 1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                 6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
```

```
surface  2003
segment:        1219
                6.20983E-49 0.0195

surface  2003
segment:       -1219    -1209
                8.52649E-51 0.0484

surface  2003
segment:       -1219     1209     1201
                2.50644E-51 0.0176

surface  2003
segment:       -1219     1209    -1201    -1205
                4.73884E-50 0.0295

surface  2003
segment:       -1219     1209    -1201     1205     1206
                4.08630E-50 0.0259

surface  2003
segment:       -1219     1209    -1201     1205    -1206
                1.17136E-06 0.0397

surface  2004
segment:        1219
                5.60975E-49 0.0197

surface  2004
segment:       -1219    -1209
                4.30714E-51 0.0561

surface  2004
segment:       -1219     1209     1201
                1.48293E-51 0.0182

surface  2004
segment:       -1219     1209    -1201    -1205
                2.56753E-50 0.0329

surface  2004
segment:       -1219     1209    -1201     1205     1206
                2.24883E-50 0.0279

surface  2004
segment:       -1219     1209    -1201     1205    -1206
                3.56853E-07 0.0470

surface  2005
segment:        1219
                4.72362E-49 0.0198

surface  2005
segment:       -1219    -1209
                2.20193E-51 0.0599

surface  2005
segment:       -1219     1209     1201
                8.48044E-52 0.0188

surface  2005
segment:       -1219     1209    -1201    -1205
                1.47596E-50 0.0347

surface  2005
segment:       -1219     1209    -1201     1205     1206
                1.33075E-50 0.0300

surface  2005
segment:       -1219     1209    -1201     1205    -1206
                1.43960E-07 0.0590

surface  2006
segment:        1219
                3.83022E-49 0.0201

surface  2006
segment:       -1219    -1209
```

```
                1.30578E-51 0.0710

surface  2006
segment:        -1219     1209     1201
                4.94411E-52 0.0202

surface  2006
segment:        -1219     1209    -1201    -1205
                8.99919E-51 0.0358

surface  2006
segment:        -1219     1209    -1201     1205     1206
                7.82528E-51 0.0302

surface  2006
segment:        -1219     1209    -1201     1205    -1206
                6.65734E-08 0.0708

surface  2007
segment:        1219
                3.02339E-49 0.0205

surface  2007
segment:        -1219    -1209
                8.10677E-52 0.0660

surface  2007
segment:        -1219     1209     1201
                2.84513E-52 0.0221

surface  2007
segment:        -1219     1209    -1201    -1205
                5.42858E-51 0.0341

surface  2007
segment:        -1219     1209    -1201     1205     1206
                4.80257E-51 0.0316

surface  2007
segment:        -1219     1209    -1201     1205    -1206
                3.48530E-08 0.0887

surface  2008
segment:        1219
                2.03906E-49 0.0210

surface  2008
segment:        -1219    -1209
                4.08837E-52 0.0791

surface  2008
segment:        -1219     1209     1201
                1.20606E-52 0.0265

surface  2008
segment:        -1219     1209    -1201    -1205
                2.75118E-51 0.0361

surface  2008
segment:        -1219     1209    -1201     1205     1206
                2.41486E-51 0.0320

surface  2008
segment:        -1219     1209    -1201     1205    -1206
                1.23182E-08 0.0929

surface  2009
segment:        1219
                1.33642E-49 0.0217

surface  2009
segment:        -1219    -1209
                1.81197E-52 0.0541

surface  2009
segment:        -1219     1209     1201
                5.41327E-53 0.0380
```

```
surface  2009
segment:       -1219     1209    -1201    -1205
                1.43754E-51 0.0380

surface  2009
segment:       -1219     1209    -1201     1205     1206
                1.26141E-51 0.0343

surface  2009
segment:       -1219     1209    -1201     1205    -1206
                5.65219E-09 0.1155

surface  2010
segment:        1219
                7.37447E-50 0.0226

surface  2010
segment:       -1219    -1209
                7.62483E-53 0.0747

surface  2010
segment:       -1219     1209     1201
                1.64675E-53 0.0518

surface  2010
segment:       -1219     1209    -1201    -1205
                6.44797E-52 0.0412

surface  2010
segment:       -1219     1209    -1201     1205     1206
                5.43069E-52 0.0387

surface  2010
segment:       -1219     1209    -1201     1205    -1206
                2.11952E-09 0.1521

surface  2011
segment:        1219
                3.97290E-50 0.0236

surface  2011
segment:       -1219    -1209
                3.41881E-53 0.0840

surface  2011
segment:       -1219     1209     1201
                5.03329E-54 0.1105

surface  2011
segment:       -1219     1209    -1201    -1205
                2.84673E-52 0.0404

surface  2011
segment:       -1219     1209    -1201     1205     1206
                2.38129E-52 0.0410

surface  2011
segment:       -1219     1209    -1201     1205    -1206
                8.32681E-10 0.2164

surface  2012
segment:        1219
                2.12074E-50 0.0247

surface  2012
segment:       -1219    -1209
                1.84859E-53 0.1090

surface  2012
segment:       -1219     1209     1201
                1.70113E-54 0.1288

surface  2012
segment:       -1219     1209    -1201    -1205
                1.28929E-52 0.0463

surface  2012
segment:       -1219     1209    -1201     1205     1206
```

```
                1.09073E-52 0.0471

 surface  2012
 segment:       -1219     1209    -1201     1205    -1206
                3.86629E-10 0.2351

 surface  2013
 segment:        1219
                1.12450E-50 0.0259

 surface  2013
 segment:       -1219    -1209
                7.89782E-54 0.1083

 surface  2013
 segment:       -1219     1209     1201
                8.40320E-55 0.2805

 surface  2013
 segment:       -1219     1209    -1201    -1205
                5.84205E-53 0.0561

 surface  2013
 segment:       -1219     1209    -1201     1205     1206
                5.14675E-53 0.0587

 surface  2013
 segment:       -1219     1209    -1201     1205    -1206
                1.75448E-10 0.3056


    ================================================================================================================================
    ==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
    tally  42

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
    merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
    behavior     slope

 desired      random       <0.10       yes       1/sqrt(nps)       <0.10       yes         1/nps           constant
    random       >3.00
 observed     random        0.04       yes           yes            0.02       yes          yes            constant
    random       3.85
 passed?       yes           yes       yes           yes             yes       yes          yes               yes
    yes          yes


    ================================================================================================================================
    ==================


 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to
    verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 1.1276E-06 to 1.2208E-06; 1.0809E-06 to 1.2675E-06; 1.0343E-
    06 to 1.3141E-06
 estimated  symmetric confidence interval(1,2,3 sigma): 1.1248E-06 to 1.2179E-06; 1.0783E-06 to 1.2644E-06; 1.0318E-
    06 to 1.3109E-06

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  42 with nps =       10459  print table
    160


 normed average tally per history  = 1.17136E-06          unnormed average tally per history  = 3.51409E+00
 estimated tally relative error    = 0.0397               estimated variance of the variance  = 0.0218
 relative error from zero tallies  = 0.0102               relative error from nonzero scores  = 0.0384

 number of nonzero history tallies =        9643          efficiency for the nonzero tallies  = 0.0005
 history number of largest  tally  =         478          largest  unnormalized history tally = 7.66320E+05
 (largest  tally)/(average tally)  = 2.18071E+05          (largest  tally)/(avg nonzero tally)= 1.05143E+02
```

(confidence interval shift)/mean = 0.0024 shifted confidence interval center = 1.17419E-06

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	1.17136E-06	2.55919E-05	20.847976
relative error	3.97118E-02	3.95472E-02	-0.004147
variance of the variance	2.18154E-02	2.53649E-02	0.162705
shifted center	1.17419E-06	7.42100E-06	5.320090
figure of merit	8.59015E+00	8.66185E+00	0.008346

the estimated inverse power slope of the 200 largest tallies starting at 6.19062E+04 is 3.8513
the large score tail of the empirical history score probability density function appears to have no unsampled regions.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (2.709E+05)*(5.631E-03)**2 = (2.709E+05)*(3.171E-05) = 8.590E+00

1tally 52 nps = 10459
tally type 2 particle flux averaged over a surface.
tally for photons
number of histories used for normalizing tallies = 20000000.00

this tally is modified by a dose function.

areas

surface:	2003	2004	2005	2006	2007	2008	2009
segment							
1	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
2	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
3	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
4	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
5	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
6	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06

surface:	2010	2011	2012	2013
segment				
1	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
2	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
3	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
4	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
5	1.00000E+50	1.00000E+50	1.00000E+50	1.00000E+50
6	3.00000E+06	3.00000E+06	3.00000E+06	3.00000E+06

surface 2003
segment: 1219
6.20983E-49 0.0195

surface 2003
segment: -1219 -1209
8.52649E-51 0.0484

surface 2003
segment: -1219 1209 -1201
1.23392E-49 0.0245

surface 2003
segment: -1219 1209 1201 -1205
1.30597E-51 0.0185

surface 2003
segment: -1219 1209 1201 1205 1206
1.09005E-51 0.0182

surface 2003
segment: -1219 1209 1201 1205 -1206
3.68043E-09 0.0269

surface 2004
segment: 1219
5.60975E-49 0.0197

surface 2004
segment: -1219 -1209
4.30714E-51 0.0561

```
surface  2004
segment:       -1219     1209    -1201
                5.88692E-50 0.0255

surface  2004
segment:       -1219     1209     1201    -1205
                7.71872E-52 0.0193

surface  2004
segment:       -1219     1209     1201     1205     1206
                6.67938E-52 0.0194

surface  2004
segment:       -1219     1209     1201     1205    -1206
                1.43727E-09 0.0349

surface  2005
segment:        1219
                4.72362E-49 0.0198

surface  2005
segment:       -1219    -1209
                2.20193E-51 0.0599

surface  2005
segment:       -1219     1209    -1201
                3.23860E-50 0.0271

surface  2005
segment:       -1219     1209     1201    -1205
                4.41398E-52 0.0204

surface  2005
segment:       -1219     1209     1201     1205     1206
                3.88529E-52 0.0204

surface  2005
segment:       -1219     1209     1201     1205    -1206
                6.03916E-10 0.0489

surface  2006
segment:        1219
                3.83022E-49 0.0201

surface  2006
segment:       -1219    -1209
                1.30578E-51 0.0710

surface  2006
segment:       -1219     1209    -1201
                1.88217E-50 0.0279

surface  2006
segment:       -1219     1209     1201    -1205
                2.62793E-52 0.0223

surface  2006
segment:       -1219     1209     1201     1205     1206
                2.23060E-52 0.0230

surface  2006
segment:       -1219     1209     1201     1205    -1206
                2.85288E-10 0.0751

surface  2007
segment:        1219
                3.02339E-49 0.0205

surface  2007
segment:       -1219    -1209
                8.10677E-52 0.0660

surface  2007
segment:       -1219     1209    -1201
                1.12767E-50 0.0284

surface  2007
segment:       -1219     1209     1201    -1205
```

```
                1.49093E-52 0.0256

surface  2007
segment:        -1219     1209     1201     1205     1206
                1.31962E-52 0.0265

surface  2007
segment:        -1219     1209     1201     1205    -1206
                1.15240E-10 0.1107

surface  2008
segment:        1219
                2.03906E-49 0.0210

surface  2008
segment:        -1219    -1209
                4.08837E-52 0.0791

surface  2008
segment:        -1219     1209    -1201
                5.53559E-51 0.0290

surface  2008
segment:        -1219     1209     1201    -1205
                6.18535E-53 0.0329

surface  2008
segment:        -1219     1209     1201     1205     1206
                5.74622E-53 0.0340

surface  2008
segment:        -1219     1209     1201     1205    -1206
                4.30120E-11 0.1659

surface  2009
segment:        1219
                1.33642E-49 0.0217

surface  2009
segment:        -1219    -1209
                1.81197E-52 0.0541

surface  2009
segment:        -1219     1209    -1201
                2.86851E-51 0.0303

surface  2009
segment:        -1219     1209     1201    -1205
                2.74666E-53 0.0462

surface  2009
segment:        -1219     1209     1201     1205     1206
                2.63359E-53 0.0551

surface  2009
segment:        -1219     1209     1201     1205    -1206
                1.10048E-11 0.2570

surface  2010
segment:        1219
                7.37447E-50 0.0226

surface  2010
segment:        -1219    -1209
                7.62483E-53 0.0747

surface  2010
segment:        -1219     1209    -1201
                1.25145E-51 0.0332

surface  2010
segment:        -1219     1209     1201    -1205
                9.30412E-54 0.0632

surface  2010
segment:        -1219     1209     1201     1205     1206
                7.00526E-54 0.0819
```

```
surface  2010
segment:       -1219     1209     1201     1205    -1206
                5.26977E-12 0.5365

surface  2011
segment:        1219
                3.97290E-50 0.0236

surface  2011
segment:       -1219    -1209
                3.41881E-53 0.0840

surface  2011
segment:       -1219     1209    -1201
                5.47782E-52 0.0341

surface  2011
segment:       -1219     1209     1201    -1205
                2.14036E-54 0.1106

surface  2011
segment:       -1219     1209     1201     1205     1206
                2.84919E-54 0.1765

surface  2011
segment:       -1219     1209     1201     1205    -1206
                1.45786E-12 0.5951

surface  2012
segment:        1219
                2.12074E-50 0.0247

surface  2012
segment:       -1219    -1209
                1.84859E-53 0.1090

surface  2012
segment:       -1219     1209    -1201
                2.49601E-52 0.0384

surface  2012
segment:       -1219     1209     1201    -1205
                9.28798E-55 0.1736

surface  2012
segment:       -1219     1209     1201     1205     1206
                7.72332E-55 0.1922

surface  2012
segment:       -1219     1209     1201     1205    -1206
                0.00000E+00 0.0000

surface  2013
segment:        1219
                1.12450E-50 0.0259

surface  2013
segment:       -1219    -1209
                7.89782E-54 0.1083

surface  2013
segment:       -1219     1209    -1201
                1.15151E-52 0.0470

surface  2013
segment:       -1219     1209     1201    -1205
                2.84498E-55 0.3486

surface  2013
segment:       -1219     1209     1201     1205     1206
                5.41478E-55 0.3940

surface  2013
segment:       -1219     1209     1201     1205    -1206
                4.78125E-13 1.0000
```

```
   ==========================================================================================================
   ===================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of
   tally  52

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure of
   merit--     -pdf-
 behavior    behavior      value   decrease   decrease rate      value   decrease   decrease rate       value
   behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
   random      >3.00
 observed     random        0.03      yes          yes            0.00      yes         yes            constant
   random      10.00
 passed?        yes          yes      yes          yes             yes      yes         yes               yes
   yes         yes


   ==========================================================================================================
   ===================


 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to
   verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 3.5842E-09 to 3.7823E-09; 3.4851E-09 to 3.8814E-09; 3.3861E-
   09 to 3.9804E-09
 estimated  symmetric confidence interval(1,2,3 sigma): 3.5814E-09 to 3.7794E-09; 3.4825E-09 to 3.8784E-09; 3.3835E-
   09 to 3.9774E-09

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  52 with nps =       10459  print table
   160


 normed average tally per history  = 3.68043E-09          unnormed average tally per history  = 1.10413E-02
 estimated tally relative error    = 0.0269               estimated variance of the variance  = 0.0049
 relative error from zero tallies  = 0.0176               relative error from nonzero scores  = 0.0203

 number of nonzero history tallies =        3233          efficiency for the nonzero tallies  = 0.0002
 history number of largest  tally  =        2353          largest  unnormalized history tally = 9.10565E+02
 (largest  tally)/(average tally)  = 8.24692E+04          (largest  tally)/(avg nonzero tally)= 1.33311E+01

 (confidence interval shift)/mean  = 0.0008               shifted confidence interval center  = 3.68325E-09


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would change
   as follows:

      estimated quantities           value at nps           value at nps+1           value(nps+1)/value(nps)-1.

      mean                            3.68043E-09             3.26974E-08                     7.884146
      relative error                  2.68930E-02             2.52709E-02                    -0.060318
      variance of the variance        4.86142E-03             5.73567E-03                     0.179833
      shifted center                  3.68325E-09             1.02158E-08                     1.773585
      figure of merit                 1.87311E+01             2.12129E+01                     0.132500

 the estimated slope of the 161 largest  tallies starting at  1.91721E+02 appears to be decreasing at least
   exponentially.
 the large score tail of the empirical history score probability density function appears to have no unsampled
   regions.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (2.709E+05)*( 8.315E-03)**2 = (2.709E+05)*(6.913E-05) =
   1.873E+01

1tally  62        nps =       10459
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     20000000.00

           this tally is modified by a dose function.

           areas
                surface:     1219
```

```
              segment
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       1.00000E+50
                5       5.30000E+06

 surface  1219
 segment:       -1205
                4.26997E-55 0.2864

 surface  1219
 segment:        1205     1206
                5.38806E-54 0.1197

 surface  1219
 segment:        1205    -1206     1203
                0.00000E+00 0.0000

 surface  1219
 segment:        1205    -1206    -1203    -1202
                2.72269E-53 0.0507

 surface  1219
 segment:        1205    -1206    -1203     1202
                0.00000E+00 0.0000

 there are no nonzero tallies in the tally fluctuation chart bin for tally  62

1status of the statistical checks used to form confidence intervals for the mean for each tally bin


 tally   result of statistical checks for the tfc bin (the first check not passed is listed) and error magnitude
    check for all bins

     2   no nonzero tallies were made in the tally fluctuation chart bin
         no nonzero tallies were made in any one of the      1 tally bins

    12   missed  3 of 10 tfc bin checks: the estimated mean has a trend during the last half of the problem
         passed all bin error check:    16 tally bins all have relative errors less than 0.10 with no zero bins

    22   passed the 10 statistical checks for the tally fluctuation chart bin result
         missed all bin error check:    22 tally bins had     0 bins with zeros and     2 bins with relative errors
    exceeding 0.10

    32   passed the 10 statistical checks for the tally fluctuation chart bin result
         passed all bin error check:     5 tally bins had     1 bins with zeros and     0 bins with relative errors
    exceeding 0.10

    42   passed the 10 statistical checks for the tally fluctuation chart bin result
         missed all bin error check:    66 tally bins had     0 bins with zeros and    10 bins with relative errors
    exceeding 0.10

    52   passed the 10 statistical checks for the tally fluctuation chart bin result
         missed all bin error check:    66 tally bins had     1 bins with zeros and    14 bins with relative errors
    exceeding 0.10

    62   no nonzero tallies were made in the tally fluctuation chart bin
         missed all bin error check:     5 tally bins had     2 bins with zeros and     2 bins with relative errors
    exceeding 0.10


 the 10 statistical checks are only for the tally fluctuation chart bin and do not apply to other tally bins.

 the tally bins with zeros may or may not be correct: compare the source, cutoffs, multipliers, et cetera with the
    tally bins.

 warning.     3 of the   7 tally fluctuation chart bins did not pass all 10 statistical checks.
 warning.     1 of the   7 tallies were all zeros.
 warning.     4 of the   7 tallies had bins with relative errors greater than recommended.
1tally fluctuation charts

                    tally    2                                 tally   12                                 tally   22
        nps      mean     error   vov  slope    fom      mean     error   vov  slope    fom      mean     error   vov  slope
    fom
       1000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   1.9381E-12 0.1178 0.0569  0.0 9.8E+00   3.8785E-49 0.1133 0.0614  3.6
    11
       2000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   2.0423E-12 0.0882 0.0372  0.0 9.1E+00   4.0298E-49 0.0861 0.0673  3.8
    9.5E+00
```

```
     3000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   2.2354E-12 0.0745 0.0270 10.0 8.4E+00   3.8447E-49 0.0674 0.0452  4.1
10
     4000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   2.2225E-12 0.0641 0.0198 10.0 8.7E+00   3.7844E-49 0.0613 0.0535  4.2
9.4E+00
     5000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   2.2535E-12 0.0585 0.0199 10.0 8.4E+00   3.7499E-49 0.0535 0.0421  4.5
10
     6000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   2.1717E-12 0.0545 0.0172 10.0 8.1E+00   3.7204E-49 0.0507 0.0395  4.0
9.4E+00
     7000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   2.2096E-12 0.0504 0.0139 10.0 8.1E+00   3.7704E-49 0.0464 0.0302  4.0
9.6E+00
     8000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   2.2380E-12 0.0471 0.0115 10.0 8.1E+00   3.7581E-49 0.0437 0.0248  3.7
9.4E+00
     9000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   2.2922E-12 0.0486 0.0498  7.4 6.7E+00   3.8225E-49 0.0438 0.0332  3.2
8.3E+00
    10000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   2.3082E-12 0.0450 0.0434  6.7 7.0E+00   3.8944E-49 0.0417 0.0269  3.2
8.2E+00
    10459   0.0000E+00 0.0000 0.0000  0.0 0.0E+00   2.3519E-12 0.0442 0.0372  7.6 6.9E+00   3.9127E-49 0.0408 0.0254  3.2
8.1E+00

                  tally   32                                 tally   42                                 tally   52
      nps      mean     error   vov  slope    fom      mean     error   vov  slope    fom      mean     error   vov  slope
fom
     1000   1.5136E-04 0.1027 0.0505 10.0      13   1.4285E-06 0.1569 0.1953  2.1 5.5E+00   4.3153E-09 0.0892 0.0381  0.0
17
     2000   1.3463E-04 0.0728 0.0256 10.0      13   1.2096E-06 0.1104 0.1261  2.1 5.8E+00   3.9723E-09 0.0624 0.0225 10.0
18
     3000   1.3820E-04 0.0599 0.0182 10.0      13   1.2072E-06 0.0855 0.0899  2.3 6.4E+00   3.8567E-09 0.0516 0.0185 10.0
18
     4000   1.4119E-04 0.0494 0.0122 10.0      15   1.1571E-06 0.0712 0.0704  2.6 7.0E+00   3.6657E-09 0.0445 0.0147 10.0
18
     5000   1.4213E-04 0.0436 0.0095 10.0      15   1.1653E-06 0.0631 0.0538  2.6 7.2E+00   3.6514E-09 0.0393 0.0115 10.0
19
     6000   1.3879E-04 0.0395 0.0079 10.0      15   1.1410E-06 0.0566 0.0451  2.7 7.5E+00   3.6345E-09 0.0356 0.0093 10.0
19
     7000   1.3743E-04 0.0359 0.0066 10.0      16   1.1491E-06 0.0517 0.0375  2.7 7.7E+00   3.6484E-09 0.0333 0.0079 10.0
19
     8000   1.3844E-04 0.0334 0.0057  8.9      16   1.1424E-06 0.0471 0.0327  3.1 8.1E+00   3.6487E-09 0.0308 0.0066 10.0
19
     9000   1.3787E-04 0.0314 0.0048 10.0      16   1.1458E-06 0.0433 0.0285  3.3 8.5E+00   3.6486E-09 0.0288 0.0056 10.0
19
    10000   1.4036E-04 0.0297 0.0043 10.0      16   1.1551E-06 0.0406 0.0241  3.5 8.6E+00   3.6930E-09 0.0274 0.0051 10.0
19
    10459   1.4214E-04 0.0291 0.0040 10.0      16   1.1714E-06 0.0397 0.0218  3.9 8.6E+00   3.6804E-09 0.0269 0.0049 10.0
19

                  tally   62
      nps      mean     error   vov  slope    fom
     1000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     2000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     3000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     4000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     5000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     6000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     7000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     8000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
     9000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
    10000   0.0000E+00 0.0000 0.0000  0.0 0.0E+00
    10459   0.0000E+00 0.0000 0.0000  0.0 0.0E+00

  ************************************************************************************************************
  *******
dump no.    3 on file runtpe       nps =       10459     coll =      438813125     ctm =       73.82   nrn =
  5459386639


      48 warning messages so far.


run terminated at end of surface-source input file.

computer time =   73.87 minutes

mcnp     version 5     11112005                     03/24/09 14:54:46                     probid =  03/24/09
  13:40:42
```

MCNP Case with Hexagonal HIC Geometry and I-Beams

Note: Case was run once to translate the source and then run from the translated source as included

```
         Thread Name & Version = mcnp5VE_RSICC, 1.40

 +---------------------------------------------------------------------+
 |   This program was prepared by the Regents of the University of     |
 |California at Los Alamos National Laboratory (the University) under  |
 |  contract number W-7405-ENG-36 with the U.S. Department of Energy    |
 |(DoE).  The University has certain rights in the program pursuant to |
 |  the contract and the program should not be copied or distributed    |
 | outside your organization.  All rights in the program are reserved   |
 |by the DoE and the University.  Neither the U.S. Government nor the   |
 | University makes any warranty, express or implied, or assumes any    |
 |     liability or responsibility for the use of this software.        |
 +---------------------------------------------------------------------+

1mcnp     version 5     ld=11112005                    05/29/09 09:02:54
 ***********************************************************************                probid =  05/29/09
09:02:54
  inp = IBEM.i outp = IBEM.o rssa = bwssa

    1-       c     Created on: Tuesday, November 11, 2008 at 09:35
    2-       c     Canister Cells
    3-          11     5      -1 -11 1209 -1212
    4-          12     5      -1 -12 1209 -1212
    5-          13     5      -1 -13 1209 -1212
    6-          14     5      -1 -14 1209 -1212
    7-          15     5      -1 -15 1209 -1212
    8-          16     5      -1 -16 1209 -1212
    9-          17     5      -1 -17 1209 -1212
   10-          18     5      -1 -18 1209 -1212
   11-          19     5      -1 -19 1209 -1212
   12-          21     5      -1 -21 1209 -1212
   13-          22     5      -1 -22 1209 -1212
   14-          23     5      -1 -23 1209 -1212
   15-          24     5      -1 -24 1209 -1212
   16-          25     5      -1 -25 1209 -1212
   17-          26     5      -1 -26 1209 -1212
   18-          27     5      -1 -27 1209 -1212
   19-          28     5      -1 -28 1209 -1212
   20-          29     5      -1 -29 1209 -1212
   21-          31     5      -1 -31 1209 -1212
   22-          32     5      -1 -32 1209 -1212
   23-          33     5      -1 -33 1209 -1212
   24-          34     5      -1 -34 1209 -1212
   25-          35     5      -1 -35 1209 -1212
   26-          36     5      -1 -36 1209 -1212
   27-          37     5      -1 -37 1209 -1212
   28-          38     5      -1 -38 1209 -1212
   29-          39     5      -1 -39 1209 -1212
   30-          41     5      -1 -41 1209 -1212
   31-          42     5      -1 -42 1209 -1212
   32-          43     5      -1 -43 1209 -1212
   33-          44     5      -1 -44 1209 -1212
   34-          45     5      -1 -45 1209 -1212
   35-          46     5      -1 -46 1209 -1212
   36-          47     5      -1 -47 1209 -1212
   37-          48     5      -1 -48 1209 -1212
   38-          49     5      -1 -49 1209 -1212
   39-          51     5      -1 -51 1209 -1212
   40-          52     5      -1 -52 1209 -1212
   41-          53     5      -1 -53 1209 -1212
   42-          54     5      -1 -54 1209 -1212
   43-          55     5      -1 -55 1209 -1212
   44-          56     5      -1 -56 1209 -1212
   45-          57     5      -1 -57 1209 -1212
   46-          58     5      -1 -58 1209 -1212
   47-          59     5      -1 -59 1209 -1212
   48-          61     5      -1 -61 1209 -1212
   49-          62     5      -1 -62 1209 -1212
   50-          63     5      -1 -63 1209 -1212
   51-          64     5      -1 -64 1209 -1212
```

```
 52-          65      5       -1 -65 1209 -1212
 53-          66      5       -1 -66 1209 -1212
 54-          67      5       -1 -67 1209 -1212
 55-          68      5       -1 -68 1209 -1212
 56-          69      5       -1 -69 1209 -1212
 57-          71      5       -1 -71 1209 -1212
 58-          72      5       -1 -72 1209 -1212
 59-          73      5       -1 -73 1209 -1212
 60-          74      5       -1 -74 1209 -1212
 61-          75      5       -1 -75 1209 -1212
 62-          76      5       -1 -76 1209 -1212
 63-          77      5       -1 -77 1209 -1212
 64-          78      5       -1 -78 1209 -1212
 65-          79      5       -1 -79 1209 -1212
 66-          81      5       -1 -81 1209 -1212
 67-          82      5       -1 -82 1209 -1212
 68-          83      5       -1 -83 1209 -1212
 69-          84      5       -1 -84 1209 -1212
 70-          85      5       -1 -85 1209 -1212
 71-          86      5       -1 -86 1209 -1212
 72-          87      5       -1 -87 1209 -1212
 73-          88      5       -1 -88 1209 -1212
 74-          89      5       -1 -89 1209 -1212
 75-          91      5       -1 -91 1209 -1212
 76-          92      5       -1 -92 1209 -1212
 77-          93      5       -1 -93 1209 -1212
 78-          94      5       -1 -94 1209 -1212
 79-          95      5       -1 -95 1209 -1212
 80-          96      5       -1 -96 1209 -1212
 81-          97      5       -1 -97 1209 -1212
 82-          98      5       -1 -98 1209 -1212
 83-          99      5       -1 -99 1209 -1212
 84-         101      5       -1 -101 1209 -1212
 85-         102      5       -1 -102 1209 -1212
 86-         103      5       -1 -103 1209 -1212
 87-         104      5       -1 -104 1209 -1212
 88-         105      5       -1 -105 1209 -1212
 89-         106      5       -1 -106 1209 -1212
 90-         107      5       -1 -107 1209 -1212
 91-         108      5       -1 -108 1209 -1212
 92-         109      5       -1 -109 1209 -1212
 93-         111      5       -1 -111 1209 -1212
 94-         112      5       -1 -112 1209 -1212
 95-         113      5       -1 -113 1209 -1212
 96-         114      5       -1 -114 1209 -1212
 97-         115      5       -1 -115 1209 -1212
 98-         116      5       -1 -116 1209 -1212
 99-         117      5       -1 -117 1209 -1212
100-         118      5       -1 -118 1209 -1212
101-         119      5       -1 -119 1209 -1212
102-         121      5       -1 -121 1209 -1212
103-         122      5       -1 -122 1209 -1212
104-         123      5       -1 -123 1209 -1212
105-         124      5       -1 -124 1209 -1212
106-         125      5       -1 -125 1209 -1212
107-         126      5       -1 -126 1209 -1212
108-         127      5       -1 -127 1209 -1212
109-         128      5       -1 -128 1209 -1212
110-         129      5       -1 -129 1209 -1212
111-         131      5       -1 -131 1209 -1212
112-         132      5       -1 -132 1209 -1212
113-         133      5       -1 -133 1209 -1212
114-         134      5       -1 -134 1209 -1212
115-         135      5       -1 -135 1209 -1212
116-         136      5       -1 -136 1209 -1212
117-         137      5       -1 -137 1209 -1212
118-         138      5       -1 -138 1209 -1212
119-         139      5       -1 -139 1209 -1212
120-         141      5       -1 -141 1209 -1212
121-         142      5       -1 -142 1209 -1212
122-         143      5       -1 -143 1209 -1212
123-         144      5       -1 -144 1209 -1212
124-         145      5       -1 -145 1209 -1212
125-         146      5       -1 -146 1209 -1212
126-         147      5       -1 -147 1209 -1212
127-         148      5       -1 -148 1209 -1212
128-         149      5       -1 -149 1209 -1212
129-         151      5       -1 -151 1209 -1212
```

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130-         152     5      -1 -152 1209 -1212
131-         153     5      -1 -153 1209 -1212
132-         154     5      -1 -154 1209 -1212
133-         155     5      -1 -155 1209 -1212
134-         156     5      -1 -156 1209 -1212
135-         157     5      -1 -157 1209 -1212
136-         158     5      -1 -158 1209 -1212
137-         159     5      -1 -159 1209 -1212
138-       c Walls
139-        1200     3 -0.001225 1222 -1221 1206 -1208 1220 -1219  $Notch
140-        1201     1  -2.365 1206 -1208 1202 -1203 -1219 1209 #1200  $Inner Wall
141-        1202     1  -2.395 1207 -1233 1219 -990 -991 992  $Top of Left Wall
142-       12021     1  -2.395 1233 -1223 1219 -990 992 -991  $Split in Left Wall
143-        1203     1  -2.365 1207 -1205 -1219 1209 -1203 1202  $Bottom of Left Wall
144-        1204     1  -2.395 1234 -1204 1207 -1218 1219 -990  $Top of Back Wall
145-       12041     1  -2.395 991 -1234 1207 -1218 1219 -990  $Split in Back Wall
146-        1205     1  -2.365 1203 -1204 1207 -1218 -1219 1209  $Bottom of Back Wall
147-        1206     1  -2.395 1235 -1218 -991 992 1219 -990  $Top of Right Wall
148-       12061     1  -2.395 1224 -1235 -991 992 1219 -990  $Split in Right Wall
149-        1207     1  -2.365 1217 -1218 -1203 1202 -1219 1209  $Bottom of Right Wall
150-        1208     1  -2.395 1201 -1236 -1218 1207 1219 -990 #10000 $Top of Front Wall
151-                    #10001 #10002 #10003 #10004 #10005
152-       12081     1  -2.395 -992 1236 -1218 1207 1219 -990 #10000 $Split in Front Wall
153-                    #10001 #10002 #10003 #10004 #10005
154-        1209     1  -2.365 -1202 1201 -1218 1207 -1219 1209  $Bottom of Front Wall
155-        1210     1  -2.365 -1209 1227 1207 -1218 -1204 1201  $Floor
156-        1211     1  -2.328 990 -1237 1207 -1218 -1204 1201  $Roof
157-       12111     1  -2.328 1237 -1216 1207 -1218 -1204 1201  $Split in Roof
158-       c   Air
159-        9999     0         2015  $Outside Model
160-        9998     3 -0.001225 1205 -1228 -1220 1209 -1203 1202 #(-134 1209 -1212 )#
161-                   (-135 1209 -1212 )#(-145 1209 -1212 )#(-146 1209 -1212 )#
162-                   (-147 1209 -1212 )#(-148 1209 -1212 )#(-149 1209 -1212 )#
163-                   (-11 1209 -1212 )#(-12 1209 -1212 )#(-13 1209 -1212 )#
164-                   (-14 1209 -1212 )#(-15 1209 -1212 )#(-25 1209 -1212 )#
165-                   (-26 1209 -1212 )#(-27 1209 -1212 )#(-28 1209 -1212 )#
166-                   (-29 1209 -1212 )#(-41 1209 -1212 )#(-42 1209 -1212 )#
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171-                   (-75 1209 -1212 )#(-85 1209 -1212 )#(-86 1209 -1212 )#
172-                   (-87 1209 -1212 )#(-88 1209 -1212 )#(-89 1209 -1212 )#
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174-                   (-104 1209 -1212 )#(-105 1209 -1212 )#(-115 1209 -1212 )#
175-                   (-116 1209 -1212 )#(-117 1209 -1212 )#(-118 1209 -1212 )#
176-                   (-119 1209 -1212 )#(-131 1209 -1212 )#(-132 1209 -1212 )#
177-                   (-133 1209 -1212 )
178-        9997     3 -0.001225 1228 -1229 -1220 1209 -1203 1202 #(-139 1209 -1212 )#
179-                   (-141 1209 -1212 )#(-151 1209 -1212 )#(-152 1209 -1212 )#
180-                   (-153 1209 -1212 )#(-154 1209 -1212 )#(-155 1209 -1212 )#
181-                   (-15 1209 -1212 )#(-16 1209 -1212 )#(-17 1209 -1212 )#
182-                   (-18 1209 -1212 )#(-19 1209 -1212 )#(-21 1209 -1212 )#
183-                   (-31 1209 -1212 )#(-32 1209 -1212 )#(-33 1209 -1212 )#
184-                   (-34 1209 -1212 )#(-35 1209 -1212 )#(-45 1209 -1212 )#
185-                   (-46 1209 -1212 )#(-47 1209 -1212 )#(-48 1209 -1212 )#
186-                   (-49 1209 -1212 )#(-51 1209 -1212 )#(-61 1209 -1212 )#
187-                   (-62 1209 -1212 )#(-63 1209 -1212 )#(-64 1209 -1212 )#
188-                   (-65 1209 -1212 )#(-75 1209 -1212 )#(-76 1209 -1212 )#
189-                   (-77 1209 -1212 )#(-78 1209 -1212 )#(-79 1209 -1212 )#
190-                   (-81 1209 -1212 )#(-91 1209 -1212 )#(-92 1209 -1212 )#
191-                   (-93 1209 -1212 )#(-94 1209 -1212 )#(-95 1209 -1212 )#
192-                   (-105 1209 -1212 )#(-106 1209 -1212 )#(-107 1209 -1212 )#
193-                   (-108 1209 -1212 )#(-109 1209 -1212 )#(-111 1209 -1212 )#
194-                   (-121 1209 -1212 )#(-122 1209 -1212 )#(-123 1209 -1212 )#
195-                   (-124 1209 -1212 )#(-125 1209 -1212 )#(-135 1209 -1212 )#
196-                   (-136 1209 -1212 )#(-137 1209 -1212 )#(-138 1209 -1212 )
197-        9996     3 -0.001225 1229 -1206 -1220 1209 -1203 1202 #(-142 1209 -1212 )#
198-                   (-143 1209 -1212 )#(-144 1209 -1212 )#(-156 1209 -1212 )#
199-                   (-157 1209 -1212 )#(-158 1209 -1212 )#(-159 1209 -1212 )#
200-                   (-21 1209 -1212 )#(-22 1209 -1212 )#(-23 1209 -1212 )#
201-                   (-24 1209 -1212 )#(-36 1209 -1212 )#(-37 1209 -1212 )#
202-                   (-38 1209 -1212 )#(-39 1209 -1212 )#(-51 1209 -1212 )#
203-                   (-52 1209 -1212 )#(-53 1209 -1212 )#(-54 1209 -1212 )#
204-                   (-66 1209 -1212 )#(-67 1209 -1212 )#(-68 1209 -1212 )#
205-                   (-69 1209 -1212 )#(-81 1209 -1212 )#(-82 1209 -1212 )#
206-                   (-83 1209 -1212 )#(-84 1209 -1212 )#(-96 1209 -1212 )#
207-                   (-97 1209 -1212 )#(-98 1209 -1212 )#(-99 1209 -1212 )#
```

```
208-                  (-111 1209 -1212 )#(-112 1209 -1212 )#(-113 1209 -1212 )#
209-                  (-114 1209 -1212 )#(-126 1209 -1212 )#(-127 1209 -1212 )#
210-                  (-128 1209 -1212 )#(-129 1209 -1212 )#(-141 1209 -1212 )
211-        9995      3 -0.001225 1220 -1219 1205 -1206 -1203 1202
212-        9994      3 -0.001225 -990 1219 1223 -1208 -991 992 #200 #201 #202 #203 #204
213-                   #205 #206 #207 #208 #209 #210
214-        9993      3 -0.001225 1209 -1231 1208 -1217 -1203 1202
215-        9992      3 -0.001225 -1230 1231 1208 -1217 -1203 1202
216-        9991      3 -0.001225 -1220 1230 1208 -1217 -1203 1202
217-        9990      3 -0.001225 1220 -1219 1208 -1217 -1203 1202
218-        9989      3 -0.001225 -990 1219 1208 -1224 -991 992 #211 #212 #213 #214
219-        9988      3 -0.001225 (-2000 -1207 1201 -1204 1227 -1216 ):
220-                  (1218 -2000 1201 -1204 1227 -1216 ):(-2000 -1201 1227 -1216 ):
221-                  (1204 -2000 1227 -1216 ):(1216 -2000 )
222-        9987      0          -1232 -2015  $Bottom Void
223-        9986      3 -0.001225 1232 -1227 -2015
224-       c       Ductwork Penetrations
225-       10000     3 -0.001225 12441 -12451 12321 -12331 1201 -992
226-       10001     3 -0.001225 12441 -12451 12341 -12351 1201 -992
227-       10002     3 -0.001225 12461 -12471 12361 -12371 1201 -992
228-       10003     3 -0.001225 12441 -12451 12381 -12391 1201 -992
229-       10004     3 -0.001225 12401 -12411 12441 -12451 1201 -992
230-       10005     3 -0.001225 12441 -12451 12421 -12431 1201 -992
231-       c Sphere Detector Cells
232-        2001      3 -0.001225 2000 -2001 1227
233-        2002      3 -0.001225 2001 -2002 1227
234-        2003      3 -0.001225 -2003 2002 1227
235-        2004      3 -0.001225 2003 -2004 1227
236-        2005      3 -0.001225 2004 -2005 1227
237-        2006      3 -0.001225 2005 -2006 1227
238-        2007      3 -0.001225 2006 -2007 1227
239-        2008      3 -0.001225 2007 -2008 1227
240-        2009      3 -0.001225 2008 -2009 1227
241-        2010      3 -0.001225 2009 -2010 1227
242-        2011      3 -0.001225 2010 -2011 1227
243-        2012      3 -0.001225 2011 -2012 1227
244-        2013      3 -0.001225 2012 -2013 1227
245-        2014      3 -0.001225 2013 -2014 1227
246-        2015      3 -0.001225 2014 -2015 1227
247-       c Roof Beams
248-         200      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
249-                    ):(-209 206 -211 212 992 -991 )
250-         201      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
251-                    ):(-209 206 -211 212 992 -991 ) trcl=(264.16 0 0 )
252-         202      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
253-                    ):(-209 206 -211 212 992 -991 ) trcl=(528.32 0 0 )
254-         203      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
255-                    ):(-209 206 -211 212 992 -991 ) trcl=(792.48 0 0 )
256-         204      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
257-                    ):(-209 206 -211 212 992 -991 ) trcl=(1056.64 0 0 )
258-         205      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
259-                    ):(-209 206 -211 212 992 -991 ) trcl=(1320.8 0 0 )
260-         206      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
261-                    ):(-209 206 -211 212 992 -991 ) trcl=(1584.96 0 0 )
262-         207      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
263-                    ):(-209 206 -211 212 992 -991 ) trcl=(1849.12 0 0 )
264-         208      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
265-                    ):(-209 206 -211 212 992 -991 ) trcl=(2113.28 0 0 )
266-         209      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
267-                    ):(-209 206 -211 212 992 -991 ) trcl=(2377.44 0 0 )
268-         210      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
269-                    ):(-209 206 -211 212 992 -991 ) trcl=(2641.6 0 0 )
270-         211      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
271-                    ):(-209 206 -211 212 992 -991 ) trcl=(2905.76 0 0 )
272-         212      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
273-                    ):(-209 206 -211 212 992 -991 ) trcl=(3169.92 0 0 )
274-         213      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
275-                    ):(-209 206 -211 212 992 -991 ) trcl=(3434.08 0 0 )
276-         214      4   -7.86 (206 -209 -990 210 992 -991 ):(-210 211 207 -208 992 -991
277-                    ):(-209 206 -211 212 992 -991 ) trcl=(3698.24 0 0 )
278-
279-       c     Source Canisters
280-          11       c/z 302.26 121.92 77.47
281-          12       c/z 500.38 121.92 77.47
282-          13       c/z 698.5 121.92 77.47
283-          14       c/z 896.62 121.92 77.47
284-          15       c/z 1094.74 121.92 77.47
285-          16       c/z 1292.86 121.92 77.47
```

```
286-          17       c/z 1490.98 121.92 77.47
287-          18       c/z 1689.1 121.92 77.47
288-          19       c/z 1887.22 121.92 77.47
289-          21       c/z 2085.34 121.92 77.47
290-          22       c/z 2283.46 121.92 77.47
291-          23       c/z 2481.58 121.92 77.47
292-          24       c/z 2679.7 121.92 77.47
293-          25       c/z 203.2 294.64 77.47
294-          26       c/z 401.32 294.64 77.47
295-          27       c/z 599.44 294.64 77.47
296-          28       c/z 797.56 294.64 77.47
297-          29       c/z 995.68 294.64 77.47
298-          31       c/z 1193.8 294.64 77.47
299-          32       c/z 1391.92 294.64 77.47
300-          33       c/z 1590.04 294.64 77.47
301-          34       c/z 1788.16 294.64 77.47
302-          35       c/z 1986.28 294.64 77.47
303-          36       c/z 2184.4 294.64 77.47
304-          37       c/z 2382.52 294.64 77.47
305-          38       c/z 2580.64 294.64 77.47
306-          39       c/z 2778.76 294.64 77.47
307-          41       c/z 302.26 467.36 77.47
308-          42       c/z 500.38 467.36 77.47
309-          43       c/z 698.5 467.36 77.47
310-          44       c/z 896.62 467.36 77.47
311-          45       c/z 1094.74 467.36 77.47
312-          46       c/z 1292.86 467.36 77.47
313-          47       c/z 1490.98 467.36 77.47
314-          48       c/z 1689.1 467.36 77.47
315-          49       c/z 1887.22 467.36 77.47
316-          51       c/z 2085.34 467.36 77.47
317-          52       c/z 2283.46 467.36 77.47
318-          53       c/z 2481.58 467.36 77.47
319-          54       c/z 2679.7 467.36 77.47
320-          55       c/z 203.2 640.08 77.47
321-          56       c/z 401.32 640.08 77.47
322-          57       c/z 599.44 640.08 77.47
323-          58       c/z 797.56 640.08 77.47
324-          59       c/z 995.68 640.08 77.47
325-          61       c/z 1193.8 640.08 77.47
326-          62       c/z 1391.92 640.08 77.47
327-          63       c/z 1590.04 640.08 77.47
328-          64       c/z 1788.16 640.08 77.47
329-          65       c/z 1986.28 640.08 77.47
330-          66       c/z 2184.4 640.08 77.47
331-          67       c/z 2382.52 640.08 77.47
332-          68       c/z 2580.64 640.08 77.47
333-          69       c/z 2778.76 640.08 77.47
334-          71       c/z 302.26 812.8 77.47
335-          72       c/z 500.38 812.8 77.47
336-          73       c/z 698.5 812.8 77.47
337-          74       c/z 896.62 812.8 77.47
338-          75       c/z 1094.74 812.8 77.47
339-          76       c/z 1292.86 812.8 77.47
340-          77       c/z 1490.98 812.8 77.47
341-          78       c/z 1689.1 812.8 77.47
342-          79       c/z 1887.22 812.8 77.47
343-          81       c/z 2085.34 812.8 77.47
344-          82       c/z 2283.46 812.8 77.47
345-          83       c/z 2481.58 812.8 77.47
346-          84       c/z 2679.7 812.8 77.47
347-          85       c/z 203.2 985.52 77.47
348-          86       c/z 401.32 985.52 77.47
349-          87       c/z 599.44 985.52 77.47
350-          88       c/z 797.56 985.52 77.47
351-          89       c/z 995.68 985.52 77.47
352-          91       c/z 1193.8 985.52 77.47
353-          92       c/z 1391.92 985.52 77.47
354-          93       c/z 1590.04 985.52 77.47
355-          94       c/z 1788.16 985.52 77.47
356-          95       c/z 1986.28 985.52 77.47
357-          96       c/z 2184.4 985.52 77.47
358-          97       c/z 2382.52 985.52 77.47
359-          98       c/z 2580.64 985.52 77.47
360-          99       c/z 2778.76 985.52 77.47
361-         101       c/z 302.26 1158.24 77.47
362-         102       c/z 500.38 1158.24 77.47
363-         103       c/z 698.5 1158.24 77.47
```

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364-         104       c/z 896.62 1158.24 77.47
365-         105       c/z 1094.74 1158.24 77.47
366-         106       c/z 1292.86 1158.24 77.47
367-         107       c/z 1490.98 1158.24 77.47
368-         108       c/z 1689.1 1158.24 77.47
369-         109       c/z 1887.22 1158.24 77.47
370-         111       c/z 2085.34 1158.24 77.47
371-         112       c/z 2283.46 1158.24 77.47
372-         113       c/z 2481.58 1158.24 77.47
373-         114       c/z 2679.7 1158.24 77.47
374-         115       c/z 203.2 1330.96 77.47
375-         116       c/z 401.32 1330.96 77.47
376-         117       c/z 599.44 1330.96 77.47
377-         118       c/z 797.56 1330.96 77.47
378-         119       c/z 995.68 1330.96 77.47
379-         121       c/z 1193.8 1330.96 77.47
380-         122       c/z 1391.92 1330.96 77.47
381-         123       c/z 1590.04 1330.96 77.47
382-         124       c/z 1788.16 1330.96 77.47
383-         125       c/z 1986.28 1330.96 77.47
384-         126       c/z 2184.4 1330.96 77.47
385-         127       c/z 2382.52 1330.96 77.47
386-         128       c/z 2580.64 1330.96 77.47
387-         129       c/z 2778.76 1330.96 77.47
388-         131       c/z 302.26 1503.68 77.47
389-         132       c/z 500.38 1503.68 77.47
390-         133       c/z 698.5 1503.68 77.47
391-         134       c/z 896.62 1503.68 77.47
392-         135       c/z 1094.74 1503.68 77.47
393-         136       c/z 1292.86 1503.68 77.47
394-         137       c/z 1490.98 1503.68 77.47
395-         138       c/z 1689.1 1503.68 77.47
396-         139       c/z 1887.22 1503.68 77.47
397-         141       c/z 2085.34 1503.68 77.47
398-         142       c/z 2283.46 1503.68 77.47
399-         143       c/z 2481.58 1503.68 77.47
400-         144       c/z 2679.7 1503.68 77.47
401-         145       c/z 203.2 1676.4 77.47
402-         146       c/z 401.32 1676.4 77.47
403-         147       c/z 599.44 1676.4 77.47
404-         148       c/z 797.56 1676.4 77.47
405-         149       c/z 995.68 1676.4 77.47
406-         151       c/z 1193.8 1676.4 77.47
407-         152       c/z 1391.92 1676.4 77.47
408-         153       c/z 1590.04 1676.4 77.47
409-         154       c/z 1788.16 1676.4 77.47
410-         155       c/z 1986.28 1676.4 77.47
411-         156       c/z 2184.4 1676.4 77.47
412-         157       c/z 2382.52 1676.4 77.47
413-         158       c/z 2580.64 1676.4 77.47
414-         159       c/z 2778.76 1676.4 77.47
415-         c    Planes
416-        1201        py -76.2
417-        1202        py 0
418-        1203        py 1828.8
419-        1204        py 1905
420-        1205        px 0
421-        1206        px 2895.6
422-        1207        px -76.2
423-        1208        px 2971.8
424-        1209        pz 0  $Top of Floor
425-        1212        pz 381  $Top of Top HIC
426-         990        pz 1455.42
427-        1216        pz 1493.52
428-        1217        px 3947.16
429-        1218        px 4023.36
430-        1219        pz 1036.32
431-        1220        pz 822.96  $Bottom of Notch
432-        1221        py 1760.22
433-        1222        py 1546.86
434-        1223        px -38.1
435-        1224        px 3985.26
436-         991        py 1866.9
437-         992        py -38.1
438-        1227        pz -76.2  $Bottom of Floor
439-        1228        px 1089.66
440-        1229        px 2080.26
441-        1230        pz 807.72
```

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442-        1231        pz 213.36  $7ft Detector Surface
443-        1232        pz -91.44  $Bottom Void
444-        1233        px -57.15
445-        1234        py 1885.95
446-        1235        px 4004.31
447-        1236        py -57.15
448-        1237        pz 1474.47
449-       c    HVAC Duct Openings
450-       12321        px 68.58  $Duct1S1
451-       12331        px 170.18  $Duct1 S2
452-       12341        px 871.22  $Duct2 S1
453-       12351        px 972.82  $Duct2 S2
454-       12361        px 1595.12  $Duct3 S1
455-       12371        px 1747.52  $Duct3 S2
456-       12381        px 1856.74  $Duct4 S1
457-       12391        px 1958.34  $Duct4 S2
458-       12401        px 2720.34  $Duct5 S1
459-       12411        px 2821.94  $Duct5 S2
460-       12421        px 3776.98  $Duct6 S1
461-       12431        px 3878.58  $Duct6 S2
462-       12441        pz 1397  $Small Ducts Bottom
463-       12451        pz 1437.64  $Small Duct Top
464-       12461        pz 1369.06  $Large Ducts Bottom
465-       12471        pz 1445.26  $Large Duct Top
466-       c   Spheres for detectors
467-        2000         s 1973.58 914.4 -72.6 2800  $Closest Sphere
468-        2001         s 1973.58 914.4 -72.6 4000
469-        2002         s 1973.58 914.4 -72.6 7000
470-        2003         s 1973.58 914.4 -72.6 10000
471-        2004         s 1973.58 914.4 -72.6 15000
472-        2005         s 1973.58 914.4 -72.6 20000
473-        2006         s 1973.58 914.4 -72.6 25000
474-        2007         s 1973.58 914.4 -72.6 30000
475-        2008         s 1973.58 914.4 -72.6 37500
476-        2009         s 1973.58 914.4 -72.6 45000
477-        2010         s 1973.58 914.4 -72.6 55000
478-        2011         s 1973.58 914.4 -72.6 65000
479-        2012         s 1973.58 914.4 -72.6 75000
480-        2013         s 1973.58 914.4 -72.6 85000
481-        2014         s 1973.58 914.4 -72.6 95000
482-        2015         s 1973.58 914.4 -72.6 120000
483-        2016        py -276.2
484-        2017        py -476.2
485-        2018        py -676.2
486-        2019        py -876.2
487-        2020        py -1076.2
488-        2021        py -1276.2
489-        2022        py -1476.2
490-        2023        py -1676.2
491-        2024        py -1876.2
492-        2025        py -2076.2
493-        2026        px 359.054
494-        2027        px 2535.94
495-        2028        py -2276.2
496-        2029        py -2476.2
497-        2030        py -2676.2
498-        2031        py -2876.2
499-        2032        py -3076.2
500-        2033        py -3276.2
501-        2034        py -3476.2
502-        2035        py -3676.2
503-       c    Roof Beams
504-         206        px 211.49
505-         207        px 225.37
506-         208        px 226.76
507-         209        px 240.64
508-         210        pz 1453.54
509-         211        pz 1373.84
510-         212        pz 1371.96
511-         213        px 226.065
512-
513-       mode  p
514-       c  Materials
515-       m1    1000.           -0.015  $MAT1
516-             8000.           -1.057 11000.          -0.041 12000.          -0.085
517-             13000.          -0.137 14000.          -0.487 15000.          -0.002
518-             16000.          -0.002 19000.          -0.015 20000.          -0.295
519-             22000.          -0.011 25000.          -0.003 26000.          -0.178
```

```
 520-       m2    13000.                1  $MAT2
warning. material   2 is not used in the problem.
 521-       m3    7000.           0.78969  $MAT3
 522-             8000.           0.21019 6000.           0.00012
 523-       m4    26000.                1  $MAT4
 524-       m5    1000.                 2  $MAT5
 525-             8000.                 1
 526-       imp:p   1 136r       9           3 1r         9           3 1r          $ 11,
 527-               9           3 1r         9           3 1r         1            $ 1206,
 528-               3           9            0           1 9r         27           $ 1211,
 529-               0           1 6r         27          54 1r        108 1r       $ 9987,
 530-               216 1r      432 1r       864 1r      1728 1r      3456 1r      $ 2006,
 531-               1 14r        $ 200, 214
 532-        phys:p  100 1 0
 533-       c sdef erg=d5 x=d1 y=d2 z=d3 cel=d4 eff=0.0001 wgt=3.045E+15
 534-       c si1  0 2895.6
 535-       c sp1  0.0 1.0
 536-       c si2  0 1828.8
 537-       c sp2  0.0 1.0
 538-       c si3  0.01 304.8 381.00
 539-       c sp3  0.0 0.8 0.2
 540-       c sb3  0.0 0.2 1.0
 541-       c si4  L 11 12 13 14 15 16 17 18 19 21 22 23 24 25 26 27 28 29 31 32
 542-       c      33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 51 52 53 54 55
 543-       c      56 57 58 59 61 62 63 64 65 66 67 68 69 71 72 73 74 75 76 77 78
 544-       c      79 81 82 83 84 85 86 87 88 89 91 92 93 94 95 96 97 98 99 101
 545-       c      102 103 104 105 106 107 108 109 111 112 113 114 115 116 117 118
 546-       c      119 121 122 123 124 125 126 127 128 129 131 132 133 134 135 136
 547-       c      137 138 139 141 142 143 144 145 146 147 148 149 151 152 153 154
 548-       c      155 156 157 158 159
 549-       c sp4  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 550-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 551-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 552-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 553-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 554-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 555-       c      1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
 556-       c      1  1  1  1  1
 557-       c si5 l 1.1730 1.3325
 558-       c sp5   1      1
 559-       c ssw 1220(9995)
 560-       ssr
 561-       c ===========================================================================
 562-       c ===========================================================================
 563-       c Truck bay dose rate
 564-       f2:p 1231
warning. without bremsstrahlung, flux estimates will be low.
 565-       c ===========================================================================
 566-       c ===========================================================================
 567-       c Rings outside the building
 568-       f12:p 1227
warning. without bremsstrahlung, flux estimates will be low.
 569-       fs12 -2000 -2001 -2002 -2003 -2004 -2005 -2006 -2007 -2008 -2009
 570-            -2010 -2011 -2012 -2013 -2014
 571-       sd12 1e50 2.564E+07 1.037e8 1.602e8 3.927e8 5.498e8 7.069e8 8.639e8 1.590e9
 572-            1.944e9 3.142e9 3.770e9 4.398e9 5.027e9 5.655e9 1.689e10
 573-       c ===========================================================================
 574-       c ===========================================================================
 575-       c Slabs Ajacent to Ventilation Penetration Side
 576-       f22:p 1227
warning. without bremsstrahlung, flux estimates will be low.
 577-       fs22 1201 -2026 2027
 578-            2016 2017 2018 2019 2020
 579-            2021 2022 2023 2024 2025
 580-            2028 2029 2030 2031 2032
 581-            2033 2034 2035
 582-       sd22 1e50 1e50 1e50
 583-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
 584-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
 585-            4.35376e5 4.35376e5 4.35376e5 4.35376e5 4.35376e5
 586-            4.35376e5 4.35376e5 4.35376e5 1e50
 587-       c ===========================================================================
 588-       c ===========================================================================
 589-       c Dose Rate on Vent Side Wall 7ft up avg
 590-       f32:p 1201
warning. without bremsstrahlung, flux estimates will be low.
 591-       fs32 1231 -2026 2027 -1227
 592-       sd32 1e50 1e50 1e50 1e50 6.30E+05
```

```
 593-       c ===========================================================================
 594-       c ===========================================================================
 595-       c detectors toward north, with HVAC effects
 596-       f42:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
 597-       fs42 1219 -1209 1201 -1205 1206
 598-       sd42 1e50 1e50 1e50 1e50 1e50 3.00e06
 599-            1e50 1e50 1e50 1e50 1e50 3.00e06
 600-            1e50 1e50 1e50 1e50 1e50 3.00e06
 601-            1e50 1e50 1e50 1e50 1e50 3.00e06
 602-            1e50 1e50 1e50 1e50 1e50 3.00e06
 603-            1e50 1e50 1e50 1e50 1e50 3.00e06
 604-            1e50 1e50 1e50 1e50 1e50 3.00e06
 605-            1e50 1e50 1e50 1e50 1e50 3.00e06
 606-            1e50 1e50 1e50 1e50 1e50 3.00e06
 607-            1e50 1e50 1e50 1e50 1e50 3.00e06
 608-            1e50 1e50 1e50 1e50 1e50 3.00e06
 609-       c detectors toward sorth, with no HVAC effects
 610-       f52:p 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
warning. without bremsstrahlung, flux estimates will be low.
 611-       fs52 1219 -1209 -1201 -1205 1206
 612-       sd52 1e50 1e50 1e50 1e50 1e50 3.00e06
 613-            1e50 1e50 1e50 1e50 1e50 3.00e06
 614-            1e50 1e50 1e50 1e50 1e50 3.00e06
 615-            1e50 1e50 1e50 1e50 1e50 3.00e06
 616-            1e50 1e50 1e50 1e50 1e50 3.00e06
 617-            1e50 1e50 1e50 1e50 1e50 3.00e06
 618-            1e50 1e50 1e50 1e50 1e50 3.00e06
 619-            1e50 1e50 1e50 1e50 1e50 3.00e06
 620-            1e50 1e50 1e50 1e50 1e50 3.00e06
 621-            1e50 1e50 1e50 1e50 1e50 3.00e06
 622-            1e50 1e50 1e50 1e50 1e50 3.00e06
 623-       c ===========================================================================
 624-       c ===========================================================================
 625-       c Detector above the HICS (used as a source check)
 626-       f62:p 1219
warning. without bremsstrahlung, flux estimates will be low.
 627-       fs62 -1205 1206 1203 -1202
 628-       sd62  1e50 1e50 1e50  1e50 5.30E+06
 629-       c ===========================================================================
 630-       c ===========================================================================
 631-       c Photon Flux to Dose Rate Conversion Factors
 632-       de0 0.01 0.03 0.05 0.07 0.10 0.15 0.20
 633-            0.25 0.30 0.35 0.40 0.45 0.50 0.55
 634-            0.60 0.65 0.70 0.80 1.00 1.40 1.80
 635-            2.20 2.60 2.80 3.25 3.75 4.25 4.75
 636-            5.00 5.25 5.75 6.25 6.75 7.50 9.00
 637-            11.0 13.0 15.0
 638-       df0 LIN 3.96E-06 5.82E-07 2.90E-07 2.58E-07 2.83E-07 3.79E-07 5.01E-07
 639-            6.31e-07 7.59E-07 8.78E-07 9.85E-07 1.08E-06 1.17E-06 1.27E-06
 640-            1.36e-06 1.44E-06 1.52E-06 1.68E-06 1.98E-06 2.51E-06 2.99E-06
 641-            3.42e-06 3.82E-06 4.01E-06 4.41E-06 4.83E-06 5.23E-06 5.60E-06
 642-            5.80e-06 6.01E-06 6.37E-06 6.74E-06 7.11E-06 7.66E-06 8.77E-06
 643-            1.03e-05 1.18E-05 1.33E-05
 644-       nps 8.00e08

surface    990   and surface 201990   are the same. 201990   will be deleted.

surface    990   and surface 202990   are the same. 202990   will be deleted.

surface    990   and surface 203990   are the same. 203990   will be deleted.

surface    990   and surface 204990   are the same. 204990   will be deleted.

surface    990   and surface 205990   are the same. 205990   will be deleted.

surface    990   and surface 206990   are the same. 206990   will be deleted.

surface    990   and surface 207990   are the same. 207990   will be deleted.

surface    990   and surface 208990   are the same. 208990   will be deleted.

surface    990   and surface 209990   are the same. 209990   will be deleted.

surface    990   and surface 210990   are the same. 210990   will be deleted.

surface    990   and surface 211990   are the same. 211990   will be deleted.
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surface    990   and surface 212990   are the same. 212990   will be deleted.
surface    990   and surface 213990   are the same. 213990   will be deleted.
surface    990   and surface 214990   are the same. 214990   will be deleted.
surface    991   and surface 201991   are the same. 201991   will be deleted.
surface    991   and surface 202991   are the same. 202991   will be deleted.
surface    991   and surface 203991   are the same. 203991   will be deleted.
surface    991   and surface 204991   are the same. 204991   will be deleted.
surface    991   and surface 205991   are the same. 205991   will be deleted.
surface    991   and surface 206991   are the same. 206991   will be deleted.
surface    991   and surface 207991   are the same. 207991   will be deleted.
surface    991   and surface 208991   are the same. 208991   will be deleted.
surface    991   and surface 209991   are the same. 209991   will be deleted.
surface    991   and surface 210991   are the same. 210991   will be deleted.
surface    991   and surface 211991   are the same. 211991   will be deleted.
surface    991   and surface 212991   are the same. 212991   will be deleted.
surface    991   and surface 213991   are the same. 213991   will be deleted.
surface    991   and surface 214991   are the same. 214991   will be deleted.
surface    992   and surface 201992   are the same. 201992   will be deleted.
surface    992   and surface 202992   are the same. 202992   will be deleted.
surface    992   and surface 203992   are the same. 203992   will be deleted.
surface    992   and surface 204992   are the same. 204992   will be deleted.
surface    992   and surface 205992   are the same. 205992   will be deleted.
surface    992   and surface 206992   are the same. 206992   will be deleted.
surface    992   and surface 207992   are the same. 207992   will be deleted.
surface    992   and surface 208992   are the same. 208992   will be deleted.
surface    992   and surface 209992   are the same. 209992   will be deleted.
surface    992   and surface 210992   are the same. 210992   will be deleted.
surface    992   and surface 211992   are the same. 211992   will be deleted.
surface    992   and surface 212992   are the same. 212992   will be deleted.
surface    992   and surface 213992   are the same. 213992   will be deleted.
surface    992   and surface 214992   are the same. 214992   will be deleted.
surface    210   and surface 201210   are the same. 201210   will be deleted.
surface    210   and surface 202210   are the same. 202210   will be deleted.
surface    210   and surface 203210   are the same. 203210   will be deleted.
surface    210   and surface 204210   are the same. 204210   will be deleted.
surface    210   and surface 205210   are the same. 205210   will be deleted.
surface    210   and surface 206210   are the same. 206210   will be deleted.
surface    210   and surface 207210   are the same. 207210   will be deleted.
surface    210   and surface 208210   are the same. 208210   will be deleted.
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surface    210   and surface 209210   are the same. 209210   will be deleted.
surface    210   and surface 210210   are the same. 210210   will be deleted.
surface    210   and surface 211210   are the same. 211210   will be deleted.
surface    210   and surface 212210   are the same. 212210   will be deleted.
surface    210   and surface 213210   are the same. 213210   will be deleted.
surface    210   and surface 214210   are the same. 214210   will be deleted.
surface    211   and surface 201211   are the same. 201211   will be deleted.
surface    211   and surface 202211   are the same. 202211   will be deleted.
surface    211   and surface 203211   are the same. 203211   will be deleted.
surface    211   and surface 204211   are the same. 204211   will be deleted.
surface    211   and surface 205211   are the same. 205211   will be deleted.
surface    211   and surface 206211   are the same. 206211   will be deleted.
surface    211   and surface 207211   are the same. 207211   will be deleted.
surface    211   and surface 208211   are the same. 208211   will be deleted.
surface    211   and surface 209211   are the same. 209211   will be deleted.
surface    211   and surface 210211   are the same. 210211   will be deleted.
surface    211   and surface 211211   are the same. 211211   will be deleted.
surface    211   and surface 212211   are the same. 212211   will be deleted.
surface    211   and surface 213211   are the same. 213211   will be deleted.
surface    211   and surface 214211   are the same. 214211   will be deleted.
surface    212   and surface 201212   are the same. 201212   will be deleted.
surface    212   and surface 202212   are the same. 202212   will be deleted.
surface    212   and surface 203212   are the same. 203212   will be deleted.
surface    212   and surface 204212   are the same. 204212   will be deleted.
surface    212   and surface 205212   are the same. 205212   will be deleted.
surface    212   and surface 206212   are the same. 206212   will be deleted.
surface    212   and surface 207212   are the same. 207212   will be deleted.
surface    212   and surface 208212   are the same. 208212   will be deleted.
surface    212   and surface 209212   are the same. 209212   will be deleted.
surface    212   and surface 210212   are the same. 210212   will be deleted.
surface    212   and surface 211212   are the same. 211212   will be deleted.
surface    212   and surface 212212   are the same. 212212   will be deleted.
surface    212   and surface 213212   are the same. 213212   will be deleted.
surface    212   and surface 214212   are the same. 214212   will be deleted.
comment.   84 surfaces were deleted for being the same as others.

 information from the header of surface-source file bwssa

the file was written by mcnp     version 5     with probid =  05/13/09 07:42:34  and ending with dump no.     5
the title of the creation run was     c     Created on: Tuesday, November 11, 2008 at 09:35
the original number of histories was    25654088
the total number of tracks recorded was     4352843 from     4229523 independent histories.
```

this ssr problem will use the following particles if available: photon

warning. 2 materials had unnormalized fractions. print table 40.

warning. 1 of the materials appear at more than one density.

warning. sum of segment sizes differs from total in 25 cases.

1cells print
table 60

	cell	mat	atom density	gram density	volume	mass	pieces	photon importance
1	11	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
2	12	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
3	13	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
4	14	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
5	15	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
6	16	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
7	17	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
8	18	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
9	19	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
10	21	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
11	22	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
12	23	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
13	24	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
14	25	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
15	26	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
16	27	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
17	28	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
18	29	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
19	31	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
20	32	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
21	33	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
22	34	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
23	35	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
24	36	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
25	37	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
26	38	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
27	39	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
28	41	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
29	42	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
30	43	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
31	44	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
32	45	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
33	46	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
34	47	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
35	48	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
36	49	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
37	51	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
38	52	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
39	53	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
40	54	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
41	55	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
42	56	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
43	57	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
44	58	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
45	59	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
46	61	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
47	62	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
48	63	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
49	64	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
50	65	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
51	66	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
52	67	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
53	68	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
54	69	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
55	71	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
56	72	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
57	73	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
58	74	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
59	75	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
60	76	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
61	77	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
62	78	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
63	79	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
64	81	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
65	82	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00

66	83	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
67	84	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
68	85	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
69	86	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
70	87	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
71	88	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
72	89	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
73	91	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
74	92	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
75	93	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
76	94	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
77	95	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
78	96	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
79	97	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
80	98	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
81	99	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
82	101	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
83	102	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
84	103	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
85	104	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
86	105	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
87	106	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
88	107	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
89	108	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
90	109	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
91	111	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
92	112	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
93	113	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
94	114	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
95	115	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
96	116	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
97	117	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
98	118	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
99	119	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
100	121	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
101	122	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
102	123	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
103	124	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
104	125	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
105	126	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
106	127	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
107	128	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
108	129	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
109	131	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
110	132	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
111	133	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
112	134	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
113	135	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
114	136	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
115	137	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
116	138	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
117	139	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
118	141	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
119	142	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
120	143	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
121	144	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
122	145	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
123	146	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
124	147	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
125	148	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
126	149	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
127	151	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
128	152	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
129	153	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
130	154	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
131	155	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
132	156	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
133	157	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
134	158	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
135	159	5	1.00282E-01	1.00000E+00	7.18360E+06	7.18360E+06	1	1.0000E+00
136	1200	3	5.11393E-05	1.22500E-03	3.46881E+06	4.24930E+03	0	1.0000E+00
137	1201	1	7.34055E-02	2.36500E+00	1.40947E+08	3.33340E+08	0	1.0000E+00
138	1202	1	7.43366E-02	2.39500E+00	1.52092E+07	3.64261E+07	0	9.0000E+00
139	12021	1	7.43366E-02	2.39500E+00	1.52092E+07	3.64261E+07	0	3.0000E+00
140	1203	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	3.0000E+00
141	1204	1	7.43366E-02	2.39500E+00	3.27303E+07	7.83891E+07	0	9.0000E+00
142	12041	1	7.43366E-02	2.39500E+00	3.27303E+07	7.83891E+07	0	3.0000E+00
143	1205	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	3.0000E+00

144	1206	1	7.43366E-02	2.39500E+00	1.52092E+07	3.64261E+07	0	9.0000E+00
145	12061	1	7.43366E-02	2.39500E+00	1.52092E+07	3.64261E+07	0	3.0000E+00
146	1207	1	7.34055E-02	2.36500E+00	1.44416E+08	3.41544E+08	0	3.0000E+00
147	1208	1	7.43366E-02	2.39500E+00	3.21158E+07	7.69173E+07	0	9.0000E+00
148	12081	1	7.43366E-02	2.39500E+00	3.21158E+07	7.69173E+07	0	3.0000E+00
149	1209	1	7.34055E-02	2.36500E+00	3.23732E+08	7.65627E+08	0	3.0000E+00
150	1210	1	7.34055E-02	2.36500E+00	6.18900E+08	1.46370E+09	0	1.0000E+00
151	1211	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	3.0000E+00
152	12111	1	7.22571E-02	2.32800E+00	1.54725E+08	3.60200E+08	0	9.0000E+00
153	9999	0	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0	0.0000E+00
154	9998	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
155	9997	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
156	9996	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	1.0000E+00
157	9995	3	5.11393E-05	1.22500E-03	1.12984E+09	1.38406E+06	0	1.0000E+00
158	9994	3	5.11393E-05	1.22500E-03	2.39844E+09	2.93809E+06	0	1.0000E+00
159	9993	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	1.0000E+00
160	9992	3	5.11393E-05	1.22500E-03	1.06018E+09	1.29872E+06	0	1.0000E+00
161	9991	3	5.11393E-05	1.22500E-03	2.71842E+07	3.33006E+04	0	1.0000E+00
162	9990	3	5.11393E-05	1.22500E-03	3.80578E+08	4.66209E+05	0	1.0000E+00
163	9989	3	5.11393E-05	1.22500E-03	8.07452E+08	9.89129E+05	0	1.0000E+00
164	9988	3	5.11393E-05	1.22500E-03	0.00000E+00	0.00000E+00	0	2.7000E+01
165	9987	0	0.00000E+00	0.00000E+00	3.61826E+15	0.00000E+00	1	0.0000E+00
166	9986	3	5.11393E-05	1.22500E-03	6.89441E+11	8.44566E+08	1	1.0000E+00
167	10000	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
168	10001	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
169	10002	3	5.11393E-05	1.22500E-03	4.42451E+05	5.42002E+02	0	1.0000E+00
170	10003	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
171	10004	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
172	10005	3	5.11393E-05	1.22500E-03	1.57316E+05	1.92712E+02	0	1.0000E+00
173	2001	3	5.11393E-05	1.22500E-03	8.81574E+10	1.07993E+08	1	2.7000E+01
174	2002	3	5.11393E-05	1.22500E-03	5.84709E+11	7.16269E+08	1	5.4000E+01
175	2003	3	5.11393E-05	1.22500E-03	1.37659E+12	1.68633E+09	1	5.4000E+01
176	2004	3	5.11393E-05	1.22500E-03	4.97560E+12	6.09511E+09	1	1.0800E+02
177	2005	3	5.11393E-05	1.22500E-03	9.68856E+12	1.18685E+10	1	1.0800E+02
178	2006	3	5.11393E-05	1.22500E-03	1.59723E+13	1.95661E+10	1	2.1600E+02
179	2007	3	5.11393E-05	1.22500E-03	2.38269E+13	2.91879E+10	1	2.1600E+02
180	2008	3	5.11393E-05	1.22500E-03	5.39037E+13	6.60320E+10	1	4.3200E+02
181	2009	3	5.11393E-05	1.22500E-03	8.04121E+13	9.85049E+10	1	4.3200E+02
182	2010	3	5.11393E-05	1.22500E-03	1.57615E+14	1.93078E+11	1	8.6400E+02
183	2011	3	5.11393E-05	1.22500E-03	2.26732E+14	2.77747E+11	1	8.6400E+02
184	2012	3	5.11393E-05	1.22500E-03	3.08416E+14	3.77809E+11	1	1.7280E+03
185	2013	3	5.11393E-05	1.22500E-03	4.02666E+14	4.93265E+11	1	1.7280E+03
186	2014	3	5.11393E-05	1.22500E-03	5.09482E+14	6.24115E+11	1	3.4560E+03
187	2015	3	5.11393E-05	1.22500E-03	1.82349E+15	2.23378E+12	1	3.4560E+03
188	200	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
189	201	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
190	202	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
191	203	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
192	204	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
193	205	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
194	206	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
195	207	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
196	208	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
197	209	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
198	210	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
199	211	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
200	212	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
201	213	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00
202	214	4	8.47555E-02	7.86000E+00	4.19837E+05	3.29992E+06	0	1.0000E+00

 total 7.23819E+15 4.44062E+12

 warning. surface 213 is not used for anything.

```
 ************************************************
 * Random Number Generator  =                  1 *
 * Random Number Seed       =       19073486328125 *
 * Random Number Multiplier =       19073486328125 *
 * Random Number Adder      =                  0 *
 * Random Number Bits Used  =                 48 *
 * Random Number Stride     =             152917 *
 ************************************************


        12 warning messages so far.
1cross-section tables                                                    print
table 100
```

```
     table    length

                        tables from file mcplib04

   1000.04p    1898  ENDF/B-VI Release 8 Photoatomic Data for 1-H                                mat 100
02/07/03
   6000.04p    3152  ENDF/B-VI Release 8 Photoatomic Data for 6-C                                mat 600
02/07/03
   7000.04p    3194  ENDF/B-VI Release 8 Photoatomic Data for 7-N                                mat 700
02/07/03
   8000.04p    3272  ENDF/B-VI Release 8 Photoatomic Data for 8-O                                mat 800
02/07/03
  11000.04p    3995  ENDF/B-VI Release 8 Photoatomic Data for 11-NA                              mat1100
02/07/03
  12000.04p    3781  ENDF/B-VI Release 8 Photoatomic Data for 12-MG                              mat1200
02/07/03
  13000.04p    4846  ENDF/B-VI Release 8 Photoatomic Data for 13-AL                              mat1300
02/07/03
  14000.04p    4792  ENDF/B-VI Release 8 Photoatomic Data for 14-SI                              mat1400
02/07/03
  15000.04p    4498  ENDF/B-VI Release 8 Photoatomic Data for 15-P                               mat1500
02/07/03
  16000.04p    4654  ENDF/B-VI Release 8 Photoatomic Data for 16-S                               mat1600
02/07/03
  19000.04p    5047  ENDF/B-VI Release 8 Photoatomic Data for 19-K                               mat1900
02/07/03
  20000.04p    5013  ENDF/B-VI Release 8 Photoatomic Data for 20-CA                              mat2000
02/07/03
  22000.04p    5742  ENDF/B-VI Release 8 Photoatomic Data for 22-TI                              mat2200
02/07/03
  25000.04p    5598  ENDF/B-VI Release 8 Photoatomic Data for 25-MN                              mat2500
02/07/03
  26000.04p    5718  ENDF/B-VI Release 8 Photoatomic Data for 26-FE                              mat2600
02/07/03

  total       65200

 warning. simple physics turned on for photons > 100 mev.

************************************************************************************************************
*******
 dump no.    1 on file runtpe       nps =           0     coll =              0     ctm =        0.00   nrn =
0


        13 warning messages so far.

************************************************************************************************************
*******
 dump no.    2 on file runtpe       nps =      189624     coll =      242628069     ctm =       60.00   nrn =
2986041879


************************************************************************************************************
*******
 dump no.    3 on file runtpe       nps =      381068     coll =      487585557     ctm =      120.01   nrn =
6000904946


************************************************************************************************************
*******
 dump no.    4 on file runtpe       nps =      570884     coll =      733848576     ctm =      180.02   nrn =
9033922676


************************************************************************************************************
*******
 dump no.    5 on file runtpe       nps =      762552     coll =      977728295     ctm =      240.03   nrn =
12034932297
```

```
********************************************************************************************************************************
*******
 dump no.    6 on file runtpe       nps =      953788     coll =     1222981716     ctm =      300.04   nrn =
15054091491


********************************************************************************************************************************
*******
 dump no.    7 on file runtpe       nps =     1143900     coll =     1467801779     ctm =      360.04   nrn =
18068518411


********************************************************************************************************************************
*******
 dump no.    8 on file runtpe       nps =     1336710     coll =     1714317770     ctm =      420.05   nrn =
21102840303


********************************************************************************************************************************
*******
 dump no.    9 on file runtpe       nps =     1525973     coll =     1960133345     ctm =      480.07   nrn =
24130774769


********************************************************************************************************************************
*******
 dump no.   10 on file runtpe       nps =     1716208     coll =     2202071745     ctm =      540.07   nrn =
27106978482


********************************************************************************************************************************
*******
 dump no.   11 on file runtpe       nps =     1906972     coll =     2445164355     ctm =      600.09   nrn =
30097998577


********************************************************************************************************************************
*******
 dump no.   12 on file runtpe       nps =     2098835     coll =     2689654366     ctm =      660.10   nrn =
33106132783


********************************************************************************************************************************
*******
 dump no.   13 on file runtpe       nps =     2288736     coll =     2934665387     ctm =      720.11   nrn =
36123343988


********************************************************************************************************************************
*******
 dump no.   14 on file runtpe       nps =     2480416     coll =     3178907614     ctm =      780.13   nrn =
39128534804


********************************************************************************************************************************
*******
 dump no.   15 on file runtpe       nps =     2670552     coll =     3423533912     ctm =      840.13   nrn =
42139723045


********************************************************************************************************************************
*******
 dump no.   16 on file runtpe       nps =     2860772     coll =     3668222228     ctm =      900.14   nrn =
45152483461
```

```
1dump no.   17 on file runtpe       nps =     3050624     coll =     3912020289     ctm =      960.15   nrn =
48153571313


1dump no.   18 on file runtpe       nps =     3240740     coll =     4156305512     ctm =     1020.16   nrn =
51161001073


1dump no.   19 on file runtpe       nps =     3431532     coll =     4399258854     ctm =     1080.17   nrn =
54150494771


1dump no.   20 on file runtpe       nps =     3623000     coll =     4641524992     ctm =     1140.18   nrn =
57130294792


1dump no.   21 on file runtpe       nps =     3813788     coll =     4886126859     ctm =     1200.19   nrn =
60140895214


1dump no.   22 on file runtpe       nps =     4003800     coll =     5129136194     ctm =     1260.19   nrn =
63131737423


1dump no.   23 on file runtpe       nps =     4195788     coll =     5373572494     ctm =     1320.19   nrn =
66139107365

1problem summary                                source particle weight for summary table normalization =
25654088.00

      run terminated at end of surface-source input file.
+                                                                                                  05/30/09
07:15:35
      c     Created on: Tuesday, November 11, 2008 at 09:35                              probid =  05/29/09
09:02:54
0
 photon creation     tracks      weight        energy           photon loss         tracks      weight
energy
                                (per source particle)                                          (per source
particle)

 source           135740272    1.7976E+14    4.9610E-01          escape             5425623    3.9919E+11
3.2785E-04
                                                                 energy cutoff            0    0.             0.
                                                                 time cutoff              0    0.             0.
 weight window            0    0.            0.                 weight window            0    0.             0.
 cell importance  682659431    3.0502E+13    2.7185E-02         cell importance  215167885    3.0494E+13
2.7185E-02
 weight cutoff            0    0.            0.                 weight cutoff            0    0.             0.
 e or t importance        0    0.            0.                 e or t importance        0    0.             0.
 dxtran                   0    0.            0.                 dxtran                   0    0.             0.
 forced collisions        0    0.            0.                 forced collisions        0    0.             0.
 exp. transform           0    0.            0.                 exp. transform           0    0.             0.
 from neutrons            0    0.            0.                 compton scatter          0    0.
4.1017E-01
 bremsstrahlung           0    0.            0.                 capture          669778234    2.1503E+14
8.6659E-02
```

```
 p-annihilation      171658    6.8154E+10    1.9375E-04          pair production      85829    3.4077E+10
2.4745E-04
 photonuclear             0    0.            0.                  photonuclear abs         0    0.            0.
 electron x-rays          0    0.            0.
 1st fluorescence  71886210    3.5634E+13    1.1132E-03
 2nd fluorescence         0    0.            0.
     total        890457571    2.4596E+14    5.2459E-01              total        890457571    2.4596E+14
5.2459E-01

   number of photons banked                517858199        average time of (shakes)              cutoffs
   photon tracks per source particle      3.4710E+01          escape            9.7081E+01          tco
1.0000E+33
   photon collisions per source particle  2.1113E+02          capture           6.1656E+00          eco
1.0000E-03
   total photon collisions                5416404164          capture or escape 6.3341E+00          wc1  -
5.0000E-01
                                                              any termination   6.6079E+00          wc2  -
2.5000E-01

 computer time so far in this run  1331.00 minutes           maximum number ever in bank        15
 computer time in mcrun            1330.94 minutes           bank overflows to backup file       0
 source particles per minute            3.1779E+03
 random numbers generated              66665944520          most random numbers used was     3268759 in
history     3715758

 warning.  random number stride   152917 exceeded     9302 times.

 range of sampled source weights = 2.2838E+13 to 4.7148E+14

 warning. importance function may be poor.  see print table 120.
1photon   activity in each cell                                                                    print
table 126

                tracks     population   collisions   collisions     number        flux        average
average
       cell    entering                             * weight     weighted     weighted   track weight   track
mfp
                                                   (per history)    energy       energy     (relative)
(cm)

     1    11       64002        62253       342426    4.3309E+11   9.2376E-02   9.2376E-02   3.2110E+13
5.3733E+00
     2    12       71894        69493       381744    4.8883E+11   9.1980E-02   9.1980E-02   3.2738E+13
5.3630E+00
     3    13       77487        74869       412156    5.2278E+11   9.1529E-02   9.1529E-02   3.2331E+13
5.3546E+00
     4    14       81016        78278       430113    5.3639E+11   9.1432E-02   9.1432E-02   3.1762E+13
5.3507E+00
     5    15       83618        80789       443374    5.6326E+11   9.0933E-02   9.0933E-02   3.2451E+13
5.3417E+00
     6    16       84443        81589       446796    5.7301E+11   9.1458E-02   9.1458E-02   3.2891E+13
5.3550E+00
     7    17       84783        81966       450917    5.9307E+11   9.0312E-02   9.0312E-02   3.3567E+13
5.3256E+00
     8    18       83979        81212       445532    5.7819E+11   9.0499E-02   9.0499E-02   3.2983E+13
5.3368E+00
     9    19       82821        79986       439675    5.6847E+11   9.0845E-02   9.0845E-02   3.2956E+13
5.3413E+00
    10    21       79607        76857       421857    5.4658E+11   9.0931E-02   9.0931E-02   3.3037E+13
5.3375E+00
    11    22       75088        72451       396941    5.0335E+11   9.2767E-02   9.2767E-02   3.2432E+13
5.3803E+00
    12    23       68624        66237       362664    4.6327E+11   9.3105E-02   9.3105E-02   3.2630E+13
5.3845E+00
    13    24       57967        56197       312001    3.9997E+11   9.3811E-02   9.3811E-02   3.2588E+13
5.3942E+00
    14    25       75171        73156       403149    5.1678E+11   9.2330E-02   9.2330E-02   3.2684E+13
5.3699E+00
    15    26       84391        80907       444210    5.6574E+11   9.0743E-02   9.0743E-02   3.2362E+13
5.3269E+00
    16    27       92921        89028       486676    6.2818E+11   8.9794E-02   8.9794E-02   3.2881E+13
5.3126E+00
    17    28       98260        94099       511220    6.5087E+11   8.9659E-02   8.9659E-02   3.2310E+13
5.3117E+00
    18    29      102753        98452       537864    6.8801E+11   8.9972E-02   8.9972E-02   3.2755E+13
5.3204E+00
    19    31      104795       100360       547914    6.9079E+11   8.9528E-02   8.9528E-02   3.2088E+13
5.3123E+00
```

20	32	106697	102263	556885	7.1337E+11	8.9541E-02	8.9541E-02	3.2478E+13
5.3114E+00								
21	33	105936	101554	552946	7.0909E+11	8.9532E-02	8.9532E-02	3.2686E+13
5.3090E+00								
22	34	103838	99492	546336	6.9935E+11	8.9780E-02	8.9780E-02	3.2657E+13
5.3142E+00								
23	35	100507	96216	524819	6.6670E+11	8.9729E-02	8.9729E-02	3.2339E+13
5.3143E+00								
24	36	95973	91925	502291	6.3320E+11	8.9868E-02	8.9868E-02	3.2074E+13
5.3165E+00								
25	37	89174	85523	469345	5.9656E+11	9.0799E-02	9.0799E-02	3.2437E+13
5.3322E+00								
26	38	79549	76342	418579	5.3131E+11	9.0997E-02	9.0997E-02	3.2387E+13
5.3323E+00								
27	39	63912	61808	342136	4.3040E+11	9.3279E-02	9.3279E-02	3.2089E+13
5.3855E+00								
28	41	86907	83844	459062	5.8749E+11	9.1202E-02	9.1202E-02	3.2625E+13
5.3416E+00								
29	42	98100	94022	514703	6.4741E+11	8.9822E-02	8.9822E-02	3.2083E+13
5.3135E+00								
30	43	105515	101104	549657	7.1156E+11	8.9772E-02	8.9772E-02	3.2982E+13
5.3124E+00								
31	44	110595	106069	574803	7.3256E+11	8.9289E-02	8.9289E-02	3.2361E+13
5.3053E+00								
32	45	114059	109227	592031	7.6439E+11	8.8633E-02	8.8633E-02	3.2909E+13
5.2935E+00								
33	46	115827	110997	605215	7.7095E+11	8.9018E-02	8.9018E-02	3.2446E+13
5.2992E+00								
34	47	116073	111249	606386	7.8045E+11	8.8656E-02	8.8656E-02	3.2909E+13
5.2939E+00								
35	48	114759	109989	599685	7.5600E+11	8.9178E-02	8.9178E-02	3.2123E+13
5.3052E+00								
36	49	112830	107980	589921	7.5555E+11	8.8857E-02	8.8857E-02	3.2740E+13
5.2984E+00								
37	51	108572	104015	565078	7.1622E+11	8.8855E-02	8.8855E-02	3.2255E+13
5.2955E+00								
38	52	102804	98491	538898	6.8771E+11	9.0198E-02	9.0198E-02	3.2668E+13
5.3225E+00								
39	53	94173	90300	494784	6.3222E+11	9.0664E-02	9.0664E-02	3.2509E+13
5.3303E+00								
40	54	79383	76360	420509	5.2694E+11	9.1188E-02	9.1188E-02	3.1912E+13
5.3408E+00								
41	55	87607	85240	468671	5.9500E+11	9.1505E-02	9.1505E-02	3.2476E+13
5.3486E+00								
42	56	97423	93199	510291	6.5428E+11	8.9633E-02	8.9633E-02	3.2690E+13
5.3103E+00								
43	57	107590	102905	562919	7.2224E+11	8.9897E-02	8.9897E-02	3.2760E+13
5.3186E+00								
44	58	113189	108406	589942	7.6111E+11	8.9441E-02	8.9441E-02	3.3091E+13
5.3084E+00								
45	59	118002	113230	616799	7.8724E+11	8.9067E-02	8.9067E-02	3.2522E+13
5.3014E+00								
46	61	120639	115603	633139	8.0936E+11	8.8821E-02	8.8821E-02	3.2421E+13
5.2951E+00								
47	62	121629	116512	630608	8.0819E+11	8.8436E-02	8.8436E-02	3.2670E+13
5.2945E+00								
48	63	120945	115712	630159	8.1407E+11	8.8049E-02	8.8049E-02	3.2779E+13
5.2777E+00								
49	64	119385	114390	620691	7.9576E+11	8.8438E-02	8.8438E-02	3.2638E+13
5.2914E+00								
50	65	115775	110849	602815	7.7808E+11	8.8803E-02	8.8803E-02	3.3018E+13
5.2988E+00								
51	66	110717	106094	577480	7.4285E+11	8.9073E-02	8.9073E-02	3.2708E+13
5.3013E+00								
52	67	103584	99126	542093	6.9335E+11	9.0591E-02	9.0591E-02	3.2598E+13
5.3277E+00								
53	68	91773	87978	482258	6.1135E+11	8.9949E-02	8.9949E-02	3.2324E+13
5.3130E+00								
54	69	74605	72158	399269	5.0951E+11	9.2234E-02	9.2234E-02	3.2550E+13
5.3666E+00								
55	71	93107	89718	489282	6.1187E+11	9.0544E-02	9.0544E-02	3.1796E+13
5.3286E+00								
56	72	105134	100668	550285	7.0092E+11	8.9412E-02	8.9412E-02	3.2512E+13
5.3035E+00								
57	73	112311	107434	584615	7.5378E+11	8.8734E-02	8.8734E-02	3.2678E+13
5.2959E+00								
58	74	116916	111985	610613	7.7737E+11	8.8662E-02	8.8662E-02	3.2473E+13
5.2952E+00								

59	75	120930	115888	632773	8.1856E+11	8.8386E-02	8.8386E-02	3.2873E+13
5.2909E+00								
60	76	123700	118458	644765	8.2075E+11	8.8745E-02	8.8745E-02	3.2487E+13
5.2955E+00								
61	77	123885	118626	645935	8.3483E+11	8.8383E-02	8.8383E-02	3.3023E+13
5.2894E+00								
62	78	122436	117317	637131	8.1668E+11	8.8564E-02	8.8564E-02	3.2855E+13
5.2913E+00								
63	79	120068	115048	625822	8.0309E+11	8.8612E-02	8.8612E-02	3.2638E+13
5.2933E+00								
64	81	114299	109569	598364	7.5993E+11	8.9141E-02	8.9141E-02	3.2456E+13
5.3026E+00								
65	82	108867	104373	570794	7.2934E+11	8.9279E-02	8.9279E-02	3.2612E+13
5.3067E+00								
66	83	99720	95600	522429	6.6308E+11	9.0579E-02	9.0579E-02	3.2305E+13
5.3257E+00								
67	84	85346	81979	449744	5.6886E+11	9.0810E-02	9.0810E-02	3.2113E+13
5.3321E+00								
68	85	89241	86802	474567	6.0058E+11	9.0846E-02	9.0846E-02	3.2112E+13
5.3444E+00								
69	86	99507	95326	522641	6.6423E+11	8.9999E-02	8.9999E-02	3.2532E+13
5.3190E+00								
70	87	109157	104645	569999	7.2134E+11	9.0213E-02	9.0213E-02	3.2259E+13
5.3242E+00								
71	88	115796	110966	602571	7.7377E+11	8.9017E-02	8.9017E-02	3.2673E+13
5.3032E+00								
72	89	120567	115383	630500	8.0724E+11	8.8642E-02	8.8642E-02	3.2773E+13
5.2934E+00								
73	91	122390	117123	639359	8.2311E+11	8.8330E-02	8.8330E-02	3.2688E+13
5.2880E+00								
74	92	123105	117997	640559	8.2547E+11	8.8771E-02	8.8771E-02	3.2851E+13
5.2981E+00								
75	93	123085	117777	640475	8.2371E+11	8.8535E-02	8.8535E-02	3.2687E+13
5.2936E+00								
76	94	121310	116218	630492	8.1503E+11	8.8825E-02	8.8825E-02	3.2991E+13
5.2970E+00								
77	95	117339	112465	611112	7.7600E+11	8.9213E-02	8.9213E-02	3.2536E+13
5.3043E+00								
78	96	112537	107758	586428	7.4138E+11	8.9229E-02	8.9229E-02	3.2247E+13
5.3077E+00								
79	97	104927	100552	546573	6.8606E+11	8.9820E-02	8.9820E-02	3.2049E+13
5.3182E+00								
80	98	93565	89575	488775	6.2287E+11	9.0236E-02	9.0236E-02	3.2543E+13
5.3260E+00								
81	99	76109	73587	407228	5.1369E+11	9.1492E-02	9.1492E-02	3.2242E+13
5.3499E+00								
82	101	91250	87843	480687	6.0714E+11	9.0669E-02	9.0669E-02	3.2263E+13
5.3344E+00								
83	102	102178	97838	532924	6.8022E+11	8.9226E-02	8.9226E-02	3.2560E+13
5.3029E+00								
84	103	110540	105859	577366	7.4066E+11	8.8977E-02	8.8977E-02	3.2734E+13
5.2983E+00								
85	104	115361	110589	603920	7.6750E+11	8.8936E-02	8.8936E-02	3.2382E+13
5.2980E+00								
86	105	119425	114457	623905	7.9812E+11	8.8604E-02	8.8604E-02	3.2538E+13
5.2916E+00								
87	106	121182	116166	630084	7.9074E+11	8.8523E-02	8.8523E-02	3.1932E+13
5.2923E+00								
88	107	121231	116097	631927	8.0718E+11	8.8827E-02	8.8827E-02	3.2684E+13
5.3021E+00								
89	108	120742	115744	629391	8.0019E+11	8.8832E-02	8.8832E-02	3.2515E+13
5.2979E+00								
90	109	117646	112718	616241	7.9343E+11	8.8825E-02	8.8825E-02	3.2844E+13
5.2974E+00								
91	111	113132	108330	588636	7.4461E+11	8.9045E-02	8.9045E-02	3.2151E+13
5.3048E+00								
92	112	106889	102292	559829	7.1848E+11	8.9420E-02	8.9420E-02	3.2765E+13
5.3077E+00								
93	113	98015	93905	512466	6.4513E+11	8.9941E-02	8.9941E-02	3.1981E+13
5.3136E+00								
94	114	83141	79916	439545	5.4727E+11	9.1586E-02	9.1586E-02	3.1780E+13
5.3476E+00								
95	115	83179	80919	442768	5.6204E+11	9.1233E-02	9.1233E-02	3.2294E+13
5.3494E+00								
96	116	93762	89669	493212	6.3554E+11	9.0480E-02	9.0480E-02	3.2840E+13
5.3279E+00								
97	117	103712	99257	540307	6.9066E+11	8.9793E-02	8.9793E-02	3.2547E+13
5.3130E+00								

98	118	109604	104998	573724	7.3559E+11	8.9457E-02	8.9457E-02	3.2652E+13
5.3062E+00								
99	119	113366	108651	592727	7.5117E+11	8.9458E-02	8.9458E-02	3.2279E+13
5.3091E+00								
100	121	116130	111253	607451	7.7465E+11	8.8771E-02	8.8771E-02	3.2406E+13
5.2955E+00								
101	122	116877	111953	611615	7.9215E+11	8.8766E-02	8.8766E-02	3.3077E+13
5.2987E+00								
102	123	116446	111530	607230	7.8363E+11	8.9037E-02	8.9037E-02	3.2862E+13
5.3034E+00								
103	124	114183	109333	594561	7.6510E+11	8.9220E-02	8.9220E-02	3.2880E+13
5.3064E+00								
104	125	110749	106056	578405	7.3986E+11	8.9275E-02	8.9275E-02	3.2564E+13
5.3034E+00								
105	126	105781	101358	551470	7.0558E+11	8.9524E-02	8.9524E-02	3.2623E+13
5.3098E+00								
106	127	99065	94835	519559	6.6101E+11	9.0593E-02	9.0593E-02	3.2343E+13
5.3284E+00								
107	128	87800	84008	461294	5.8371E+11	9.0058E-02	9.0058E-02	3.2337E+13
5.3160E+00								
108	129	72192	69860	384771	4.9126E+11	9.2902E-02	9.2902E-02	3.2569E+13
5.3776E+00								
109	131	81204	78216	431890	5.5241E+11	9.1813E-02	9.1813E-02	3.2646E+13
5.3456E+00								
110	132	91315	87441	478211	6.0229E+11	9.0806E-02	9.0806E-02	3.2125E+13
5.3276E+00								
111	133	98350	94329	516999	6.5720E+11	8.9963E-02	8.9963E-02	3.2429E+13
5.3182E+00								
112	134	103245	98822	541124	6.8951E+11	9.0220E-02	9.0220E-02	3.2540E+13
5.3270E+00								
113	135	106288	101799	553880	7.0544E+11	8.9866E-02	8.9866E-02	3.2596E+13
5.3167E+00								
114	136	107474	102977	564692	7.1514E+11	8.9596E-02	8.9596E-02	3.2161E+13
5.3109E+00								
115	137	107663	103137	561629	7.1643E+11	8.9508E-02	8.9508E-02	3.2652E+13
5.3109E+00								
116	138	106594	102129	557203	7.1189E+11	8.9589E-02	8.9589E-02	3.2537E+13
5.3115E+00								
117	139	103529	99200	543425	7.0443E+11	8.9962E-02	8.9962E-02	3.3044E+13
5.3178E+00								
118	141	100209	95923	523093	6.6354E+11	8.9934E-02	8.9934E-02	3.2360E+13
5.3186E+00								
119	142	94001	90022	494480	6.3642E+11	9.0124E-02	9.0124E-02	3.2899E+13
5.3184E+00								
120	143	85885	82325	451428	5.6606E+11	9.0361E-02	9.0361E-02	3.1996E+13
5.3193E+00								
121	144	72836	70046	384252	4.9641E+11	9.1736E-02	9.1736E-02	3.3018E+13
5.3489E+00								
122	145	65283	63873	354213	4.5198E+11	9.2473E-02	9.2473E-02	3.2445E+13
5.3731E+00								
123	146	72217	69887	383853	4.9949E+11	9.2643E-02	9.2643E-02	3.3247E+13
5.3706E+00								
124	147	79260	76599	420806	5.3436E+11	9.1829E-02	9.1829E-02	3.2368E+13
5.3562E+00								
125	148	84443	81640	448945	5.7705E+11	9.0369E-02	9.0369E-02	3.2783E+13
5.3329E+00								
126	149	87346	84425	463442	5.8910E+11	9.0955E-02	9.0955E-02	3.2437E+13
5.3434E+00								
127	151	89118	86224	473855	6.1460E+11	9.0588E-02	9.0588E-02	3.3018E+13
5.3395E+00								
128	152	89181	86180	472400	6.0541E+11	9.0200E-02	9.0200E-02	3.2685E+13
5.3311E+00								
129	153	89273	86362	472926	6.1675E+11	9.0004E-02	9.0004E-02	3.3298E+13
5.3268E+00								
130	154	87669	84850	467139	6.0217E+11	9.0600E-02	9.0600E-02	3.2812E+13
5.3361E+00								
131	155	85054	82222	449392	5.7715E+11	9.1077E-02	9.1077E-02	3.2815E+13
5.3439E+00								
132	156	80765	78074	428652	5.5129E+11	9.2025E-02	9.2025E-02	3.2855E+13
5.3644E+00								
133	157	75171	72667	402805	5.1232E+11	9.1545E-02	9.1545E-02	3.2331E+13
5.3507E+00								
134	158	66545	64341	355057	4.5738E+11	9.2863E-02	9.2863E-02	3.2987E+13
5.3758E+00								
135	159	55227	53686	298319	3.7587E+11	9.4351E-02	9.4351E-02	3.2125E+13
5.4020E+00								
136	1200	592968	551682	7667	9.5186E+09	4.0295E-01	4.0295E-01	3.1570E+13
7.8372E+03								

137	1201	6580484	6459836	28222625	3.3835E+13	3.5900E-01	3.5900E-01	2.9953E+13
3.6527E+00								
138	1202	3769860	3673122	18618411	2.2589E+12	3.6786E-01	3.6786E-01	2.7833E+13
3.7610E+00								
139	12021	21530342	21275608	94058787	3.7995E+13	3.9368E-01	3.9368E-01	3.0305E+13
3.7975E+00								
140	1203	19731164	19605781	86748310	3.4538E+13	3.6426E-01	3.6426E-01	2.9764E+13
3.6803E+00								
141	1204	5267534	5132391	25825795	3.1801E+12	3.5383E-01	3.5383E-01	2.8262E+13
3.6948E+00								
142	12041	35561122	35191324	153866759	6.2653E+13	3.9242E-01	3.9242E-01	3.0517E+13
3.7870E+00								
143	1205	34099171	33870142	147060648	5.8796E+13	3.6578E-01	3.6578E-01	2.9936E+13
3.6838E+00								
144	1206	189802	185088	902244	1.0535E+11	3.2006E-01	3.2006E-01	2.6513E+13
3.5391E+00								
145	12061	1286842	1272916	5487061	2.1217E+12	2.5813E-01	2.5813E-01	2.9016E+13
3.1754E+00								
146	1207	1452613	1443121	5881264	2.3494E+12	1.7533E-01	1.7533E-01	3.0303E+13
2.7888E+00								
147	1208	5957805	5811715	27621131	3.4589E+12	3.5830E-01	3.5830E-01	2.8667E+13
3.7071E+00								
148	12081	34799388	34413789	149421739	6.1018E+13	3.9123E-01	3.9123E-01	3.0586E+13
3.7798E+00								
149	1209	33966728	33744489	146066537	5.8746E+13	3.6484E-01	3.6484E-01	3.0072E+13
3.6790E+00								
150	1210	1038439	1015090	3605944	4.5365E+12	1.2850E-01	1.2850E-01	3.1775E+13
2.3939E+00								
151	1211	227101912	223823482	1042884183	4.5418E+14	4.1026E-01	4.1026E-01	3.2725E+13
3.9984E+00								
152	12111	61935599	60337499	311922636	4.3237E+13	3.9572E-01	3.9572E-01	3.1941E+13
4.0025E+00								
154	9998	10725608	7865964	1032629	1.3473E+12	1.2143E-01	1.2143E-01	3.3008E+13
5.4306E+03								
155	9997	11927614	8553559	1088543	1.4250E+12	1.1858E-01	1.1858E-01	3.3161E+13
5.3870E+03								
156	9996	8195750	5866739	728131	9.4341E+11	1.2229E-01	1.2229E-01	3.2878E+13
5.4415E+03								
157	9995	160658055	147306742	7209884	9.6856E+12	4.1758E-01	4.1758E-01	3.3197E+13
7.9293E+03								
158	9994	154306607	131137437	10940836	1.4891E+13	4.0390E-01	4.0390E-01	3.3726E+13
7.8437E+03								
159	9993	433685	359522	20198	2.4694E+10	1.3393E-01	1.3393E-01	3.1216E+13
5.6628E+03								
160	9992	969487	852267	98642	1.2280E+11	1.4679E-01	1.4679E-01	3.1378E+13
5.8095E+03								
161	9991	884669	822223	4312	5.3786E+09	1.5767E-01	1.5767E-01	3.1572E+13
5.9278E+03								
162	9990	1535035	1415874	82705	1.0323E+11	1.9154E-01	1.9154E-01	3.1359E+13
6.2082E+03								
163	9989	8850155	7151077	467578	5.8344E+11	3.5303E-01	3.5303E-01	3.1031E+13
7.4897E+03								
164	9988	25311340	24191959	4264091	1.9319E+11	4.4220E-01	4.4220E-01	3.1312E+13
8.4269E+03								
166	9986	329434	329429	1788	2.0511E+09	1.6683E-01	1.6683E-01	3.0781E+13
5.8958E+03								
167	10000	34870	33375	159	1.4522E+08	4.0773E-01	4.0773E-01	3.0725E+13
7.9953E+03								
168	10001	53605	51510	232	2.6396E+08	4.0478E-01	4.0478E-01	3.3166E+13
7.9031E+03								
169	10002	143831	139657	910	1.1796E+09	4.0782E-01	4.0782E-01	3.1360E+13
7.8899E+03								
170	10003	53597	51439	245	3.6183E+08	3.8119E-01	3.8119E-01	3.2400E+13
7.7314E+03								
171	10004	36764	35261	159	1.4519E+08	3.9619E-01	3.9619E-01	3.4256E+13
7.8402E+03								
172	10005	1532	1477	14	1.2808E+07	3.5729E-01	3.5729E-01	2.6939E+13
7.6121E+03								
173	2001	25074527	23675957	5184283	2.3526E+11	4.2741E-01	4.2741E-01	3.1296E+13
8.2621E+03								
174	2002	50847014	45612571	27934861	6.3462E+11	3.7904E-01	3.7904E-01	3.1355E+13
7.8012E+03								
175	2003	49411286	43221664	31144138	7.0738E+11	3.2783E-01	3.2783E-01	3.1371E+13
7.3030E+03								
176	2004	95328851	78756874	111254843	1.2634E+12	2.8369E-01	2.8369E-01	3.1392E+13
6.8568E+03								
177	2005	85244269	70122381	110186142	1.2501E+12	2.4914E-01	2.4914E-01	3.1381E+13
6.4943E+03								

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   178  2006   146156649    115723383    201305056    1.1408E+12   2.2789E-01   2.2789E-01   3.1362E+13
6.2639E+03
   179  2007   120992319     96981400    173698458    9.8311E+11   2.1426E-01   2.1426E-01   3.1331E+13
6.1126E+03
   180  2008   191004761    149218118    410214452    1.1606E+12   2.0377E-01   2.0377E-01   3.1317E+13
5.9944E+03
   181  2009   132474853    105016089    291279296    8.2329E+11   1.9600E-01   1.9600E-01   3.1294E+13
5.9063E+03
   182  2010   173951287    136563205    497682856    7.0264E+11   1.9124E-01   1.9124E-01   3.1260E+13
5.8518E+03
   183  2011    98925603     78377357    285902964    4.0304E+11   1.8856E-01   1.8856E-01   3.1219E+13
5.8219E+03
   184  2012   109884105     85988199    319569343    2.2490E+11   1.8753E-01   1.8753E-01   3.1169E+13
5.8108E+03
   185  2013    60105021     47417446    175568530    1.2344E+11   1.8735E-01   1.8735E-01   3.1153E+13
5.8098E+03
   186  2014    65047396     50151802    190463073    6.6917E+10   1.8768E-01   1.8768E-01   3.1125E+13
5.8140E+03
   187  2015    29270393     24701199    164428588    5.7623E+10   1.9433E-01   1.9433E-01   3.1044E+13
5.8905E+03
   188   200     2754998      2466652      5459714    7.1062E+12   4.9178E-01   4.9178E-01   3.1830E+13
1.2890E+00
   189   201     3019580      2694884      6002501    7.8359E+12   4.9353E-01   4.9353E-01   3.1984E+13
1.2901E+00
   190   202     3335109      2970677      6648721    8.6464E+12   5.0214E-01   5.0214E-01   3.1928E+13
1.3036E+00
   191   203     3571035      3173965      7126662    9.3724E+12   5.0292E-01   5.0292E-01   3.2335E+13
1.3063E+00
   192   204     3719639      3302671      7437981    9.7286E+12   5.0192E-01   5.0192E-01   3.1971E+13
1.3050E+00
   193   205     3751977      3332096      7494768    9.9119E+12   5.0682E-01   5.0682E-01   3.2551E+13
1.3139E+00
   194   206     3669046      3258008      7341172    9.6135E+12   5.0522E-01   5.0522E-01   3.2282E+13
1.3110E+00
   195   207     3462915      3076792      6908210    9.0373E+12   5.0259E-01   5.0259E-01   3.1953E+13
1.3061E+00
   196   208     3156633      2808686      6292301    8.1625E+12   4.9773E-01   4.9773E-01   3.1859E+13
1.2992E+00
   197   209     2808486      2498828      5562568    7.1855E+12   5.0415E-01   5.0415E-01   3.1765E+13
1.3111E+00
   198   210     2356592      2101662      4644487    5.9527E+12   5.1739E-01   5.1739E-01   3.1502E+13
1.3341E+00
   199   211     1539396      1389428      2983013    3.6432E+12   5.1391E-01   5.1391E-01   2.9603E+13
1.3294E+00
   200   212      754952       691038      1413470    1.6440E+12   4.9853E-01   4.9853E-01   2.8284E+13
1.3064E+00
   201   213      359296       331683       663251    7.5362E+11   4.7355E-01   4.7355E-01   2.7164E+13
1.2626E+00
   202   214      177191       164103       323277    3.7099E+11   4.5886E-01   4.5886E-01   2.7650E+13
1.2309E+00

     total    2364834333   2022595422   5416404164    1.0907E+15

1tally   2        nps =     4229523
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     25654088.00

           this tally is modified by a dose function.

           areas
                surface:     1231
                         1.78374E+06

 surface  1231
                1.54633E-01 0.0057


================================================================================================================
====================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally   2

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
```

behavior	behavior	value	decrease	decrease rate	value	decrease	decrease rate	value	behavior	slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant	random	>3.00
observed	random	0.01	yes	yes	0.00	yes	yes	constant	random	3.72
passed?	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

==========

this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart to verify.
the results in other bins associated with this tally may not meet these statistical criteria.

----- estimated confidence intervals: -----

estimated asymmetric confidence interval(1,2,3 sigma): 1.5377E-01 to 1.5553E-01; 1.5288E-01 to 1.5641E-01; 1.5200E-01 to 1.5729E-01
estimated symmetric confidence interval(1,2,3 sigma): 1.5375E-01 to 1.5551E-01; 1.5287E-01 to 1.5640E-01; 1.5199E-01 to 1.5728E-01

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 2 with nps = 4229523 print table 160

normed average tally per history	= 1.54633E-01	unnormed average tally per history	= 2.75825E+05
estimated tally relative error	= 0.0057	estimated variance of the variance	= 0.0023
relative error from zero tallies	= 0.0021	relative error from nonzero scores	= 0.0053
number of nonzero history tallies	= 226951	efficiency for the nonzero tallies	= 0.0088
history number of largest tally	= 1104723	largest unnormalized history tally	= 5.32503E+09
(largest tally)/(average tally)	= 1.93058E+04	(largest tally)/(avg nonzero tally)	= 1.70791E+02
(confidence interval shift)/mean	= 0.0001	shifted confidence interval center	= 1.54648E-01

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	1.54633E-01	1.55339E-01	0.004564
relative error	5.70274E-03	5.73064E-03	0.004894
variance of the variance	2.25592E-03	2.49699E-03	0.106863
shifted center	1.54648E-01	1.54728E-01	0.000521
figure of merit	2.31034E+01	2.28789E+01	-0.009716

the estimated inverse power slope of the 200 largest tallies starting at 1.11777E+09 is 3.7157
the large score tail of the empirical history score probability density function appears to have no unsampled regions.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.928E+04)*(3.462E-02)**2 = (1.928E+04)*(1.199E-03) = 2.310E+01

1tally 12 nps = 4229523
tally type 2 particle flux averaged over a surface.
tally for photons
number of histories used for normalizing tallies = 25654088.00

this tally is modified by a dose function.

areas

surface:	1227
segment	
1	1.00000E+50
2	2.56400E+07
3	1.03700E+08
4	1.60200E+08
5	3.92700E+08
6	5.49800E+08
7	7.06900E+08
8	8.63900E+08
9	1.59000E+09

```
               10       1.94400E+09
               11       3.14200E+09
               12       3.77000E+09
               13       4.39800E+09
               14       5.02700E+09
               15       5.65500E+09
               16       1.68900E+10

surface  1227
segment:       -2000
               1.92516E-46 0.0088

surface  1227
segment:        2000    -2001
               1.23824E-03 0.0069

surface  1227
segment:        2000     2001    -2002
               7.80794E-04 0.0052

surface  1227
segment:        2000     2001     2002    -2003
               3.86665E-04 0.0054

surface  1227
segment:        2000     2001     2002     2003    -2004
               1.79669E-04 0.0047

surface  1227
segment:        2000     2001     2002     2003     2004    -2005
               8.29655E-05 0.0066

surface  1227
segment:        2000     2001     2002     2003     2004     2005    -2006
               3.82826E-05 0.0082

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006    -2007
               1.86220E-05 0.0060

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007    -2008
               8.31301E-06 0.0054

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008    -2009
               3.31464E-06 0.0058

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009    -2010
               1.22083E-06 0.0061

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
    -2011
               4.15936E-07 0.0192

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011    -2012
               1.42201E-07 0.0094

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012    -2013
               5.15383E-08 0.0120

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012     2013    -2014
               2.26976E-08 0.1403

surface  1227
segment:        2000     2001     2002     2003     2004     2005     2006     2007     2008     2009     2010
     2011     2012     2013     2014
               4.22139E-09 0.0150
```

```
==========================================================================================================================
==================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  12

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps            constant
random      >3.00
 observed     random        0.01      yes          yes            0.15      yes         yes             constant
increase      2.44
 passed?       yes          yes      yes          yes              no      yes         yes                yes
no          no

==========================================================================================================================
==================


 warning.  the tally in the tally fluctuation chart bin did not pass  3 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  12 with nps =     4229523  print
table 160


 normed average tally per history  = 4.22139E-09          unnormed average tally per history  = 7.12992E+01
 estimated tally relative error    = 0.0150               estimated variance of the variance  = 0.1482
 relative error from zero tallies  = 0.0028               relative error from nonzero scores  = 0.0147

 number of nonzero history tallies =      126575          efficiency for the nonzero tallies  = 0.0049
 history number of largest  tally  =     1000351          largest  unnormalized history tally = 1.68310E+07
 (largest  tally)/(average tally)  = 2.36061E+05          (largest  tally)/(avg nonzero tally)= 1.16471E+03

 (confidence interval shift)/mean  = 0.0021               shifted confidence interval center  = 4.23017E-09


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1           value(nps+1)/value(nps)-1.

      mean                            4.22139E-09             4.45699E-09                    0.055813
      relative error                  1.49961E-02             1.74281E-02                    0.162172
      variance of the variance        1.48166E-01             1.53197E-01                    0.033956
      shifted center                  4.23017E-09             4.29234E-09                    0.014698
      figure of merit                 3.34105E+00             2.47368E+00                   -0.259612

 the estimated inverse power slope of the 200 largest  tallies starting at 5.36151E+05 is 2.4446
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.928E+04)*( 1.317E-02)**2 = (1.928E+04)*(1.733E-
04) = 3.341E+00

1unnormed tally density for tally  12            nonzero tally mean(m) = 1.445E+04   nps =     4229523  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 2.4)
  tally  number num den log den:d----------d----------d----------d----------d----------d----------d-------
----d----------d--
 2.00+03   5505 5.23-07  -6.282
**********|**********|**********|**********|**********|**********|**********|**********  |
 2.51+03  16485 1.24-06  -5.905
**********|**********|**********|**********|**********|**********|**********|**********|**
 3.16+03  15911 9.54-07  -6.021
**********|**********|**********|**********|**********|**********|**********|**********|*
 3.98+03  14233 6.78-07  -6.169
**********|**********|**********|**********|**********|**********|**********|**********|
 5.01+03  12535 4.74-07  -6.324
**********|**********|**********|**********|**********|**********|**********|**********  |
```

```
 6.31+03  11601 3.48-07  -6.458
**********|**********|**********|**********|**********|**********|**********|********     |
 7.94+03  10004 2.39-07  -6.622
**********|**********|**********|**********|**********|**********|**********|******       |
 1.00+04   8334 1.58-07  -6.801
**********|**********|**********|**********|**********|**********|**********|****         |
 1.26+04   6928 1.04-07  -6.982
**********|**********|**********|**********|**********|**********|**********|**           |
 1.58+04   5505 6.58-08  -7.182
mmmmmmmmmmmm|mmmmmmmmmmmm|mmmmmmmmmmmmm|mmmmmmmmmmmmm|mmmmmmmmmmmmm|mmmmmmmmmmmmm|mmmmmmmmmmmmm|            |
 2.00+04   4395 4.17-08  -7.379
**********|**********|**********|**********|**********|**********|*********  |            |
 2.51+04   3282 2.48-08  -7.606 **********|**********|**********|**********|**********|**********|******
|            |
 3.16+04   2438 1.46-08  -7.835 **********|**********|**********|**********|**********|**********|***
|            |
 3.98+04   2125 1.01-08  -7.995 **********|**********|**********|**********|**********|**********|**
|            |
 5.01+04   1796 6.79-09  -8.168 **********|**********|**********|**********|**********|**********|
|            |
 6.31+04   1347 4.05-09  -8.393 **********|**********|**********|**********|**********|*********  |
|            |
 7.94+04    969 2.31-09  -8.636 **********|**********|**********|**********|**********|******     |
|            |
 1.00+05    746 1.41-09  -8.850 **********|**********|**********|**********|**********|***        |
|            |
 1.26+05    511 7.69-10  -9.114 **********|**********|**********|**********|**********|           |
|            |
 1.58+05    410 4.90-10  -9.310 **********|**********|**********|**********|*********  |           |
|            |
 2.00+05    366 3.48-10  -9.459 **********|**********|**********|**********|********   |           |
|            |
 2.51+05    345 2.60-10  -9.585 **********|**********|**********|**********|******     |           |
|            |
 3.16+05    259 1.55-10  -9.809 **********|**********|**********|**********|***        |           |
|            |
 3.98+05    183 8.71-11 -10.060 **********|**********|**********|**********|           |           |
|            |
 5.01+05    137 5.18-11 -10.286 **********|**********|**********|********** |           |           |
|            |
 6.31+05     96 2.88-11 -10.540 **********|**********|**********|******     |   s       |           |
|            |
 7.94+05     56 1.34-11 -10.874 **********|**********|**********|**         | s         |           |
|            |
 1.00+06     28 5.31-12 -11.275 **********|**********|**********  |           s           |           |
|            |
 1.26+06     15 2.26-12 -11.646 **********|**********|******      |        s  |           |           |
|            |
 1.58+06      6 7.17-13 -12.144 **********|**********|            |      s    |           |           |
|            |
 2.00+06     11 1.04-12 -11.981 **********|**********|**          |   s       |           |           |
|            |
 2.51+06      2 1.51-13 -12.821 **********|****       |            | s         |           |           |
|            |
 3.16+06      2 1.20-13 -12.921 **********|**         |           s|           |           |           |
|            |
 3.98+06      3 1.43-13 -12.845 **********|***        |        s   |           |           |           |
|            |
 5.01+06      3 1.13-13 -12.945 **********|**         |      s     |           |           |           |
|            |
 6.31+06      2 6.01-14 -13.221 **********|           |   s        |           |           |           |
|            |
 7.94+06      0 0.00+00   0.000            |           |s           |           |           |           |
|            |
 1.00+07      0 0.00+00   0.000            |         s |            |           |           |           |
|            |
 1.26+07      0 0.00+00   0.000            |      s    |            |           |           |           |
|            |
 1.58+07      0 0.00+00   0.000            |   s       |            |           |           |           |
|            |
 2.00+07      1 9.50-15 -14.022 *          |s          |            |           |           |           |
|            |
  total  126575 4.93-03         d----------d-----------d------------d-----------d-----------d-----------d-------
----d------------d--

1tally  22        nps =     4229523
          tally type 2    particle flux averaged over a surface.
          tally for  photons
```

```
number of histories used for normalizing tallies =     25654088.00

          this tally is modified by a dose function.

          areas
               surface:     1227
              segment
                1       1.00000E+50
                2       1.00000E+50
                3       1.00000E+50
                4       4.35376E+05
                5       4.35376E+05
                6       4.35376E+05
                7       4.35376E+05
                8       4.35376E+05
                9       4.35376E+05
               10       4.35376E+05
               11       4.35376E+05
               12       4.35376E+05
               13       4.35376E+05
               14       4.35376E+05
               15       4.35376E+05
               16       4.35376E+05
               17       4.35376E+05
               18       4.35376E+05
               19       4.35376E+05
               20       4.35376E+05
               21       4.35376E+05
               22       1.00000E+50

surface  1227
segment:        1201
                1.71258E-45 0.0033

surface  1227
segment:       -1201    -2026
                9.10009E-46 0.0066

surface  1227
segment:       -1201     2026     2027
                8.16497E-46 0.0067

surface  1227
segment:       -1201     2026    -2027     2016
                8.51999E-04 0.0425

surface  1227
segment:       -1201     2026    -2027    -2016     2017
                1.21744E-03 0.0337

surface  1227
segment:       -1201     2026    -2027    -2016    -2017     2018
                1.67074E-03 0.0327

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018     2019
                1.95171E-03 0.0251

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019     2020
                2.33751E-03 0.0316

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020     2021
                2.81594E-03 0.0369

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021     2022
                2.94336E-03 0.0331

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022     2023
                3.05420E-03 0.0369

surface  1227
segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     2024
                2.81264E-03 0.0227
```

```
 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024     2025
                3.10359E-03 0.0396

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025     2028
                2.66328E-03 0.0245

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028     2029
                2.85292E-03 0.0520

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029     2030
                2.57305E-03 0.0348

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030     2031
                2.40073E-03 0.0396

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031     2032
                2.31325E-03 0.0379

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032     2033
                2.17870E-03 0.0424

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033     2034
                2.13633E-03 0.0603

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034     2035
                1.87747E-03 0.0405

 surface  1227
 segment:       -1201     2026    -2027    -2016    -2017    -2018    -2019    -2020    -2021    -2022    -2023
     -2024    -2025    -2028    -2029    -2030    -2031    -2032    -2033    -2034    -2035
                1.72945E-46 0.0144


================================================================================================================
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          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  22

 tfc bin      --mean--       ---------relative error---------       ----variance of the variance----       --figure
of merit--      -pdf-
 behavior     behavior       value    decrease    decrease rate       value    decrease    decrease rate        value
behavior     slope

 desired       random        <0.10       yes       1/sqrt(nps)        <0.10       yes         1/nps            constant
random       >3.00
 observed      random         0.01       yes           yes             0.04       yes           no             constant
random        2.57
 passed?         yes           yes       yes           yes               yes       yes           no                yes
yes           no


================================================================================================================
==================

 warning.  the tally in the tally fluctuation chart bin did not pass  2 of the 10 statistical checks.
```

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 22 with nps = 4229523 print table 160

normed average tally per history	= 1.72945E-46	unnormed average tally per history	= 1.72945E+04
estimated tally relative error	= 0.0144	estimated variance of the variance	= 0.0388
relative error from zero tallies	= 0.0015	relative error from nonzero scores	= 0.0143
number of nonzero history tallies	= 420599	efficiency for the nonzero tallies	= 0.0164
history number of largest tally	= 3441811	largest unnormalized history tally	= 2.42768E+09
(largest tally)/(average tally)	= 1.40373E+05	(largest tally)/(avg nonzero tally)	= 2.30142E+03
(confidence interval shift)/mean	= 0.0011	shifted confidence interval center	= 1.73137E-46

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	1.72945E-46	1.78684E-46	0.033189
relative error	1.43679E-02	1.52844E-02	0.063789
variance of the variance	3.87823E-02	4.56914E-02	0.178150
shifted center	1.73137E-46	1.74331E-46	0.006892
figure of merit	3.63963E+00	3.21622E+00	-0.116332

the estimated inverse power slope of the 200 largest tallies starting at 9.72268E+07 is 2.5666
the large score tail of the empirical history score probability density function appears to have no unsampled regions.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.928E+04)*(1.374E-02)**2 = (1.928E+04)*(1.888E-04) = 3.640E+00

1unnormed tally density for tally 22 nonzero tally mean(m) = 1.055E+06 nps = 4229523 print table 161

abscissa ordinate log plot of tally probability density function in tally fluctuation chart bin(d=decade,slope= 2.6)

tally	number	num den	log den	d	d	d	d	d	d	d	d
2.51+03	116	4.88-09	-8.312								
3.98+03	246	6.53-09	-8.185								
6.31+03	706	1.18-08	-7.927								
1.00+04	2536	2.68-08	-7.572								
1.58+04	4474	2.98-08	-7.526								
2.51+04	10651	4.48-08	-7.349								
3.98+04	17054	4.52-08	-7.344								
6.31+04	22712	3.80-08	-7.420								
1.00+05	45807	4.84-08	-7.315								
1.58+05	62230	4.15-08	-7.382								
2.51+05	71277	3.00-08	-7.523								
3.98+05	60858	1.61-08	-7.792								
6.31+05	42993	7.20-09	-8.143								
1.00+06	27500	2.90-09	-8.537								
1.58+06	16789	1.12-09	-8.951								
2.51+06	9694	4.08-10	-9.390								
3.98+06	6930	1.84-10	-9.736								
6.31+06	5250	8.79-11	-10.056								
1.00+07	4789	5.06-11	-10.296								

```
 1.58+07   3814 2.54-11 -10.595 **********|**********|**********|**********|**********|******    |          |
|
 2.51+07   2073 8.72-12 -11.060 **********|**********|**********|**********|**********|*         |          |
|
 3.98+07   1019 2.70-12 -11.568 **********|**********|**********|**********|*******    |          |          |
|
 6.31+07    615 1.03-12 -11.987 **********|**********|**********|**********|**         |          |          |
|
 1.00+08    274 2.89-13 -12.538 **********|**********|**********|*******   |     s     |          |          |
|
 1.58+08     76 5.07-14 -13.295 **********|**********|********* |          |   s       |          |          |
|
 2.51+08     57 2.40-14 -13.620 **********|**********|******    |          s           |          |          |
|
 3.98+08     29 7.69-15 -14.114 **********|**********|          |       s  |           |          |          |
|
 6.31+08     11 1.84-15 -14.735 **********|*****      |          |  s       |           |          |          |
|
 1.00+09     10 1.06-15 -14.976 **********|**         |         s|          |           |          |          |
|
 1.58+09      7 4.67-16 -15.331 ********* |           |    s     |          |           |          |          |
|
 2.51+09      2 8.41-17 -16.075 *         |          s|          |          |           |          |          |
|
  total  420599 1.64-02         d---------d----------d----------d----------d----------d----------d----------d-
---------d----------

1tally  32        nps =     4229523
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     25654088.00

           this tally is modified by a dose function.

           areas
                surface:     1201
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       1.00000E+50
                 5       6.30000E+05

 surface  1201
 segment:        1231
                 2.44021E-45 0.0225

 surface  1201
 segment:       -1231    -2026
                 1.04720E-48 0.1627

 surface  1201
 segment:       -1231     2026     2027
                 2.49323E-48 0.0573

 surface  1201
 segment:       -1231     2026    -2027    -1227
                 0.00000E+00 0.0000

 surface  1201
 segment:       -1231     2026    -2027     1227
                 7.82500E-04 0.0389


==========================================================================================================================
===================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  32

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10       yes      1/sqrt(nps)       <0.10       yes        1/nps           constant
random      >3.00
```

```
 observed     random        0.04      yes          yes            0.06      yes          no            constant
random       2.32
 passed?        yes          yes      yes          yes             yes      yes          no              yes
yes          no
```

==========

```
 warning.  the tally in the tally fluctuation chart bin did not pass  2 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  32 with nps =     4229523  print
table 160


 normed average tally per history  = 7.82500E-04          unnormed average tally per history  = 4.92975E+02
 estimated tally relative error    = 0.0389               estimated variance of the variance  = 0.0638
 relative error from zero tallies  = 0.0100               relative error from nonzero scores  = 0.0376

 number of nonzero history tallies =        9907          efficiency for the nonzero tallies  = 0.0004
 history number of largest  tally  =     2800437          largest  unnormalized history tally = 2.21129E+08
 (largest  tally)/(average tally)  = 4.48561E+05          (largest  tally)/(avg nonzero tally)= 1.73223E+02

 (confidence interval shift)/mean  = 0.0040               shifted confidence interval center  = 7.85618E-04


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            7.82500E-04            8.65487E-04                   0.106054
      relative error                  3.88887E-02            4.19036E-02                   0.077525
      variance of the variance        6.37580E-02            7.24072E-02                   0.135657
      shifted center                  7.85618E-04            8.05211E-04                   0.024940
      figure of merit                 4.96816E-01            4.27898E-01                  -0.138718

 the estimated inverse power slope of the 200 largest  tallies starting at 8.21852E+06 is 2.3216
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.928E+04)*( 5.077E-03)**2 = (1.928E+04)*(2.577E-
05) = 4.968E-01

1unnormed tally density for tally  32            nonzero tally mean(m) = 1.277E+06   nps =     4229523  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 2.3)
  tally  number num den log den:d--------------d---------------d--------------d--------------d--------------
-d--------------d--
 2.51+05    367 2.77-10  -9.558
***************|****************|***************|***************|****************|**********     |
 3.16+05   1431 8.58-10  -9.067
***************|****************|***************|***************|****************|***************|**
 3.98+05   1617 7.70-10  -9.114
***************|****************|***************|***************|****************|***************|*
 5.01+05   1460 5.52-10  -9.258
***************|****************|***************|***************|****************|***************|
 6.31+05   1201 3.61-10  -9.443
***************|****************|***************|***************|****************|************   |
 7.94+05    943 2.25-10  -9.648
***************|****************|***************|***************|****************|********       |
 1.00+06    714 1.35-10  -9.869
***************|****************|***************|***************|****************|*****          |
 1.26+06    524 7.89-11 -10.103
***************|****************|***************|***************|****************|*              |
 1.58+06    410 4.90-11 -10.310 mmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmm
|              |
 2.00+06    288 2.74-11 -10.563 ***************|****************|***************|***************|***********
|              |
 2.51+06    193 1.46-11 -10.837 ***************|****************|***************|***************|******
|              |
 3.16+06    130 7.79-12 -11.108 ***************|****************|***************|***************|**
|              |
```

```
 3.98+06     87 4.14-12 -11.383 ***************|***************|***************|*************  |
|            |
 5.01+06    145 5.48-12 -11.261 ***************|***************|***************|***************|
|            |
 6.31+06    108 3.24-12 -11.489 ***************|***************|***************|***********    |
|            |
 7.94+06     81 1.93-12 -11.714 ***************|***************|***************|********       |
|            |
 1.00+07     69 1.31-12 -11.883 ***************|***************|***************|*****         s|
|            |
 1.26+07     35 5.27-13 -12.278 ***************|***************|************** |            s  |
|            |
 1.58+07     33 3.95-13 -12.404 ***************|***************|************   |         s     |
|            |
 2.00+07     24 2.28-13 -12.642 ***************|***************|*********      |       s       |
|            |
 2.51+07     10 7.55-14 -13.122 ***************|***************|*              |    s          |
|            |
 3.16+07      8 4.79-14 -13.319 ***************|**************  |               | s             |
|            |
 3.98+07      5 2.38-14 -13.623 ***************|*********       |              s|               |
|            |
 5.01+07     10 3.78-14 -13.422 ***************|*************   |          s    |               |
|            |
 6.31+07      2 6.01-15 -14.221 ***************|                |       s       |               |
|            |
 7.94+07      4 9.54-15 -14.020 ***************|***             |    s          |               |
|            |
 1.00+08      1 1.90-15 -14.722 ********       |                |s              |               |
|            |
 1.26+08      4 6.02-15 -14.220 ***************|             s  |               |               |
|            |
 1.58+08      2 2.39-15 -14.621 *********      |          s     |               |               |
|            |
 2.00+08      0 0.00+00   0.000                |      s         |               |               |
|            |
 2.51+08      1 7.55-16 -15.122 *              |   s            |               |               |
|            |
  total    9907 3.86-04         d--------------d---------------d---------------d---------------d---------------
-d---------------d--

1tally  42        nps =     4229523
          tally type 2    particle flux averaged over a surface.
          tally for  photons
 number of histories used for normalizing tallies =     25654088.00

          this tally is modified by a dose function.

          areas
               surface:     2003         2004         2005         2006         2007         2008         2009
              segment
                1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
3.00000E+06
               surface:     2010         2011         2012         2013
              segment
                1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:        1219
                 1.07501E-44 0.0038

 surface  2003
 segment:       -1219    -1209
```

```
                1.35827E-47 0.0157

surface  2003
segment:       -1219     1209     1201
                1.03877E-46 0.0049

surface  2003
segment:       -1219     1209    -1201    -1205
                5.67155E-47 0.0095

surface  2003
segment:       -1219     1209    -1201     1205     1206
                4.77899E-47 0.0094

surface  2003
segment:       -1219     1209    -1201     1205    -1206
                5.45830E-04 0.0158

surface  2004
segment:       1219
                9.46098E-45 0.0039

surface  2004
segment:       -1219    -1209
                8.34924E-48 0.0135

surface  2004
segment:       -1219     1209     1201
                6.14751E-47 0.0047

surface  2004
segment:       -1219     1209    -1201    -1205
                3.51847E-47 0.0087

surface  2004
segment:       -1219     1209    -1201     1205     1206
                2.98943E-47 0.0092

surface  2004
segment:       -1219     1209    -1201     1205    -1206
                1.99472E-04 0.0191

surface  2005
segment:       1219
                8.03850E-45 0.0039

surface  2005
segment:       -1219    -1209
                5.05371E-48 0.0154

surface  2005
segment:       -1219     1209     1201
                3.74705E-47 0.0052

surface  2005
segment:       -1219     1209    -1201    -1205
                2.18336E-47 0.0084

surface  2005
segment:       -1219     1209    -1201     1205     1206
                1.85625E-47 0.0088

surface  2005
segment:       -1219     1209    -1201     1205    -1206
                8.44326E-05 0.0165

surface  2006
segment:       1219
                6.62466E-45 0.0040

surface  2006
segment:       -1219    -1209
                3.05157E-48 0.0115

surface  2006
segment:       -1219     1209     1201
                2.29797E-47 0.0053
```

```
surface  2006
segment:       -1219     1209    -1201    -1205
                1.36339E-47 0.0085

surface  2006
segment:       -1219     1209    -1201     1205     1206
                1.16429E-47 0.0089

surface  2006
segment:       -1219     1209    -1201     1205    -1206
                4.04984E-05 0.0191

surface  2007
segment:        1219
                5.32991E-45 0.0041

surface  2007
segment:       -1219    -1209
                1.95534E-48 0.0280

surface  2007
segment:       -1219     1209     1201
                1.41871E-47 0.0059

surface  2007
segment:       -1219     1209    -1201    -1205
                8.48008E-48 0.0092

surface  2007
segment:       -1219     1209    -1201     1205     1206
                7.26752E-48 0.0096

surface  2007
segment:       -1219     1209    -1201     1205    -1206
                2.02943E-05 0.0216

surface  2008
segment:        1219
                3.71583E-45 0.0043

surface  2008
segment:       -1219    -1209
                9.29878E-49 0.0152

surface  2008
segment:       -1219     1209     1201
                6.91716E-48 0.0068

surface  2008
segment:       -1219     1209    -1201    -1205
                4.19525E-48 0.0097

surface  2008
segment:       -1219     1209    -1201     1205     1206
                3.58433E-48 0.0097

surface  2008
segment:       -1219     1209    -1201     1205    -1206
                7.93675E-06 0.0260

surface  2009
segment:        1219
                2.51116E-45 0.0045

surface  2009
segment:       -1219    -1209
                4.64499E-49 0.0184

surface  2009
segment:       -1219     1209     1201
                3.37263E-48 0.0084

surface  2009
segment:       -1219     1209    -1201    -1205
                2.11948E-48 0.0112

surface  2009
segment:       -1219     1209    -1201     1205     1206
```

```
                1.81144E-48 0.0135

surface  2009
segment:       -1219     1209    -1201     1205    -1206
                3.23960E-06 0.0403

surface  2010
segment:        1219
                1.44241E-45 0.0048

surface  2010
segment:       -1219    -1209
                1.87421E-49 0.0269

surface  2010
segment:       -1219     1209     1201
                1.33325E-48 0.0103

surface  2010
segment:       -1219     1209    -1201    -1205
                8.55591E-49 0.0140

surface  2010
segment:       -1219     1209    -1201     1205     1206
                7.35255E-49 0.0240

surface  2010
segment:       -1219     1209    -1201     1205    -1206
                1.14396E-06 0.0570

surface  2011
segment:        1219
                8.08679E-46 0.0051

surface  2011
segment:       -1219    -1209
                7.18500E-50 0.0265

surface  2011
segment:       -1219     1209     1201
                5.17468E-49 0.0146

surface  2011
segment:       -1219     1209    -1201    -1205
                3.50849E-49 0.0196

surface  2011
segment:       -1219     1209    -1201     1205     1206
                2.91544E-49 0.0211

surface  2011
segment:       -1219     1209    -1201     1205    -1206
                3.74643E-07 0.0495

surface  2012
segment:        1219
                4.45827E-46 0.0053

surface  2012
segment:       -1219    -1209
                2.93165E-50 0.0315

surface  2012
segment:       -1219     1209     1201
                2.08923E-49 0.0157

surface  2012
segment:       -1219     1209    -1201    -1205
                1.43037E-49 0.0180

surface  2012
segment:       -1219     1209    -1201     1205     1206
                1.25124E-49 0.0303

surface  2012
segment:       -1219     1209    -1201     1205    -1206
                1.37988E-07 0.0667
```

```
 surface  2013
 segment:        1219
                 2.43531E-46 0.0057

 surface  2013
 segment:       -1219    -1209
                 1.32310E-50 0.0525

 surface  2013
 segment:       -1219     1209     1201
                 9.41396E-50 0.0724

 surface  2013
 segment:       -1219     1209    -1201    -1205
                 6.42133E-50 0.0350

 surface  2013
 segment:       -1219     1209    -1201     1205     1206
                 5.12813E-50 0.0311

 surface  2013
 segment:       -1219     1209    -1201     1205    -1206
                 5.53882E-08 0.1441


================================================================================================================
==================

           results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  42

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--      -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.02      yes          yes            0.04      yes         yes            constant
random       2.32
 passed?        yes          yes      yes          yes              yes      yes         yes               yes
yes          no


================================================================================================================
==================


 warning.  the tally in the tally fluctuation chart bin did not pass  1 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  42 with nps =     4229523  print
table 160


 normed average tally per history  = 5.45830E-04          unnormed average tally per history  = 1.63749E+03
 estimated tally relative error    = 0.0158               estimated variance of the variance  = 0.0351
 relative error from zero tallies  = 0.0039               relative error from nonzero scores  = 0.0153

 number of nonzero history tallies =       66288          efficiency for the nonzero tallies  = 0.0026
 history number of largest  tally  =     3441811          largest  unnormalized history tally = 2.36796E+08
 (largest  tally)/(average tally)  = 1.44609E+05          (largest  tally)/(avg nonzero tally)= 3.73657E+02

 (confidence interval shift)/mean  = 0.0011               shifted confidence interval center  = 5.46439E-04


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities           value at nps           value at nps+1          value(nps+1)/value(nps)-1.

      mean                            5.45830E-04            5.64492E-04                  0.034190
      relative error                  1.57879E-02            1.66641E-02                  0.055498
      variance of the variance        3.51227E-02            4.04623E-02                  0.152028
      shifted center                  5.46439E-04            5.50164E-04                  0.006817
      figure of merit                 3.01434E+00            2.70568E+00                 -0.102396

 the estimated inverse power slope of the 200 largest  tallies starting at 1.34710E+07 is 2.3216
```

```
 the history score probability density function appears to have an unsampled region at the largest  history
scores:
 please examine. see print table 161.

 fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.928E+04)*( 1.251E-02)**2 = (1.928E+04)*(1.564E-
04) = 3.014E+00

1unnormed tally density for tally  42            nonzero tally mean(m) = 6.337E+05   nps =     4229523  print
table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart
bin(d=decade,slope= 2.3)
  tally  number num den log den:d------------d-------------d-------------d-------------d-------------d----------
----d-------------d-
 6.31+04    870 2.61-09  -8.583
*************|*************|*************|*************|*************|*******      |
 7.94+04   2958 7.06-09  -8.151
*************|*************|*************|*************|*************|*************|*************|
 1.00+05   3002 5.69-09  -8.245
*************|*************|*************|*************|*************|*************|************ |
 1.26+05   4521 6.81-09  -8.167
*************|*************|*************|*************|*************|*************|*************|
 1.58+05   8411 1.01-08  -7.997
*************|*************|*************|*************|*************|*************|*************|*
 2.00+05   7702 7.32-09  -8.136
*************|*************|*************|*************|*************|*************|*************|
 2.51+05   7248 5.47-09  -8.262
*************|*************|*************|*************|*************|*************|************  |
 3.16+05   6374 3.82-09  -8.418
*************|*************|*************|*************|*************|*************|*********    |
 3.98+05   5456 2.60-09  -8.585
*************|*************|*************|*************|*************|*************|*******      |
 5.01+05   4631 1.75-09  -8.757
*************|*************|*************|*************|*************|*************|****         |
 6.31+05   3343 1.00-09  -8.998
*************|*************|*************|*************|*************|*************|*            |
 7.94+05   2471 5.90-10  -9.229
mmmmmmmmmmmmmm|mmmmmmmmmmmmmmm|mmmmmmmmmmmmmmm|mmmmmmmmmmmmmmm|mmmmmmmmmmmmmmm|mmmmmmmmmmmmmmm |            |
 1.00+06   1731 3.28-10  -9.484 *************|*************|*************|*************|*************|*********
|           |
 1.26+06   1421 2.14-10  -9.670 *************|*************|*************|*************|*************|******
|           |
 1.58+06   1286 1.54-10  -9.813 *************|*************|*************|*************|*************|****
|           |
 2.00+06    996 9.46-11 -10.024 *************|*************|*************|*************|*************|*
|           |
 2.51+06    986 7.44-11 -10.128 *************|*************|*************|*************|*************|
|           |
 3.16+06    867 5.20-11 -10.284 *************|*************|*************|*************|************ |
|           |
 3.98+06    606 2.88-11 -10.540 *************|*************|*************|*************|********     |
|           |
 5.01+06    406 1.54-11 -10.814 *************|*************|*************|*************|****         |
|           |
 6.31+06    277 8.32-12 -11.080 *************|*************|*************|*************|*            |
|           |
 7.94+06    229 5.46-12 -11.262 *************|*************|*************|************ |            |
|           |
 1.00+07    157 2.98-12 -11.526 *************|*************|*************|********     |            |
|           |
 1.26+07    107 1.61-12 -11.793 *************|*************|*************|*****        |            |
|           |
 1.58+07     86 1.03-12 -11.988 *************|*************|*************|**         s |            |
|           |
 2.00+07     60 5.70-13 -12.244 *************|*************|************ |         s   |            |
|           |
 2.51+07     21 1.58-13 -12.800 *************|*************|****         |       s     |            |
|           |
 3.16+07     24 1.44-13 -12.842 *************|*************|****         |    s        |            |
|           |
 3.98+07      7 3.33-14 -13.477 *************|*********    |             | s           |            |
|           |
 5.01+07     10 3.78-14 -13.422 *************|**********   |             s             |            |
|           |
 6.31+07      6 1.80-14 -13.744 *************|*****        |          s  |             |            |
|           |
 7.94+07      9 2.15-14 -13.668 *************|******       |       s     |             |            |
|           |
```

```
 1.00+08      2 3.79-15 -14.421 *********    |             |    s        |             |             |
|             |
 1.26+08      4 6.02-15 -14.220 ************ |             | s           |             |             |
|             |
 1.58+08      0 0.00+00   0.000              |            s|             |             |             |
|             |
 2.00+08      1 9.50-16 -15.022 *            |         s   |             |             |             |
|             |
 2.51+08      2 1.51-15 -14.821 ****         |      s      |             |             |             |
|             |
  total   66288 2.58-03         d------------d-------------d-------------d-------------d-------------d----------
----d-------------d-

1tally  52        nps =     4229523
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     25654088.00

           this tally is modified by a dose function.

           areas
                surface:     2003         2004         2005         2006         2007         2008         2009
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06
3.00000E+06
                surface:     2010         2011         2012         2013
               segment
                  1       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  2       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  3       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  4       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  5       1.00000E+50  1.00000E+50  1.00000E+50  1.00000E+50
                  6       3.00000E+06  3.00000E+06  3.00000E+06  3.00000E+06

 surface  2003
 segment:       1219
                1.07501E-44 0.0038

 surface  2003
 segment:      -1219    -1209
                1.35827E-47 0.0157

 surface  2003
 segment:      -1219     1209    -1201
                1.20880E-46 0.0070

 surface  2003
 segment:      -1219     1209     1201    -1205
                5.33319E-47 0.0064

 surface  2003
 segment:      -1219     1209     1201     1205     1206
                4.01272E-47 0.0072

 surface  2003
 segment:      -1219     1209     1201     1205    -1206
                3.47254E-04 0.0133

 surface  2004
 segment:       1219
                9.46098E-45 0.0039

 surface  2004
 segment:      -1219    -1209
                8.34924E-48 0.0135

 surface  2004
 segment:      -1219     1209    -1201
```

```
                7.10631E-47 0.0068

surface  2004
segment:       -1219     1209     1201    -1205
                3.19788E-47 0.0061

surface  2004
segment:       -1219     1209     1201     1205     1206
                2.55390E-47 0.0069

surface  2004
segment:       -1219     1209     1201     1205    -1206
                1.31911E-04 0.0138

surface  2005
segment:        1219
                8.03850E-45 0.0039

surface  2005
segment:       -1219    -1209
                5.05371E-48 0.0154

surface  2005
segment:       -1219     1209    -1201
                4.29291E-47 0.0066

surface  2005
segment:       -1219     1209     1201    -1205
                1.97796E-47 0.0069

surface  2005
segment:       -1219     1209     1201     1205     1206
                1.57670E-47 0.0071

surface  2005
segment:       -1219     1209     1201     1205    -1206
                6.41297E-05 0.0205

surface  2006
segment:        1219
                6.62466E-45 0.0040

surface  2006
segment:       -1219    -1209
                3.05157E-48 0.0115

surface  2006
segment:       -1219     1209    -1201
                2.64917E-47 0.0069

surface  2006
segment:       -1219     1209     1201    -1205
                1.22649E-47 0.0072

surface  2006
segment:       -1219     1209     1201     1205     1206
                9.82197E-48 0.0072

surface  2006
segment:       -1219     1209     1201     1205    -1206
                2.97624E-05 0.0210

surface  2007
segment:        1219
                5.32991E-45 0.0041

surface  2007
segment:       -1219    -1209
                1.95534E-48 0.0280

surface  2007
segment:       -1219     1209    -1201
                1.63564E-47 0.0075

surface  2007
segment:       -1219     1209     1201    -1205
                7.64034E-48 0.0078
```

```
surface  2007
segment:       -1219     1209     1201     1205     1206
                6.07154E-48 0.0084

surface  2007
segment:       -1219     1209     1201     1205    -1206
                1.58411E-05 0.0284

surface  2008
segment:        1219
                3.71583E-45 0.0043

surface  2008
segment:       -1219    -1209
                9.29878E-49 0.0152

surface  2008
segment:       -1219     1209    -1201
                8.01768E-48 0.0079

surface  2008
segment:       -1219     1209     1201    -1205
                3.74688E-48 0.0091

surface  2008
segment:       -1219     1209     1201     1205     1206
                2.99085E-48 0.0096

surface  2008
segment:       -1219     1209     1201     1205    -1206
                5.98125E-06 0.0371

surface  2009
segment:        1219
                2.51116E-45 0.0045

surface  2009
segment:       -1219    -1209
                4.64499E-49 0.0184

surface  2009
segment:       -1219     1209    -1201
                4.02811E-48 0.0097

surface  2009
segment:       -1219     1209     1201    -1205
                1.83180E-48 0.0115

surface  2009
segment:       -1219     1209     1201     1205     1206
                1.46836E-48 0.0118

surface  2009
segment:       -1219     1209     1201     1205    -1206
                2.41562E-06 0.0463

surface  2010
segment:        1219
                1.44241E-45 0.0048

surface  2010
segment:       -1219    -1209
                1.87421E-49 0.0269

surface  2010
segment:       -1219     1209    -1201
                1.62516E-48 0.0143

surface  2010
segment:       -1219     1209     1201    -1205
                7.30467E-49 0.0131

surface  2010
segment:       -1219     1209     1201     1205     1206
                5.78830E-49 0.0165

surface  2010
segment:       -1219     1209     1201     1205    -1206
```

```
                7.98330E-07 0.0568

 surface  2011
 segment:        1219
                 8.08679E-46 0.0051

 surface  2011
 segment:       -1219    -1209
                 7.18500E-50 0.0265

 surface  2011
 segment:       -1219     1209    -1201
                 6.53632E-49 0.0152

 surface  2011
 segment:       -1219     1209     1201    -1205
                 2.89615E-49 0.0177

 surface  2011
 segment:       -1219     1209     1201     1205     1206
                 2.19557E-49 0.0248

 surface  2011
 segment:       -1219     1209     1201     1205    -1206
                 2.76527E-07 0.0845

 surface  2012
 segment:        1219
                 4.45827E-46 0.0053

 surface  2012
 segment:       -1219    -1209
                 2.93165E-50 0.0315

 surface  2012
 segment:       -1219     1209    -1201
                 2.72301E-49 0.0179

 surface  2012
 segment:       -1219     1209     1201    -1205
                 1.19433E-49 0.0217

 surface  2012
 segment:       -1219     1209     1201     1205     1206
                 8.65864E-50 0.0212

 surface  2012
 segment:       -1219     1209     1201     1205    -1206
                 9.68073E-08 0.1034

 surface  2013
 segment:        1219
                 2.43531E-46 0.0057

 surface  2013
 segment:       -1219    -1209
                 1.32310E-50 0.0525

 surface  2013
 segment:       -1219     1209    -1201
                 1.17156E-49 0.0247

 surface  2013
 segment:       -1219     1209     1201    -1205
                 5.70129E-50 0.1117

 surface  2013
 segment:       -1219     1209     1201     1205     1206
                 3.59742E-50 0.0302

 surface  2013
 segment:       -1219     1209     1201     1205    -1206
                 3.84175E-08 0.1695
```

==========

results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally 52

tfc bin behavior	--mean-- behavior	---------relative error--------- value	decrease	decrease rate	----variance of the variance---- value	decrease	decrease rate	--figure of merit-- -pdf- behavior	slope
desired	random	<0.10	yes	1/sqrt(nps)	<0.10	yes	1/nps	constant random	>3.00
observed	random	0.01	yes	yes	0.03	yes	yes	constant random	2.87
passed?	yes	yes	yes	yes	yes	yes	yes	yes yes	no

==========

warning. the tally in the tally fluctuation chart bin did not pass 1 of the 10 statistical checks.

1analysis of the results in the tally fluctuation chart bin (tfc) for tally 52 with nps = 4229523 print table 160

normed average tally per history = 3.47254E-04
estimated tally relative error = 0.0133
relative error from zero tallies = 0.0043

unnormed average tally per history = 1.04176E+03
estimated variance of the variance = 0.0305
relative error from nonzero scores = 0.0126

number of nonzero history tallies = 54739
history number of largest tally = 1916113
(largest tally)/(average tally) = 1.33795E+05

efficiency for the nonzero tallies = 0.0021
largest unnormalized history tally = 1.39383E+08
(largest tally)/(avg nonzero tally)= 2.85483E+02

(confidence interval shift)/mean = 0.0008

shifted confidence interval center = 3.47526E-04

if the largest history score sampled so far were to occur on the next history, the tfc bin quantities would change as follows:

estimated quantities	value at nps	value at nps+1	value(nps+1)/value(nps)-1.
mean	3.47254E-04	3.58239E-04	0.031633
relative error	1.33429E-02	1.42446E-02	0.067585
variance of the variance	3.05283E-02	4.06078E-02	0.330168
shifted center	3.47526E-04	3.49415E-04	0.005435
figure of merit	4.22032E+00	3.70288E+00	-0.122606

the estimated inverse power slope of the 200 largest tallies starting at 7.61638E+06 is 2.8711
the history score probability density function appears to have an unsampled region at the largest history scores:
please examine. see print table 161.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.928E+04)*(1.480E-02)**2 = (1.928E+04)*(2.190E-04) = 4.220E+00

1unnormed tally density for tally 52 nonzero tally mean(m) = 4.882E+05 nps = 4229523 print table 161

abscissa tally	ordinate number	num den	log plot of tally probability density function in tally fluctuation chart bin(d=decade,slope= 2.9) log den:d
6.31+04	767	2.30-09	-8.638
7.94+04	2676	6.38-09	-8.195
1.00+05	2705	5.13-09	-8.290
1.26+05	3851	5.80-09	-8.237
1.58+05	7371	8.81-09	-8.055
2.00+05	6716	6.38-09	-8.195
2.51+05	6357	4.80-09	-8.319

```
 3.16+05   5502 3.30-09  -8.482
*************|**************|*************|**************|*************|**************|*******
 3.98+05   4721 2.25-09  -8.648
*************|**************|*************|**************|*************|**************|****
 5.01+05   3586 1.36-09  -8.868
mmmmmmmmmmmmm|mmmmmmmmmmmmmmm|mmmmmmmmmmmmmm|mmmmmmmmmmmmmmm|mmmmmmmmmmmmmm|mmmmmmmmmmmmmmm|m
 6.31+05   2744 8.24-10  -9.084
*************|**************|*************|**************|*************|************* |
 7.94+05   1926 4.60-10  -9.338
*************|**************|*************|**************|*************|**********    |
 1.00+06   1201 2.28-10  -9.643 *************|**************|*************|**************|*************|*****
|
 1.26+06    958 1.44-10  -9.841 *************|**************|*************|**************|*************|**
|
 1.58+06    775 9.27-11 -10.033 *************|**************|*************|**************|*************|
|
 2.00+06    622 5.91-11 -10.229 *************|**************|*************|**************|***********  |
|
 2.51+06    595 4.49-11 -10.348 *************|**************|*************|**************|*********    |
|
 3.16+06    616 3.69-11 -10.433 *************|**************|*************|**************|********     |
|
 3.98+06    381 1.81-11 -10.741 *************|**************|*************|**************|***          |
|
 5.01+06    235 8.89-12 -11.051 *************|**************|*************|**************|             |
|
 6.31+06    150 4.51-12 -11.346 *************|**************|*************|**********    |             |
|
 7.94+06     98 2.34-12 -11.631 *************|**************|*************|*****        s|             |
|
 1.00+07     63 1.19-12 -11.923 *************|**************|*************|*          s  |             |
|
 1.26+07     41 6.17-13 -12.210 *************|**************|***********  |         s    |             |
|
 1.58+07     30 3.59-13 -12.445 *************|**************|********     |      s       |             |
|
 2.00+07     10 9.50-14 -13.022 *************|**************|             |    s         |             |
|
 2.51+07     12 9.05-14 -13.043 *************|**************|             | s            |             |
|
 3.16+07     10 5.99-14 -13.222 *************|***********   |            s|              |             |
|
 3.98+07     11 5.24-14 -13.281 *************|***********   |        s    |              |             |
|
 5.01+07      4 1.51-14 -13.820 *************|***           |     s       |              |             |
|
 6.31+07      3 9.01-15 -14.045 *************|              |  s          |              |             |
|
 7.94+07      0 0.00+00   0.000               |             s|             |              |             |
|
 1.00+08      1 1.90-15 -14.722 ****          |         s    |             |              |             |
|
 1.26+08      0 0.00+00   0.000               |     s        |             |              |             |
|
 1.58+08      1 1.20-15 -14.922 *             |  s           |             |              |             |
|
  total   54739 2.13-03         d------------d-------------d-------------d--------------d-------------d--------
------d-------------

1tally  62        nps =     4229523
           tally type 2    particle flux averaged over a surface.
           tally for  photons
 number of histories used for normalizing tallies =     25654088.00

           this tally is modified by a dose function.

           areas
                surface:     1219
               segment
                 1       1.00000E+50
                 2       1.00000E+50
                 3       1.00000E+50
                 4       1.00000E+50
                 5       5.30000E+06

 surface  1219
 segment:       -1205
                 4.15600E-45 0.0173
```

```
 surface  1219
 segment:        1205     1206
                 3.03405E-44 0.0065

 surface  1219
 segment:        1205    -1206     1203
                 7.02022E-45 0.0146

 surface  1219
 segment:        1205    -1206    -1203    -1202
                 7.00544E-45 0.0140

 surface  1219
 segment:        1205    -1206    -1203     1202
                 4.55167E+01 0.0012
```

```
================================================================================================================================
====================

          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin
of tally  62

 tfc bin     --mean--      ---------relative error---------      ----variance of the variance----      --figure
of merit--     -pdf-
 behavior    behavior      value    decrease    decrease rate      value    decrease    decrease rate       value
behavior     slope

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant
random      >3.00
 observed     random        0.00      yes          yes            0.00      yes         yes            constant
random       8.17
 passed?        yes          yes      yes          yes              yes      yes         yes               yes
yes         yes

================================================================================================================================
====================


 this tally meets the statistical criteria used to form confidence intervals: check the tally fluctuation chart
to verify.
 the results in other bins associated with this tally may not meet these statistical criteria.

 ----- estimated confidence intervals:  -----

 estimated asymmetric confidence interval(1,2,3 sigma): 4.5461E+01 to 4.5573E+01; 4.5405E+01 to 4.5629E+01;
4.5349E+01 to 4.5685E+01
 estimated  symmetric confidence interval(1,2,3 sigma): 4.5461E+01 to 4.5573E+01; 4.5405E+01 to 4.5629E+01;
4.5349E+01 to 4.5684E+01

1analysis of the results in the tally fluctuation chart bin (tfc) for tally  62 with nps =     4229523  print
table 160


 normed average tally per history  = 4.55167E+01          unnormed average tally per history  = 2.41238E+08
 estimated tally relative error    = 0.0012               estimated variance of the variance  = 0.0000
 relative error from zero tallies  = 0.0004               relative error from nonzero scores  = 0.0011

 number of nonzero history tallies =     4197402          efficiency for the nonzero tallies  = 0.1636
 history number of largest  tally  =      769241          largest  unnormalized history tally = 1.98498E+11
 (largest  tally)/(average tally)  = 8.22831E+02          (largest  tally)/(avg nonzero tally)= 1.34628E+02

 (confidence interval shift)/mean  = 0.0000               shifted confidence interval center  = 4.55168E+01


 if the largest  history score sampled so far were to occur on the next history, the tfc bin quantities would
change as follows:

      estimated quantities          value at nps          value at nps+1          value(nps+1)/value(nps)-1.

      mean                          4.55167E+01           4.55255E+01                  0.000194
      relative error                1.22864E-03           1.14588E-03                 -0.067362
      variance of the variance      2.89483E-05           3.49184E-05                  0.206230
      shifted center                4.55168E+01           4.55176E+01                  0.000017
      figure of merit               4.97730E+02           5.72227E+02                  0.149672
```

the estimated inverse power slope of the 200 largest tallies starting at 7.52707E+10 is 8.1697
the history score probability density function appears to have an unsampled region at the largest history scores:
please examine. see print table 161.

fom = (histories/minute)*(f(x) signal-to-noise ratio)**2 = (1.928E+04)*(1.607E-01)**2 = (1.928E+04)*(2.582E-02) = 4.977E+02

1status of the statistical checks used to form confidence intervals for the mean for each tally bin

tally result of statistical checks for the tfc bin (the first check not passed is listed) and error magnitude check for all bins

2 passed the 10 statistical checks for the tally fluctuation chart bin result
passed all bin error check: 1 tally bins all have relative errors less than 0.10 with no zero bins

12 missed 3 of 10 tfc bin checks: the variance of the variance exceeds the recommended value of 0.1
missed all bin error check: 16 tally bins had 0 bins with zeros and 1 bins with relative errors exceeding 0.10

22 missed 2 of 10 tfc bin checks: the variance of the variance appears not to decrease as 1/nps for the last half of problem
passed all bin error check: 22 tally bins all have relative errors less than 0.10 with no zero bins

32 missed 2 of 10 tfc bin checks: the variance of the variance appears not to decrease as 1/nps for the last half of problem
missed all bin error check: 5 tally bins had 1 bins with zeros and 1 bins with relative errors exceeding 0.10

42 missed 1 of 10 tfc bin checks: the slope of decrease of largest tallies is less than the minimum acceptable value of 3.0
missed all bin error check: 66 tally bins had 0 bins with zeros and 1 bins with relative errors exceeding 0.10

52 missed 1 of 10 tfc bin checks: the slope of decrease of largest tallies is less than the minimum acceptable value of 3.0
missed all bin error check: 66 tally bins had 0 bins with zeros and 3 bins with relative errors exceeding 0.10

62 passed the 10 statistical checks for the tally fluctuation chart bin result
passed all bin error check: 5 tally bins all have relative errors less than 0.10 with no zero bins

the 10 statistical checks are only for the tally fluctuation chart bin and do not apply to other tally bins.

the tally bins with zeros may or may not be correct: compare the source, cutoffs, multipliers, et cetera with the tally bins.

warning. 5 of the 7 tally fluctuation chart bins did not pass all 10 statistical checks.
warning. 4 of the 7 tallies had bins with relative errors greater than recommended.
1tally fluctuation charts

	tally 2					tally 12					tally 22				
nps	mean	error	vov	slope	fom	mean	error	vov	slope	fom	mean	error	vov	slope	fom
256000	1.5730E-01	0.0210	0.0095	10.0	28	4.4750E-09	0.0415	0.0366	3.4	7.2E+00	1.6813E-46	0.0572	0.3115	2.5	3.8E+00
512000	1.5760E-01	0.0164	0.0191	6.8	23	4.4173E-09	0.0366	0.1850	4.8	4.6E+00	1.7398E-46	0.0400	0.1127	2.4	3.9E+00
768000	1.5398E-01	0.0130	0.0117	6.0	24	4.3266E-09	0.0278	0.1202	4.2	5.3E+00	1.7364E-46	0.0316	0.0732	2.5	4.2E+00
1024000	1.5394E-01	0.0113	0.0077	6.0	24	4.4935E-09	0.0428	0.4919	3.3	1.7E+00	1.7096E-46	0.0255	0.0581	2.5	4.8E+00
1280000	1.5416E-01	0.0104	0.0088	4.8	23	4.3790E-09	0.0359	0.4538	3.3	1.9E+00	1.6909E-46	0.0219	0.0475	2.2	5.2E+00
1536000	1.5340E-01	0.0093	0.0068	5.1	24	4.3801E-09	0.0321	0.3450	3.1	2.0E+00	1.6923E-46	0.0199	0.0418	2.2	5.2E+00
1792000	1.5395E-01	0.0086	0.0055	4.8	24	4.3018E-09	0.0284	0.3281	3.2	2.2E+00	1.7284E-46	0.0215	0.0516	2.0	3.8E+00
2048000	1.5424E-01	0.0081	0.0045	4.4	24	4.2602E-09	0.0258	0.2933	2.9	2.3E+00	1.7312E-46	0.0204	0.0424	2.0	3.7E+00
2304000	1.5456E-01	0.0076	0.0038	5.1	24	4.2533E-09	0.0233	0.2753	2.9	2.5E+00	1.7278E-46	0.0189	0.0382	2.0	3.9E+00
2560000	1.5489E-01	0.0072	0.0033	4.4	24	4.2233E-09	0.0214	0.2623	2.8	2.7E+00	1.7355E-46	0.0183	0.0350	1.9	3.7E+00

```
      2816000   1.5447E-01 0.0069 0.0030  4.2      24   4.2382E-09 0.0202 0.2249  2.7 2.8E+00   1.7242E-46
0.0169 0.0333  2.0 3.9E+00
      3072000   1.5403E-01 0.0066 0.0028  4.0      24   4.2306E-09 0.0188 0.2112  2.7 2.9E+00   1.7241E-46
0.0159 0.0303  2.1 4.1E+00
      3328000   1.5373E-01 0.0063 0.0025  4.1      24   4.2343E-09 0.0178 0.1905  2.7 3.0E+00   1.7330E-46
0.0159 0.0299  2.2 3.8E+00
      3584000   1.5407E-01 0.0062 0.0026  4.1      23   4.2252E-09 0.0170 0.1732  2.6 3.1E+00   1.7363E-46
0.0163 0.0444  2.3 3.3E+00
      3840000   1.5434E-01 0.0060 0.0026  3.7      23   4.2270E-09 0.0161 0.1618  2.6 3.2E+00   1.7297E-46
0.0154 0.0428  2.4 3.5E+00
      4096000   1.5465E-01 0.0058 0.0024  4.0      23   4.2197E-09 0.0154 0.1525  2.5 3.3E+00   1.7280E-46
0.0146 0.0408  2.6 3.6E+00
      4229523   1.5463E-01 0.0057 0.0023  3.7      23   4.2214E-09 0.0150 0.1482  2.4 3.3E+00   1.7294E-46
0.0144 0.0388  2.6 3.6E+00


                     tally   32                                  tally   42                                  tally
52
         nps      mean     error   vov  slope    fom      mean     error   vov  slope    fom      mean
error   vov  slope    fom
       256000   8.2883E-04 0.1458 0.5331  3.5 5.8E-01   5.5351E-04 0.0587 0.0788  2.5 3.6E+00   3.5017E-04
0.0566 0.1653  3.1 3.9E+00
       512000   8.3896E-04 0.1063 0.1778  2.4 5.5E-01   5.4417E-04 0.0379 0.0376  2.7 4.3E+00   3.6129E-04
0.0356 0.0690  3.0 4.9E+00
       768000   7.7875E-04 0.0824 0.1344  2.7 6.1E-01   5.5171E-04 0.0319 0.0306  2.9 4.1E+00   3.4606E-04
0.0271 0.0487  3.5 5.6E+00
      1024000   7.6845E-04 0.0668 0.1051  2.5 7.0E-01   5.4135E-04 0.0261 0.0234  3.2 4.5E+00   3.3975E-04
0.0231 0.0331  3.5 5.8E+00
      1280000   7.7611E-04 0.0655 0.1225  2.5 5.8E-01   5.3611E-04 0.0241 0.0371  3.0 4.3E+00   3.3905E-04
0.0213 0.0258  2.6 5.5E+00
      1536000   7.8796E-04 0.0573 0.0963  2.4 6.3E-01   5.3873E-04 0.0237 0.0608  2.6 3.7E+00   3.3680E-04
0.0193 0.0212  2.9 5.6E+00
      1792000   7.8071E-04 0.0510 0.0864  2.6 6.8E-01   5.5070E-04 0.0255 0.0706  2.6 2.7E+00   3.3823E-04
0.0177 0.0170  3.3 5.7E+00
      2048000   7.8915E-04 0.0502 0.0798  2.6 6.2E-01   5.4245E-04 0.0231 0.0653  2.8 2.9E+00   3.4167E-04
0.0198 0.1020  3.0 4.0E+00
      2304000   7.8700E-04 0.0468 0.0680  2.6 6.3E-01   5.4449E-04 0.0216 0.0550  2.8 3.0E+00   3.4449E-04
0.0185 0.0820  3.0 4.0E+00
      2560000   7.6615E-04 0.0439 0.0645  2.6 6.4E-01   5.4823E-04 0.0205 0.0448  2.7 3.0E+00   3.4621E-04
0.0174 0.0679  2.9 4.1E+00
      2816000   7.8436E-04 0.0475 0.1216  2.5 5.0E-01   5.4333E-04 0.0191 0.0418  2.6 3.1E+00   3.4773E-04
0.0165 0.0567  3.1 4.1E+00
      3072000   7.7963E-04 0.0446 0.1139  2.6 5.2E-01   5.4390E-04 0.0181 0.0373  2.6 3.1E+00   3.4696E-04
0.0157 0.0503  3.1 4.2E+00
      3328000   7.8323E-04 0.0425 0.0999  2.7 5.3E-01   5.4374E-04 0.0173 0.0336  2.6 3.2E+00   3.5045E-04
0.0158 0.0390  2.9 3.8E+00
      3584000   7.7903E-04 0.0412 0.0886  2.5 5.2E-01   5.4774E-04 0.0178 0.0411  2.3 2.8E+00   3.4946E-04
0.0149 0.0364  3.0 4.0E+00
      3840000   7.8598E-04 0.0406 0.0732  2.3 5.0E-01   5.4513E-04 0.0169 0.0393  2.3 2.9E+00   3.4795E-04
0.0142 0.0344  2.8 4.1E+00
      4096000   7.9373E-04 0.0395 0.0641  2.4 5.0E-01   5.4551E-04 0.0162 0.0362  2.3 3.0E+00   3.4751E-04
0.0137 0.0313  2.9 4.1E+00
      4229523   7.8250E-04 0.0389 0.0638  2.3 5.0E-01   5.4583E-04 0.0158 0.0351  2.3 3.0E+00   3.4725E-04
0.0133 0.0305  2.9 4.2E+00
1tally fluctuation charts

                     tally   62
         nps      mean     error   vov  slope    fom
       256000   4.5538E+01 0.0050 0.0005 10.0     496
       512000   4.5743E+01 0.0035 0.0002 10.0     497
       768000   4.5658E+01 0.0029 0.0002 10.0     496
      1024000   4.5664E+01 0.0025 0.0001  9.1     496
      1280000   4.5588E+01 0.0022 0.0001  9.7     499
      1536000   4.5599E+01 0.0020 0.0001  7.5     497
      1792000   4.5584E+01 0.0019 0.0001  8.5     498
      2048000   4.5569E+01 0.0018 0.0001  7.8     498
      2304000   4.5578E+01 0.0017 0.0001  8.2     496
      2560000   4.5586E+01 0.0016 0.0000 10.0     496
      2816000   4.5571E+01 0.0015 0.0000 10.0     497
      3072000   4.5548E+01 0.0014 0.0000 10.0     497
      3328000   4.5499E+01 0.0014 0.0000 10.0     498
      3584000   4.5507E+01 0.0013 0.0000 10.0     498
      3840000   4.5525E+01 0.0013 0.0000  9.7     498
      4096000   4.5512E+01 0.0012 0.0000  8.5     498
      4229523   4.5517E+01 0.0012 0.0000  8.2     498
```

```
************************************************************************************************************************
*******
 dump no.   24 on file runtpe       nps =     4229523     coll =     5416404164     ctm =     1330.94    nrn =
66665944520


        22 warning messages so far.


 run terminated at end of surface-source input file.

 computer time = 1331.00 minutes

 mcnp     version 5     11112005                     05/30/09 07:15:35                     probid =  05/29/09
09:02:54
```

Computer Disclosure Sheet

Discipline Nuclear

Client: Exelon Corporation
Project: LaSalle IRSF

Date: September 2009
Job No. 29487-NCS0086.Q.N.DOSE & 29487-NCS0097.N.LAS.CALCSHLD

Program(s) used: Excel (for Attachment Spreadsheets)
Rev No.: N/A
Rev Date: N/A
Calculation Set No.: L-003388, Rev. 0

Status [ ] Prelim. [X] Final [ ] Void

WGI Prequalification [ ] Yes [X] No

Run No.

Description:

Analysis Description: Excel Spreadsheets were used to execute arithmetic manipulations of numbers, for various applications within the attachments of this analysis. All of the inputs were checked for consistency with their source and their use, and all results were checked for consistency with expected values. Attachment J contains formula versions..

The attached computer output has been reviewed, the input data checked,
And the results approved for release. Input criteria for this analysis were established.

By:

On: 7/2008 – 9/2009

Run by: S. Amitrani, P. Reichert

Checked by: : K. Schwalm, A. Woodruffe

Approved by: H. Rothstein

Remarks:

These spreadsheets were applied in a straight-forward manner and each formula utilized was hand checked to ensure correctness.

Computer Disclosure Sheet

Discipline Nuclear

Client:	Exelon Corporation	Date: September 2009	
Project:	LaSalle IRSF	Job No. 29487-NCS0086.Q.N.DOSE & 29487-NCS0097.N.LAS.CALCSHLD	
Program(s) used:	Rev No.	Rev Date	Calculation Set No.: L-003388, Rev. 0
MCNP 5 used in Attachment B, E, M, N	0	12/2006	

Status [ ] Prelim.
[X] Final
[ ] Void

WGI Prequalification [X] Yes
[ ] No

Run No. Description:

Analysis Description: MCNP output files for the assessment of dose rates inside and outside of the IRSF are in Attachment B, E, M, and N, with input described.and illustrated. All of the inputs were checked for consistency with their source and their use in MCNP. All results were checked for consistency with expected values.

The attached computer output has been reviewed, the input data checked,
And the results approved for release. Input criteria for this analysis were established.

By: On: 7/2008 –8/2009

Run by: S. Amitrani, P. Reichert

Checked by: K. Schwalm, A. Woodruffe

Approved by: H. Rothstein

Remarks:

The MCNP computer code is applied in a manner fitting its intended purpose, and well within its operating parameters. All outputs were hand checked. Additionally, MCNP's VisEd feature was used to show that geometry and source characteristics are consistent with the analyzed problems.

Computer Disclosure Sheet

Discipline Nuclear

Client:	Exelon Corporation	Date: September 2009	
Project:	LaSalle IRSF	Job No. 29487-NCS0086.Q.N.DOSE & 29487-NCS0097.N.LAS.CALCSHLD	
Program(s) used:	Rev No.	Rev Date	Calculation Set No.: L-003388, Rev. 0
MicroShield 5.05 (MC-201)	0	9/2001	

Status [ ] Prelim.
[X] Final
[ ] Void

WGI Prequalification [X] Yes
[ ] No

Run No. Description:

Analysis Description: MicroShield is used to calculate package contents corresponding to particular contact dose rates, and then to determine radiated doses on the other side of various shield walls All of the inputs were checked for consistency with their source and their use. All results were checked for consistency with expected values.

The attached computer output has been reviewed, the input data checked,
And the results approved for release. Input criteria for this analysis were established.

By: On: 7/2008 – 8/2009

Run by: S. Amitrani, P. Reichert

Checked by: K. Schwalm, A. Woodruffe

Approved by: H. Rothstein

Remarks: The MicroShield computer code is applied in a manner fitting its intended purpose, and well within its operating parameters. All outputs were hand checked.

Reichert, Paul:::> Isotopic Assumption Test using Quad Cities Data for Illustration

From: James, Howard
Sent: Tuesday, November 11, 2008 11:22 AM
To: Reichert, Paul
Cc: Murr, Robert; Zappia, John
Subject: FW: IRSF Waste Storage Questions
Attachments: Scan001.PDF

Paul,
FYI. QC IRSF waste info...

Howard James
Washington Division of URS
630-829-2334
-----Original Message-----
From: lynnl.patten@exeloncorp.com [mailto:lynnl.patten@exeloncorp.com]
Sent: Tuesday, November 11, 2008 8:33 AM
To: James, Howard
Subject: FW: IRSF Waste Storage Questions

Howard,
Hope this is what you are looking for. If not let me know and I will try to get what you need.

1) the average contact dose rates of the HICs presently in storage or shipped in the past; Currently we have no HIC's in storage. If we were to store Fuel Pool Resin they range from 15-20 rem at contact. Clean-Up resin range from 100-250 Rem at contact.

2) the number of HICs generated per year and intended for storage in the IRSF (our understanding is 4 HICs of B&C waste per year); Possibly 4 HIC's of "B" waste.

3) the maximum target contact dose rate for future HICs intended for IRSF storage; Building limit is 380 Rem at contact, Quad has had them as high as 250 Rem at contact.

4) Lastly, we are in need of an isotopic characterization (Co-60, etc.) of the waste presently stored in the IRSF as well as that intended for future storage in the IRSF. See attached Package Characterization Report for past Clean-Up resin liner.

<<Scan001.PDF>>

Lynn Patten
Radiation Protection
Exelon Nuclear - Quad Cities Station
22710 206th Avenue North
Cordova, Ill 61242-9740

(309) 227-2704
FAX (309) 227-2769
lynnl.patten@exeloncorp.com

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****

LL 4-9-04

Package Characterization Report

Printed on: 4/8/2004 during Characterization
Method Used: Gross Gamma

Signature:
Date: 4/8/04

Date:	04/08/2004	Liner Serial No.	502323-10
Package ID:	502323-10	DOT Package Class:	>A LSA II
NRC Waste Class	B	Physical Form:	Solid
Waste Description	PR-D-NA RWCU 120	Container Type:	8-120 POLY HIC FEDX
Chemical Form:	Metal Oxides	Weight % Chelating Agent:	N/A
Chelating Agent:	N/A	Package Volume (Ft3):	120.3
Waste Volume (Ft:	98.00	Package Weight (lbs):	5888.00
Waste Weight (lbs	4788.00	Characterization Dist (in):	39.37
Dose / Curie Factc	25.159	3 Meter Dose (mR/hr):	Not Calculated

Contact Rad Level (mR/hr): 221000 1 Meter Rad Level (mR/hr): 40000 Survey Date: 10/31/2003

Nuclide:	mCi:	Nuclide:	mCi:	Nuclide:	mCi:
H-3	1.43E+01	C-14	7.23E+00	Mn-54	1.74E+04
Fe-55	6.36E+05	Co-58	3.59E+02	Co-60	2.44E+05
Ni-59	2.23E+01	Ni-63	4.04E+03	Sr-89	5.90E+01
Sr-90	3.46E+02	Tc-99	2.03E-01	Cs-137	3.93E+03
Ce-141	1.95E+00	Ce-144	3.59E+01	Pu-238	2.37E+00
Pu-239	5.74E-01	Pu-241	7.23E+01	Am-241	1.89E+00
Cm-242	2.02E+00	Cm-243	2.30E+00		
				Total:	9.07E+05

Entered Dose Rates in mR/hr
40000

Average = 40000.00

COPY

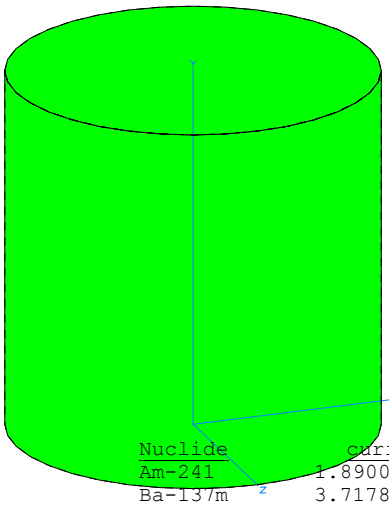
Part 61 Information
Sample ID : 3659 RWCU
Sample Date : 10/31/2003
Activity Units : uCi/gm
Analysis Vendor : Eberline Services

This package contains Reportable Quantities of Radionuclides

Page : 1
DOS File: QC-RWCU.MS5
Run Date: December 22, 2008
Run Time: 2:11:01 PM
Duration: 00:00:51

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

Case Title: Quad Cities RWCU
Description: Sample Package Characterization (no decay)
Geometry: 7 - Cylinder Volume - Side Shields



Source Dimensions

Height	152.4 cm	5 ft 0.0 in
Radius	76.2 cm	2 ft 6.0 in

Dose Points

	X	Y	Z
# 1	78.74 cm	76.2 cm	0 cm
	2 ft 7.0 in	2 ft 6.0 in	0.0 in
# 2	176.2 cm	76.2 cm	0 cm
	5 ft 9.4 in	2 ft 6.0 in	0.0 in

Shields

Shield Name	Dimension	Material	Density
Source	2.78e+06 cm³	Water	0.783
Transition		Air	0.00122
Air Gap		Air	0.00122

Source Input
Grouping Method : Linear Energy
Number of Groups : 25
Lower Energy Cutoff : 0.015
Photons < 0.015 : Excluded
Library : Grove

Nuclide	curies	becquerels	µCi/cm³	Bq/cm³
Am-241	1.8900e-003	6.9930e+007	6.7986e-004	2.5155e+001
Ba-137m	3.7178e+000	1.3756e+011	1.3373e+000	4.9481e+004
C-14	7.2300e-003	2.6751e+008	2.6007e-003	9.6227e+001
Ce-141	1.9500e-003	7.2150e+007	7.0144e-004	2.5953e+001
Ce-144	3.5900e-002	1.3283e+009	1.2914e-002	4.7781e+002
Cm-242	2.0200e-003	7.4740e+007	7.2662e-004	2.6885e+001
Cm-243	2.3000e-003	8.5100e+007	8.2734e-004	3.0612e+001
Co-58	3.5900e-001	1.3283e+010	1.2914e-001	4.7781e+003
Co-60	2.4400e+002	9.0280e+012	8.7770e+001	3.2475e+006
Cs-137	3.9300e+000	1.4541e+011	1.4137e+000	5.2306e+004
Fe-55	6.3200e+002	2.3384e+013	2.2734e+002	8.4115e+006
H-3	1.4300e-002	5.2910e+008	5.1439e-003	1.9032e+002
Mn-54	1.7400e+001	6.4380e+011	6.2590e+000	2.3158e+005
Ni-59	2.2300e-002	8.2510e+008	8.0216e-003	2.9680e+002
Ni-63	4.0400e+000	1.4948e+011	1.4532e+000	5.3770e+004
Pr-144	3.5387e-002	1.3093e+009	1.2729e-002	4.7097e+002
Pu-238	2.3700e-003	8.7690e+007	8.5252e-004	3.1543e+001
Pu-239	5.7400e-004	2.1238e+007	2.0647e-004	7.6396e+000
Pu-241	7.2300e-002	2.6751e+009	2.6007e-002	9.6227e+002
Sr-89	5.9000e-002	2.1830e+009	2.1223e-002	7.8525e+002
Sr-90	3.4600e-001	1.2802e+010	1.2446e-001	4.6050e+003
Tc-99	2.0300e-004	7.5110e+006	7.3022e-005	2.7018e+000
Y-90	3.4600e-001	1.2802e+010	1.2446e-001	4.6050e+003

Buildup
The material reference is : Source

Integration Parameters

Radial	30
Circumferential	30
Y Direction (axial)	31

Results - Dose Point # 1 - (78.74,76.2,0) 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
0.0331	1.020e+10	2.128e+02	5.521e+02	1.579e+00	4.095e+00
0.1302	2.198e+08	3.513e+01	2.059e+02	5.586e-02	3.275e-01
0.224	1.189e+07	3.868e+00	1.688e+01	6.992e-03	3.051e-02
0.278	1.250e+07	5.431e+00	2.069e+01	1.019e-02	3.883e-02
0.511	3.966e+09	3.999e+03	1.125e+04	7.848e+00	2.209e+01
0.662	1.253e+11	1.823e+05	4.605e+05	3.534e+02	8.928e+02
0.8344	6.570e+11	1.334e+06	3.080e+06	2.524e+03	5.829e+03
0.9091	3.275e+05	7.528e-01	1.687e+00	1.408e-03	3.157e-03
1.0586	2.664e+05	7.650e-01	1.629e+00	1.396e-03	2.973e-03
1.1732	9.028e+12	3.014e+07	6.204e+07	5.387e+04	1.109e+05
1.3325	9.028e+12	3.636e+07	7.182e+07	6.309e+04	1.246e+05

DOS File: QC-RWCU.MS5
Run Date: December 22, 2008
Run Time: 2:11:01 PM
Duration: 00:00:51

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
1.4892	3.934e+06	1.867e+01	3.564e+01	3.148e-02	6.009e-02
1.6747	7.132e+07	4.027e+02	7.434e+02	6.569e-01	1.213e+00
2.1857	1.013e+07	8.475e+01	1.458e+02	1.274e-01	2.192e-01
TOTALS:	1.885e+13	6.803e+07	1.374e+08	1.198e+05	2.422e+05

Results - Dose Point # 2 - (176.2,76.2,0) 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
0.0331	1.020e+10	3.883e+01	1.018e+02	2.880e-01	7.553e-01
0.1302	2.198e+08	6.422e+00	3.648e+01	1.021e-02	5.800e-02
0.224	1.189e+07	7.050e-01	2.973e+00	1.274e-03	5.373e-03
0.278	1.250e+07	9.884e-01	3.636e+00	1.855e-03	6.825e-03
0.511	3.966e+09	7.228e+02	1.969e+03	1.419e+00	3.865e+00
0.662	1.253e+11	3.283e+04	8.044e+04	6.365e+01	1.559e+02
0.8344	6.570e+11	2.393e+05	5.371e+05	4.528e+02	1.016e+03
0.9091	3.275e+05	1.349e-01	2.941e-01	2.523e-04	5.502e-04
1.0586	2.664e+05	1.367e-01	2.836e-01	2.494e-04	5.174e-04
1.1732	9.028e+12	5.374e+06	1.079e+07	9.604e+03	1.928e+04
1.3325	9.028e+12	6.468e+06	1.248e+07	1.122e+04	2.165e+04
1.4892	3.934e+06	3.314e+00	6.189e+00	5.586e-03	1.043e-02
1.6747	7.132e+07	7.130e+01	1.290e+02	1.163e-01	2.104e-01
2.1857	1.013e+07	1.493e+01	2.526e+01	2.245e-02	3.797e-02
TOTALS:	1.885e+13	1.212e+07	2.389e+07	2.134e+04	4.211e+04