

boundaries	mev	0.1 y	1.1 y
0	0.02	2882000000000000	8599000000000000
0.02	0.03	6487000000000000	1856000000000000
0.03	0.045	8081000000000000	2118000000000000
0.045	0.07	4882000000000000	1571000000000000
0.07	0.1	3872000000000000	1192000000000000
0.1	0.15	9384000000000000	1694000000000000
0.15	0.3	3528000000000000	1130000000000000
0.3	0.45	3005000000000000	5875000000000000
0.45	0.7	1839000000000000	5218000000000000
0.7	1	3042000000000000	2445000000000000
1	1.5	8519000000000000	2845000000000000
1.5	2	2830000000000000	3353000000000000
2	2.5	2136000000000000	4766000000000000
2.5	3	1055000000000000	7674000000000000
3	4	9351000000000000	6873000000000000
4	6	10510000	6875000
6	8	1209000	791400
8	11	139000	91020
totals		120900000000000000	267800000000000000

1.2 y	1.2 y	1.3 y	1.4 y
8092000000000000	7625000000000000	7195000000000000	6793000000000000
1748000000000000	1649000000000000	1557000000000000	1471000000000000
1995000000000000	1881000000000000	1775000000000000	1676000000000000
1478000000000000	1392000000000000	1314000000000000	1240000000000000
1121000000000000	1055000000000000	9937000000000000	9366000000000000
1586000000000000	1486000000000000	1394000000000000	1308000000000000
1062000000000000	9997000000000000	9418000000000000	8875000000000000
5532000000000000	5213000000000000	4917000000000000	4639000000000000
5073000000000000	4937000000000000	4808000000000000	4685000000000000
2180000000000000	1978000000000000	1821000000000000	1695000000000000
2729000000000000	2619000000000000	2516000000000000	2417000000000000
3153000000000000	2966000000000000	2792000000000000	2627000000000000
4435000000000000	4128000000000000	3843000000000000	3576000000000000
7244000000000000	6838000000000000	6457000000000000	6094000000000000
6493000000000000	6135000000000000	5797000000000000	5476000000000000
6741000	6622000	6515000	6419000
776100	762400	750100	739000
89260	87680	86270	84990
25240000000000000	23860000000000000	22610000000000000	21460000000000000



1.5 y

Eight Assemblies

6422000000000000  
1392000000000000  
1585000000000000  
1171000000000000  
8837000000000000  
1228000000000000  
8371000000000000  
4381000000000000  
4569000000000000  
1594000000000000  
2325000000000000  
2474000000000000  
3328000000000000  
5753000000000000  
5174000000000000  
6332000  
729100  
83850  
2041000000000000

=8\*M4  
=8\*M5  
=8\*M6  
=8\*M7  
=8\*M8  
=8\*M9  
=8\*M10  
=8\*M11  
=8\*M12  
=8\*M13  
=8\*M14  
=8\*M15  
=8\*M16  
=8\*M17  
=8\*M18  
=8\*M19  
=8\*M20  
=8\*M21  
=8\*M22

Gamma photons/sec/basis		ORIGEN2 Group	
ORIGEN grp	max gamma MeV		Output Group
19	0	0	
18	0.02	=B4*1000000	1
17	0.03	=B5*1000000	2
16	0.045	=B6*1000000	3
15	0.07	=B7*1000000	4
14	0.1	=B8*1000000	5
13	0.15	=B9*1000000	6
12	0.3	=B10*1000000	7
11	0.45	=B11*1000000	8
10	0.7	=B12*1000000	9
9	1	=B13*1000000	10
8	1.5	=B14*1000000	11
7	2	=B15*1000000	12
6	2.5	=B16*1000000	13
5	3	=B17*1000000	14
4	4	=B18*1000000	15
3	6	=B19*1000000	16
2	8	=B20*1000000	17
1	11	=B21*1000000	18
t			

boundaries	mev	0.1 y	1.1 y
0	0.02	2881000000000000	8785000000000000
0.02	0.03	6497000000000000	1898000000000000
0.03	0.045	8041000000000000	2149000000000000
0.045	0.07	4888000000000000	1605000000000000
0.07	0.1	3878000000000000	1216000000000000
0.1	0.15	9282000000000000	1706000000000000
0.15	0.3	3541000000000000	1157000000000000
0.3	0.45	3004000000000000	6029000000000000
0.45	0.7	1912000000000000	5618000000000000
0.7	1	2993000000000000	2594000000000000
1	1.5	9244000000000000	3074000000000000
1.5	2	2795000000000000	3507000000000000
2	2.5	2245000000000000	4739000000000000
2.5	3	1038000000000000	8288000000000000
3	4	9330000000000000	7458000000000000
4	6	13860000	9562000
6	8	1595000	1101000
8	11	183300	126600
totals		12100000000000000	27720000000000000

1.2 y	1.2 y	1.3 y	1.4 y
8269000000000000	7798000000000000	7377000000000000	6954000000000000
1789000000000000	1688000000000000	1598000000000000	1508000000000000
2024000000000000	1910000000000000	1808000000000000	1705000000000000
1511000000000000	1425000000000000	1347000000000000	1269000000000000
1144000000000000	1077000000000000	1018000000000000	9576000000000000
1598000000000000	1498000000000000	1409000000000000	1320000000000000
1088000000000000	1024000000000000	9674000000000000	9100000000000000
5678000000000000	5354000000000000	5063000000000000	4769000000000000
5460000000000000	5313000000000000	5179000000000000	5040000000000000
2329000000000000	2128000000000000	1974000000000000	1841000000000000
2950000000000000	2833000000000000	2727000000000000	2618000000000000
3298000000000000	3104000000000000	2930000000000000	2753000000000000
4409000000000000	4106000000000000	3833000000000000	3558000000000000
7823000000000000	7387000000000000	6990000000000000	6584000000000000
7045000000000000	6657000000000000	6304000000000000	5943000000000000
9400000	9257000	9132000	9010000
1082000	1066000	1052000	1037000
124500	122600	120900	119300
261500000000000000	247500000000000000	235300000000000000	223100000000000000

1.5 y

16Assemblies

6577000000000000	=16*M4
1427000000000000	=16*M5
1613000000000000	=16*M6
1200000000000000	=16*M7
9039000000000000	=16*M8
1240000000000000	=16*M9
8587000000000000	=16*M10
4505000000000000	=16*M11
4914000000000000	=16*M12
1737000000000000	=16*M13
2518000000000000	=16*M14
2593000000000000	=16*M15
3312000000000000	=16*M16
6216000000000000	=16*M17
5615000000000000	=16*M18
8904000	=16*M19
1025000	=16*M20
117900	=16*M21
2123000000000000	=16*M22

## Formulas

Gamma photons/sec/basi		ORIGEN2 Group	
ORIGEN grp	max gamma MeV		Output Group
19	0	0	
18	0.02	=B4*1000000	1
17	0.03	=B5*1000000	2
16	0.045	=B6*1000000	3
15	0.07	=B7*1000000	4
14	0.1	=B8*1000000	5
13	0.15	=B9*1000000	6
12	0.3	=B10*1000000	7
11	0.45	=B11*1000000	8
10	0.7	=B12*1000000	9
9	1	=B13*1000000	10
8	1.5	=B14*1000000	11
7	2	=B15*1000000	12
6	2.5	=B16*1000000	13
5	3	=B17*1000000	14
4	4	=B18*1000000	15
3	6	=B19*1000000	16
2	8	=B20*1000000	17
1	11	=B21*1000000	18
t			



boundaries	mev	0.1 y	1.1 y
0	0.02	2866000000000000	8696000000000000
0.02	0.03	6469000000000000	1880000000000000
0.03	0.045	8007000000000000	2126000000000000
0.045	0.07	4860000000000000	1590000000000000
0.07	0.1	3857000000000000	1205000000000000
0.1	0.15	9261000000000000	1693000000000000
0.15	0.3	3521000000000000	1147000000000000
0.3	0.45	2993000000000000	5979000000000000
0.45	0.7	1890000000000000	5435000000000000
0.7	1	2982000000000000	2516000000000000
1	1.5	9020000000000000	2989000000000000
1.5	2	2796000000000000	3477000000000000
2	2.5	2221000000000000	4719000000000000
2.5	3	1039000000000000	8243000000000000
3	4	9331000000000000	7417000000000000
4	6	12940000	8860000
6	8	1488000	1020000
8	11	171100	117300
totals		120400000000000000	272700000000000000

1.2 y	1.2 y	1.3 y	1.4 y
8186000000000000	7715000000000000	7296000000000000	6875000000000000
1771000000000000	1670000000000000	1581000000000000	1491000000000000
2003000000000000	1889000000000000	1787000000000000	1684000000000000
1497000000000000	1410000000000000	1333000000000000	1256000000000000
1133000000000000	1067000000000000	1008000000000000	9479000000000000
1585000000000000	1486000000000000	1397000000000000	1308000000000000
1078000000000000	1015000000000000	9585000000000000	9014000000000000
5631000000000000	5308000000000000	5018000000000000	4725000000000000
5282000000000000	5138000000000000	5006000000000000	4872000000000000
2255000000000000	2054000000000000	1903000000000000	1771000000000000
2867000000000000	2752000000000000	2647000000000000	2540000000000000
3270000000000000	3077000000000000	2903000000000000	2727000000000000
4392000000000000	4089000000000000	3817000000000000	3543000000000000
7782000000000000	7347000000000000	6952000000000000	6548000000000000
7008000000000000	6621000000000000	6270000000000000	5910000000000000
8708000	8572000	8454000	8339000
1003000	987000	973500	960200
115300	113500	112000	110400
2572000000000000	2432000000000000	2310000000000000	2190000000000000

1.5 y

Eight Assemblies

6500000000000000	=8*M4
1411000000000000	=8*M5
1593000000000000	=8*M6
1187000000000000	=8*M7
8945000000000000	=8*M8
1229000000000000	=8*M9
8503000000000000	=8*M10
4463000000000000	=8*M11
4748000000000000	=8*M12
1669000000000000	=8*M13
2443000000000000	=8*M14
2569000000000000	=8*M15
3299000000000000	=8*M16
618200000000	=8*M17
558400000000	=8*M18
8239000	=8*M19
948700	=8*M20
109100	=8*M21
2083000000000000	=8*M22

## Formulas

Gamma photons/sec/basi		ORIGEN2 Group	
ORIGEN grp	max gamma MeV		Output Group
19	0	0	
18	0.02	=B4*1000000	1
17	0.03	=B5*1000000	2
16	0.045	=B6*1000000	3
15	0.07	=B7*1000000	4
14	0.1	=B8*1000000	5
13	0.15	=B9*1000000	6
12	0.3	=B10*1000000	7
11	0.45	=B11*1000000	8
10	0.7	=B12*1000000	9
9	1	=B13*1000000	10
8	1.5	=B14*1000000	11
7	2	=B15*1000000	12
6	2.5	=B16*1000000	13
5	3	=B17*1000000	14
4	4	=B18*1000000	15
3	6	=B19*1000000	16
2	8	=B20*1000000	17
1	11	=B21*1000000	18
t			

boundaries	mev	3E-02 y	0.1 y
0	0.02	4763000000000000	2498000000000000
0.02	0.03	1087000000000000	5606000000000000
0.03	0.045	1563000000000000	7223000000000000
0.045	0.07	7331000000000000	4137000000000000
0.07	0.1	8902000000000000	3295000000000000
0.1	0.15	2007000000000000	8874000000000000
0.15	0.3	9572000000000000	2936000000000000
0.3	0.45	9702000000000000	2677000000000000
0.45	0.7	2677000000000000	1291000000000000
0.7	1	4301000000000000	3097000000000000
1	1.5	1204000000000000	4066000000000000
1.5	2	1149000000000000	2892000000000000
2	2.5	3169000000000000	1468000000000000
2.5	3	4366000000000000	1093000000000000
3	4	3421000000000000	9031000000000000
4	6	855800	790900
6	8	98340	90880
8	11	11300	10440
totals		212900000000000000	107200000000000000

1.0 y	1.1 y	1.2 y	1.2 y
6428000000000000	5999000000000000	5609000000000000	5254000000000000
1375000000000000	1285000000000000	1202000000000000	1127000000000000
1636000000000000	1529000000000000	1430000000000000	1340000000000000
1174000000000000	1096000000000000	1026000000000000	9608000000000000
9029000000000000	8430000000000000	7883000000000000	7380000000000000
1386000000000000	1289000000000000	1202000000000000	1121000000000000
8439000000000000	7882000000000000	7372000000000000	6903000000000000
4320000000000000	4043000000000000	3788000000000000	3554000000000000
2229000000000000	2154000000000000	2088000000000000	2026000000000000
1659000000000000	1333000000000000	1092000000000000	9136000000000000
1303000000000000	1236000000000000	1173000000000000	1115000000000000
2256000000000000	2113000000000000	1979000000000000	1854000000000000
4228000000000000	3931000000000000	3655000000000000	3399000000000000
4218000000000000	3980000000000000	3755000000000000	3542000000000000
3640000000000000	3439000000000000	3249000000000000	3069000000000000
361800	344400	329000	315400
41590	39590	37820	36260
4779	4548	4345	4166
18260000000000000	16910000000000000	15730000000000000	14690000000000000



1.3 y	1.4 y	1.5 y
4930000000000000	4629000000000000	4352000000000000
1058000000000000	9944000000000000	9356000000000000
1257000000000000	1180000000000000	1109000000000000
9014000000000000	8461000000000000	7951000000000000
6918000000000000	6488000000000000	6090000000000000
1047000000000000	9774000000000000	9135000000000000
6471000000000000	6068000000000000	5697000000000000
3337000000000000	3134000000000000	2946000000000000
1970000000000000	1916000000000000	1866000000000000
7808000000000000	6801000000000000	6038000000000000
1061000000000000	1009000000000000	9609000000000000
1737000000000000	1628000000000000	1526000000000000
3161000000000000	2939000000000000	2733000000000000
3343000000000000	3153000000000000	2975000000000000
2900000000000000	2740000000000000	2588000000000000
303400	292800	283400
34880	33660	32580
4008	3867	3743
137700000000000000	129400000000000000	121900000000000000

**Eight Assemblies**

=8\*O4  
=8\*O5  
=8\*O6  
=8\*O7  
=8\*O8  
=8\*O9  
=8\*O10  
=8\*O11  
=8\*O12  
=8\*O13  
=8\*O14  
=8\*O15  
=8\*O16  
=8\*O17  
=8\*O18  
=8\*O19  
=8\*O20  
=8\*O21  
=8\*O22

## Formulas

## Gamma photons/sec/basis

## ORIGEN2 Group

## ORIGEN grp

## max gamma MeV

			Output Group
19	0	0	
18	0.02	=B4*1000000	1
17	0.03	=B5*1000000	2
16	0.045	=B6*1000000	3
15	0.07	=B7*1000000	4
14	0.1	=B8*1000000	5
13	0.15	=B9*1000000	6
12	0.3	=B10*1000000	7
11	0.45	=B11*1000000	8
10	0.7	=B12*1000000	9
9	1	=B13*1000000	10
8	1.5	=B14*1000000	11
7	2	=B15*1000000	12
6	2.5	=B16*1000000	13
5	3	=B17*1000000	14
4	4	=B18*1000000	15
3	6	=B19*1000000	16
2	8	=B20*1000000	17
1	11	=B21*1000000	18
t			

boundaries	mev	0.1 y	1.1 y
0	0.02	2488000000000000	5970000000000000
0.02	0.03	5583000000000000	1278000000000000
0.03	0.045	7192000000000000	1520000000000000
0.045	0.07	4120000000000000	1091000000000000
0.07	0.1	3283000000000000	8389000000000000
0.1	0.15	8839000000000000	1282000000000000
0.15	0.3	2924000000000000	7847000000000000
0.3	0.45	2666000000000000	4026000000000000
0.45	0.7	1290000000000000	2144000000000000
0.7	1	3087000000000000	1347000000000000
1	1.5	4046000000000000	1231000000000000
1.5	2	2877000000000000	2106000000000000
2	2.5	1460000000000000	3908000000000000
2.5	3	1087000000000000	3991000000000000
3	4	8989000000000000	3451000000000000
4	6	786800	334100
6	8	90410	38410
8	11	10390	4413
totals		106800000000000000	168400000000000000

1.2 y	1.2 y	1.3 y	1.4 y
5581000000000000	5228000000000000	4917000000000000	4605000000000000
1196000000000000	1122000000000000	1055000000000000	9894000000000000
1422000000000000	1332000000000000	1253000000000000	1173000000000000
1021000000000000	9563000000000000	8992000000000000	8421000000000000
7842000000000000	7344000000000000	6900000000000000	6455000000000000
1194000000000000	1114000000000000	1043000000000000	9717000000000000
7337000000000000	6871000000000000	6457000000000000	6041000000000000
3771000000000000	3538000000000000	3330000000000000	3120000000000000
2077000000000000	2016000000000000	1961000000000000	1906000000000000
1098000000000000	9160000000000000	7854000000000000	6793000000000000
1168000000000000	1110000000000000	1058000000000000	1005000000000000
1972000000000000	1848000000000000	1736000000000000	1623000000000000
3633000000000000	3379000000000000	3151000000000000	2922000000000000
376500000000	355300000000	336000000000	316300000000
326000000000	308100000000	291700000000	275000000000
318500	304800	293100	281900
36610	35040	33690	32400
4206	4025	3871	3723
1566000000000000	1462000000000000	1374000000000000	1287000000000000

1.5 y

Eight Assemblies

4329000000000000	=8*M4
9309000000000000	=8*M5
1102000000000000	=8*M6
7913000000000000	=8*M7
6060000000000000	=8*M8
9082000000000000	=8*M9
5670000000000000	=8*M10
2933000000000000	=8*M11
1855000000000000	=8*M12
6025000000000000	=8*M13
9566000000000000	=8*M14
1522000000000000	=8*M15
2717000000000000	=8*M16
2984000000000000	=8*M17
2598000000000000	=8*M18
272400	=8*M19
31310	=8*M20
3598	=8*M21
1212000000000000	=8*M22



## Formulas

Gamma photons/sec/basi		ORIGEN2 Group	
ORIGEN grp	max gamma MeV		Output Group
19	0	0	
18	0.02	=B4*1000000	1
17	0.03	=B5*1000000	2
16	0.045	=B6*1000000	3
15	0.07	=B7*1000000	4
14	0.1	=B8*1000000	5
13	0.15	=B9*1000000	6
12	0.3	=B10*1000000	7
11	0.45	=B11*1000000	8
10	0.7	=B12*1000000	9
9	1	=B13*1000000	10
8	1.5	=B14*1000000	11
7	2	=B15*1000000	12
6	2.5	=B16*1000000	13
5	3	=B17*1000000	14
4	4	=B18*1000000	15
3	6	=B19*1000000	16
2	8	=B20*1000000	17
1	11	=B21*1000000	18
t			

## Formulas

boundaries	mev	0.1 y	1.1 y
0	0.02	2568000000000000	6678000000000000
0.02	0.03	5786000000000000	1435000000000000
0.03	0.045	7351000000000000	1675000000000000
0.045	0.07	4285000000000000	1223000000000000
0.07	0.1	3411000000000000	9362000000000000
0.1	0.15	8888000000000000	1392000000000000
0.15	0.3	3064000000000000	8822000000000000
0.3	0.45	2735000000000000	4555000000000000
0.45	0.7	1431000000000000	2785000000000000
0.7	1	2999000000000000	1530000000000000
1	1.5	5042000000000000	1593000000000000
1.5	2	2819000000000000	2473000000000000
2	2.5	1622000000000000	4154000000000000
2.5	3	1062000000000000	5201000000000000
3	4	8995000000000000	4578000000000000
4	6	1942000	948100
6	8	223300	109100
8	11	25660	12540
totals		109100000000000000	192200000000000000

## Formulas

1.2 y

1.2 y

1.3 y

1.4 y

6254000000000000	5869000000000000	5526000000000000	5184000000000000
1345000000000000	1264000000000000	1191000000000000	1118000000000000
1569000000000000	1473000000000000	1387000000000000	1300000000000000
1146000000000000	1075000000000000	1013000000000000	9495000000000000
8766000000000000	8220000000000000	7734000000000000	7244000000000000
1299000000000000	1213000000000000	1137000000000000	1060000000000000
8261000000000000	7748000000000000	7290000000000000	6829000000000000
4273000000000000	4014000000000000	3783000000000000	3549000000000000
2699000000000000	2620000000000000	2548000000000000	2475000000000000
1283000000000000	1102000000000000	9707000000000000	8623000000000000
1516000000000000	1445000000000000	1381000000000000	1315000000000000
2318000000000000	2175000000000000	2046000000000000	1915000000000000
3863000000000000	3594000000000000	3353000000000000	3110000000000000
4907000000000	4632000000000	4382000000000	4126000000000
4324000000000	4087000000000	3870000000000	3648000000000
913300	882700	856500	831300
105100	101500	98540	95640
12080	11670	11330	11000
1794000000000000	1682000000000000	1585000000000000	1489000000000000

1.5 y

24 Assemblies

4880000000000000

=24\*M4

1053000000000000

=24\*M5

1223000000000000

=24\*M6

8934000000000000

=24\*M7

6809000000000000

=24\*M8

9921000000000000

=24\*M9

6418000000000000

=24\*M10

3340000000000000

=24\*M11

2409000000000000

=24\*M12

7825000000000000

=24\*M13

1255000000000000

=24\*M14

1798000000000000

=24\*M15

2893000000000000

=24\*M16

3894000000000000

=24\*M17

3446000000000000

=24\*M18

809900

=24\*M19

93180

=24\*M20

10710

=24\*M21

1406000000000000

=24\*M22

Energy Output Group	Assembly Sub Batch Cor		
	DD1	DD2	DD3
1	=DD1!O4	=DD2!O4	=DD3!P4
2	=DD1!O5	=DD2!O5	=DD3!P5
3	=DD1!O6	=DD2!O6	=DD3!P6
4	=DD1!O7	=DD2!O7	=DD3!P7
5	=DD1!O8	=DD2!O8	=DD3!P8
6	=DD1!O9	=DD2!O9	=DD3!P9
7	=DD1!O10	=DD2!O10	=DD3!P10
8	=DD1!O11	=DD2!O11	=DD3!P11
9	=DD1!O12	=DD2!O12	=DD3!P12
10	=DD1!O13	=DD2!O13	=DD3!P13
11	=DD1!O14	=DD2!O14	=DD3!P14
12	=DD1!O15	=DD2!O15	=DD3!P15
13	=DD1!O16	=DD2!O16	=DD3!P16
14	=DD1!O17	=DD2!O17	=DD3!P17
15	=DD1!O18	=DD2!O18	=DD3!P18
16	=DD1!O19	=DD2!O19	=DD3!P19
17	=DD1!O20	=DD2!O20	=DD3!P20
18	=DD1!O21	=DD2!O21	=DD3!P21
Total	=DD1!O22	=DD2!O22	=DD3!P22

EE1	EE2	EE3	FF1	FF2
=EE1!P4	=EE2!L4	=EE3!P4	=FF1!P4	=FF2!O4
=EE1!P5	=EE2!L5	=EE3!P5	=FF1!P5	=FF2!O5
=EE1!P6	=EE2!L6	=EE3!P6	=FF1!P6	=FF2!O6
=EE1!P7	=EE2!L7	=EE3!P7	=FF1!P7	=FF2!O7
=EE1!P8	=EE2!L8	=EE3!P8	=FF1!P8	=FF2!O8
=EE1!P9	=EE2!L9	=EE3!P9	=FF1!P9	=FF2!O9
=EE1!P10	=EE2!L10	=EE3!P10	=FF1!P10	=FF2!O10
=EE1!P11	=EE2!L11	=EE3!P11	=FF1!P11	=FF2!O11
=EE1!P12	=EE2!L12	=EE3!P12	=FF1!P12	=FF2!O12
=EE1!P13	=EE2!L13	=EE3!P13	=FF1!P13	=FF2!O13
=EE1!P14	=EE2!L14	=EE3!P14	=FF1!P14	=FF2!O14
=EE1!P15	=EE2!L15	=EE3!P15	=FF1!P15	=FF2!O15
=EE1!P16	=EE2!L16	=EE3!P16	=FF1!P16	=FF2!O16
=EE1!P17	=EE2!L17	=EE3!P17	=FF1!P17	=FF2!O17
=EE1!P18	=EE2!L18	=EE3!P18	=FF1!P18	=FF2!O18
=EE1!P19	=EE2!L19	=EE3!P19	=FF1!P19	=FF2!O19
=EE1!P20	=EE2!L20	=EE3!P20	=FF1!P20	=FF2!O20
=EE1!P21	=EE2!L21	=EE3!P21	=FF1!P21	=FF2!O21
=EE1!P22	=EE2!L22	=EE3!P22	=FF1!P22	=FF2!O22



FF3	FF4	GG1	GG2	GG3
=FF3!O4	=FF4!O4	=GG1!Q4	=GG2!O4	=GG3!O4
=FF3!O5	=FF4!O5	=GG1!Q5	=GG2!O5	=GG3!O5
=FF3!O6	=FF4!O6	=GG1!Q6	=GG2!O6	=GG3!O6
=FF3!O7	=FF4!O7	=GG1!Q7	=GG2!O7	=GG3!O7
=FF3!O8	=FF4!O8	=GG1!Q8	=GG2!O8	=GG3!O8
=FF3!O9	=FF4!O9	=GG1!Q9	=GG2!O9	=GG3!O9
=FF3!O10	=FF4!O10	=GG1!Q10	=GG2!O10	=GG3!O10
=FF3!O11	=FF4!O11	=GG1!Q11	=GG2!O11	=GG3!O11
=FF3!O12	=FF4!O12	=GG1!Q12	=GG2!O12	=GG3!O12
=FF3!O13	=FF4!O13	=GG1!Q13	=GG2!O13	=GG3!O13
=FF3!O14	=FF4!O14	=GG1!Q14	=GG2!O14	=GG3!O14
=FF3!O15	=FF4!O15	=GG1!Q15	=GG2!O15	=GG3!O15
=FF3!O16	=FF4!O16	=GG1!Q16	=GG2!O16	=GG3!O16
=FF3!O17	=FF4!O17	=GG1!Q17	=GG2!O17	=GG3!O17
=FF3!O18	=FF4!O18	=GG1!Q18	=GG2!O18	=GG3!O18
=FF3!O19	=FF4!O19	=GG1!Q19	=GG2!O19	=GG3!O19
=FF3!O20	=FF4!O20	=GG1!Q20	=GG2!O20	=GG3!O20
=FF3!O21	=FF4!O21	=GG1!Q21	=GG2!O21	=GG3!O21
=FF3!O22	=FF4!O22	=GG1!Q22	=GG2!O22	=GG3!O22

**Total for Core Offload a**

**=SUM(B4:N4)**  
**=SUM(B5:N5)**  
**=SUM(B6:N6)**  
**=SUM(B7:N7)**  
**=SUM(B8:N8)**  
**=SUM(B9:N9)**  
**=SUM(B10:N10)**  
**=SUM(B11:N11)**  
**=SUM(B12:N12)**  
**=SUM(B13:N13)**  
**=SUM(B14:N14)**  
**=SUM(B15:N15)**  
**=SUM(B16:N16)**  
**=SUM(B17:N17)**  
**=SUM(B18:N18)**  
**=SUM(B19:N19)**  
**=SUM(B20:N20)**  
**=SUM(B21:N21)**  
**=SUM(B22:N22)**

				boundaries	mev	1E-03 y	3E-03 y	1E-02 y
Gamma photons/sec/basis		ORIGEN2 Group						
ORIGEN grp	max gamma MeV							
19	0	0 Output Group						
18	0.02	20000	1	0.00E+00	2.00E-02	3.34E+17	2.58E+17	1.44E+17
17	0.03	30000	2	2.00E-02	3.00E-02	5.13E+16	3.92E+16	2.44E+16
16	0.045	45000	3	3.00E-02	4.50E-02	5.35E+16	4.33E+16	2.91E+16
15	0.07	70000	4	4.50E-02	7.00E-02	3.27E+16	2.49E+16	1.61E+16
14	0.1	100000	5	7.00E-02	1.00E-01	4.52E+16	3.66E+16	2.33E+16
13	0.15	150000	6	1.00E-01	1.50E-01	1.78E+17	1.45E+17	7.74E+16
12	0.3	300000	7	1.50E-01	3.00E-01	1.34E+17	1.02E+17	4.94E+16
11	0.45	450000	8	3.00E-01	4.50E-01	3.55E+16	2.87E+16	1.95E+16
10	0.7	700000	9	4.50E-01	7.00E-01	1.15E+17	8.59E+16	5.65E+16
9	1	1000000	10	7.00E-01	1.00E+00	9.20E+16	7.34E+16	5.51E+16
8	1.5	1500000	11	1.00E+00	1.50E+00	2.23E+16	1.13E+16	6.19E+15
7	2	2000000	12	1.50E+00	2.00E+00	2.14E+16	1.84E+16	1.59E+16
6	2.5	2500000	13	2.00E+00	2.50E+00	2.08E+15	1.25E+15	1.00E+15
5	3	3000000	14	2.50E+00	3.00E+00	7.78E+14	6.59E+14	5.89E+14
4	4	4000000	15	3.00E+00	4.00E+00	3.50E+13	5.28E+12	4.69E+12
3	6	6000000	16	4.00E+00	6.00E+00	1.55E+12	2.11E+10	3.60E+07
2	8	8000000	17	6.00E+00	8.00E+00	4.16E+06	4.16E+06	4.15E+06
1	11	11000000	18	8.00E+00	1.10E+01	4.78E+05	4.78E+05	4.77E+05
totals						1.12E+18	8.69E+17	5.18E+17

3E-02 y	0.1 y	0.3 y	1.0 y	3.0 y	3.2 y	49 Assemblies
---------	-------	-------	-------	-------	-------	---------------

5.57E+16	2.98E+16	1.97E+16	1.04E+16	3.24E+15	3.01E+15	1.48E+17
1.22E+16	6.75E+15	4.27E+15	2.24E+15	7.11E+14	6.61E+14	3.24E+16
1.67E+16	8.20E+15	4.72E+15	2.48E+15	8.06E+14	7.52E+14	3.69E+16
9.01E+15	5.08E+15	3.47E+15	1.89E+15	5.76E+14	5.33E+14	2.61E+16
1.03E+16	4.04E+15	2.60E+15	1.42E+15	4.20E+14	3.87E+14	1.90E+16
2.21E+16	9.24E+15	4.44E+15	1.92E+15	5.08E+14	4.64E+14	2.28E+16
1.17E+16	3.71E+15	2.49E+15	1.37E+15	3.93E+14	3.61E+14	1.77E+16
1.03E+16	3.10E+15	1.30E+15	7.15E+14	2.09E+14	1.93E+14	9.43E+15
3.76E+16	2.26E+16	1.27E+16	7.81E+15	4.51E+15	4.35E+15	2.13E+17
4.14E+16	2.97E+16	1.65E+16	3.72E+15	1.38E+15	1.31E+15	6.39E+16
3.12E+15	1.26E+15	6.43E+14	4.29E+14	1.91E+14	1.81E+14	8.87E+15
1.08E+16	2.78E+15	1.27E+14	4.40E+13	1.18E+13	1.07E+13	5.23E+14
6.91E+14	2.76E+14	9.88E+13	5.12E+13	9.42E+12	8.19E+12	4.01E+14
4.03E+14	1.02E+14	3.68E+12	1.11E+12	2.82E+11	2.51E+11	1.23E+13
3.28E+12	9.55E+11	1.78E+11	1.01E+11	2.59E+10	2.32E+10	1.13E+12
3.57E+07	3.47E+07	3.24E+07	2.78E+07	2.40E+07	2.38E+07	1.17E+09
4.11E+06	4.00E+06	3.73E+06	3.20E+06	2.77E+06	2.75E+06	1.35E+08
4.73E+05	4.60E+05	4.29E+05	3.68E+05	3.18E+05	3.16E+05	1.55E+07
2.42E+17	1.27E+17	7.30E+16	3.44E+16	1.30E+16	1.22E+16	5.99E+17

				boundaries	mev	1E-03 y	3E-03 y	1E-02 y
Gamma photons/sec/basis		ORIGEN2 Group						
ORIGEN grp	max gamma MeV							
19	0	0 Output Group						
18	0.02	20000	1	0.00E+00	2.00E-02	3.30E+17	2.55E+17	1.42E+17
17	0.03	30000	2	2.00E-02	3.00E-02	5.10E+16	3.89E+16	2.42E+16
16	0.045	45000	3	3.00E-02	4.50E-02	5.34E+16	4.32E+16	2.90E+16
15	0.07	70000	4	4.50E-02	7.00E-02	3.25E+16	2.48E+16	1.60E+16
14	0.1	100000	5	7.00E-02	1.00E-01	4.48E+16	3.62E+16	2.31E+16
13	0.15	150000	6	1.00E-01	1.50E-01	1.75E+17	1.43E+17	7.64E+16
12	0.3	300000	7	1.50E-01	3.00E-01	1.32E+17	1.01E+17	4.87E+16
11	0.45	450000	8	3.00E-01	4.50E-01	3.53E+16	2.85E+16	1.94E+16
10	0.7	700000	9	4.50E-01	7.00E-01	1.14E+17	8.52E+16	5.58E+16
9	1	1000000	10	7.00E-01	1.00E+00	9.18E+16	7.33E+16	5.52E+16
8	1.5	1500000	11	1.00E+00	1.50E+00	2.21E+16	1.11E+16	6.02E+15
7	2	2000000	12	1.50E+00	2.00E+00	2.14E+16	1.84E+16	1.60E+16
6	2.5	2500000	13	2.00E+00	2.50E+00	2.05E+15	1.21E+15	9.72E+14
5	3	3000000	14	2.50E+00	3.00E+00	7.81E+14	6.62E+14	5.91E+14
4	4	4000000	15	3.00E+00	4.00E+00	3.53E+13	5.29E+12	4.70E+12
3	6	6000000	16	4.00E+00	6.00E+00	1.60E+12	2.17E+10	3.14E+07
2	8	8000000	17	6.00E+00	8.00E+00	3.62E+06	3.62E+06	3.61E+06
1	11	11000000	18	8.00E+00	1.10E+01	4.17E+05	4.17E+05	4.16E+05
				totals		1.11E+18	8.60E+17	5.13E+17

3E-02 y	0.1 y	0.3 y	1.0 y	3.0 y	7.1 y	52 Assemblies
5.54E+16	2.96E+16	1.94E+16	1.02E+16	3.15E+15	1.24E+15	6.47E+16
1.22E+16	6.70E+15	4.22E+15	2.20E+15	6.92E+14	2.61E+14	1.36E+16
1.66E+16	8.17E+15	4.68E+15	2.44E+15	7.83E+14	3.38E+14	1.76E+16
8.97E+15	5.05E+15	3.43E+15	1.85E+15	5.61E+14	2.13E+14	1.11E+16
1.02E+16	4.01E+15	2.57E+15	1.40E+15	4.09E+14	1.42E+14	7.39E+15
2.20E+16	9.25E+15	4.42E+15	1.91E+15	4.97E+14	1.50E+14	7.79E+15
1.16E+16	3.68E+15	2.45E+15	1.34E+15	3.83E+14	1.24E+14	6.47E+15
1.03E+16	3.08E+15	1.28E+15	7.01E+14	2.04E+14	5.98E+13	3.11E+15
3.69E+16	2.19E+16	1.22E+16	7.43E+15	4.28E+15	2.38E+15	1.24E+17
4.14E+16	2.97E+16	1.65E+16	3.58E+15	1.30E+15	3.56E+14	1.85E+16
3.01E+15	1.21E+15	6.16E+14	4.09E+14	1.82E+14	6.72E+13	3.49E+15
1.09E+16	2.78E+15	1.25E+14	4.28E+13	1.13E+13	2.41E+12	1.25E+14
6.67E+14	2.69E+14	9.86E+13	5.12E+13	9.39E+12	3.30E+11	1.71E+13
4.04E+14	1.02E+14	3.62E+12	1.07E+12	2.70E+11	1.67E+10	8.68E+11
3.28E+12	9.51E+11	1.71E+11	9.71E+10	2.49E+10	1.58E+09	8.20E+10
3.11E+07	3.02E+07	2.81E+07	2.39E+07	2.05E+07	1.75E+07	9.09E+08
3.58E+06	3.48E+06	3.23E+06	2.75E+06	2.36E+06	2.01E+06	1.05E+08
4.12E+05	4.00E+05	3.71E+05	3.16E+05	2.72E+05	2.32E+05	1.20E+07
2.40E+17	1.26E+17	7.20E+16	3.35E+16	1.25E+16	5.34E+15	2.78E+17



		boundaries		mev	1E-03 y	3E-03 y
Gamma photons/sec/basis		ORIGEN2 Group				
ORIGEN grp	max gamma MeV	0 Output Group				
19	0					
18	0.02	20000	1	0.00E+00	2.00E-02	3.42E+17
17	0.03	30000	2	2.00E-02	3.00E-02	5.20E+16
16	0.045	45000	3	3.00E-02	4.50E-02	5.39E+16
15	0.07	70000	4	4.50E-02	7.00E-02	3.31E+16
14	0.1	100000	5	7.00E-02	1.00E-01	4.61E+16
13	0.15	150000	6	1.00E-01	1.50E-01	1.82E+17
12	0.3	300000	7	1.50E-01	3.00E-01	1.36E+17
11	0.45	450000	8	3.00E-01	4.50E-01	3.59E+16
10	0.7	700000	9	4.50E-01	7.00E-01	1.16E+17
9	1	1000000	10	7.00E-01	1.00E+00	9.29E+16
8	1.5	1500000	11	1.00E+00	1.50E+00	2.28E+16
7	2	2000000	12	1.50E+00	2.00E+00	2.14E+16
6	2.5	2500000	13	2.00E+00	2.50E+00	2.16E+15
5	3	3000000	14	2.50E+00	3.00E+00	7.74E+14
4	4	4000000	15	3.00E+00	4.00E+00	3.44E+13
3	6	6000000	16	4.00E+00	6.00E+00	1.47E+12
2	8	8000000	17	6.00E+00	8.00E+00	5.45E+06
1	11	11000000	18	8.00E+00	1.10E+01	6.27E+05
totals					1.14E+18	8.85E+17

1E-02 y	3E-02 y	0.1 y	0.3 y	1.0 y	3.0 y	8.5 y	57 Assemblies
1.47E+17	5.63E+16	3.01E+16	2.00E+16	1.06E+16	3.37E+15	1.24E+15	7.06E+16
2.46E+16	1.23E+16	6.82E+15	4.35E+15	2.30E+15	7.39E+14	2.54E+14	1.44E+16
2.93E+16	1.67E+16	8.24E+15	4.77E+15	2.53E+15	8.37E+14	3.40E+14	1.94E+16
1.64E+16	9.13E+15	5.14E+15	3.53E+15	1.94E+15	5.97E+14	2.11E+14	1.20E+16
2.37E+16	1.04E+16	4.09E+15	2.64E+15	1.46E+15	4.35E+14	1.39E+14	7.90E+15
7.89E+16	2.22E+16	9.21E+15	4.45E+15	1.95E+15	5.24E+14	1.46E+14	8.30E+15
5.04E+16	1.19E+16	3.76E+15	2.53E+15	1.40E+15	4.08E+14	1.20E+14	6.86E+15
1.97E+16	1.03E+16	3.13E+15	1.32E+15	7.35E+14	2.17E+14	5.53E+13	3.15E+15
5.79E+16	3.89E+16	2.37E+16	1.37E+16	8.51E+15	4.90E+15	2.40E+15	1.37E+17
5.53E+16	4.14E+16	2.97E+16	1.67E+16	4.03E+15	1.55E+15	2.79E+14	1.59E+16
6.66E+15	3.43E+15	1.39E+15	6.94E+14	4.66E+14	2.10E+14	6.22E+13	3.55E+15
1.59E+16	1.08E+16	2.77E+15	1.31E+14	4.60E+13	1.24E+13	2.20E+12	1.26E+14
1.10E+15	7.58E+14	2.97E+14	9.93E+13	5.11E+13	9.46E+12	1.14E+11	6.51E+12
5.85E+14	3.99E+14	1.01E+14	3.78E+12	1.18E+12	2.99E+11	7.24E+09	4.12E+11
4.67E+12	3.26E+12	9.60E+11	1.88E+11	1.08E+11	2.76E+10	7.12E+08	4.06E+10
4.73E+07	4.69E+07	4.58E+07	4.32E+07	3.80E+07	3.33E+07	2.69E+07	1.53E+09
5.44E+06	5.40E+06	5.28E+06	4.98E+06	4.38E+06	3.83E+06	3.10E+06	1.77E+08
6.26E+05	6.21E+05	6.07E+05	5.72E+05	5.03E+05	4.41E+05	3.57E+05	2.03E+07
5.27E+17	2.45E+17	1.28E+17	7.48E+16	3.61E+16	1.38E+16	5.25E+15	2.99E+17



				boundaries	mev	1E-02 y	3E-02 y	0.1 y
Gamma photons/sec/basis		ORIGEN2 Group						
ORIGEN grp	max gamma MeV							
19	0	0 Output Group						
18	0.02	20000	1	0.00E+00	2.00E-02	1.42E+17	5.56E+16	2.98E+16
17	0.03	30000	2	2.00E-02	3.00E-02	2.43E+16	1.22E+16	6.74E+15
16	0.045	45000	3	3.00E-02	4.50E-02	2.91E+16	1.67E+16	8.21E+15
15	0.07	70000	4	4.50E-02	7.00E-02	1.61E+16	9.05E+15	5.08E+15
14	0.1	100000	5	7.00E-02	1.00E-01	2.32E+16	1.03E+16	4.04E+15
13	0.15	150000	6	1.00E-01	1.50E-01	7.65E+16	2.20E+16	9.26E+15
12	0.3	300000	7	1.50E-01	3.00E-01	4.88E+16	1.16E+16	3.70E+15
11	0.45	450000	8	3.00E-01	4.50E-01	1.95E+16	1.03E+16	3.10E+15
10	0.7	700000	9	4.50E-01	7.00E-01	5.63E+16	3.74E+16	2.23E+16
9	1	1000000	10	7.00E-01	1.00E+00	5.53E+16	4.16E+16	2.98E+16
8	1.5	1500000	11	1.00E+00	1.50E+00	6.18E+15	3.11E+15	1.25E+15
7	2	2000000	12	1.50E+00	2.00E+00	1.60E+16	1.09E+16	2.78E+15
6	2.5	2500000	13	2.00E+00	2.50E+00	9.97E+14	6.86E+14	2.75E+14
5	3	3000000	14	2.50E+00	3.00E+00	5.91E+14	4.04E+14	1.02E+14
4	4	4000000	15	3.00E+00	4.00E+00	4.70E+12	3.28E+12	9.52E+11
3	6	6000000	16	4.00E+00	6.00E+00	3.45E+07	3.42E+07	3.32E+07
2	8	8000000	17	6.00E+00	8.00E+00	3.97E+06	3.93E+06	3.82E+06
1	11	11000000	18	8.00E+00	1.10E+01	4.56E+05	4.52E+05	4.40E+05
totals						5.15E+17	2.42E+17	1.26E+17

0.3 y	1.0 y	3.0 y	10.0 y	10.1 y	37 Assemblies
1.96E+16	1.03E+16	3.22E+15	1.11E+15	1.11E+15	4.09E+16
4.25E+15	2.22E+15	7.06E+14	2.25E+14	2.24E+14	8.29E+15
4.71E+15	2.47E+15	8.01E+14	3.01E+14	3.00E+14	1.11E+16
3.46E+15	1.88E+15	5.72E+14	1.92E+14	1.91E+14	7.07E+15
2.58E+15	1.41E+15	4.17E+14	1.24E+14	1.23E+14	4.56E+15
4.44E+15	1.92E+15	5.06E+14	1.27E+14	1.26E+14	4.67E+15
2.47E+15	1.35E+15	3.90E+14	1.08E+14	1.07E+14	3.97E+15
1.29E+15	7.08E+14	2.07E+14	4.79E+13	4.77E+13	1.76E+15
1.26E+16	7.72E+15	4.46E+15	2.04E+15	2.03E+15	7.50E+16
1.66E+16	3.71E+15	1.37E+15	1.65E+14	1.61E+14	5.96E+15
6.35E+14	4.23E+14	1.89E+14	4.61E+13	4.56E+13	1.69E+15
1.27E+14	4.34E+13	1.16E+13	1.72E+12	1.71E+12	6.32E+13
9.90E+13	5.13E+13	9.41E+12	3.72E+10	3.52E+10	1.30E+12
3.64E+12	1.09E+12	2.75E+11	2.54E+09	2.41E+09	8.92E+10
1.73E+11	9.86E+10	2.53E+10	2.54E+08	2.42E+08	8.97E+09
3.09E+07	2.65E+07	2.29E+07	1.75E+07	1.74E+07	6.44E+08
3.56E+06	3.05E+06	2.63E+06	2.01E+06	2.00E+06	7.41E+07
4.10E+05	3.51E+05	3.03E+05	2.31E+05	2.31E+05	8.53E+06
7.28E+16	3.42E+16	1.29E+16	4.48E+15	4.46E+15	1.65E+17

			grp	boundaries	mev	1E-02 y	3E-02 y
Gamma photons/sec/basis			ORIGEN2 Group				
ORIGEN grp	max gamma MeV						
19	0	0 Output Group					
18	0.02	20000	1	0.00E+00	2.00E-02	1.40E+17	5.47E+16
17	0.03	30000	2	2.00E-02	3.00E-02	2.40E+16	1.21E+16
16	0.045	45000	3	3.00E-02	4.50E-02	2.87E+16	1.65E+16
15	0.07	70000	4	4.50E-02	7.00E-02	1.57E+16	8.81E+15
14	0.1	100000	5	7.00E-02	1.00E-01	2.27E+16	1.00E+16
13	0.15	150000	6	1.00E-01	1.50E-01	7.54E+16	2.18E+16
12	0.3	300000	7	1.50E-01	3.00E-01	4.80E+16	1.14E+16
11	0.45	450000	8	3.00E-01	4.50E-01	1.93E+16	1.02E+16
10	0.7	700000	9	4.50E-01	7.00E-01	5.45E+16	3.57E+16
9	1	1000000	10	7.00E-01	1.00E+00	5.49E+16	4.13E+16
8	1.5	1500000	11	1.00E+00	1.50E+00	5.61E+15	2.74E+15
7	2	2000000	12	1.50E+00	2.00E+00	1.60E+16	1.09E+16
6	2.5	2500000	13	2.00E+00	2.50E+00	8.99E+14	6.16E+14
5	3	3000000	14	2.50E+00	3.00E+00	5.95E+14	4.07E+14
4	4	4000000	15	3.00E+00	4.00E+00	4.72E+12	3.29E+12
3	6	6000000	16	4.00E+00	6.00E+00	2.38E+07	2.35E+07
2	8	8000000	17	6.00E+00	8.00E+00	2.74E+06	2.71E+06
1	11	11000000	18	8.00E+00	1.10E+01	3.15E+05	3.11E+05
			totals			5.06E+17	2.37E+17

0.1 y	0.3 y	1.0 y	3.0 y	10.0 y	11.7 y	26 Assemblies
2.92E+16	1.90E+16	9.82E+15	2.98E+15	9.83E+14	9.32E+14	2.42E+16
6.61E+15	4.13E+15	2.13E+15	6.55E+14	2.00E+14	1.88E+14	4.88E+15
8.09E+15	4.60E+15	2.37E+15	7.40E+14	2.66E+14	2.51E+14	6.52E+15
4.97E+15	3.36E+15	1.80E+15	5.32E+14	1.71E+14	1.64E+14	4.25E+15
3.95E+15	2.51E+15	1.36E+15	3.88E+14	1.10E+14	1.04E+14	2.69E+15
9.24E+15	4.39E+15	1.87E+15	4.76E+14	1.11E+14	1.03E+14	2.68E+15
3.62E+15	2.40E+15	1.30E+15	3.64E+14	9.57E+13	9.01E+13	2.34E+15
3.05E+15	1.25E+15	6.78E+14	1.94E+14	4.29E+13	3.93E+13	1.02E+15
2.08E+16	1.12E+16	6.69E+15	3.84E+15	1.78E+15	1.65E+15	4.30E+16
2.96E+16	1.62E+16	3.26E+15	1.14E+15	1.37E+14	9.02E+13	2.35E+15
1.09E+15	5.64E+14	3.71E+14	1.62E+14	3.85E+13	3.18E+13	8.27E+14
2.79E+15	1.22E+14	4.08E+13	1.06E+13	1.46E+12	1.26E+12	3.27E+13
2.52E+14	9.77E+13	5.10E+13	9.31E+12	3.55E+10	1.25E+10	3.24E+11
1.03E+14	3.53E+12	1.01E+12	2.55E+11	2.30E+09	8.63E+08	2.24E+10
9.45E+11	1.62E+11	9.12E+10	2.34E+10	2.24E+08	8.79E+07	2.29E+09
2.28E+07	2.09E+07	1.74E+07	1.47E+07	1.12E+07	1.05E+07	2.74E+08
2.62E+06	2.41E+06	2.00E+06	1.69E+06	1.29E+06	1.21E+06	3.16E+07
3.01E+05	2.77E+05	2.30E+05	1.95E+05	1.49E+05	1.40E+05	3.63E+06
1.23E+17	6.99E+16	3.17E+16	1.15E+16	3.94E+15	3.65E+15	9.48E+16

			grp	boundaries	mev	1E-02 y	3E-02 y	
Gamma photons/sec/basis	ORIGEN2 Group							
ORIGEN grp	max gamma MeV							
19	0	0 Output Group						
18	0.02	20000	1	0.00E+00	2.00E-02	1.39E+17	5.45E+16	
17	0.03	30000	2	2.00E-02	3.00E-02	2.39E+16	1.20E+16	
16	0.045	45000	3	3.00E-02	4.50E-02	2.87E+16	1.65E+16	
15	0.07	70000	4	4.50E-02	7.00E-02	1.56E+16	8.80E+15	
14	0.1	100000	5	7.00E-02	1.00E-01	2.27E+16	1.00E+16	
13	0.15	150000	6	1.00E-01	1.50E-01	7.49E+16	2.18E+16	
12	0.3	300000	7	1.50E-01	3.00E-01	4.77E+16	1.14E+16	
11	0.45	450000	8	3.00E-01	4.50E-01	1.92E+16	1.02E+16	
10	0.7	700000	9	4.50E-01	7.00E-01	5.43E+16	3.55E+16	
9	1	1000000	10	7.00E-01	1.00E+00	5.50E+16	4.14E+16	
8	1.5	1500000	11	1.00E+00	1.50E+00	5.54E+15	2.70E+15	
7	2	2000000	12	1.50E+00	2.00E+00	1.60E+16	1.09E+16	
6	2.5	2500000	13	2.00E+00	2.50E+00	8.84E+14	6.05E+14	
5	3	3000000	14	2.50E+00	3.00E+00	5.96E+14	4.08E+14	
4	4	4000000	15	3.00E+00	4.00E+00	4.72E+12	3.30E+12	
3	6	6000000	16	4.00E+00	6.00E+00	2.25E+07	2.23E+07	
2	8	8000000	17	6.00E+00	8.00E+00	2.59E+06	2.56E+06	
1	11	11000000	18	8.00E+00	1.10E+01	2.98E+05	2.95E+05	
			totals				5.04E+17	2.37E+17

0.1 y	0.3 y	1.0 y	3.0 y	10.0 y	13.2 y	31 Assemblies
2.92E+16	1.90E+16	9.77E+15	2.96E+15	9.81E+14	8.92E+14	2.76E+16
6.60E+15	4.12E+15	2.11E+15	6.51E+14	2.00E+14	1.78E+14	5.52E+15
8.10E+15	4.60E+15	2.36E+15	7.36E+14	2.65E+14	2.38E+14	7.39E+15
4.97E+15	3.35E+15	1.79E+15	5.29E+14	1.71E+14	1.58E+14	4.89E+15
3.94E+15	2.51E+15	1.35E+15	3.86E+14	1.10E+14	9.86E+13	3.06E+15
9.25E+15	4.39E+15	1.87E+15	4.74E+14	1.11E+14	9.66E+13	2.99E+15
3.61E+15	2.39E+15	1.29E+15	3.62E+14	9.56E+13	8.59E+13	2.66E+15
3.05E+15	1.24E+15	6.74E+14	1.93E+14	4.28E+13	3.69E+13	1.14E+15
2.06E+16	1.11E+16	6.59E+15	3.79E+15	1.76E+15	1.55E+15	4.81E+16
2.97E+16	1.63E+16	3.23E+15	1.11E+15	1.34E+14	6.38E+13	1.98E+15
1.07E+15	5.56E+14	3.65E+14	1.59E+14	3.80E+13	2.69E+13	8.34E+14
2.79E+15	1.22E+14	4.04E+13	1.05E+13	1.44E+12	1.11E+12	3.44E+13
2.49E+14	9.77E+13	5.10E+13	9.30E+12	3.52E+10	6.38E+09	1.98E+11
1.03E+14	3.51E+12	9.91E+11	2.50E+11	2.26E+09	4.24E+08	1.31E+10
9.44E+11	1.59E+11	8.97E+10	2.30E+10	2.19E+08	4.41E+07	1.37E+09
2.15E+07	1.97E+07	1.63E+07	1.37E+07	1.05E+07	9.30E+06	2.88E+08
2.48E+06	2.27E+06	1.87E+06	1.58E+06	1.21E+06	1.07E+06	3.32E+07
2.85E+05	2.61E+05	2.16E+05	1.82E+05	1.39E+05	1.23E+05	3.82E+06
1.23E+17	6.97E+16	3.15E+16	1.14E+16	3.91E+15	3.43E+15	1.06E+17



			grp	boundaries mev		1E-02 y	3E-02 y
Gamma photons/sec/basis			ORIGEN2 Group				
ORIGEN grp	max gamma MeV						
19	0	0 Output Group					
18	0.02	20000	1	0.00E+00	2.00E-02	1.40E+17	5.51E+16
17	0.03	30000	2	2.00E-02	3.00E-02	2.41E+16	1.21E+16
16	0.045	45000	3	3.00E-02	4.50E-02	2.90E+16	1.66E+16
15	0.07	70000	4	4.50E-02	7.00E-02	1.59E+16	8.93E+15
14	0.1	100000	5	7.00E-02	1.00E-01	2.29E+16	1.02E+16
13	0.15	150000	6	1.00E-01	1.50E-01	7.54E+16	2.19E+16
12	0.3	300000	7	1.50E-01	3.00E-01	4.80E+16	1.15E+16
11	0.45	450000	8	3.00E-01	4.50E-01	1.93E+16	1.02E+16
10	0.7	700000	9	4.50E-01	7.00E-01	5.52E+16	3.63E+16
9	1	1000000	10	7.00E-01	1.00E+00	5.52E+16	4.15E+16
8	1.5	1500000	11	1.00E+00	1.50E+00	5.82E+15	2.87E+15
7	2	2000000	12	1.50E+00	2.00E+00	1.60E+16	1.09E+16
6	2.5	2500000	13	2.00E+00	2.50E+00	9.30E+14	6.38E+14
5	3	3000000	14	2.50E+00	3.00E+00	5.94E+14	4.06E+14
4	4	4000000	15	3.00E+00	4.00E+00	4.71E+12	3.29E+12
3	6	6000000	16	4.00E+00	6.00E+00	2.72E+07	2.70E+07
2	8	8000000	17	6.00E+00	8.00E+00	3.13E+06	3.10E+06
1	11	11000000	18	8.00E+00	1.10E+01	3.60E+05	3.57E+05
			totals			5.08E+17	2.39E+17

0.1 y	0.3 y	1.0 y	3.0 y	10.0 y	14.7 y	41 Assemblies
2.95E+16	1.93E+16	1.00E+16	3.09E+15	1.05E+15	9.15E+14	3.75E+16
6.67E+15	4.18E+15	2.17E+15	6.77E+14	2.13E+14	1.81E+14	7.43E+15
8.16E+15	4.65E+15	2.41E+15	7.68E+14	2.83E+14	2.44E+14	9.99E+15
5.02E+15	3.40E+15	1.83E+15	5.50E+14	1.82E+14	1.63E+14	6.66E+15
3.99E+15	2.54E+15	1.38E+15	4.01E+14	1.17E+14	1.01E+14	4.12E+15
9.27E+15	4.42E+15	1.89E+15	4.90E+14	1.19E+14	9.78E+13	4.01E+15
3.66E+15	2.43E+15	1.32E+15	3.75E+14	1.02E+14	8.77E+13	3.59E+15
3.07E+15	1.26E+15	6.89E+14	2.00E+14	4.55E+13	3.72E+13	1.52E+15
2.14E+16	1.18E+16	7.11E+15	4.11E+15	1.90E+15	1.59E+15	6.51E+16
2.98E+16	1.64E+16	3.45E+15	1.23E+15	1.48E+14	5.26E+13	2.16E+15
1.15E+15	5.91E+14	3.92E+14	1.73E+14	4.19E+13	2.57E+13	1.05E+15
2.79E+15	1.24E+14	4.16E+13	1.10E+13	1.57E+12	1.09E+12	4.46E+13
2.60E+14	9.84E+13	5.12E+13	9.36E+12	3.61E+10	4.62E+09	1.89E+11
1.03E+14	3.57E+12	1.03E+12	2.60E+11	2.37E+09	3.09E+08	1.27E+10
9.48E+11	1.65E+11	9.32E+10	2.39E+10	2.33E+08	3.41E+07	1.40E+09
2.61E+07	2.41E+07	2.02E+07	1.72E+07	1.32E+07	1.10E+07	4.52E+08
3.01E+06	2.78E+06	2.33E+06	1.98E+06	1.52E+06	1.27E+06	5.21E+07
3.46E+05	3.19E+05	2.68E+05	2.28E+05	1.74E+05	1.46E+05	5.99E+06
1.25E+17	7.12E+16	3.27E+16	1.21E+16	4.20E+15	3.49E+15	1.43E+17



			grp	boundaries mev		1E-02 y	3E-02 y
Gamma photons/sec/basis			ORIGEN2 Group				
ORIGEN grp	max gamma MeV						
19	0	0 Output Group					
18	0.02	20000	1	0.00E+00	2.00E-02	1.37E+17	5.43E+16
17	0.03	30000	2	2.00E-02	3.00E-02	2.38E+16	1.20E+16
16	0.045	45000	3	3.00E-02	4.50E-02	2.87E+16	1.65E+16
15	0.07	70000	4	4.50E-02	7.00E-02	1.55E+16	8.78E+15
14	0.1	100000	5	7.00E-02	1.00E-01	2.24E+16	9.99E+15
13	0.15	150000	6	1.00E-01	1.50E-01	7.37E+16	2.17E+16
12	0.3	300000	7	1.50E-01	3.00E-01	4.69E+16	1.13E+16
11	0.45	450000	8	3.00E-01	4.50E-01	1.91E+16	1.02E+16
10	0.7	700000	9	4.50E-01	7.00E-01	5.38E+16	3.50E+16
9	1	1000000	10	7.00E-01	1.00E+00	5.51E+16	4.16E+16
8	1.5	1500000	11	1.00E+00	1.50E+00	5.39E+15	2.59E+15
7	2	2000000	12	1.50E+00	2.00E+00	1.61E+16	1.10E+16
6	2.5	2500000	13	2.00E+00	2.50E+00	8.50E+14	5.81E+14
5	3	3000000	14	2.50E+00	3.00E+00	5.99E+14	4.10E+14
4	4	4000000	15	3.00E+00	4.00E+00	4.74E+12	3.31E+12
3	6	6000000	16	4.00E+00	6.00E+00	1.99E+07	1.96E+07
2	8	8000000	17	6.00E+00	8.00E+00	2.29E+06	2.26E+06
1	11	11000000	18	8.00E+00	1.10E+01	2.63E+05	2.60E+05
			totals			4.99E+17	2.36E+17

0.1 y	0.3 y	1.0 y	3.0 y	10.0 y	16.0 y	518 Assemblies
2.91E+16	1.89E+16	9.66E+15	2.92E+15	9.75E+14	8.24E+14	4.27E+17
6.58E+15	4.09E+15	2.09E+15	6.42E+14	1.99E+14	1.63E+14	8.46E+16
8.10E+15	4.58E+15	2.34E+15	7.27E+14	2.62E+14	2.17E+14	1.13E+17
4.95E+15	3.33E+15	1.76E+15	5.22E+14	1.70E+14	1.48E+14	7.68E+16
3.93E+15	2.49E+15	1.34E+15	3.81E+14	1.09E+14	9.06E+13	4.69E+16
9.28E+15	4.39E+15	1.86E+15	4.69E+14	1.10E+14	8.62E+13	4.46E+16
3.60E+15	2.37E+15	1.27E+15	3.56E+14	9.52E+13	7.90E+13	4.09E+16
3.04E+15	1.23E+15	6.64E+14	1.89E+14	4.26E+13	3.34E+13	1.73E+16
2.02E+16	1.08E+16	6.37E+15	3.68E+15	1.73E+15	1.40E+15	7.26E+17
2.98E+16	1.63E+16	3.14E+15	1.07E+15	1.29E+14	3.70E+13	1.92E+16
1.03E+15	5.37E+14	3.53E+14	1.53E+14	3.67E+13	2.02E+13	1.05E+16
2.80E+15	1.20E+14	3.94E+13	1.02E+13	1.40E+12	8.80E+11	4.56E+14
2.42E+14	9.77E+13	5.11E+13	9.29E+12	3.47E+10	3.66E+09	1.90E+12
1.03E+14	3.46E+12	9.53E+11	2.40E+11	2.16E+09	2.08E+08	1.08E+11
9.42E+11	1.53E+11	8.61E+10	2.20E+10	2.07E+08	1.97E+07	1.02E+10
1.89E+07	1.72E+07	1.40E+07	1.17E+07	8.93E+06	7.12E+06	3.69E+09
2.18E+06	1.98E+06	1.61E+06	1.35E+06	1.03E+06	8.20E+05	4.25E+08
2.50E+05	2.28E+05	1.86E+05	1.55E+05	1.18E+05	9.44E+04	4.89E+07
1.23E+17	6.92E+16	3.09E+16	1.11E+16	3.86E+15	3.10E+15	1.61E+18

## Spent Fuel Assembly Batches by Cooling Year

Energy Output Group									Total for Spent Fuel Assemblies at 18 months
	3.167	7.083	8.5	10.083	11.67	13.167	14.67	16	
1	1.48E+17	6.47E+16	7.06E+16	4.09E+16	2.42E+16	2.76E+16	3.75E+16	4.27E+17	8.40E+17
2	3.24E+16	1.36E+16	1.44E+16	8.29E+15	4.88E+15	5.52E+15	7.43E+15	8.46E+16	1.71E+17
3	3.69E+16	1.76E+16	1.94E+16	1.11E+16	6.52E+15	7.39E+15	9.99E+15	1.13E+17	2.21E+17
4	2.61E+16	1.11E+16	1.20E+16	7.07E+15	4.25E+15	4.89E+15	6.66E+15	7.68E+16	1.49E+17
5	1.90E+16	7.39E+15	7.90E+15	4.56E+15	2.69E+15	3.06E+15	4.12E+15	4.69E+16	9.56E+16
6	2.28E+16	7.79E+15	8.30E+15	4.67E+15	2.68E+15	2.99E+15	4.01E+15	4.46E+16	9.78E+16
7	1.77E+16	6.47E+15	6.86E+15	3.97E+15	2.34E+15	2.66E+15	3.59E+15	4.09E+16	8.45E+16
8	9.43E+15	3.11E+15	3.15E+15	1.76E+15	1.02E+15	1.14E+15	1.52E+15	1.73E+16	3.84E+16
9	2.13E+17	1.24E+17	1.37E+17	7.50E+16	4.30E+16	4.81E+16	6.51E+16	7.26E+17	1.43E+18
10	6.39E+16	1.85E+16	1.59E+16	5.96E+15	2.35E+15	1.98E+15	2.16E+15	1.92E+16	1.30E+17
11	8.87E+15	3.49E+15	3.55E+15	1.69E+15	8.27E+14	8.34E+14	1.05E+15	1.05E+16	3.08E+16
12	5.23E+14	1.25E+14	1.26E+14	6.32E+13	3.27E+13	3.44E+13	4.46E+13	4.56E+14	1.40E+15
13	4.01E+14	1.71E+13	6.51E+12	1.30E+12	3.24E+11	1.98E+11	1.89E+11	1.90E+12	4.29E+14
14	1.23E+13	8.68E+11	4.12E+11	8.92E+10	2.24E+10	1.31E+10	1.27E+10	1.08E+11	1.38E+13
15	1.13E+12	8.20E+10	4.06E+10	8.97E+09	2.29E+09	1.37E+09	1.40E+09	1.02E+10	1.28E+12
16	1.17E+09	9.09E+08	1.53E+09	6.44E+08	2.74E+08	2.88E+08	4.52E+08	3.69E+09	8.96E+09
17	1.35E+08	1.05E+08	1.77E+08	7.41E+07	3.16E+07	3.32E+07	5.21E+07	4.25E+08	1.03E+09
18	1.55E+07	1.20E+07	2.03E+07	8.53E+06	3.63E+06	3.82E+06	5.99E+06	4.89E+07	1.19E+08
<b>Total</b>	5.99E+17	2.78E+17	2.99E+17	1.65E+17	9.48E+16	1.06E+17	1.43E+17	1.61E+18	3.29E+18

18 Month Decay			
Energy	Old Fuel	Core Offload	Total Gamma Spectrum
Output Group	811 Assemblies photons/s/mev	133 Assemblies photons/s/mev	Core Offload and Old Fuel photons/s/mev
1	8.40E+17	8.29E+17	1.67E+18
2	1.71E+17	1.80E+17	3.51E+17
3	2.21E+17	2.04E+17	4.25E+17
4	1.49E+17	1.51E+17	3.00E+17
5	9.56E+16	1.14E+17	2.10E+17
6	9.78E+16	1.57E+17	2.55E+17
7	8.45E+16	1.08E+17	1.93E+17
8	3.84E+16	5.67E+16	9.51E+16
9	1.43E+18	6.07E+17	2.04E+18
10	1.30E+17	2.16E+17	3.46E+17
11	3.08E+16	3.11E+16	6.19E+16
12	1.40E+15	3.25E+15	4.65E+15
13	4.29E+14	4.24E+15	4.67E+15
14	1.38E+13	7.72E+13	9.10E+13
15	1.28E+12	6.96E+12	8.24E+12
16	8.96E+09	1.46E+09	1.04E+10
17	1.03E+09	1.68E+08	1.20E+09
18	1.19E+08	1.93E+07	1.38E+08
Total	3.29E+18	2.66E+18	5.95E+18

14 Month Decay Scaled	
Energy	Total Gamma Spectrum
Output Group	Core Offload and Old Fuel photons/s/mev
1	2.02E+18
2	4.25E+17
3	5.14E+17
4	3.63E+17
5	2.53E+17
6	3.08E+17
7	2.33E+17
8	1.15E+17
9	2.46E+18
10	4.18E+17
11	7.48E+16
12	5.63E+15
13	5.65E+15
14	1.10E+14
15	9.97E+12
16	1.26E+10
17	1.45E+09
18	1.67E+08
Total	7.20E+18

Gamma photons/sec/basis ORIGEN grp	max gamma MeV	ORIGEN2 Group	Output Group
19	0	0	
18	0.02	=B5*1000000	1
17	0.03	=B6*1000000	2
16	0.045	=B7*1000000	3
15	0.07	=B8*1000000	4
14	0.1	=B9*1000000	5
13	0.15	=B10*1000000	6
12	0.3	=B11*1000000	7
11	0.45	=B12*1000000	8
10	0.7	=B13*1000000	9
9	1	=B14*1000000	10
8	1.5	=B15*1000000	11
7	2	=B16*1000000	12
6	2.5	=B17*1000000	13
5	3	=B18*1000000	14
4	4	=B19*1000000	15
3	6	=B20*1000000	16
2	8	=B21*1000000	17
1	11	=B22*1000000	18



boundaries	mev	1E-03 y	3E-03 y
0	0.02	3341000000000000000	2582000000000000000
0.02	0.03	5132000000000000000	3917000000000000000
0.03	0.045	5352000000000000000	4325000000000000000
0.045	0.07	3268000000000000000	2491000000000000000
0.07	0.1	4523000000000000000	3656000000000000000
0.1	0.15	1778000000000000000	1449000000000000000
0.15	0.3	1335000000000000000	1022000000000000000
0.3	0.45	3552000000000000000	2871000000000000000
0.45	0.7	1146000000000000000	8585000000000000000
0.7	1	9199000000000000000	7339000000000000000
1	1.5	2226000000000000000	1134000000000000000
1.5	2	2139000000000000000	1836000000000000000
2	2.5	2079000000000000000	1246000000000000000
2.5	3	7778000000000000000	6593000000000000000
3	4	3497000000000000000	5283000000000000000
4	6	1553000000000000000	2111000000000000000
6	8	4155000	4155000
8	11	477800	477800
totals		11170000000000000000	8688000000000000000

1E-02 y	3E-02 y	0.1 y	0.3 y	1.0 y
1437000000000000000	5571000000000000000	2979000000000000000	1965000000000000000	1035000000000000000
2436000000000000000	1223000000000000000	6752000000000000000	4274000000000000000	2241000000000000000
2909000000000000000	1666000000000000000	8201000000000000000	4717000000000000000	2478000000000000000
1608000000000000000	9010000000000000000	5084000000000000000	3471000000000000000	1888000000000000000
2332000000000000000	1026000000000000000	4040000000000000000	2595000000000000000	1424000000000000000
7738000000000000000	2205000000000000000	9237000000000000000	4436000000000000000	1924000000000000000
4938000000000000000	1169000000000000000	3709000000000000000	2485000000000000000	1365000000000000000
1952000000000000000	1028000000000000000	3100000000000000000	1295000000000000000	7149000000000000000
5654000000000000000	3761000000000000000	2255000000000000000	1272000000000000000	7811000000000000000
5513000000000000000	4135000000000000000	2966000000000000000	1652000000000000000	3720000000000000000
6186000000000000000	3121000000000000000	1259000000000000000	6425000000000000000	4285000000000000000
1593000000000000000	1084000000000000000	2776000000000000000	1274000000000000000	4397000000000000000
1004000000000000000	6907000000000000000	2759000000000000000	9881000000000000000	5121000000000000000
5890000000000000000	4027000000000000000	1018000000000000000	3682000000000000000	1113000000000000000
4688000000000000000	3275000000000000000	9550000000000000000	1776000000000000000	1012000000000000000
36020000	35710000	34720000	32380000	27800000
4145000	4111000	3997000	3728000	3202000
476700	472700	459600	428800	368300
5182000000000000000	2419000000000000000	1265000000000000000	7303000000000000000	3444000000000000000

**3.0 y                      3.2 y                      49 Assemblies**

3241000000000000	3011000000000000	=49*O5
7114000000000000	6610000000000000	=49*O6
8057000000000000	7523000000000000	=49*O7
5760000000000000	5334000000000000	=49*O8
4196000000000000	3872000000000000	=49*O9
5080000000000000	4644000000000000	=49*O10
3930000000000000	3613000000000000	=49*O11
2094000000000000	1925000000000000	=49*O12
4506000000000000	4347000000000000	=49*O13
1381000000000000	1305000000000000	=49*O14
1913000000000000	1810000000000000	=49*O15
1175000000000000	1067000000000000	=49*O16
9421000000000000	8190000000000000	=49*O17
2815000000000000	2510000000000000	=49*O18
2594000000000000	2315000000000000	=49*O19
24020000	23840000	=49*O20
2766000	2746000	=49*O21
318200	315900	=49*O22
129600000000000000	122200000000000000	=49*O23



Gamma photons/sec/basis ORIGEN grp	max gamma MeV	ORIGEN2 Group	Output Group
19	0	0	
18	0.02	=B5*1000000	1
17	0.03	=B6*1000000	2
16	0.045	=B7*1000000	3
15	0.07	=B8*1000000	4
14	0.1	=B9*1000000	5
13	0.15	=B10*1000000	6
12	0.3	=B11*1000000	7
11	0.45	=B12*1000000	8
10	0.7	=B13*1000000	9
9	1	=B14*1000000	10
8	1.5	=B15*1000000	11
7	2	=B16*1000000	12
6	2.5	=B17*1000000	13
5	3	=B18*1000000	14
4	4	=B19*1000000	15
3	6	=B20*1000000	16
2	8	=B21*1000000	17
1	11	=B22*1000000	18

boundaries	mev	1E-03 y	3E-03 y
0	0.02	32950000000000000	25460000000000000
0.02	0.03	50950000000000000	38890000000000000
0.03	0.045	53420000000000000	43150000000000000
0.045	0.07	32540000000000000	24770000000000000
0.07	0.1	44780000000000000	36210000000000000
0.1	0.15	17520000000000000	14290000000000000
0.15	0.3	13190000000000000	10090000000000000
0.3	0.45	35270000000000000	28500000000000000
0.45	0.7	11400000000000000	85160000000000000
0.7	1	91790000000000000	73330000000000000
1	1.5	22110000000000000	11140000000000000
1.5	2	21430000000000000	18400000000000000
2	2.5	20540000000000000	12090000000000000
2.5	3	78100000000000000	66150000000000000
3	4	35260000000000000	52940000000000000
4	6	15970000000000000	21710000000000000
6	8	3622000	3623000
8	11	416500	416500
totals		1106000000000000000	8598000000000000000

1E-02 y	3E-02 y	0.1 y	0.3 y	1.0 y
14190000000000000	55370000000000000	29600000000000000	19430000000000000	10160000000000000
24210000000000000	12170000000000000	67040000000000000	42230000000000000	21990000000000000
29030000000000000	16630000000000000	81710000000000000	46790000000000000	24410000000000000
15990000000000000	89710000000000000	50490000000000000	34300000000000000	18540000000000000
23140000000000000	10210000000000000	40120000000000000	25660000000000000	13990000000000000
76430000000000000	21960000000000000	92460000000000000	44220000000000000	19060000000000000
48730000000000000	11590000000000000	36790000000000000	24540000000000000	13400000000000000
19420000000000000	10250000000000000	30820000000000000	12770000000000000	70100000000000000
55820000000000000	36920000000000000	21930000000000000	12210000000000000	74320000000000000
55150000000000000	41410000000000000	29700000000000000	16460000000000000	35790000000000000
60170000000000000	30050000000000000	12050000000000000	61570000000000000	40920000000000000
15960000000000000	10870000000000000	27810000000000000	12540000000000000	42750000000000000
97150000000000000	66730000000000000	26860000000000000	98600000000000000	51190000000000000
59130000000000000	40440000000000000	10220000000000000	36210000000000000	10700000000000000
46990000000000000	32810000000000000	95090000000000000	17100000000000000	97130000000000000
31400000	31120000	30200000	28050000	23860000
3613000	3582000	3477000	3229000	2747000
415500	411800	399800	371400	316000
51340000000000000	24040000000000000	12550000000000000	71990000000000000	33510000000000000

## Formulas

3.0 y

7.1 y

52 Assemblies

3151000000000000	1244000000000000	=52*O5
6916000000000000	2613000000000000	=52*O6
7832000000000000	3375000000000000	=52*O7
5606000000000000	2130000000000000	=52*O8
4086000000000000	1422000000000000	=52*O9
4973000000000000	1499000000000000	=52*O10
3827000000000000	1244000000000000	=52*O11
2038000000000000	5984000000000000	=52*O12
4282000000000000	2384000000000000	=52*O13
1304000000000000	3557000000000000	=52*O14
1816000000000000	6721000000000000	=52*O15
1134000000000000	2406000000000000	=52*O16
9387000000000000	3296000000000000	=52*O17
2704000000000000	1670000000000000	=52*O18
2488000000000000	1576000000000000	=52*O19
20490000	17480000	=52*O20
2360000	2013000	=52*O21
271500	231600	=52*O22
124700000000000000	5342000000000000	=52*O23

Gamma photons/sec/basis ORIGEN grp	max gamma MeV	ORIGEN2 Group
19	0	0
18	0.02	=B5*1000000
17	0.03	=B6*1000000
16	0.045	=B7*1000000
15	0.07	=B8*1000000
14	0.1	=B9*1000000
13	0.15	=B10*1000000
12	0.3	=B11*1000000
11	0.45	=B12*1000000
10	0.7	=B13*1000000
9	1	=B14*1000000
8	1.5	=B15*1000000
7	2	=B16*1000000
6	2.5	=B17*1000000
5	3	=B18*1000000
4	4	=B19*1000000
3	6	=B20*1000000
2	8	=B21*1000000
1	11	=B22*1000000

	boundaries	mev	1E-03 y
<b>Output Group</b>			
1	0	0.02	3421000000000000000
2	0.02	0.03	5201000000000000000
3	0.03	0.045	5385000000000000000
4	0.045	0.07	3312000000000000000
5	0.07	0.1	4605000000000000000
6	0.1	0.15	1818000000000000000
7	0.15	0.3	1357000000000000000
8	0.3	0.45	3594000000000000000
9	0.45	0.7	1158000000000000000
10	0.7	1	9289000000000000000
11	1	1.5	2278000000000000000
12	1.5	2	2138000000000000000
13	2	2.5	2164000000000000000
14	2.5	3	7735000000000000000
15	3	4	3440000000000000000
16	4	6	1471000000000000000
17	6	8	5451000
18	8	11	626900
	totals		11360000000000000000



3E-03 y	1E-02 y	3E-02 y	0.1 y	0.3 y
2644000000000000000	1466000000000000000	5633000000000000000	3005000000000000000	1996000000000000000
3968000000000000000	2461000000000000000	1232000000000000000	6818000000000000000	4347000000000000000
4354000000000000000	2925000000000000000	1672000000000000000	8241000000000000000	4767000000000000000
2534000000000000000	1636000000000000000	9133000000000000000	5138000000000000000	3527000000000000000
3719000000000000000	2366000000000000000	1037000000000000000	4087000000000000000	2635000000000000000
1481000000000000000	7887000000000000000	2219000000000000000	9210000000000000000	4448000000000000000
1042000000000000000	5040000000000000000	1188000000000000000	3756000000000000000	2530000000000000000
2904000000000000000	1968000000000000000	1032000000000000000	3125000000000000000	1321000000000000000
8711000000000000000	5785000000000000000	3886000000000000000	2368000000000000000	1366000000000000000
7385000000000000000	5528000000000000000	4136000000000000000	2966000000000000000	1668000000000000000
1192000000000000000	6656000000000000000	3427000000000000000	1385000000000000000	6944000000000000000
1836000000000000000	1588000000000000000	1080000000000000000	2771000000000000000	1309000000000000000
1352000000000000000	1098000000000000000	7577000000000000000	2966000000000000000	9930000000000000000
6565000000000000000	5850000000000000000	3993000000000000000	1010000000000000000	3776000000000000000
5268000000000000000	4669000000000000000	3261000000000000000	9604000000000000000	1880000000000000000
19990000000	47270000	46930000	45830000	43210000
5452000	5441000	5402000	5276000	4976000
626900	625700	621300	606700	572300
8848000000000000000	5268000000000000000	2449000000000000000	1283000000000000000	7480000000000000000

1.0 y	3.0 y	8.5 y	57 Assemblies
10630000000000000	33710000000000000	12380000000000000	=57*O5
23030000000000000	73920000000000000	25350000000000000	=57*O6
25310000000000000	83740000000000000	33980000000000000	=57*O7
19380000000000000	59730000000000000	21070000000000000	=57*O8
14590000000000000	43520000000000000	13860000000000000	=57*O9
19480000000000000	52350000000000000	14570000000000000	=57*O10
14010000000000000	40760000000000000	12030000000000000	=57*O11
73530000000000000	21730000000000000	55340000000000000	=57*O12
85110000000000000	48990000000000000	24030000000000000	=57*O13
40290000000000000	15460000000000000	27860000000000000	=57*O14
46560000000000000	20990000000000000	62240000000000000	=57*O15
46000000000000000	12410000000000000	22040000000000000	=57*O16
51120000000000000	94560000000000000	11420000000000000	=57*O17
11820000000000000	29920000000000000	72360000000000000	=57*O18
10780000000000000	27630000000000000	71150000000000000	=57*O19
38000000	33290000	26910000	=57*O20
4377000	3834000	3100000	=57*O21
503400	441100	356600	=57*O22
36050000000000000	13810000000000000	52480000000000000	=57*O23



Gamma photons/sec/basis		ORIGEN2 Group	
ORIGEN grp	max gamma MeV		Output Group
19	0	0	
18	0.02	=B5*1000000	1
17	0.03	=B6*1000000	2
16	0.045	=B7*1000000	3
15	0.07	=B8*1000000	4
14	0.1	=B9*1000000	5
13	0.15	=B10*1000000	6
12	0.3	=B11*1000000	7
11	0.45	=B12*1000000	8
10	0.7	=B13*1000000	9
9	1	=B14*1000000	10
8	1.5	=B15*1000000	11
7	2	=B16*1000000	12
6	2.5	=B17*1000000	13
5	3	=B18*1000000	14
4	4	=B19*1000000	15
3	6	=B20*1000000	16
2	8	=B21*1000000	17
1	11	=B22*1000000	18

boundaries	mev	1E-02 y	3E-02 y
0	0.02	14240000000000000	55620000000000000
0.02	0.03	24270000000000000	12210000000000000
0.03	0.045	29100000000000000	16670000000000000
0.045	0.07	16120000000000000	90460000000000000
0.07	0.1	23220000000000000	10260000000000000
0.1	0.15	76510000000000000	22000000000000000
0.15	0.3	48820000000000000	11640000000000000
0.3	0.45	19450000000000000	10270000000000000
0.45	0.7	56250000000000000	37350000000000000
0.7	1	55340000000000000	41550000000000000
1	1.5	61750000000000000	31050000000000000
1.5	2	15960000000000000	10870000000000000
2	2.5	99700000000000000	68570000000000000
2.5	3	59060000000000000	40380000000000000
3	4	46960000000000000	32790000000000000
4	6	34460000	34170000
6	8	3966000	3933000
8	11	456100	452200
totals		51520000000000000	24170000000000000

0.1 y	0.3 y	1.0 y	3.0 y	10.0 y
2976000000000000	1957000000000000	1028000000000000	3219000000000000	1109000000000000
6737000000000000	4254000000000000	2224000000000000	7059000000000000	2248000000000000
8205000000000000	4710000000000000	2467000000000000	8007000000000000	3012000000000000
5079000000000000	3455000000000000	1875000000000000	5719000000000000	1916000000000000
4035000000000000	2584000000000000	1414000000000000	4166000000000000	1237000000000000
9258000000000000	4437000000000000	1920000000000000	5059000000000000	1266000000000000
3702000000000000	2472000000000000	1354000000000000	3898000000000000	1075000000000000
3095000000000000	1287000000000000	7083000000000000	2073000000000000	4787000000000000
2234000000000000	1257000000000000	7719000000000000	4459000000000000	2036000000000000
2981000000000000	1658000000000000	3705000000000000	1371000000000000	1647000000000000
1248000000000000	6348000000000000	4233000000000000	1894000000000000	4608000000000000
2781000000000000	1265000000000000	4335000000000000	1158000000000000	1721000000000000
2745000000000000	9895000000000000	5128000000000000	9414000000000000	3722000000000000
1020000000000000	3643000000000000	1086000000000000	2745000000000000	2537000000000000
9524000000000000	1734000000000000	9864000000000000	2527000000000000	2543000000000000
33200000	30930000	26490000	22850000	17460000
3822000	3561000	3051000	2632000	2011000
439500	409600	350900	302800	231300
12640000000000000	7279000000000000	3418000000000000	1286000000000000	4481000000000000

10.1 y

37 Assemblies

1106000000000000	=37*N5
2240000000000000	=37*N6
3003000000000000	=37*N7
1911000000000000	=37*N8
1233000000000000	=37*N9
1261000000000000	=37*N10
1072000000000000	=37*N11
4765000000000000	=37*N12
2027000000000000	=37*N13
1611000000000000	=37*N14
4560000000000000	=37*N15
1707000000000000	=37*N16
351600000000	=37*N17
2411000000	=37*N18
242400000	=37*N19
17400000	=37*N20
2004000	=37*N21
230600	=37*N22
4461000000000000	=37*N23

Gamma photons/sec/basis ORIGEN grp	max gamma MeV	ORIGEN2 Group
19	0	0
18	0.02	=B5*1000000
17	0.03	=B6*1000000
16	0.045	=B7*1000000
15	0.07	=B8*1000000
14	0.1	=B9*1000000
13	0.15	=B10*1000000
12	0.3	=B11*1000000
11	0.45	=B12*1000000
10	0.7	=B13*1000000
9	1	=B14*1000000
8	1.5	=B15*1000000
7	2	=B16*1000000
6	2.5	=B17*1000000
5	3	=B18*1000000
4	4	=B19*1000000
3	6	=B20*1000000
2	8	=B21*1000000
1	11	=B22*1000000

grp	boundaries	mev	1E-02 y
<b>Output Group</b>			
1	0	0.02	139600000000000000
2	0.02	0.03	239800000000000000
3	0.03	0.045	287300000000000000
4	0.045	0.07	156700000000000000
5	0.07	0.1	227300000000000000
6	0.1	0.15	754100000000000000
7	0.15	0.3	480200000000000000
8	0.3	0.45	192900000000000000
9	0.45	0.7	545400000000000000
10	0.7	1	549000000000000000
11	1	1.5	561200000000000000
12	1.5	2	160100000000000000
13	2	2.5	899300000000000000
14	2.5	3	594800000000000000
15	3	4	471500000000000000
16	4	6	23770000
17	6	8	2735000
18	8	11	314500
	totals		506000000000000000

3E-02 y	0.1 y	0.3 y	1.0 y	3.0 y
5465000000000000	2921000000000000	1902000000000000	9821000000000000	2980000000000000
1206000000000000	6614000000000000	4131000000000000	2125000000000000	6550000000000000
1649000000000000	8094000000000000	4601000000000000	2370000000000000	7402000000000000
8808000000000000	4973000000000000	3358000000000000	1795000000000000	5318000000000000
1004000000000000	3949000000000000	2513000000000000	1357000000000000	3881000000000000
2181000000000000	9236000000000000	4387000000000000	1868000000000000	4758000000000000
1141000000000000	3618000000000000	2399000000000000	1297000000000000	3638000000000000
1020000000000000	3048000000000000	1246000000000000	6780000000000000	1939000000000000
3568000000000000	2079000000000000	1124000000000000	6687000000000000	3841000000000000
4128000000000000	2959000000000000	1623000000000000	3262000000000000	1135000000000000
2742000000000000	1091000000000000	5636000000000000	3710000000000000	1616000000000000
1091000000000000	2785000000000000	1221000000000000	4078000000000000	1064000000000000
6157000000000000	2523000000000000	9774000000000000	5098000000000000	9308000000000000
4070000000000000	1027000000000000	3534000000000000	1008000000000000	2545000000000000
3291000000000000	9454000000000000	1617000000000000	9124000000000000	2337000000000000
23530000	22750000	20910000	17360000	14700000
2708000	2618000	2407000	2000000	1693000
311400	301000	276800	230000	194700
2371000000000000	1233000000000000	6992000000000000	3172000000000000	1149000000000000



## Formulas

10.0 y	11.7 y	26 Assemblies
9831000000000000	9319000000000000	=26*N5
2003000000000000	1875000000000000	=26*N6
2660000000000000	2508000000000000	=26*N7
1711000000000000	1635000000000000	=26*N8
1100000000000000	1035000000000000	=26*N9
1112000000000000	1030000000000000	=26*N10
9570000000000000	9010000000000000	=26*N11
4285000000000000	3930000000000000	=26*N12
17790000000000000	16520000000000000	=26*N13
13650000000000000	9024000000000000	=26*N14
3854000000000000	3179000000000000	=26*N15
1455000000000000	1259000000000000	=26*N16
354700000000	124800000000	=26*N17
2295000000	863400000	=26*N18
223800000	87890000	=26*N19
11220000	10540000	=26*N20
1293000	1214000	=26*N21
148700	139600	=26*N22
39350000000000000	36450000000000000	=26*N23

Gamma photons/sec/basis ORIGEN grp	max gamma MeV	ORIGEN2 Group
19	0	0
18	0.02	=B5*1000000
17	0.03	=B6*1000000
16	0.045	=B7*1000000
15	0.07	=B8*1000000
14	0.1	=B9*1000000
13	0.15	=B10*1000000
12	0.3	=B11*1000000
11	0.45	=B12*1000000
10	0.7	=B13*1000000
9	1	=B14*1000000
8	1.5	=B15*1000000
7	2	=B16*1000000
6	2.5	=B17*1000000
5	3	=B18*1000000
4	4	=B19*1000000
3	6	=B20*1000000
2	8	=B21*1000000
1	11	=B22*1000000

grp	boundaries	mev	1E-02 y
<b>Output Group</b>			
1	0	0.02	138700000000000000
2	0.02	0.03	239200000000000000
3	0.03	0.045	287200000000000000
4	0.045	0.07	156300000000000000
5	0.07	0.1	226500000000000000
6	0.1	0.15	749000000000000000
7	0.15	0.3	476800000000000000
8	0.3	0.45	192400000000000000
9	0.45	0.7	543000000000000000
10	0.7	1	549700000000000000
11	1	1.5	554300000000000000
12	1.5	2	160300000000000000
13	2	2.5	884000000000000000
14	2.5	3	596000000000000000
15	3	4	472100000000000000
16	4	6	22520000
17	6	8	2591000
18	8	11	297900
	totals		503800000000000000

3E-02 y	0.1 y	0.3 y	1.0 y	3.0 y
5454000000000000	2919000000000000	1897000000000000	9772000000000000	2963000000000000
1204000000000000	6604000000000000	4118000000000000	2113000000000000	6510000000000000
1649000000000000	8095000000000000	4595000000000000	2362000000000000	7363000000000000
8798000000000000	4967000000000000	3348000000000000	1785000000000000	5287000000000000
1003000000000000	3944000000000000	2506000000000000	1350000000000000	3859000000000000
2177000000000000	9249000000000000	4388000000000000	1865000000000000	4738000000000000
1136000000000000	3611000000000000	2390000000000000	1290000000000000	3615000000000000
1019000000000000	3045000000000000	1240000000000000	6738000000000000	1926000000000000
3546000000000000	2060000000000000	1110000000000000	6590000000000000	3791000000000000
4137000000000000	2966000000000000	1625000000000000	3225000000000000	1114000000000000
2696000000000000	1072000000000000	5555000000000000	3654000000000000	1590000000000000
1092000000000000	2788000000000000	1215000000000000	4036000000000000	1051000000000000
6048000000000000	2490000000000000	9771000000000000	5102000000000000	9302000000000000
4079000000000000	1030000000000000	3512000000000000	9908000000000000	2502000000000000
3295000000000000	9443000000000000	1591000000000000	8965000000000000	2296000000000000
22280000	21520000	19730000	16280000	13720000
2564000	2476000	2271000	1874000	1580000
294800	284700	261100	215600	181800
2367000000000000	1232000000000000	6968000000000000	3148000000000000	1138000000000000

10.0 y	13.2 y	31 Assemblies
9806000000000000	8917000000000000	=31*N5
1999000000000000	1781000000000000	=31*N6
2648000000000000	2383000000000000	=31*N7
1708000000000000	1578000000000000	=31*N8
1098000000000000	9861000000000000	=31*N9
1107000000000000	9658000000000000	=31*N10
9556000000000000	8591000000000000	=31*N11
4279000000000000	3688000000000000	=31*N12
17640000000000000	15530000000000000	=31*N13
13410000000000000	6384000000000000	=31*N14
3799000000000000	2691000000000000	=31*N15
1437000000000000	1109000000000000	=31*N16
352300000000	6384000000	=31*N17
2255000000	424000000	=31*N18
218600000	44120000	=31*N19
10480000	9301000	=31*N20
1207000	1071000	=31*N21
138800	123200	=31*N22
39130000000000000	34290000000000000	=31*N23

Gamma photons/sec/basis ORIGEN grp	max gamma MeV	ORIGEN2 Group
19	0	0
18	0.02	=B5*1000000
17	0.03	=B6*1000000
16	0.045	=B7*1000000
15	0.07	=B8*1000000
14	0.1	=B9*1000000
13	0.15	=B10*1000000
12	0.3	=B11*1000000
11	0.45	=B12*1000000
10	0.7	=B13*1000000
9	1	=B14*1000000
8	1.5	=B15*1000000
7	2	=B16*1000000
6	2.5	=B17*1000000
5	3	=B18*1000000
4	4	=B19*1000000
3	6	=B20*1000000
2	8	=B21*1000000
1	11	=B22*1000000



grp	boundaries	mev	1E-02 y	3E-02 y
<b>Output Group</b>				
1	0	0.02	1400000000000000000	5505000000000000000
2	0.02	0.03	2406000000000000000	1213000000000000000
3	0.03	0.045	2897000000000000000	1661000000000000000
4	0.045	0.07	1587000000000000000	8926000000000000000
5	0.07	0.1	2294000000000000000	1016000000000000000
6	0.1	0.15	7536000000000000000	2187000000000000000
7	0.15	0.3	4802000000000000000	1147000000000000000
8	0.3	0.45	1932000000000000000	1023000000000000000
9	0.45	0.7	5515000000000000000	3629000000000000000
10	0.7	1	5521000000000000000	4152000000000000000
11	1	1.5	5816000000000000000	2872000000000000000
12	1.5	2	1601000000000000000	1091000000000000000
13	2	2.5	9301000000000000000	6379000000000000000
14	2.5	3	5940000000000000000	4064000000000000000
15	3	4	4712000000000000000	3290000000000000000
16	4	6	27240000	26970000
17	6	8	3134000	3104000
18	8	11	360300	356900
	totals		5083000000000000000	2391000000000000000

0.1 y	0.3 y	1.0 y	3.0 y	10.0 y
2948000000000000	1926000000000000	1001000000000000	3086000000000000	1047000000000000
6670000000000000	4183000000000000	2165000000000000	6774000000000000	2129000000000000
8157000000000000	4654000000000000	2413000000000000	7677000000000000	2832000000000000
5024000000000000	3399000000000000	1827000000000000	5496000000000000	1817000000000000
3990000000000000	2544000000000000	1380000000000000	4006000000000000	1170000000000000
9266000000000000	4417000000000000	1892000000000000	4896000000000000	1188000000000000
3656000000000000	2428000000000000	1319000000000000	3750000000000000	1019000000000000
3070000000000000	1262000000000000	6893000000000000	1995000000000000	4546000000000000
2137000000000000	1177000000000000	7110000000000000	4105000000000000	1896000000000000
2979000000000000	1644000000000000	3449000000000000	1233000000000000	1484000000000000
1149000000000000	5912000000000000	3917000000000000	1731000000000000	4185000000000000
2787000000000000	1236000000000000	4163000000000000	1098000000000000	1574000000000000
2596000000000000	9841000000000000	5123000000000000	9364000000000000	3612000000000000
1026000000000000	3565000000000000	1029000000000000	2599000000000000	2371000000000000
9478000000000000	1648000000000000	9323000000000000	2388000000000000	2326000000000000
26120000	24110000	20220000	17220000	13150000
3006000	2775000	2329000	1983000	1515000
345700	319200	267800	228200	174300
124800000000000000	711700000000000000	327400000000000000	120800000000000000	419500000000000000

14.7 y

41 Assemblies

915400000000000  
181300000000000  
243600000000000  
162500000000000  
100500000000000  
978000000000000  
876500000000000  
371500000000000  
158900000000000  
526000000000000  
257300000000000  
108900000000000  
4618000000  
309000000  
34110000  
11030000  
1271000  
146200  
349400000000000

=41\*N5  
=41\*N6  
=41\*N7  
=41\*N8  
=41\*N9  
=41\*N10  
=41\*N11  
=41\*N12  
=41\*N13  
=41\*N14  
=41\*N15  
=41\*N16  
=41\*N17  
=41\*N18  
=41\*N19  
=41\*N20  
=41\*N21  
=41\*N22  
=41\*N23

Gamma photons/sec/basis ORIGEN grp	max gamma MeV	ORIGEN2 Group
19	0	0
18	0.02	=B5*1000000
17	0.03	=B6*1000000
16	0.045	=B7*1000000
15	0.07	=B8*1000000
14	0.1	=B9*1000000
13	0.15	=B10*1000000
12	0.3	=B11*1000000
11	0.45	=B12*1000000
10	0.7	=B13*1000000
9	1	=B14*1000000
8	1.5	=B15*1000000
7	2	=B16*1000000
6	2.5	=B17*1000000
5	3	=B18*1000000
4	4	=B19*1000000
3	6	=B20*1000000
2	8	=B21*1000000
1	11	=B22*1000000

grp	boundaries	mev	1E-02 y	3E-02 y
<b>Output Group</b>				
1	0	0.02	13670000000000000	54290000000000000
2	0.02	0.03	23770000000000000	12010000000000000
3	0.03	0.045	28680000000000000	16490000000000000
4	0.045	0.07	15540000000000000	87750000000000000
5	0.07	0.1	22440000000000000	99890000000000000
6	0.1	0.15	73720000000000000	21680000000000000
7	0.15	0.3	46890000000000000	11250000000000000
8	0.3	0.45	19140000000000000	10180000000000000
9	0.45	0.7	53760000000000000	34960000000000000
10	0.7	1	55140000000000000	41570000000000000
11	1	1.5	53870000000000000	25940000000000000
12	1.5	2	16080000000000000	10960000000000000
13	2	2.5	85000000000000000	58060000000000000
14	2.5	3	59880000000000000	41010000000000000
15	3	4	47370000000000000	33050000000000000
16	4	6	19860000	19640000
17	6	8	2285000	2260000
18	8	11	262700	259800
	totals		49870000000000000	23570000000000000

0.1 y	0.3 y	1.0 y	3.0 y	10.0 y
2913000000000000	1885000000000000	9658000000000000	2923000000000000	9746000000000000
6582000000000000	4089000000000000	2087000000000000	6419000000000000	1989000000000000
8096000000000000	4582000000000000	2344000000000000	7272000000000000	2619000000000000
4953000000000000	3325000000000000	1764000000000000	5217000000000000	1700000000000000
3931000000000000	2490000000000000	1335000000000000	3807000000000000	1093000000000000
9279000000000000	4389000000000000	1856000000000000	4692000000000000	1096000000000000
3596000000000000	2371000000000000	1273000000000000	3563000000000000	9519000000000000
3037000000000000	1229000000000000	6642000000000000	1894000000000000	4261000000000000
2016000000000000	1078000000000000	6369000000000000	3678000000000000	1730000000000000
2982000000000000	1629000000000000	3141000000000000	1066000000000000	1288000000000000
1029000000000000	5372000000000000	3525000000000000	1531000000000000	3674000000000000
2796000000000000	1200000000000000	3940000000000000	1023000000000000	1396000000000000
2416000000000000	9765000000000000	5109000000000000	9288000000000000	3467000000000000
1034000000000000	3461000000000000	9529000000000000	2404000000000000	2162000000000000
9419000000000000	1534000000000000	8605000000000000	2203000000000000	2072000000000000
18920000	17230000	14010000	11690000	8925000
2177000	1984000	1613000	1346000	1028000
250300	228100	185500	154900	118200
122800000000000000	691500000000000000	309400000000000000	111300000000000000	385900000000000000



16.0 y

518 Assemblies

8243000000000000	=518*N5
1633000000000000	=518*N6
2172000000000000	=518*N7
1482000000000000	=518*N8
9056000000000000	=518*N9
8619000000000000	=518*N10
7899000000000000	=518*N11
3336000000000000	=518*N12
1402000000000000	=518*N13
3699000000000000	=518*N14
2018000000000000	=518*N15
8802000000000000	=518*N16
3662000000000000	=518*N17
2080000000000000	=518*N18
1974000000000000	=518*N19
7124000000000000	=518*N20
8204000000000000	=518*N21
9436000000000000	=518*N22
3102000000000000	=518*N23

**Spent Fuel Assembly Ba**

<b>Energy</b>	3.167	7.083	8.5	10.083
<b>Output Group</b>				
1	=3.167 Years!P5	=7.083 Years!P5	=8.5 Years!P5	=10.083 Years!P5
2	=3.167 Years!P6	=7.083 Years!P6	=8.5 Years!P6	=10.083 Years!P6
3	=3.167 Years!P7	=7.083 Years!P7	=8.5 Years!P7	=10.083 Years!P7
4	=3.167 Years!P8	=7.083 Years!P8	=8.5 Years!P8	=10.083 Years!P8
5	=3.167 Years!P9	=7.083 Years!P9	=8.5 Years!P9	=10.083 Years!P9
6	=3.167 Years!P10	=7.083 Years!P10	=8.5 Years!P10	=10.083 Years!P10
7	=3.167 Years!P11	=7.083 Years!P11	=8.5 Years!P11	=10.083 Years!P11
8	=3.167 Years!P12	=7.083 Years!P12	=8.5 Years!P12	=10.083 Years!P12
9	=3.167 Years!P13	=7.083 Years!P13	=8.5 Years!P13	=10.083 Years!P13
10	=3.167 Years!P14	=7.083 Years!P14	=8.5 Years!P14	=10.083 Years!P14
11	=3.167 Years!P15	=7.083 Years!P15	=8.5 Years!P15	=10.083 Years!P15
12	=3.167 Years!P16	=7.083 Years!P16	=8.5 Years!P16	=10.083 Years!P16
13	=3.167 Years!P17	=7.083 Years!P17	=8.5 Years!P17	=10.083 Years!P17
14	=3.167 Years!P18	=7.083 Years!P18	=8.5 Years!P18	=10.083 Years!P18
15	=3.167 Years!P19	=7.083 Years!P19	=8.5 Years!P19	=10.083 Years!P19
16	=3.167 Years!P20	=7.083 Years!P20	=8.5 Years!P20	=10.083 Years!P20
17	=3.167 Years!P21	=7.083 Years!P21	=8.5 Years!P21	=10.083 Years!P21
18	=3.167 Years!P22	=7.083 Years!P22	=8.5 Years!P22	=10.083 Years!P22
<b>Total</b>	=SUM(B4:B21)	=SUM(C4:C21)	=SUM(D4:D21)	=SUM(E4:E21)

11.67	13.167	14.67	16	Total for Spent Fuel Assemblies at 18 months
= '11.67 Years'!P5	= '13.167 Years'!P5	= '14.67 Years'!P5	= '16 Years'!P5	=SUM(B4:I4)
= '11.67 Years'!P6	= '13.167 Years'!P6	= '14.67 Years'!P6	= '16 Years'!P6	=SUM(B5:I5)
= '11.67 Years'!P7	= '13.167 Years'!P7	= '14.67 Years'!P7	= '16 Years'!P7	=SUM(B6:I6)
= '11.67 Years'!P8	= '13.167 Years'!P8	= '14.67 Years'!P8	= '16 Years'!P8	=SUM(B7:I7)
= '11.67 Years'!P9	= '13.167 Years'!P9	= '14.67 Years'!P9	= '16 Years'!P9	=SUM(B8:I8)
= '11.67 Years'!P10	= '13.167 Years'!P10	= '14.67 Years'!P10	= '16 Years'!P10	=SUM(B9:I9)
= '11.67 Years'!P11	= '13.167 Years'!P11	= '14.67 Years'!P11	= '16 Years'!P11	=SUM(B10:I10)
= '11.67 Years'!P12	= '13.167 Years'!P12	= '14.67 Years'!P12	= '16 Years'!P12	=SUM(B11:I11)
= '11.67 Years'!P13	= '13.167 Years'!P13	= '14.67 Years'!P13	= '16 Years'!P13	=SUM(B12:I12)
= '11.67 Years'!P14	= '13.167 Years'!P14	= '14.67 Years'!P14	= '16 Years'!P14	=SUM(B13:I13)
= '11.67 Years'!P15	= '13.167 Years'!P15	= '14.67 Years'!P15	= '16 Years'!P15	=SUM(B14:I14)
= '11.67 Years'!P16	= '13.167 Years'!P16	= '14.67 Years'!P16	= '16 Years'!P16	=SUM(B15:I15)
= '11.67 Years'!P17	= '13.167 Years'!P17	= '14.67 Years'!P17	= '16 Years'!P17	=SUM(B16:I16)
= '11.67 Years'!P18	= '13.167 Years'!P18	= '14.67 Years'!P18	= '16 Years'!P18	=SUM(B17:I17)
= '11.67 Years'!P19	= '13.167 Years'!P19	= '14.67 Years'!P19	= '16 Years'!P19	=SUM(B18:I18)
= '11.67 Years'!P20	= '13.167 Years'!P20	= '14.67 Years'!P20	= '16 Years'!P20	=SUM(B19:I19)
= '11.67 Years'!P21	= '13.167 Years'!P21	= '14.67 Years'!P21	= '16 Years'!P21	=SUM(B20:I20)
= '11.67 Years'!P22	= '13.167 Years'!P22	= '14.67 Years'!P22	= '16 Years'!P22	=SUM(B21:I21)
=SUM(F4:F21)	=SUM(G4:G21)	=SUM(H4:H21)	=SUM(I4:I21)	=SUM(J4:J21)

18 Month	Decay	
Energy	Old Fuel	Core Offload
Output Group	811 Assemblies photons/s/mev	133 Assemblies photons/s/mev
1	=Total Spent Fuel Gamma!J4	8290000000000000
2	=Total Spent Fuel Gamma!J5	1800000000000000
3	=Total Spent Fuel Gamma!J6	2040000000000000
4	=Total Spent Fuel Gamma!J7	1510000000000000
5	=Total Spent Fuel Gamma!J8	1140000000000000
6	=Total Spent Fuel Gamma!J9	1570000000000000
7	=Total Spent Fuel Gamma!J10	1080000000000000
8	=Total Spent Fuel Gamma!J11	5670000000000000
9	=Total Spent Fuel Gamma!J12	6070000000000000
10	=Total Spent Fuel Gamma!J13	2160000000000000
11	=Total Spent Fuel Gamma!J14	3110000000000000
12	=Total Spent Fuel Gamma!J15	3250000000000000
13	=Total Spent Fuel Gamma!J16	4240000000000000
14	=Total Spent Fuel Gamma!J17	7720000000000000
15	=Total Spent Fuel Gamma!J18	6960000000000000
16	=Total Spent Fuel Gamma!J19	1460000000
17	=Total Spent Fuel Gamma!J20	168000000
18	=Total Spent Fuel Gamma!J21	19300000
Total	=Total Spent Fuel Gamma!J22	=SUM(C5:C22)

**Total Gamma Spectrum**

**Core Offload and Old Fuel**  
photons/s/mev

=B5+C5
=B6+C6
=B7+C7
=B8+C8
=B9+C9
=B10+C10
=B11+C11
=B12+C12
=B13+C13
=B14+C14
=B15+C15
=B16+C16
=B17+C17
=B18+C18
=B19+C19
=B20+C20
=B21+C21
=B22+C22
=B23+C23

**14 Month Decay Scaled**

**Energy**

**Output Group**

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
<b>Total</b>

**Total Gamma Spectrum**

**Core Offload and Old Fuel**  
photons/s/mev

=1.2092*D5
=1.2092*D6
=1.2092*D7
=1.2092*D8
=1.2092*D9
=1.2092*D10
=1.2092*D11
=1.2092*D12
=1.2092*D13
=1.2092*D14
=1.2092*D15
=1.2092*D16
=1.2092*D17
=1.2092*D18
=1.2092*D19
=1.2092*D20
=1.2092*D21
=1.2092*D22
=1.2092*D23



## Neutron ENDF5 Group

grp

boundaries

mev

initial

1E-03 y

ORIGEN ENDF5 4 Max Energy

45	1.00E-09	1.00E-05						
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	8.25E-06	8.25E-06	
43	7.50E-09	7.50E-03	2	3.00E-09	7.50E-09	5.88E-06	5.88E-06	
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	3.96E-06	3.96E-06	
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	1.41E-05	1.41E-05	
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	5.08E-06	5.08E-06	
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	1.49E-05	1.49E-05	
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	1.21E-05	1.21E-05	
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	2.71E-05	2.70E-05	
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	4.45E-05	4.45E-05	
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	8.43E-05	8.42E-05	
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	9.65E-05	9.65E-05	
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	5.61E-05	5.61E-05	
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	6.81E-05	6.81E-05	
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	6.15E-05	6.15E-05	
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	1.94E-02	1.94E-02	
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	7.22E-03	7.23E-03	
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	9.44E-03	9.44E-03	
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	7.94E-03	7.95E-03	
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	7.02E-02	7.03E-02	
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	1.67E-01	1.67E-01	
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	4.67E-01	4.67E-01	
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	9.26E-01	9.26E-01	
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	1.71E+00	1.71E+00	
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	1.46E+00	1.46E+00	
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	2.77E+00	2.77E+00	
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	2.82E+00	2.83E+00	
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	4.41E+01	4.41E+01	
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	2.80E+02	2.80E+02	
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	3.98E+03	3.98E+03	
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	5.05E+04	5.05E+04	
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	6.83E+05	6.84E+05	
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	5.76E+05	5.76E+05	
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	8.98E+06	8.98E+06	
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	6.49E+07	6.49E+07	
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	1.42E+08	1.42E+08	
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	1.42E+08	1.42E+08	
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	1.15E+08	1.15E+08	
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	1.10E+08	1.10E+08	
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	2.41E+07	2.41E+07	
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	8.71E+07	8.72E+07	
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	1.59E+08	1.59E+08	
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	4.22E+07	4.22E+07	
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	1.33E+07	1.33E+07	
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	4.57E+06	4.57E+06	
totals							9.14E+08	9.15E+08

3E-03 y	1E-02 y	3E-02 y	0.1 y	0.5 y	1.5 y	Five Assemblies
8.25E-06	8.25E-06	8.25E-06	8.25E-06	8.25E-06	<b>8.25E-06</b>	4.13E-05
5.88E-06	5.88E-06	5.88E-06	5.88E-06	5.88E-06	<b>5.88E-06</b>	2.94E-05
3.96E-06	3.96E-06	3.96E-06	3.96E-06	3.96E-06	<b>3.96E-06</b>	1.98E-05
1.41E-05	1.41E-05	1.41E-05	1.41E-05	1.41E-05	<b>1.41E-05</b>	7.07E-05
5.08E-06	5.08E-06	5.08E-06	5.08E-06	5.08E-06	<b>5.08E-06</b>	2.54E-05
1.49E-05	1.49E-05	1.49E-05	1.49E-05	1.49E-05	<b>1.49E-05</b>	7.46E-05
1.21E-05	1.21E-05	1.21E-05	1.21E-05	1.21E-05	<b>1.21E-05</b>	6.05E-05
2.70E-05	2.70E-05	2.69E-05	2.67E-05	2.61E-05	<b>2.60E-05</b>	1.30E-04
4.45E-05	4.44E-05	4.43E-05	4.39E-05	4.29E-05	<b>4.27E-05</b>	2.13E-04
8.42E-05	8.41E-05	8.38E-05	8.31E-05	8.12E-05	<b>8.08E-05</b>	4.04E-04
9.65E-05	9.65E-05	9.62E-05	9.53E-05	9.32E-05	<b>9.26E-05</b>	4.63E-04
5.61E-05	5.61E-05	5.60E-05	5.55E-05	5.43E-05	<b>5.40E-05</b>	2.70E-04
6.81E-05	6.81E-05	6.79E-05	6.74E-05	6.62E-05	<b>6.59E-05</b>	3.30E-04
6.15E-05	6.15E-05	6.13E-05	6.08E-05	5.95E-05	<b>5.92E-05</b>	2.96E-04
1.94E-02	1.94E-02	1.93E-02	1.89E-02	1.75E-02	<b>1.58E-02</b>	7.90E-02
7.23E-03	7.21E-03	7.16E-03	6.99E-03	6.27E-03	<b>5.49E-03</b>	2.74E-02
9.44E-03	9.41E-03	9.29E-03	8.92E-03	7.38E-03	<b>5.84E-03</b>	2.92E-02
7.95E-03	7.93E-03	7.87E-03	7.66E-03	6.81E-03	<b>5.89E-03</b>	2.94E-02
7.03E-02	7.01E-02	6.96E-02	6.77E-02	6.01E-02	<b>5.20E-02</b>	2.60E-01
1.67E-01	1.67E-01	1.65E-01	1.61E-01	1.43E-01	<b>1.24E-01</b>	6.19E-01
4.67E-01	4.66E-01	4.62E-01	4.50E-01	4.01E-01	<b>3.47E-01</b>	1.74E+00
9.26E-01	9.24E-01	9.17E-01	8.93E-01	7.93E-01	<b>6.85E-01</b>	3.43E+00
1.71E+00	1.70E+00	1.69E+00	1.65E+00	1.47E+00	<b>1.27E+00</b>	6.35E+00
1.47E+00	1.46E+00	1.45E+00	1.41E+00	1.26E+00	<b>1.10E+00</b>	5.48E+00
2.77E+00	2.76E+00	2.74E+00	2.67E+00	2.38E+00	<b>2.06E+00</b>	1.03E+01
2.83E+00	2.82E+00	2.80E+00	2.73E+00	2.43E+00	<b>2.12E+00</b>	1.06E+01
4.41E+01	4.40E+01	4.37E+01	4.25E+01	3.79E+01	<b>3.28E+01</b>	1.64E+02
2.80E+02	2.80E+02	2.77E+02	2.70E+02	2.40E+02	<b>2.07E+02</b>	1.04E+03
3.98E+03	3.98E+03	3.94E+03	3.84E+03	3.41E+03	<b>2.95E+03</b>	1.47E+04
5.06E+04	5.04E+04	5.00E+04	4.87E+04	4.33E+04	<b>3.75E+04</b>	1.87E+05
6.84E+05	6.82E+05	6.77E+05	6.59E+05	5.86E+05	<b>5.06E+05</b>	2.53E+06
5.77E+05	5.75E+05	5.71E+05	5.56E+05	4.93E+05	<b>4.26E+05</b>	2.13E+06
8.98E+06	8.96E+06	8.89E+06	8.66E+06	7.69E+06	<b>6.64E+06</b>	3.32E+07
6.49E+07	6.47E+07	6.42E+07	6.25E+07	5.55E+07	<b>4.80E+07</b>	2.40E+08
1.42E+08	1.41E+08	1.40E+08	1.36E+08	1.21E+08	<b>1.05E+08</b>	5.24E+08
1.42E+08	1.42E+08	1.41E+08	1.37E+08	1.21E+08	<b>1.05E+08</b>	5.24E+08
1.15E+08	1.15E+08	1.14E+08	1.11E+08	9.76E+07	<b>8.37E+07</b>	4.19E+08
1.10E+08	1.10E+08	1.09E+08	1.06E+08	9.26E+07	<b>7.87E+07</b>	3.94E+08
2.41E+07	2.41E+07	2.39E+07	2.31E+07	2.01E+07	<b>1.70E+07</b>	8.51E+07
8.72E+07	8.70E+07	8.61E+07	8.34E+07	7.23E+07	<b>6.07E+07</b>	3.04E+08
1.59E+08	1.59E+08	1.57E+08	1.53E+08	1.32E+08	<b>1.11E+08</b>	5.55E+08
4.22E+07	4.21E+07	4.18E+07	4.07E+07	3.63E+07	<b>3.15E+07</b>	1.58E+08
1.33E+07	1.33E+07	1.32E+07	1.29E+07	1.15E+07	<b>1.00E+07</b>	5.02E+07
4.57E+06	4.56E+06	4.53E+06	4.42E+06	3.96E+06	<b>3.46E+06</b>	1.73E+07
9.15E+08	9.12E+08	9.05E+08	8.79E+08	7.73E+08	<b>6.61E+08</b>	3.31E+09



## Neutron ENDF5 Group

boundaries

mev

initial

1E-03 y

3E-03 y

grp

ORIGEN ENDF5 4<sup>4</sup> Max Energy

45	1.00E-09	1.00E-05						
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	1.30E-06	1.30E-06	1.30E-06
43	<b>7.50E-09</b>	7.50E-03	2	3.00E-09	<b>7.50E-09</b>	9.58E-07	9.58E-07	9.58E-07
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	1.10E-06	1.10E-06	1.10E-06
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	2.00E-06	2.00E-06	2.00E-06
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	1.22E-06	1.22E-06	1.22E-06
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	5.84E-06	5.84E-06	5.84E-06
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	3.40E-06	3.40E-06	3.40E-06
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	7.43E-06	7.43E-06	7.43E-06
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	1.25E-05	1.25E-05	1.25E-05
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	2.41E-05	2.41E-05	2.41E-05
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	3.02E-05	3.03E-05	3.03E-05
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	1.97E-05	1.97E-05	1.97E-05
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	2.81E-05	2.82E-05	2.82E-05
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	2.16E-05	2.16E-05	2.17E-05
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	6.25E-03	6.25E-03	6.25E-03
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	2.48E-03	2.48E-03	2.48E-03
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	3.71E-03	3.71E-03	3.71E-03
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	2.78E-03	2.78E-03	2.79E-03
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	2.46E-02	2.46E-02	2.46E-02
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	5.82E-02	5.83E-02	5.83E-02
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	1.63E-01	1.63E-01	1.63E-01
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	3.24E-01	3.24E-01	3.24E-01
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	5.94E-01	5.94E-01	5.94E-01
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	5.07E-01	5.08E-01	5.08E-01
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	9.62E-01	9.62E-01	9.62E-01
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	9.79E-01	9.80E-01	9.80E-01
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	1.53E+01	1.53E+01	1.53E+01
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	9.80E+01	9.80E+01	9.81E+01
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	1.39E+03	1.39E+03	1.39E+03
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	1.76E+04	1.77E+04	1.77E+04
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	2.39E+05	2.39E+05	2.39E+05
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	2.02E+05	2.02E+05	2.02E+05
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	3.14E+06	3.15E+06	3.15E+06
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	2.27E+07	2.27E+07	2.27E+07
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	4.95E+07	4.95E+07	4.95E+07
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	4.99E+07	4.99E+07	4.99E+07
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	4.07E+07	4.08E+07	4.08E+07
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	3.96E+07	3.96E+07	3.96E+07
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	8.77E+06	8.78E+06	8.78E+06
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	3.20E+07	3.20E+07	3.20E+07
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	5.83E+07	5.83E+07	5.83E+07
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	1.46E+07	1.46E+07	1.46E+07
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	4.57E+06	4.57E+06	4.57E+06
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	1.56E+06	1.56E+06	1.56E+06
			totals			3.26E+08	3.26E+08	3.26E+08

1E-02 y	3E-02 y	0.1 y	0.3 y	1.0 y	1.5 y	Four Assemblies
1.30E-06	1.30E-06	1.30E-06	1.30E-06	1.30E-06	<b>1.30E-06</b>	5.21E-06
9.58E-07	9.58E-07	9.58E-07	9.58E-07	9.58E-07	<b>9.58E-07</b>	3.83E-06
1.10E-06	1.10E-06	1.10E-06	1.10E-06	1.10E-06	<b>1.10E-06</b>	4.41E-06
2.00E-06	2.00E-06	2.00E-06	2.00E-06	2.00E-06	<b>2.00E-06</b>	7.98E-06
1.22E-06	1.22E-06	1.22E-06	1.22E-06	1.22E-06	<b>1.22E-06</b>	4.90E-06
5.84E-06	5.84E-06	5.84E-06	5.84E-06	5.84E-06	<b>5.84E-06</b>	2.34E-05
3.40E-06	3.40E-06	3.40E-06	3.40E-06	3.40E-06	<b>3.40E-06</b>	1.36E-05
7.43E-06	7.43E-06	7.42E-06	7.42E-06	7.41E-06	<b>7.41E-06</b>	2.96E-05
1.25E-05	1.25E-05	1.25E-05	1.25E-05	1.25E-05	<b>1.25E-05</b>	4.99E-05
2.41E-05	2.41E-05	2.41E-05	2.41E-05	2.41E-05	<b>2.41E-05</b>	9.63E-05
3.03E-05	3.04E-05	3.04E-05	3.03E-05	3.03E-05	<b>3.03E-05</b>	1.21E-04
1.97E-05	1.98E-05	1.98E-05	1.97E-05	1.97E-05	<b>1.97E-05</b>	7.89E-05
2.82E-05	2.82E-05	2.82E-05	2.82E-05	2.82E-05	<b>2.82E-05</b>	1.13E-04
2.17E-05	2.17E-05	2.17E-05	2.17E-05	2.17E-05	<b>2.17E-05</b>	8.67E-05
6.24E-03	6.18E-03	6.00E-03	5.58E-03	4.74E-03	<b>4.47E-03</b>	1.79E-02
2.47E-03	2.44E-03	2.35E-03	2.13E-03	1.70E-03	<b>1.57E-03</b>	6.28E-03
3.69E-03	3.62E-03	3.41E-03	2.92E-03	1.99E-03	<b>1.72E-03</b>	6.89E-03
2.78E-03	2.74E-03	2.63E-03	2.36E-03	1.85E-03	<b>1.70E-03</b>	6.79E-03
2.45E-02	2.42E-02	2.32E-02	2.08E-02	1.63E-02	<b>1.49E-02</b>	5.97E-02
5.81E-02	5.73E-02	5.50E-02	4.94E-02	3.88E-02	<b>3.55E-02</b>	1.42E-01
1.62E-01	1.60E-01	1.54E-01	1.38E-01	1.09E-01	<b>9.95E-02</b>	3.98E-01
3.23E-01	3.19E-01	3.05E-01	2.74E-01	2.15E-01	<b>1.97E-01</b>	7.86E-01
5.92E-01	5.85E-01	5.61E-01	5.04E-01	3.97E-01	<b>3.64E-01</b>	1.46E+00
5.06E-01	5.00E-01	4.80E-01	4.32E-01	3.42E-01	<b>3.14E-01</b>	1.26E+00
9.59E-01	9.47E-01	9.08E-01	8.17E-01	6.45E-01	<b>5.91E-01</b>	2.36E+00
9.76E-01	9.65E-01	9.26E-01	8.34E-01	6.60E-01	<b>6.05E-01</b>	2.42E+00
1.53E+01	1.51E+01	1.45E+01	1.30E+01	1.03E+01	<b>9.40E+00</b>	3.76E+01
9.77E+01	9.65E+01	9.24E+01	8.30E+01	6.51E+01	<b>5.95E+01</b>	2.38E+02
1.39E+03	1.37E+03	1.31E+03	1.18E+03	9.25E+02	<b>8.47E+02</b>	3.39E+03
1.76E+04	1.74E+04	1.67E+04	1.50E+04	1.18E+04	<b>1.08E+04</b>	4.30E+04
2.38E+05	2.35E+05	2.26E+05	2.03E+05	1.59E+05	<b>1.45E+05</b>	5.81E+05
2.01E+05	1.99E+05	1.90E+05	1.71E+05	1.34E+05	<b>1.22E+05</b>	4.90E+05
3.13E+06	3.10E+06	2.97E+06	2.66E+06	2.09E+06	<b>1.91E+06</b>	7.63E+06
2.26E+07	2.24E+07	2.14E+07	1.92E+07	1.51E+07	<b>1.38E+07</b>	5.51E+07
4.94E+07	4.87E+07	4.67E+07	4.19E+07	3.29E+07	<b>3.00E+07</b>	1.20E+08
4.97E+07	4.91E+07	4.70E+07	4.22E+07	3.29E+07	<b>3.01E+07</b>	1.20E+08
4.06E+07	4.01E+07	3.83E+07	3.42E+07	2.65E+07	<b>2.41E+07</b>	9.65E+07
3.95E+07	3.89E+07	3.72E+07	3.30E+07	2.52E+07	<b>2.28E+07</b>	9.13E+07
8.74E+06	8.62E+06	8.22E+06	7.27E+06	5.50E+06	<b>4.96E+06</b>	1.98E+07
3.19E+07	3.14E+07	2.99E+07	2.64E+07	1.98E+07	<b>1.78E+07</b>	7.10E+07
5.81E+07	5.72E+07	5.45E+07	4.80E+07	3.59E+07	<b>3.23E+07</b>	1.29E+08
1.46E+07	1.44E+07	1.38E+07	1.24E+07	9.82E+06	<b>9.01E+06</b>	3.60E+07
4.56E+06	4.50E+06	4.32E+06	3.91E+06	3.11E+06	<b>2.86E+06</b>	1.14E+07
1.56E+06	1.54E+06	1.48E+06	1.34E+06	1.07E+06	<b>9.83E+05</b>	3.93E+06
3.25E+08	3.20E+08	3.06E+08	2.73E+08	2.10E+08	<b>1.91E+08</b>	7.64E+08



Neutron ENDF5 Group				boundaries mev		initial	1E-03 y	3E-03 y
grp								
ORIGEN ENDF5 4+ Max Energy								
45	1.00E-09	1.00E-05						
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	5.93E-06	5.93E-06	5.93E-06
43	<b>7.50E-09</b>	7.50E-03	2	3.00E-09	<b>7.50E-09</b>	4.24E-06	4.24E-06	4.24E-06
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	3.08E-06	3.08E-06	3.08E-06
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	1.01E-05	1.01E-05	1.01E-05
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	3.83E-06	3.83E-06	3.83E-06
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	1.21E-05	1.21E-05	1.21E-05
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	9.31E-06	9.31E-06	9.31E-06
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	2.05E-05	2.05E-05	2.05E-05
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	3.38E-05	3.38E-05	3.38E-05
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	6.43E-05	6.43E-05	6.42E-05
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	7.44E-05	7.44E-05	7.44E-05
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	4.42E-05	4.42E-05	4.42E-05
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	5.54E-05	5.54E-05	5.54E-05
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	4.84E-05	4.84E-05	4.84E-05
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	1.60E-02	1.60E-02	1.60E-02
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	6.04E-03	6.05E-03	6.05E-03
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	8.11E-03	8.11E-03	8.11E-03
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	6.67E-03	6.67E-03	6.67E-03
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	5.90E-02	5.90E-02	5.90E-02
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	1.40E-01	1.40E-01	1.40E-01
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	3.92E-01	3.92E-01	3.92E-01
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	7.77E-01	7.78E-01	7.78E-01
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	1.43E+00	1.43E+00	1.43E+00
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	1.23E+00	1.23E+00	1.23E+00
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	2.32E+00	2.32E+00	2.32E+00
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	2.37E+00	2.37E+00	2.37E+00
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	3.70E+01	3.70E+01	3.70E+01
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	2.35E+02	2.35E+02	2.35E+02
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	3.34E+03	3.35E+03	3.35E+03
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	4.24E+04	4.24E+04	4.24E+04
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	5.74E+05	5.74E+05	5.74E+05
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	4.84E+05	4.84E+05	4.84E+05
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	7.54E+06	7.55E+06	7.55E+06
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	5.45E+07	5.45E+07	5.45E+07
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	1.19E+08	1.19E+08	1.19E+08
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	1.19E+08	1.19E+08	1.19E+08
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	9.67E+07	9.68E+07	9.68E+07
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	9.29E+07	9.30E+07	9.30E+07
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	2.04E+07	2.04E+07	2.04E+07
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	7.39E+07	7.39E+07	7.39E+07
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	1.35E+08	1.35E+08	1.35E+08
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	3.53E+07	3.53E+07	3.54E+07
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	1.11E+07	1.11E+07	1.11E+07
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	3.82E+06	3.82E+06	3.82E+06
totals						7.70E+08	7.71E+08	7.71E+08

1E-02 y	3E-02 y	0.1 y	0.3 y	1.0 y	1.5 y	16 Assemblies
5.93E-06	5.93E-06	5.93E-06	5.93E-06	5.93E-06	<b>5.93E-06</b>	9.48E-05
4.24E-06	4.24E-06	4.24E-06	4.24E-06	4.24E-06	<b>4.24E-06</b>	6.79E-05
3.08E-06	3.08E-06	3.08E-06	3.08E-06	3.07E-06	<b>3.07E-06</b>	4.92E-05
1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	<b>1.00E-05</b>	1.61E-04
3.83E-06	3.83E-06	3.83E-06	3.83E-06	3.83E-06	<b>3.83E-06</b>	6.12E-05
1.21E-05	1.21E-05	1.21E-05	1.21E-05	1.21E-05	<b>1.21E-05</b>	1.94E-04
9.31E-06	9.31E-06	9.31E-06	9.31E-06	9.31E-06	<b>9.31E-06</b>	1.49E-04
2.05E-05	2.04E-05	2.03E-05	2.01E-05	2.00E-05	<b>2.00E-05</b>	3.20E-04
3.38E-05	3.37E-05	3.36E-05	3.32E-05	3.30E-05	<b>3.30E-05</b>	5.28E-04
6.42E-05	6.41E-05	6.37E-05	6.31E-05	6.27E-05	<b>6.27E-05</b>	1.00E-03
7.44E-05	7.43E-05	7.39E-05	7.32E-05	7.27E-05	<b>7.27E-05</b>	1.16E-03
4.42E-05	4.41E-05	4.39E-05	4.35E-05	4.32E-05	<b>4.32E-05</b>	6.92E-04
5.54E-05	5.53E-05	5.51E-05	5.47E-05	5.44E-05	<b>5.44E-05</b>	8.70E-04
4.84E-05	4.84E-05	4.81E-05	4.77E-05	4.74E-05	<b>4.74E-05</b>	7.58E-04
1.60E-02	1.59E-02	1.56E-02	1.49E-02	1.34E-02	<b>1.28E-02</b>	2.05E-01
6.03E-03	5.98E-03	5.83E-03	5.45E-03	4.71E-03	<b>4.45E-03</b>	7.12E-02
8.08E-03	7.97E-03	7.62E-03	6.80E-03	5.24E-03	<b>4.76E-03</b>	7.62E-02
6.66E-03	6.60E-03	6.41E-03	5.96E-03	5.08E-03	<b>4.78E-03</b>	7.65E-02
5.88E-02	5.83E-02	5.66E-02	5.26E-02	4.48E-02	<b>4.22E-02</b>	6.75E-01
1.40E-01	1.39E-01	1.35E-01	1.25E-01	1.07E-01	<b>1.01E-01</b>	1.61E+00
3.91E-01	3.87E-01	3.76E-01	3.50E-01	2.99E-01	<b>2.82E-01</b>	4.51E+00
7.76E-01	7.69E-01	7.47E-01	6.94E-01	5.91E-01	<b>5.56E-01</b>	8.90E+00
1.43E+00	1.42E+00	1.38E+00	1.28E+00	1.09E+00	<b>1.03E+00</b>	1.65E+01
1.23E+00	1.21E+00	1.18E+00	1.10E+00	9.43E-01	<b>8.90E-01</b>	1.42E+01
2.32E+00	2.30E+00	2.23E+00	2.08E+00	1.78E+00	<b>1.68E+00</b>	2.68E+01
2.36E+00	2.34E+00	2.28E+00	2.12E+00	1.82E+00	<b>1.72E+00</b>	2.75E+01
3.69E+01	3.66E+01	3.55E+01	3.31E+01	2.83E+01	<b>2.66E+01</b>	4.26E+02
2.35E+02	2.33E+02	2.26E+02	2.10E+02	1.79E+02	<b>1.68E+02</b>	2.69E+03
3.34E+03	3.31E+03	3.21E+03	2.99E+03	2.54E+03	<b>2.39E+03</b>	3.83E+04
4.23E+04	4.20E+04	4.08E+04	3.79E+04	3.23E+04	<b>3.04E+04</b>	4.87E+05
5.73E+05	5.68E+05	5.51E+05	5.12E+05	4.36E+05	<b>4.11E+05</b>	6.58E+06
4.83E+05	4.79E+05	4.65E+05	4.32E+05	3.68E+05	<b>3.46E+05</b>	5.54E+06
7.53E+06	7.46E+06	7.24E+06	6.73E+06	5.73E+06	<b>5.39E+06</b>	8.63E+07
5.44E+07	5.39E+07	5.23E+07	4.86E+07	4.14E+07	<b>3.90E+07</b>	6.23E+08
1.19E+08	1.18E+08	1.14E+08	1.06E+08	9.03E+07	<b>8.50E+07</b>	1.36E+09
1.19E+08	1.18E+08	1.15E+08	1.06E+08	9.03E+07	<b>8.50E+07</b>	1.36E+09
9.65E+07	9.56E+07	9.27E+07	8.58E+07	7.24E+07	<b>6.80E+07</b>	1.09E+09
9.27E+07	9.18E+07	8.88E+07	8.19E+07	6.84E+07	<b>6.40E+07</b>	1.02E+09
2.04E+07	2.02E+07	1.95E+07	1.79E+07	1.48E+07	<b>1.39E+07</b>	2.22E+08
7.37E+07	7.29E+07	7.04E+07	6.45E+07	5.31E+07	<b>4.95E+07</b>	7.91E+08
1.35E+08	1.33E+08	1.29E+08	1.18E+08	9.70E+07	<b>9.03E+07</b>	1.45E+09
3.53E+07	3.50E+07	3.40E+07	3.17E+07	2.71E+07	<b>2.56E+07</b>	4.09E+08
1.11E+07	1.10E+07	1.07E+07	1.00E+07	8.61E+06	<b>8.13E+06</b>	1.30E+08
3.81E+06	3.78E+06	3.68E+06	3.44E+06	2.96E+06	<b>2.80E+06</b>	4.48E+07
7.69E+08	7.61E+08	7.38E+08	6.82E+08	5.73E+08	<b>5.37E+08</b>	8.60E+09



## Neutron ENDF5 Group

boundaries meV

initial

0.2 y

1.0 y

grp

ORIGEN ENDF5 44 Max Energy

45	1.00E-09	1.00E-05						
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	2.17E-06	2.17E-06	2.17E-06
43	<b>7.50E-09</b>	7.50E-03	2	3.00E-09	<b>7.50E-09</b>	1.58E-06	1.58E-06	1.58E-06
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	1.52E-06	1.52E-06	1.52E-06
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	3.48E-06	<b>3.48E-06</b>	3.48E-06
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	1.73E-06	1.73E-06	1.73E-06
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	7.17E-06	7.17E-06	7.18E-06
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	4.58E-06	4.58E-06	4.59E-06
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	9.98E-06	9.95E-06	9.93E-06
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	1.67E-05	1.66E-05	1.66E-05
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	3.20E-05	3.19E-05	3.19E-05
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	3.89E-05	3.89E-05	3.88E-05
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	2.46E-05	2.46E-05	2.45E-05
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	3.38E-05	3.38E-05	3.38E-05
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	2.70E-05	2.70E-05	2.70E-05
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	8.67E-03	7.97E-03	6.81E-03
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	3.38E-03	3.01E-03	2.43E-03
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	4.88E-03	4.05E-03	2.79E-03
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	3.77E-03	3.33E-03	2.63E-03
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	3.33E-02	2.94E-02	2.32E-02
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	7.90E-02	6.98E-02	5.52E-02
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	2.21E-01	1.95E-01	1.55E-01
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	4.39E-01	3.87E-01	3.06E-01
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	8.07E-01	7.13E-01	5.66E-01
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	6.90E-01	6.11E-01	4.87E-01
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	1.31E+00	1.16E+00	9.18E-01
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	1.33E+00	1.18E+00	9.40E-01
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	2.08E+01	1.84E+01	1.46E+01
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	1.33E+02	1.17E+02	9.26E+01
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	1.89E+03	1.67E+03	1.32E+03
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	2.39E+04	2.11E+04	1.67E+04
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	3.24E+05	2.86E+05	2.26E+05
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	2.74E+05	2.41E+05	1.91E+05
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	4.26E+06	3.76E+06	2.97E+06
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	3.08E+07	2.71E+07	2.14E+07
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	6.72E+07	5.92E+07	4.68E+07
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	6.76E+07	5.95E+07	4.68E+07
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	5.51E+07	4.83E+07	3.77E+07
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	5.33E+07	4.64E+07	3.57E+07
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	1.18E+07	1.02E+07	7.77E+06
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	4.28E+07	3.70E+07	2.79E+07
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	7.81E+07	6.74E+07	5.08E+07
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	1.99E+07	1.76E+07	1.40E+07
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	6.23E+06	5.53E+06	4.43E+06
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	2.13E+06	1.90E+06	1.53E+06
			totals			4.40E+08	3.84E+08	2.98E+08

1.3 y      1.5 y      12 Assemblies

2.17E-06	<b>2.17E-06</b>	2.60E-05
1.58E-06	<b>1.58E-06</b>	1.89E-05
1.52E-06	<b>1.52E-06</b>	1.82E-05
3.48E-06	<b>3.48E-06</b>	4.18E-05
1.73E-06	<b>1.73E-06</b>	2.08E-05
7.18E-06	<b>7.18E-06</b>	8.61E-05
4.59E-06	<b>4.59E-06</b>	5.50E-05
9.93E-06	<b>9.93E-06</b>	1.19E-04
1.66E-05	<b>1.66E-05</b>	1.99E-04
3.19E-05	<b>3.19E-05</b>	3.82E-04
3.88E-05	<b>3.88E-05</b>	4.65E-04
2.45E-05	<b>2.45E-05</b>	2.94E-04
3.38E-05	<b>3.38E-05</b>	4.05E-04
2.70E-05	<b>2.70E-05</b>	3.23E-04
6.56E-03	<b>6.46E-03</b>	7.75E-02
2.31E-03	<b>2.26E-03</b>	2.71E-02
2.54E-03	<b>2.46E-03</b>	2.95E-02
2.49E-03	<b>2.44E-03</b>	2.92E-02
2.19E-02	<b>2.15E-02</b>	2.57E-01
5.22E-02	<b>5.11E-02</b>	6.13E-01
1.46E-01	<b>1.43E-01</b>	1.72E+00
2.89E-01	<b>2.83E-01</b>	3.39E+00
5.35E-01	<b>5.24E-01</b>	6.29E+00
4.61E-01	<b>4.52E-01</b>	5.42E+00
8.69E-01	<b>8.51E-01</b>	1.02E+01
8.90E-01	<b>8.71E-01</b>	1.05E+01
1.38E+01	<b>1.35E+01</b>	1.62E+02
8.75E+01	<b>8.56E+01</b>	1.03E+03
1.24E+03	<b>1.22E+03</b>	1.46E+04
1.58E+04	<b>1.55E+04</b>	1.86E+05
2.14E+05	<b>2.09E+05</b>	2.51E+06
1.80E+05	<b>1.76E+05</b>	2.11E+06
2.80E+06	<b>2.74E+06</b>	3.29E+07
2.03E+07	<b>1.98E+07</b>	2.38E+08
4.42E+07	<b>4.32E+07</b>	5.19E+08
4.42E+07	<b>4.32E+07</b>	5.19E+08
3.55E+07	<b>3.47E+07</b>	4.16E+08
3.35E+07	<b>3.27E+07</b>	3.93E+08
7.28E+06	<b>7.10E+06</b>	8.52E+07
2.61E+07	<b>2.54E+07</b>	3.05E+08
4.75E+07	<b>4.63E+07</b>	5.55E+08
1.33E+07	<b>1.30E+07</b>	1.56E+08
4.20E+06	<b>4.12E+06</b>	4.94E+07
1.45E+06	<b>1.42E+06</b>	1.70E+07
2.81E+08	<b>2.74E+08</b>	3.29E+09

## Neutron ENDF5 Group

grp

ORIGEN ENDF5 4<sup>+</sup> Max Energy

			boundaries	mev	initial
45	1.00E-09	1.00E-05			
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09
43	<b>7.50E-09</b>	7.50E-03	2	3.00E-09	<b>7.50E-09</b>
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01
totals					3.35E+08



1E-03 y	3E-03 y	1E-02 y	3E-02 y	0.1 y	0.3 y	1.0 y	1.5 y	Four Assembl
1.37E-06	1.37E-06	1.37E-06	1.37E-06	1.37E-06	1.37E-06	1.37E-06	<b>1.37E-06</b>	5.46E-06
1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	1.00E-06	<b>1.00E-06</b>	4.01E-06
1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	1.13E-06	<b>1.13E-06</b>	4.53E-06
2.10E-06	2.10E-06	2.10E-06	2.10E-06	2.10E-06	2.10E-06	2.10E-06	<b>2.10E-06</b>	8.41E-06
1.26E-06	1.26E-06	1.26E-06	1.26E-06	1.26E-06	1.26E-06	1.26E-06	<b>1.26E-06</b>	5.04E-06
5.94E-06	5.94E-06	5.94E-06	5.94E-06	5.94E-06	5.94E-06	5.94E-06	<b>5.94E-06</b>	2.38E-05
3.49E-06	3.49E-06	3.49E-06	3.49E-06	3.49E-06	3.49E-06	3.49E-06	<b>3.49E-06</b>	1.40E-05
7.61E-06	7.61E-06	7.61E-06	7.61E-06	7.61E-06	7.60E-06	7.60E-06	<b>7.60E-06</b>	3.04E-05
1.28E-05	1.28E-05	1.28E-05	1.28E-05	1.28E-05	1.28E-05	1.28E-05	<b>1.28E-05</b>	5.11E-05
2.47E-05	2.47E-05	2.47E-05	2.47E-05	2.47E-05	2.47E-05	2.47E-05	<b>2.47E-05</b>	9.86E-05
3.09E-05	3.09E-05	3.09E-05	3.10E-05	3.10E-05	3.09E-05	3.09E-05	<b>3.09E-05</b>	1.24E-04
2.00E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	<b>2.01E-05</b>	8.03E-05
2.86E-05	2.86E-05	2.86E-05	2.86E-05	2.86E-05	2.86E-05	2.86E-05	<b>2.86E-05</b>	1.14E-04
2.20E-05	2.20E-05	2.21E-05	2.21E-05	2.21E-05	2.21E-05	2.20E-05	<b>2.21E-05</b>	8.82E-05
6.45E-03	6.45E-03	6.43E-03	6.38E-03	6.19E-03	5.76E-03	4.91E-03	<b>4.62E-03</b>	1.85E-02
2.55E-03	2.55E-03	2.54E-03	2.51E-03	2.42E-03	2.19E-03	1.76E-03	<b>1.62E-03</b>	6.50E-03
3.81E-03	3.80E-03	3.79E-03	3.72E-03	3.50E-03	3.00E-03	2.06E-03	<b>1.78E-03</b>	7.12E-03
2.86E-03	2.86E-03	2.85E-03	2.82E-03	2.70E-03	2.43E-03	1.92E-03	<b>1.76E-03</b>	7.02E-03
2.53E-02	2.53E-02	2.52E-02	2.49E-02	2.39E-02	2.15E-02	1.69E-02	<b>1.54E-02</b>	6.17E-02
5.99E-02	5.99E-02	5.97E-02	5.90E-02	5.66E-02	5.09E-02	4.01E-02	<b>3.67E-02</b>	1.47E-01
1.67E-01	1.67E-01	1.67E-01	1.65E-01	1.58E-01	1.42E-01	1.12E-01	<b>1.03E-01</b>	4.12E-01
3.33E-01	3.33E-01	3.32E-01	3.28E-01	3.14E-01	2.83E-01	2.22E-01	<b>2.03E-01</b>	8.13E-01
6.11E-01	6.11E-01	6.09E-01	6.02E-01	5.77E-01	5.20E-01	4.11E-01	<b>3.76E-01</b>	1.51E+00
5.22E-01	5.22E-01	5.21E-01	5.14E-01	4.94E-01	4.45E-01	3.53E-01	<b>3.25E-01</b>	1.30E+00
9.90E-01	9.90E-01	9.87E-01	9.75E-01	9.35E-01	8.42E-01	6.66E-01	<b>6.11E-01</b>	2.45E+00
1.01E+00	1.01E+00	1.01E+00	9.93E-01	9.53E-01	8.59E-01	6.82E-01	<b>6.26E-01</b>	2.50E+00
1.58E+01	1.58E+01	1.57E+01	1.55E+01	1.49E+01	1.34E+01	1.06E+01	<b>9.72E+00</b>	3.89E+01
1.01E+02	1.01E+02	1.01E+02	9.93E+01	9.51E+01	8.55E+01	6.72E+01	<b>6.15E+01</b>	2.46E+02
1.43E+03	1.43E+03	1.43E+03	1.41E+03	1.35E+03	1.22E+03	9.56E+02	<b>8.76E+02</b>	3.50E+03
1.82E+04	1.82E+04	1.81E+04	1.79E+04	1.71E+04	1.54E+04	1.21E+04	<b>1.11E+04</b>	4.45E+04
2.46E+05	2.46E+05	2.45E+05	2.42E+05	2.32E+05	2.09E+05	1.64E+05	<b>1.50E+05</b>	6.01E+05
2.08E+05	2.08E+05	2.07E+05	2.04E+05	1.96E+05	1.76E+05	1.38E+05	<b>1.27E+05</b>	5.06E+05
3.24E+06	3.24E+06	3.22E+06	3.18E+06	3.05E+06	2.74E+06	2.16E+06	<b>1.97E+06</b>	7.89E+06
2.34E+07	2.34E+07	2.33E+07	2.30E+07	2.20E+07	1.98E+07	1.56E+07	<b>1.43E+07</b>	5.70E+07
5.10E+07	5.10E+07	5.08E+07	5.02E+07	4.81E+07	4.32E+07	3.40E+07	<b>3.11E+07</b>	1.24E+08
5.13E+07	5.14E+07	5.12E+07	5.05E+07	4.84E+07	4.34E+07	3.40E+07	<b>3.11E+07</b>	1.24E+08
4.19E+07	4.19E+07	4.18E+07	4.12E+07	3.94E+07	3.53E+07	2.74E+07	<b>2.50E+07</b>	9.98E+07
4.07E+07	4.07E+07	4.06E+07	4.00E+07	3.82E+07	3.40E+07	2.60E+07	<b>2.36E+07</b>	9.44E+07
9.02E+06	9.02E+06	8.99E+06	8.86E+06	8.45E+06	7.49E+06	5.68E+06	<b>5.13E+06</b>	2.05E+07
3.29E+07	3.29E+07	3.28E+07	3.23E+07	3.08E+07	2.72E+07	2.04E+07	<b>1.83E+07</b>	7.34E+07
5.99E+07	5.99E+07	5.97E+07	5.88E+07	5.60E+07	4.94E+07	3.71E+07	<b>3.34E+07</b>	1.33E+08
1.50E+07	1.50E+07	1.50E+07	1.48E+07	1.42E+07	1.28E+07	1.02E+07	<b>9.32E+06</b>	3.73E+07
4.71E+06	4.71E+06	4.69E+06	4.64E+06	4.45E+06	4.03E+06	3.21E+06	<b>2.96E+06</b>	1.18E+07
1.61E+06	1.61E+06	1.60E+06	1.58E+06	1.52E+06	1.38E+06	1.10E+06	<b>1.02E+06</b>	4.07E+06
3.35E+08	3.35E+08	3.34E+08	3.30E+08	3.15E+08	2.81E+08	2.17E+08	<b>1.97E+08</b>	7.90E+08

blies

## Neutron ENDF5 Group

boundaries meV

initial

0.1 y

1.0 y

grp

ORIGEN ENDF5 44 Max Energy

45	1.00E-09	1.00E-05						
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	6.35E-07	6.35E-07	6.35E-07
43	<b>7.50E-09</b>	7.50E-03	2	3.00E-09	<b>7.50E-09</b>	4.78E-07	4.78E-07	4.78E-07
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	7.14E-07	7.14E-07	7.14E-07
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	8.84E-07	8.84E-07	8.84E-07
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	7.93E-07	7.93E-07	7.93E-07
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	4.54E-06	4.54E-06	4.54E-06
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	2.36E-06	2.36E-06	2.37E-06
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	5.19E-06	5.19E-06	5.19E-06
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	8.80E-06	8.80E-06	8.80E-06
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	1.71E-05	1.71E-05	1.71E-05
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	2.34E-05	2.35E-05	2.35E-05
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	1.56E-05	1.57E-05	1.57E-05
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	2.30E-05	2.30E-05	2.30E-05
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	1.71E-05	1.72E-05	1.72E-05
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	4.06E-03	3.86E-03	2.89E-03
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	1.66E-03	1.56E-03	1.05E-03
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	2.63E-03	2.39E-03	1.27E-03
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	1.88E-03	1.76E-03	1.15E-03
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	1.66E-02	1.55E-02	1.01E-02
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	3.93E-02	3.67E-02	2.41E-02
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	1.10E-01	1.03E-01	6.74E-02
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	2.19E-01	2.04E-01	1.33E-01
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	4.00E-01	3.74E-01	2.46E-01
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	3.41E-01	3.19E-01	2.12E-01
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	6.47E-01	6.05E-01	3.99E-01
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	6.58E-01	6.16E-01	4.08E-01
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	1.03E+01	9.65E+00	6.36E+00
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	6.62E+01	6.18E+01	4.04E+01
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	9.40E+02	8.78E+02	5.74E+02
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	1.19E+04	1.11E+04	7.29E+03
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	1.61E+05	1.51E+05	9.86E+04
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	1.36E+05	1.27E+05	8.31E+04
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	2.12E+06	1.98E+06	1.30E+06
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	1.53E+07	1.43E+07	9.35E+06
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	3.34E+07	3.12E+07	2.04E+07
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	3.37E+07	3.15E+07	2.05E+07
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	2.77E+07	2.58E+07	1.65E+07
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	2.71E+07	2.52E+07	1.58E+07
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	6.03E+06	5.59E+06	3.46E+06
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	2.21E+07	2.04E+07	1.25E+07
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	4.02E+07	3.71E+07	2.26E+07
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	9.81E+06	9.18E+06	6.07E+06
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	3.06E+06	2.87E+06	1.92E+06
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	1.04E+06	9.78E+05	6.58E+05
			totals			2.22E+08	2.06E+08	1.31E+08



1.1 y	1.2 y	1.2 y	1.3 y	1.4 y	1.5 y	Eight Assemblies
6.35E-07	6.35E-07	6.35E-07	6.35E-07	6.35E-07	<b>6.35E-07</b>	5.08E-06
4.78E-07	4.78E-07	4.78E-07	4.78E-07	4.78E-07	<b>4.78E-07</b>	3.82E-06
7.14E-07	7.14E-07	7.14E-07	7.14E-07	7.14E-07	<b>7.14E-07</b>	5.71E-06
8.84E-07	8.84E-07	8.84E-07	8.84E-07	8.84E-07	<b>8.84E-07</b>	7.07E-06
7.93E-07	7.93E-07	7.93E-07	7.93E-07	7.93E-07	<b>7.93E-07</b>	6.35E-06
4.54E-06	4.54E-06	4.54E-06	4.54E-06	4.54E-06	<b>4.54E-06</b>	3.63E-05
2.37E-06	2.37E-06	2.37E-06	2.37E-06	2.37E-06	<b>2.37E-06</b>	1.89E-05
5.19E-06	5.19E-06	5.19E-06	5.19E-06	5.19E-06	<b>5.19E-06</b>	4.15E-05
8.80E-06	8.80E-06	8.80E-06	8.80E-06	8.80E-06	<b>8.80E-06</b>	7.04E-05
1.71E-05	1.71E-05	1.71E-05	1.71E-05	1.71E-05	<b>1.71E-05</b>	1.37E-04
2.35E-05	2.35E-05	2.35E-05	2.35E-05	2.35E-05	<b>2.35E-05</b>	1.88E-04
1.57E-05	1.57E-05	1.57E-05	1.57E-05	1.57E-05	<b>1.57E-05</b>	1.25E-04
2.30E-05	2.30E-05	2.30E-05	2.30E-05	2.30E-05	<b>2.30E-05</b>	1.84E-04
1.72E-05	1.72E-05	1.72E-05	1.72E-05	1.72E-05	<b>1.72E-05</b>	1.37E-04
2.85E-03	2.81E-03	2.78E-03	2.74E-03	2.71E-03	<b>2.69E-03</b>	2.15E-02
1.03E-03	1.01E-03	9.95E-04	9.80E-04	9.65E-04	<b>9.53E-04</b>	7.62E-03
1.23E-03	1.19E-03	1.15E-03	1.12E-03	1.09E-03	<b>1.06E-03</b>	8.51E-03
1.13E-03	1.11E-03	1.09E-03	1.07E-03	1.05E-03	<b>1.04E-03</b>	8.28E-03
9.91E-03	9.71E-03	9.53E-03	9.37E-03	9.22E-03	<b>9.08E-03</b>	7.27E-02
2.35E-02	2.31E-02	2.26E-02	2.23E-02	2.19E-02	<b>2.16E-02</b>	1.73E-01
6.59E-02	6.45E-02	6.33E-02	6.23E-02	6.13E-02	<b>6.04E-02</b>	4.83E-01
1.30E-01	1.28E-01	1.25E-01	1.23E-01	1.21E-01	<b>1.20E-01</b>	9.56E-01
2.41E-01	2.36E-01	2.32E-01	2.28E-01	2.24E-01	<b>2.21E-01</b>	1.77E+00
2.07E-01	2.03E-01	1.99E-01	1.96E-01	1.93E-01	<b>1.90E-01</b>	1.52E+00
3.91E-01	3.83E-01	3.76E-01	3.70E-01	3.64E-01	<b>3.59E-01</b>	2.87E+00
4.00E-01	3.92E-01	3.84E-01	3.78E-01	3.72E-01	<b>3.67E-01</b>	2.94E+00
6.22E+00	6.09E+00	5.98E+00	5.88E+00	5.79E+00	<b>5.71E+00</b>	4.56E+01
3.95E+01	3.86E+01	3.79E+01	3.73E+01	3.67E+01	<b>3.62E+01</b>	2.89E+02
5.61E+02	5.50E+02	5.40E+02	5.31E+02	5.22E+02	<b>5.15E+02</b>	4.12E+03
7.13E+03	6.98E+03	6.85E+03	6.74E+03	6.63E+03	<b>6.54E+03</b>	5.23E+04
9.64E+04	9.44E+04	9.26E+04	9.11E+04	8.96E+04	<b>8.84E+04</b>	7.07E+05
8.12E+04	7.96E+04	7.81E+04	7.68E+04	7.55E+04	<b>7.45E+04</b>	5.96E+05
1.27E+06	1.24E+06	1.22E+06	1.20E+06	1.18E+06	<b>1.16E+06</b>	9.28E+06
9.14E+06	8.95E+06	8.78E+06	8.64E+06	8.50E+06	<b>8.37E+06</b>	6.70E+07
1.99E+07	1.95E+07	1.92E+07	1.88E+07	1.85E+07	<b>1.83E+07</b>	1.46E+08
2.00E+07	1.96E+07	1.92E+07	1.89E+07	1.86E+07	<b>1.83E+07</b>	1.46E+08
1.61E+07	1.58E+07	1.55E+07	1.52E+07	1.49E+07	<b>1.47E+07</b>	1.18E+08
1.54E+07	1.51E+07	1.47E+07	1.45E+07	1.42E+07	<b>1.40E+07</b>	1.12E+08
3.37E+06	3.29E+06	3.22E+06	3.16E+06	3.10E+06	<b>3.05E+06</b>	2.44E+07
1.21E+07	1.18E+07	1.16E+07	1.13E+07	1.11E+07	<b>1.09E+07</b>	8.74E+07
2.20E+07	2.14E+07	2.10E+07	2.05E+07	2.01E+07	<b>1.98E+07</b>	1.58E+08
5.94E+06	5.82E+06	5.71E+06	5.62E+06	5.53E+06	<b>5.46E+06</b>	4.36E+07
1.88E+06	1.84E+06	1.81E+06	1.78E+06	1.75E+06	<b>1.73E+06</b>	1.38E+07
6.44E+05	6.32E+05	6.21E+05	6.12E+05	6.02E+05	<b>5.94E+05</b>	4.75E+06
1.28E+08	1.25E+08	1.23E+08	1.20E+08	1.18E+08	<b>1.17E+08</b>	9.32E+08

## Neutron ENDF5 Group

boundaries mev

initial

0.1 y

1.1 y

grp

ORIGEN ENDF5 44 Max Energy

45	1.00E-09	1.00E-05						
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	8.40E-07	8.40E-07	8.40E-07
43	<b>7.50E-09</b>	7.50E-03	2	3.00E-09	<b>7.50E-09</b>	6.26E-07	6.26E-07	6.26E-07
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	8.43E-07	8.43E-07	8.43E-07
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	1.22E-06	1.22E-06	1.22E-06
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	9.28E-07	9.28E-07	9.29E-07
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	4.95E-06	4.95E-06	4.95E-06
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	2.69E-06	2.69E-06	2.69E-06
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	5.90E-06	5.89E-06	5.89E-06
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	9.97E-06	9.97E-06	9.96E-06
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	1.93E-05	1.93E-05	1.93E-05
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	2.57E-05	2.58E-05	2.58E-05
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	1.70E-05	1.70E-05	1.70E-05
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	2.47E-05	2.47E-05	2.47E-05
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	1.86E-05	1.87E-05	1.87E-05
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	4.90E-03	4.68E-03	3.53E-03
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	1.98E-03	1.86E-03	1.27E-03
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	3.07E-03	2.80E-03	1.50E-03
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	2.23E-03	2.10E-03	1.39E-03
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	1.97E-02	1.85E-02	1.22E-02
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	4.67E-02	4.38E-02	2.90E-02
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	1.30E-01	1.22E-01	8.11E-02
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	2.60E-01	2.44E-01	1.61E-01
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	4.76E-01	4.47E-01	2.97E-01
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	4.06E-01	3.81E-01	2.55E-01
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	7.70E-01	7.23E-01	4.81E-01
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	7.84E-01	7.36E-01	4.92E-01
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	1.23E+01	1.15E+01	7.66E+00
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	7.86E+01	7.37E+01	4.86E+01
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	1.12E+03	1.05E+03	6.91E+02
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	1.42E+04	1.33E+04	8.78E+03
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	1.92E+05	1.80E+05	1.19E+05
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	1.62E+05	1.52E+05	1.00E+05
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	2.52E+06	2.37E+06	1.56E+06
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	1.82E+07	1.71E+07	1.13E+07
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	3.97E+07	3.73E+07	2.45E+07
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	4.01E+07	3.75E+07	2.46E+07
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	3.28E+07	3.07E+07	1.98E+07
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	3.20E+07	2.99E+07	1.89E+07
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	7.12E+06	6.63E+06	4.13E+06
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	2.60E+07	2.42E+07	1.48E+07
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	4.74E+07	4.40E+07	2.69E+07
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	1.17E+07	1.10E+07	7.32E+06
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	3.65E+06	3.43E+06	2.32E+06
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	1.25E+06	1.17E+06	7.96E+05
				totals		2.63E+08	2.46E+08	1.57E+08



1.2 y	1.2 y	1.3 y	1.4 y	1.5 y	Eight Assemblies
8.40E-07	8.40E-07	8.40E-07	8.40E-07	<b>8.40E-07</b>	6.72E-06
6.26E-07	6.26E-07	6.26E-07	6.26E-07	<b>6.26E-07</b>	5.01E-06
8.43E-07	8.43E-07	8.43E-07	8.43E-07	<b>8.43E-07</b>	6.74E-06
1.22E-06	1.22E-06	1.22E-06	1.22E-06	<b>1.22E-06</b>	9.77E-06
9.29E-07	9.29E-07	9.29E-07	9.29E-07	<b>9.29E-07</b>	7.43E-06
4.95E-06	4.95E-06	4.95E-06	4.95E-06	<b>4.95E-06</b>	3.96E-05
2.69E-06	2.69E-06	2.69E-06	2.69E-06	<b>2.69E-06</b>	2.15E-05
5.89E-06	5.89E-06	5.89E-06	5.89E-06	<b>5.89E-06</b>	4.71E-05
9.96E-06	9.96E-06	9.96E-06	9.96E-06	<b>9.96E-06</b>	7.97E-05
1.93E-05	1.93E-05	1.93E-05	1.93E-05	<b>1.93E-05</b>	1.55E-04
2.58E-05	2.58E-05	2.58E-05	2.58E-05	<b>2.58E-05</b>	2.06E-04
1.70E-05	1.70E-05	1.70E-05	1.70E-05	<b>1.70E-05</b>	1.36E-04
2.47E-05	2.47E-05	2.47E-05	2.47E-05	<b>2.47E-05</b>	1.98E-04
1.87E-05	1.87E-05	1.87E-05	1.87E-05	<b>1.87E-05</b>	1.49E-04
3.49E-03	3.45E-03	3.41E-03	3.38E-03	<b>3.35E-03</b>	2.68E-02
1.25E-03	1.23E-03	1.21E-03	1.20E-03	<b>1.18E-03</b>	9.46E-03
1.45E-03	1.41E-03	1.37E-03	1.34E-03	<b>1.31E-03</b>	1.05E-02
1.36E-03	1.34E-03	1.32E-03	1.30E-03	<b>1.28E-03</b>	1.02E-02
1.20E-02	1.18E-02	1.16E-02	1.14E-02	<b>1.13E-02</b>	9.00E-02
2.84E-02	2.80E-02	2.75E-02	2.71E-02	<b>2.68E-02</b>	2.14E-01
7.96E-02	7.82E-02	7.70E-02	7.59E-02	<b>7.49E-02</b>	5.99E-01
1.58E-01	1.55E-01	1.52E-01	1.50E-01	<b>1.48E-01</b>	1.18E+00
2.91E-01	2.86E-01	2.82E-01	2.78E-01	<b>2.74E-01</b>	2.19E+00
2.51E-01	2.46E-01	2.43E-01	2.39E-01	<b>2.36E-01</b>	1.89E+00
4.72E-01	4.64E-01	4.57E-01	4.51E-01	<b>4.45E-01</b>	3.56E+00
4.83E-01	4.75E-01	4.68E-01	4.61E-01	<b>4.56E-01</b>	3.64E+00
7.52E+00	7.39E+00	7.27E+00	7.17E+00	<b>7.08E+00</b>	5.66E+01
4.77E+01	4.68E+01	4.61E+01	4.54E+01	<b>4.48E+01</b>	3.59E+02
6.78E+02	6.66E+02	6.56E+02	6.46E+02	<b>6.38E+02</b>	5.10E+03
8.61E+03	8.46E+03	8.33E+03	8.21E+03	<b>8.10E+03</b>	6.48E+04
1.16E+05	1.14E+05	1.13E+05	1.11E+05	<b>1.10E+05</b>	8.76E+05
9.81E+04	9.64E+04	9.49E+04	9.35E+04	<b>9.23E+04</b>	7.38E+05
1.53E+06	1.50E+06	1.48E+06	1.46E+06	<b>1.44E+06</b>	1.15E+07
1.10E+07	1.09E+07	1.07E+07	1.05E+07	<b>1.04E+07</b>	8.30E+07
2.41E+07	2.37E+07	2.33E+07	2.29E+07	<b>2.26E+07</b>	1.81E+08
2.41E+07	2.37E+07	2.33E+07	2.30E+07	<b>2.27E+07</b>	1.81E+08
1.94E+07	1.91E+07	1.88E+07	1.85E+07	<b>1.82E+07</b>	1.46E+08
1.85E+07	1.81E+07	1.78E+07	1.75E+07	<b>1.73E+07</b>	1.38E+08
4.04E+06	3.96E+06	3.88E+06	3.82E+06	<b>3.76E+06</b>	3.01E+07
1.45E+07	1.42E+07	1.39E+07	1.37E+07	<b>1.35E+07</b>	1.08E+08
2.63E+07	2.58E+07	2.53E+07	2.49E+07	<b>2.45E+07</b>	1.96E+08
7.19E+06	7.07E+06	6.96E+06	6.86E+06	<b>6.77E+06</b>	5.42E+07
2.27E+06	2.24E+06	2.20E+06	2.17E+06	<b>2.15E+06</b>	1.72E+07
7.82E+05	7.69E+05	7.58E+05	7.48E+05	<b>7.38E+05</b>	5.91E+06
1.54E+08	1.51E+08	1.49E+08	1.46E+08	<b>1.44E+08</b>	1.15E+09

Neutron ENDF5 Group					boundaries	mev	initial	0.1 y	1.1 y
grp									
ORIGEN ENDF5 44 Max Energy									
45	1.00E-09	1.00E-05							
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	1.35E-06	1.35E-06	1.35E-06	1.35E-06
43	<b>7.50E-09</b>	7.50E-03	2	3.00E-09	<b>7.50E-09</b>	9.93E-07	9.93E-07	9.93E-07	9.93E-07
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	1.13E-06	1.13E-06	1.13E-06	1.13E-06
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	2.08E-06	2.08E-06	2.08E-06	2.08E-06
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	1.24E-06	1.24E-06	1.24E-06	1.24E-06
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	5.82E-06	5.82E-06	5.82E-06	5.82E-06
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	3.43E-06	3.43E-06	3.43E-06	3.43E-06
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	7.49E-06	7.48E-06	7.47E-06	7.47E-06
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	1.26E-05	1.26E-05	1.26E-05	1.26E-05
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	2.43E-05	2.43E-05	2.42E-05	2.42E-05
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	3.07E-05	3.08E-05	3.07E-05	3.07E-05
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	1.99E-05	1.99E-05	1.99E-05	1.99E-05
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	2.82E-05	2.82E-05	2.82E-05	2.82E-05
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	2.18E-05	2.19E-05	2.18E-05	2.18E-05
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	6.59E-03	6.34E-03	4.97E-03	4.97E-03
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	2.61E-03	2.47E-03	1.77E-03	1.77E-03
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	3.89E-03	3.58E-03	2.04E-03	2.04E-03
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	2.93E-03	2.77E-03	1.93E-03	1.93E-03
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	2.59E-02	2.44E-02	1.70E-02	1.70E-02
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	6.13E-02	5.79E-02	4.03E-02	4.03E-02
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	1.71E-01	1.62E-01	1.13E-01	1.13E-01
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	3.41E-01	3.22E-01	2.23E-01	2.23E-01
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	6.25E-01	5.91E-01	4.13E-01	4.13E-01
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	5.34E-01	5.05E-01	3.56E-01	3.56E-01
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	1.01E+00	9.57E-01	6.71E-01	6.71E-01
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	1.03E+00	9.75E-01	6.86E-01	6.86E-01
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	1.61E+01	1.53E+01	1.07E+01	1.07E+01
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	1.03E+02	9.73E+01	6.76E+01	6.76E+01
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	1.47E+03	1.38E+03	9.62E+02	9.62E+02
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	1.86E+04	1.75E+04	1.22E+04	1.22E+04
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	2.51E+05	2.37E+05	1.65E+05	1.65E+05
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	2.12E+05	2.00E+05	1.39E+05	1.39E+05
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	3.31E+06	3.12E+06	2.17E+06	2.17E+06
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	2.39E+07	2.26E+07	1.57E+07	1.57E+07
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	5.21E+07	4.92E+07	3.42E+07	3.42E+07
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	5.25E+07	4.95E+07	3.42E+07	3.42E+07
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	4.28E+07	4.03E+07	2.75E+07	2.75E+07
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	4.16E+07	3.91E+07	2.61E+07	2.61E+07
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	9.22E+06	8.65E+06	5.69E+06	5.69E+06
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	3.36E+07	3.15E+07	2.04E+07	2.04E+07
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	6.12E+07	5.73E+07	3.72E+07	3.72E+07
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	1.54E+07	1.45E+07	1.02E+07	1.02E+07
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	4.81E+06	4.56E+06	3.23E+06	3.23E+06
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	1.64E+06	1.56E+06	1.11E+06	1.11E+06
				totals			3.43E+08	3.22E+08	2.18E+08



1.2 y	1.2 y	1.3 y	1.4 y	1.5 y	16 Assemblies
1.35E-06	1.35E-06	1.35E-06	1.35E-06	<b>1.35E-06</b>	2.16E-05
9.93E-07	9.93E-07	9.93E-07	9.93E-07	<b>9.93E-07</b>	1.59E-05
1.13E-06	1.13E-06	1.13E-06	1.13E-06	<b>1.13E-06</b>	1.80E-05
2.08E-06	2.08E-06	2.08E-06	2.08E-06	<b>2.08E-06</b>	3.33E-05
1.24E-06	1.24E-06	1.24E-06	1.24E-06	<b>1.24E-06</b>	1.99E-05
5.82E-06	5.82E-06	5.82E-06	5.82E-06	<b>5.82E-06</b>	9.31E-05
3.43E-06	3.43E-06	3.43E-06	3.43E-06	<b>3.43E-06</b>	5.49E-05
7.47E-06	7.47E-06	7.47E-06	7.47E-06	<b>7.47E-06</b>	1.20E-04
1.26E-05	1.26E-05	1.26E-05	1.26E-05	<b>1.26E-05</b>	2.01E-04
2.42E-05	2.42E-05	2.42E-05	2.42E-05	<b>2.42E-05</b>	3.88E-04
3.07E-05	3.07E-05	3.07E-05	3.07E-05	<b>3.07E-05</b>	4.92E-04
1.99E-05	1.99E-05	1.99E-05	1.99E-05	<b>1.99E-05</b>	3.18E-04
2.82E-05	2.82E-05	2.82E-05	2.82E-05	<b>2.82E-05</b>	4.51E-04
2.18E-05	2.18E-05	2.18E-05	2.18E-05	<b>2.18E-05</b>	3.49E-04
4.91E-03	4.86E-03	4.82E-03	4.77E-03	<b>4.74E-03</b>	7.58E-02
1.75E-03	1.72E-03	1.70E-03	1.68E-03	<b>1.66E-03</b>	2.66E-02
1.99E-03	1.94E-03	1.90E-03	1.86E-03	<b>1.82E-03</b>	2.92E-02
1.90E-03	1.87E-03	1.84E-03	1.82E-03	<b>1.80E-03</b>	2.88E-02
1.67E-02	1.64E-02	1.62E-02	1.60E-02	<b>1.58E-02</b>	2.53E-01
3.97E-02	3.91E-02	3.86E-02	3.81E-02	<b>3.76E-02</b>	6.02E-01
1.11E-01	1.10E-01	1.08E-01	1.07E-01	<b>1.05E-01</b>	1.69E+00
2.20E-01	2.16E-01	2.14E-01	2.11E-01	<b>2.08E-01</b>	3.33E+00
4.06E-01	4.00E-01	3.95E-01	3.90E-01	<b>3.86E-01</b>	6.17E+00
3.50E-01	3.45E-01	3.41E-01	3.36E-01	<b>3.33E-01</b>	5.32E+00
6.60E-01	6.50E-01	6.42E-01	6.34E-01	<b>6.26E-01</b>	1.00E+01
6.75E-01	6.66E-01	6.57E-01	6.49E-01	<b>6.42E-01</b>	1.03E+01
1.05E+01	1.03E+01	1.02E+01	1.01E+01	<b>9.96E+00</b>	1.59E+02
6.65E+01	6.55E+01	6.46E+01	6.38E+01	<b>6.30E+01</b>	1.01E+03
9.46E+02	9.32E+02	9.20E+02	9.08E+02	<b>8.97E+02</b>	1.44E+04
1.20E+04	1.18E+04	1.17E+04	1.15E+04	<b>1.14E+04</b>	1.82E+05
1.62E+05	1.60E+05	1.58E+05	1.56E+05	<b>1.54E+05</b>	2.46E+06
1.37E+05	1.35E+05	1.33E+05	1.31E+05	<b>1.30E+05</b>	2.08E+06
2.13E+06	2.10E+06	2.07E+06	2.05E+06	<b>2.02E+06</b>	3.24E+07
1.54E+07	1.52E+07	1.50E+07	1.48E+07	<b>1.46E+07</b>	2.34E+08
3.36E+07	3.31E+07	3.26E+07	3.22E+07	<b>3.18E+07</b>	5.09E+08
3.36E+07	3.31E+07	3.27E+07	3.22E+07	<b>3.19E+07</b>	5.10E+08
2.70E+07	2.66E+07	2.63E+07	2.59E+07	<b>2.56E+07</b>	4.09E+08
2.57E+07	2.52E+07	2.49E+07	2.45E+07	<b>2.42E+07</b>	3.87E+08
5.59E+06	5.49E+06	5.41E+06	5.32E+06	<b>5.25E+06</b>	8.41E+07
2.00E+07	1.97E+07	1.94E+07	1.91E+07	<b>1.88E+07</b>	3.01E+08
3.65E+07	3.58E+07	3.52E+07	3.47E+07	<b>3.42E+07</b>	5.47E+08
1.01E+07	9.91E+06	9.78E+06	9.65E+06	<b>9.55E+06</b>	1.53E+08
3.18E+06	3.14E+06	3.10E+06	3.06E+06	<b>3.03E+06</b>	4.84E+07
1.10E+06	1.08E+06	1.07E+06	1.05E+06	<b>1.04E+06</b>	1.67E+07
2.14E+08	2.11E+08	2.08E+08	2.05E+08	<b>2.02E+08</b>	3.24E+09

Neutron ENDF5 Group				boundaries		mev	initial	0.1 y	1.1 y
grp									
ORIGEN ENDF5 44 Max Energy									
45	1.00E-09	1.00E-05							
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	1.22E-06	1.22E-06	1.22E-06	
43	7.50E-09	7.50E-03	2	3.00E-09	7.50E-09	9.01E-07	9.01E-07	9.01E-07	
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	1.06E-06	1.06E-06	1.06E-06	
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	1.86E-06	1.86E-06	1.86E-06	
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	1.17E-06	1.17E-06	1.17E-06	
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	5.61E-06	5.62E-06	5.62E-06	
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	3.25E-06	3.26E-06	3.26E-06	
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	7.11E-06	7.10E-06	7.09E-06	
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	1.20E-05	1.20E-05	1.19E-05	
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	2.31E-05	2.31E-05	2.31E-05	
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	2.93E-05	2.94E-05	2.94E-05	
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	1.91E-05	1.91E-05	1.91E-05	
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	2.73E-05	2.73E-05	2.73E-05	
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	2.09E-05	2.10E-05	2.10E-05	
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	6.14E-03	5.89E-03	4.60E-03	
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	2.43E-03	2.31E-03	1.64E-03	
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	3.65E-03	3.36E-03	1.90E-03	
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	2.74E-03	2.58E-03	1.79E-03	
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	2.42E-02	2.28E-02	1.57E-02	
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	5.72E-02	5.40E-02	3.74E-02	
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	1.60E-01	1.51E-01	1.05E-01	
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	3.18E-01	3.00E-01	2.07E-01	
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	5.84E-01	5.51E-01	3.83E-01	
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	4.99E-01	4.71E-01	3.30E-01	
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	9.45E-01	8.93E-01	6.21E-01	
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	9.62E-01	9.09E-01	6.36E-01	
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	1.51E+01	1.42E+01	9.88E+00	
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	9.63E+01	9.08E+01	6.26E+01	
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	1.37E+03	1.29E+03	8.91E+02	
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	1.73E+04	1.64E+04	1.13E+04	
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	2.35E+05	2.22E+05	1.53E+05	
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	1.98E+05	1.87E+05	1.29E+05	
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	3.09E+06	2.91E+06	2.01E+06	
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	2.23E+07	2.10E+07	1.45E+07	
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	4.87E+07	4.59E+07	3.16E+07	
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	4.90E+07	4.62E+07	3.17E+07	
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	4.00E+07	3.77E+07	2.55E+07	
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	3.89E+07	3.65E+07	2.42E+07	
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	8.63E+06	8.08E+06	5.28E+06	
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	3.15E+07	2.94E+07	1.90E+07	
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	5.73E+07	5.36E+07	3.45E+07	
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	1.43E+07	1.36E+07	9.46E+06	
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	4.49E+06	4.25E+06	3.00E+06	
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	1.53E+06	1.45E+06	1.03E+06	
				totals		3.20E+08	3.01E+08	2.02E+08	



1.2 y	1.2 y	1.3 y	1.4 y	1.5 y	Eight Assemblies
1.22E-06	1.22E-06	1.22E-06	1.22E-06	<b>1.22E-06</b>	9.78E-06
9.01E-07	9.01E-07	9.01E-07	9.01E-07	<b>9.01E-07</b>	7.21E-06
1.06E-06	1.06E-06	1.06E-06	1.06E-06	<b>1.06E-06</b>	8.50E-06
1.86E-06	1.86E-06	1.86E-06	1.86E-06	<b>1.86E-06</b>	1.49E-05
1.17E-06	1.17E-06	1.17E-06	1.17E-06	<b>1.17E-06</b>	9.33E-06
5.62E-06	5.62E-06	5.62E-06	5.62E-06	<b>5.62E-06</b>	4.49E-05
3.26E-06	3.26E-06	3.26E-06	3.26E-06	<b>3.26E-06</b>	2.60E-05
7.09E-06	7.09E-06	7.09E-06	7.09E-06	<b>7.09E-06</b>	5.68E-05
1.19E-05	1.19E-05	1.19E-05	1.19E-05	<b>1.19E-05</b>	9.55E-05
2.31E-05	2.31E-05	2.31E-05	2.31E-05	<b>2.31E-05</b>	1.85E-04
2.94E-05	2.94E-05	2.94E-05	2.94E-05	<b>2.94E-05</b>	2.35E-04
1.91E-05	1.91E-05	1.91E-05	1.91E-05	<b>1.91E-05</b>	1.53E-04
2.73E-05	2.73E-05	2.73E-05	2.73E-05	<b>2.73E-05</b>	2.18E-04
2.10E-05	2.10E-05	2.10E-05	2.10E-05	<b>2.10E-05</b>	1.68E-04
4.54E-03	4.50E-03	4.46E-03	4.41E-03	<b>4.38E-03</b>	3.50E-02
1.62E-03	1.60E-03	1.58E-03	1.56E-03	<b>1.54E-03</b>	1.23E-02
1.85E-03	1.80E-03	1.76E-03	1.72E-03	<b>1.69E-03</b>	1.35E-02
1.76E-03	1.73E-03	1.71E-03	1.68E-03	<b>1.66E-03</b>	1.33E-02
1.55E-02	1.52E-02	1.50E-02	1.48E-02	<b>1.46E-02</b>	1.17E-01
3.68E-02	3.62E-02	3.57E-02	3.52E-02	<b>3.48E-02</b>	2.79E-01
1.03E-01	1.01E-01	1.00E-01	9.87E-02	<b>9.75E-02</b>	7.80E-01
2.04E-01	2.00E-01	1.98E-01	1.95E-01	<b>1.93E-01</b>	1.54E+00
3.76E-01	3.71E-01	3.66E-01	3.61E-01	<b>3.57E-01</b>	2.86E+00
3.24E-01	3.19E-01	3.15E-01	3.11E-01	<b>3.08E-01</b>	2.46E+00
6.11E-01	6.02E-01	5.94E-01	5.86E-01	<b>5.80E-01</b>	4.64E+00
6.25E-01	6.16E-01	6.08E-01	6.00E-01	<b>5.94E-01</b>	4.75E+00
9.72E+00	9.58E+00	9.45E+00	9.33E+00	<b>9.22E+00</b>	7.37E+01
6.16E+01	6.06E+01	5.98E+01	5.90E+01	<b>5.83E+01</b>	4.67E+02
8.76E+02	8.63E+02	8.51E+02	8.40E+02	<b>8.30E+02</b>	6.64E+03
1.11E+04	1.10E+04	1.08E+04	1.07E+04	<b>1.06E+04</b>	8.44E+04
1.50E+05	1.48E+05	1.46E+05	1.44E+05	<b>1.43E+05</b>	1.14E+06
1.27E+05	1.25E+05	1.23E+05	1.22E+05	<b>1.20E+05</b>	9.61E+05
1.98E+06	1.95E+06	1.92E+06	1.89E+06	<b>1.87E+06</b>	1.50E+07
1.43E+07	1.40E+07	1.39E+07	1.37E+07	<b>1.35E+07</b>	1.08E+08
3.11E+07	3.06E+07	3.02E+07	2.98E+07	<b>2.95E+07</b>	2.36E+08
3.12E+07	3.07E+07	3.03E+07	2.98E+07	<b>2.95E+07</b>	2.36E+08
2.51E+07	2.47E+07	2.43E+07	2.40E+07	<b>2.37E+07</b>	1.89E+08
2.38E+07	2.34E+07	2.30E+07	2.27E+07	<b>2.24E+07</b>	1.79E+08
5.18E+06	5.09E+06	5.01E+06	4.93E+06	<b>4.86E+06</b>	3.89E+07
1.86E+07	1.82E+07	1.79E+07	1.77E+07	<b>1.74E+07</b>	1.39E+08
3.38E+07	3.32E+07	3.26E+07	3.21E+07	<b>3.17E+07</b>	2.53E+08
9.31E+06	9.17E+06	9.05E+06	8.93E+06	<b>8.83E+06</b>	7.06E+07
2.95E+06	2.91E+06	2.87E+06	2.83E+06	<b>2.80E+06</b>	2.24E+07
1.01E+06	9.99E+05	9.87E+05	9.75E+05	<b>9.64E+05</b>	7.71E+06
1.98E+08	1.95E+08	1.92E+08	1.90E+08	<b>1.87E+08</b>	1.50E+09

Neutron ENDF5 Group				boundaries	mev	initial	3E-02 y	0.1 y
grp								
ORIGEN ENDF5 44 Max Energy								
45	1.00E-09	1.00E-05						
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	4.17E-08	4.17E-08	4.17E-08
43	<b>7.50E-09</b>	7.50E-03	2	3.00E-09	<b>7.50E-09</b>	3.54E-08	3.54E-08	3.54E-08
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	1.12E-07	1.12E-07	1.12E-07
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	2.61E-08	2.61E-08	2.61E-08
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	2.26E-07	2.26E-07	2.26E-07
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	1.91E-06	1.91E-06	1.91E-06
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	7.94E-07	7.94E-07	7.94E-07
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	1.76E-06	1.76E-06	1.76E-06
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	3.03E-06	3.03E-06	3.03E-06
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	5.95E-06	5.95E-06	5.95E-06
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	1.16E-05	1.17E-05	1.17E-05
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	7.78E-06	7.84E-06	7.84E-06
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	1.14E-05	1.15E-05	1.15E-05
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	8.40E-06	8.46E-06	8.46E-06
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	3.22E-04	3.16E-04	2.96E-04
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	1.51E-04	1.48E-04	1.37E-04
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	2.84E-04	2.76E-04	2.52E-04
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	1.80E-04	1.76E-04	1.63E-04
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	1.57E-03	1.53E-03	1.42E-03
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	3.66E-03	3.57E-03	3.30E-03
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	1.01E-02	9.87E-03	9.14E-03
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	2.03E-02	1.98E-02	1.83E-02
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	3.68E-02	3.59E-02	3.32E-02
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	3.11E-02	3.03E-02	2.80E-02
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	5.93E-02	5.78E-02	5.35E-02
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	6.00E-02	5.84E-02	5.41E-02
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	9.45E-01	9.20E-01	8.51E-01
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	6.11E+00	5.95E+00	5.50E+00
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	8.67E+01	8.45E+01	7.81E+01
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	1.10E+03	1.07E+03	9.87E+02
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	1.49E+04	1.45E+04	1.34E+04
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	1.26E+04	1.23E+04	1.14E+04
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	1.96E+05	1.91E+05	1.77E+05
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	1.42E+06	1.38E+06	1.28E+06
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	3.09E+06	3.01E+06	2.78E+06
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	3.13E+06	3.05E+06	2.82E+06
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	2.62E+06	2.55E+06	2.35E+06
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	2.64E+06	2.57E+06	2.37E+06
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	5.98E+05	5.82E+05	5.37E+05
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	2.22E+06	2.16E+06	1.99E+06
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	3.98E+06	3.87E+06	3.56E+06
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	8.83E+05	8.60E+05	7.95E+05
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	2.72E+05	2.65E+05	2.45E+05
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	9.16E+04	8.93E+04	8.26E+04
totals						2.12E+07	2.06E+07	1.90E+07



1.0 y	1.1 y	1.2 y	1.2 y	1.3 y	1.4 y	1.5 y	Eight Assemblies
4.17E-08	4.17E-08	4.17E-08	4.17E-08	4.17E-08	4.17E-08	<b>4.17E-08</b>	3.34E-07
3.54E-08	3.54E-08	3.54E-08	3.54E-08	3.54E-08	3.54E-08	<b>3.54E-08</b>	2.83E-07
1.12E-07	1.12E-07	1.12E-07	1.12E-07	1.12E-07	1.12E-07	<b>1.12E-07</b>	8.98E-07
2.61E-08	2.61E-08	2.61E-08	2.61E-08	2.61E-08	2.61E-08	<b>2.61E-08</b>	2.09E-07
2.26E-07	2.26E-07	2.26E-07	2.26E-07	2.26E-07	2.26E-07	<b>2.26E-07</b>	1.81E-06
1.91E-06	1.91E-06	1.91E-06	1.91E-06	1.91E-06	1.91E-06	<b>1.91E-06</b>	1.53E-05
7.94E-07	7.94E-07	7.94E-07	7.94E-07	7.94E-07	7.94E-07	<b>7.94E-07</b>	6.35E-06
1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	1.76E-06	<b>1.76E-06</b>	1.41E-05
3.03E-06	3.03E-06	3.03E-06	3.03E-06	3.03E-06	3.03E-06	<b>3.03E-06</b>	2.42E-05
5.94E-06	5.94E-06	5.94E-06	5.94E-06	5.94E-06	5.94E-06	<b>5.94E-06</b>	4.76E-05
1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	1.17E-05	<b>1.17E-05</b>	9.38E-05
7.84E-06	7.84E-06	7.84E-06	7.84E-06	7.84E-06	7.84E-06	<b>7.84E-06</b>	6.27E-05
1.15E-05	1.15E-05	1.15E-05	1.15E-05	1.15E-05	1.15E-05	<b>1.15E-05</b>	9.20E-05
8.46E-06	8.46E-06	8.46E-06	8.46E-06	8.46E-06	8.46E-06	<b>8.46E-06</b>	6.76E-05
1.65E-04	1.60E-04	1.55E-04	1.51E-04	1.47E-04	1.44E-04	<b>1.41E-04</b>	1.13E-03
6.77E-05	6.49E-05	6.24E-05	6.02E-05	5.82E-05	5.65E-05	<b>5.50E-05</b>	4.40E-04
9.39E-05	8.75E-05	8.19E-05	7.70E-05	7.27E-05	6.88E-05	<b>6.54E-05</b>	5.24E-04
7.93E-05	7.59E-05	7.29E-05	7.02E-05	6.79E-05	6.58E-05	<b>6.40E-05</b>	5.12E-04
6.74E-04	6.43E-04	6.17E-04	5.93E-04	5.72E-04	5.54E-04	<b>5.37E-04</b>	4.30E-03
1.56E-03	1.48E-03	1.42E-03	1.37E-03	1.32E-03	1.27E-03	<b>1.24E-03</b>	9.88E-03
4.28E-03	4.09E-03	3.91E-03	3.76E-03	3.62E-03	3.50E-03	<b>3.39E-03</b>	2.72E-02
8.50E-03	8.10E-03	7.75E-03	7.44E-03	7.16E-03	6.92E-03	<b>6.70E-03</b>	5.36E-02
1.55E-02	1.48E-02	1.42E-02	1.36E-02	1.31E-02	1.27E-02	<b>1.23E-02</b>	9.82E-02
1.32E-02	1.26E-02	1.21E-02	1.16E-02	1.12E-02	1.08E-02	<b>1.05E-02</b>	8.38E-02
2.50E-02	2.38E-02	2.28E-02	2.19E-02	2.11E-02	2.04E-02	<b>1.98E-02</b>	1.58E-01
2.54E-02	2.42E-02	2.32E-02	2.23E-02	2.15E-02	2.08E-02	<b>2.02E-02</b>	1.61E-01
3.96E-01	3.77E-01	3.61E-01	3.47E-01	3.34E-01	3.23E-01	<b>3.13E-01</b>	2.50E+00
2.54E+00	2.42E+00	2.32E+00	2.22E+00	2.14E+00	2.07E+00	<b>2.00E+00</b>	1.60E+01
3.61E+01	3.44E+01	3.29E+01	3.16E+01	3.04E+01	2.94E+01	<b>2.84E+01</b>	2.28E+02
4.58E+02	4.36E+02	4.17E+02	4.00E+02	3.86E+02	3.73E+02	<b>3.61E+02</b>	2.89E+03
6.21E+03	5.92E+03	5.66E+03	5.43E+03	5.23E+03	5.05E+03	<b>4.90E+03</b>	3.92E+04
5.25E+03	5.00E+03	4.78E+03	4.59E+03	4.42E+03	4.27E+03	<b>4.14E+03</b>	3.31E+04
8.17E+04	7.79E+04	7.44E+04	7.14E+04	6.88E+04	6.64E+04	<b>6.43E+04</b>	5.15E+05
5.89E+05	5.61E+05	5.36E+05	5.15E+05	4.96E+05	4.79E+05	<b>4.63E+05</b>	3.71E+06
1.28E+06	1.22E+06	1.17E+06	1.12E+06	1.08E+06	1.04E+06	<b>1.01E+06</b>	8.06E+06
1.30E+06	1.23E+06	1.18E+06	1.13E+06	1.09E+06	1.05E+06	<b>1.02E+06</b>	8.13E+06
1.07E+06	1.02E+06	9.73E+05	9.33E+05	8.97E+05	8.66E+05	<b>8.38E+05</b>	6.70E+06
1.07E+06	1.02E+06	9.69E+05	9.28E+05	8.92E+05	8.60E+05	<b>8.32E+05</b>	6.66E+06
2.41E+05	2.29E+05	2.18E+05	2.09E+05	2.01E+05	1.93E+05	<b>1.87E+05</b>	1.50E+06
8.79E+05	8.34E+05	7.95E+05	7.60E+05	7.30E+05	7.03E+05	<b>6.79E+05</b>	5.43E+06
1.53E+06	1.45E+06	1.38E+06	1.32E+06	1.26E+06	1.21E+06	<b>1.17E+06</b>	9.33E+06
3.66E+05	3.49E+05	3.34E+05	3.20E+05	3.08E+05	2.97E+05	<b>2.88E+05</b>	2.30E+06
1.14E+05	1.08E+05	1.04E+05	9.95E+04	9.58E+04	9.26E+04	<b>8.97E+04</b>	7.17E+05
3.85E+04	3.67E+04	3.51E+04	3.37E+04	3.25E+04	3.14E+04	<b>3.04E+04</b>	2.43E+05
8.57E+06	8.15E+06	7.77E+06	7.44E+06	7.15E+06	6.90E+06	<b>6.67E+06</b>	5.34E+07

Neutron ENDF5 Group			boundaries		mev	initial	0.1 y	1.1 y
grp								
ORIGEN ENDF5 44 Max Energy								
45	1.00E-09	1.00E-05						
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	4.29E-08	4.29E-08	4.29E-08
43	<b>7.50E-09</b>	7.50E-03	2	3.00E-09	<b>7.50E-09</b>	3.65E-08	3.65E-08	3.65E-08
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	1.17E-07	1.17E-07	1.17E-07
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	2.58E-08	2.58E-08	2.58E-08
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	2.15E-07	2.15E-07	2.15E-07
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	1.80E-06	1.80E-06	1.80E-06
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	7.53E-07	7.53E-07	7.53E-07
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	1.67E-06	1.67E-06	1.67E-06
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	2.87E-06	2.87E-06	2.87E-06
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	5.64E-06	5.64E-06	5.64E-06
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	1.13E-05	1.14E-05	1.14E-05
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	7.50E-06	7.55E-06	7.55E-06
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	1.09E-05	1.10E-05	1.10E-05
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	8.08E-06	8.14E-06	8.14E-06
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	3.18E-04	2.92E-04	1.54E-04
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	1.50E-04	1.36E-04	6.28E-05
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	2.86E-04	2.53E-04	8.61E-05
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	1.79E-04	1.62E-04	7.35E-05
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	1.56E-03	1.41E-03	6.24E-04
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	3.64E-03	3.28E-03	1.44E-03
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	1.01E-02	9.09E-03	3.96E-03
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	2.02E-02	1.82E-02	7.86E-03
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	3.66E-02	3.30E-02	1.44E-02
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	3.09E-02	2.79E-02	1.22E-02
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	5.90E-02	5.31E-02	2.31E-02
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	5.97E-02	5.38E-02	2.35E-02
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	9.41E-01	8.47E-01	3.66E-01
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	6.09E+00	5.47E+00	2.35E+00
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	8.64E+01	7.77E+01	3.34E+01
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	1.09E+03	9.82E+02	4.23E+02
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	1.48E+04	1.33E+04	5.74E+03
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	1.26E+04	1.13E+04	4.85E+03
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	1.96E+05	1.76E+05	7.55E+04
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	1.41E+06	1.27E+06	5.44E+05
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	3.08E+06	2.77E+06	1.18E+06
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	3.12E+06	2.81E+06	1.20E+06
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	2.61E+06	2.34E+06	9.91E+05
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	2.63E+06	2.36E+06	9.89E+05
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	5.97E+05	5.36E+05	2.23E+05
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	2.22E+06	1.99E+06	8.14E+05
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	3.98E+06	3.56E+06	1.42E+06
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	8.79E+05	7.91E+05	3.38E+05
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	2.70E+05	2.43E+05	1.05E+05
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	9.12E+04	8.21E+04	3.56E+04
			totals			2.11E+07	1.89E+07	7.92E+06



1.2 y	1.2 y	1.3 y	1.4 y	1.5 y	Eight Assemblies
4.29E-08	4.29E-08	4.29E-08	4.29E-08	<b>4.29E-08</b>	3.43E-07
3.65E-08	3.65E-08	3.65E-08	3.65E-08	<b>3.65E-08</b>	2.92E-07
1.17E-07	1.17E-07	1.17E-07	1.17E-07	<b>1.17E-07</b>	9.39E-07
2.58E-08	2.58E-08	2.58E-08	2.58E-08	<b>2.58E-08</b>	2.06E-07
2.15E-07	2.15E-07	2.15E-07	2.15E-07	<b>2.15E-07</b>	1.72E-06
1.80E-06	1.80E-06	1.80E-06	1.80E-06	<b>1.80E-06</b>	1.44E-05
7.53E-07	7.53E-07	7.53E-07	7.53E-07	<b>7.53E-07</b>	6.03E-06
1.67E-06	1.67E-06	1.67E-06	1.67E-06	<b>1.67E-06</b>	1.34E-05
2.87E-06	2.87E-06	2.87E-06	2.87E-06	<b>2.87E-06</b>	2.30E-05
5.64E-06	5.64E-06	5.64E-06	5.64E-06	<b>5.64E-06</b>	4.51E-05
1.14E-05	1.14E-05	1.14E-05	1.14E-05	<b>1.14E-05</b>	9.10E-05
7.55E-06	7.55E-06	7.55E-06	7.55E-06	<b>7.55E-06</b>	6.04E-05
1.10E-05	1.10E-05	1.10E-05	1.10E-05	<b>1.10E-05</b>	8.78E-05
8.14E-06	8.14E-06	8.14E-06	8.14E-06	<b>8.14E-06</b>	6.51E-05
1.49E-04	1.45E-04	1.41E-04	1.38E-04	<b>1.35E-04</b>	1.08E-03
6.03E-05	5.81E-05	5.62E-05	5.44E-05	<b>5.28E-05</b>	4.22E-04
8.04E-05	7.54E-05	7.12E-05	6.71E-05	<b>6.37E-05</b>	5.10E-04
7.04E-05	6.78E-05	6.55E-05	6.33E-05	<b>6.15E-05</b>	4.92E-04
5.97E-04	5.73E-04	5.53E-04	5.34E-04	<b>5.17E-04</b>	4.14E-03
1.38E-03	1.32E-03	1.27E-03	1.23E-03	<b>1.19E-03</b>	9.50E-03
3.79E-03	3.63E-03	3.50E-03	3.37E-03	<b>3.26E-03</b>	2.61E-02
7.50E-03	7.19E-03	6.92E-03	6.66E-03	<b>6.45E-03</b>	5.16E-02
1.37E-02	1.31E-02	1.27E-02	1.22E-02	<b>1.18E-02</b>	9.44E-02
1.17E-02	1.12E-02	1.08E-02	1.04E-02	<b>1.01E-02</b>	8.05E-02
2.21E-02	2.12E-02	2.04E-02	1.96E-02	<b>1.90E-02</b>	1.52E-01
2.25E-02	2.15E-02	2.07E-02	2.00E-02	<b>1.94E-02</b>	1.55E-01
3.49E-01	3.35E-01	3.22E-01	3.10E-01	<b>3.00E-01</b>	2.40E+00
2.24E+00	2.15E+00	2.07E+00	1.99E+00	<b>1.93E+00</b>	1.54E+01
3.19E+01	3.05E+01	2.94E+01	2.83E+01	<b>2.74E+01</b>	2.19E+02
4.04E+02	3.87E+02	3.73E+02	3.59E+02	<b>3.47E+02</b>	2.78E+03
5.48E+03	5.25E+03	5.05E+03	4.87E+03	<b>4.71E+03</b>	3.77E+04
4.63E+03	4.44E+03	4.27E+03	4.11E+03	<b>3.98E+03</b>	3.18E+04
7.21E+04	6.91E+04	6.65E+04	6.40E+04	<b>6.19E+04</b>	4.95E+05
5.19E+05	4.97E+05	4.79E+05	4.61E+05	<b>4.46E+05</b>	3.56E+06
1.13E+06	1.08E+06	1.04E+06	1.00E+06	<b>9.69E+05</b>	7.75E+06
1.14E+06	1.09E+06	1.05E+06	1.01E+06	<b>9.77E+05</b>	7.82E+06
9.44E+05	9.03E+05	8.69E+05	8.35E+05	<b>8.07E+05</b>	6.46E+06
9.42E+05	9.00E+05	8.65E+05	8.32E+05	<b>8.04E+05</b>	6.43E+06
2.12E+05	2.03E+05	1.95E+05	1.87E+05	<b>1.81E+05</b>	1.45E+06
7.74E+05	7.39E+05	7.10E+05	6.81E+05	<b>6.57E+05</b>	5.26E+06
1.34E+06	1.28E+06	1.22E+06	1.17E+06	<b>1.13E+06</b>	9.02E+06
3.23E+05	3.09E+05	2.97E+05	2.86E+05	<b>2.77E+05</b>	2.21E+06
1.00E+05	9.61E+04	9.25E+04	8.90E+04	<b>8.61E+04</b>	6.89E+05
3.39E+04	3.25E+04	3.13E+04	3.02E+04	<b>2.92E+04</b>	2.33E+05
7.54E+06	7.21E+06	6.93E+06	6.66E+06	<b>6.43E+06</b>	5.14E+07

## Neutron ENDF5 Group

boundaries

mev

initial

0.1 y

1.1 y

grp

ORIGEN ENDF5 4+ Max Energy

45	1.00E-09	1.00E-05						
44	3.00E-09	3.00E-03	1	1.00E-11	3.00E-09	1.02E-07	1.02E-07	1.02E-07
43	<b>7.50E-09</b>	7.50E-03	2	3.00E-09	<b>7.50E-09</b>	8.44E-08	8.44E-08	8.44E-08
42	1.00E-08	1.00E-02	3	7.50E-09	1.00E-08	2.42E-07	2.42E-07	2.42E-07
41	2.53E-08	2.53E-02	4	1.00E-08	2.53E-08	7.83E-08	7.83E-08	7.83E-08
40	3.00E-08	3.00E-02	5	2.53E-08	3.00E-08	3.21E-07	3.21E-07	3.21E-07
39	4.00E-08	4.00E-02	6	3.00E-08	4.00E-08	2.45E-06	2.45E-06	2.45E-06
38	5.00E-08	5.00E-02	7	4.00E-08	5.00E-08	1.08E-06	1.08E-06	1.08E-06
37	7.00E-08	7.00E-02	8	5.00E-08	7.00E-08	2.40E-06	2.40E-06	2.40E-06
36	1.00E-07	1.00E-01	9	7.00E-08	1.00E-07	4.11E-06	4.11E-06	4.11E-06
35	1.50E-07	1.50E-01	10	1.00E-07	1.50E-07	8.07E-06	8.07E-06	8.07E-06
34	2.00E-07	2.00E-01	11	1.50E-07	2.00E-07	1.36E-05	1.37E-05	1.37E-05
33	2.25E-07	2.25E-01	12	2.00E-07	2.25E-07	9.19E-06	9.25E-06	9.25E-06
32	2.50E-07	2.50E-01	13	2.25E-07	2.50E-07	1.37E-05	1.38E-05	1.38E-05
31	2.75E-07	2.75E-01	14	2.50E-07	2.75E-07	9.99E-06	1.01E-05	1.01E-05
30	3.25E-07	3.25E-01	15	2.75E-07	3.25E-07	8.16E-04	7.57E-04	4.52E-04
29	3.50E-07	3.50E-01	16	3.25E-07	3.50E-07	3.67E-04	3.35E-04	1.74E-04
28	3.75E-07	3.75E-01	17	3.50E-07	3.75E-07	6.66E-04	5.94E-04	2.30E-04
27	4.00E-07	4.00E-01	18	3.75E-07	4.00E-07	4.29E-04	3.91E-04	1.97E-04
26	6.25E-07	6.25E-01	19	4.00E-07	6.25E-07	3.77E-03	3.43E-03	1.71E-03
25	1.00E-06	1.00E+00	20	6.25E-07	1.00E-06	8.86E-03	8.06E-03	4.01E-03
24	1.77E-06	1.77E+00	21	1.00E-06	1.77E-06	2.46E-02	2.24E-02	1.12E-02
23	3.00E-06	3.00E+00	22	1.77E-06	3.00E-06	4.93E-02	4.48E-02	2.21E-02
22	4.75E-06	4.75E+00	23	3.00E-06	4.75E-06	8.96E-02	8.16E-02	4.06E-02
21	6.00E-06	6.00E+00	24	4.75E-06	6.00E-06	7.59E-02	6.92E-02	3.48E-02
20	8.10E-06	8.10E+00	25	6.00E-06	8.10E-06	1.45E-01	1.32E-01	6.57E-02
19	1.00E-05	1.00E+01	26	8.10E-06	1.00E-05	1.47E-01	1.34E-01	6.70E-02
18	3.00E-05	3.00E+01	27	1.00E-05	3.00E-05	2.31E+00	2.10E+00	1.05E+00
17	1.00E-04	1.00E+02	28	3.00E-05	1.00E-04	1.49E+01	1.35E+01	6.68E+00
16	5.50E-04	5.50E+02	29	1.00E-04	5.50E-04	2.12E+02	1.92E+02	9.49E+01
15	3.00E-03	3.00E+03	30	5.50E-04	3.00E-03	2.67E+03	2.43E+03	1.20E+03
14	1.70E-02	1.70E+04	31	3.00E-03	1.70E-02	3.63E+04	3.30E+04	1.63E+04
13	2.50E-02	2.50E+04	32	1.70E-02	2.50E-02	3.07E+04	2.79E+04	1.38E+04
12	1.00E-01	1.00E+05	33	2.50E-02	1.00E-01	4.78E+05	4.35E+05	2.14E+05
11	4.00E-01	4.00E+05	34	1.00E-01	4.00E-01	3.45E+06	3.14E+06	1.55E+06
10	9.00E-01	9.00E+05	35	4.00E-01	9.00E-01	7.53E+06	6.84E+06	3.37E+06
9	1.40E+00	1.40E+06	36	9.00E-01	1.40E+00	7.63E+06	6.93E+06	3.39E+06
8	1.85E+00	1.85E+06	37	1.40E+00	1.85E+00	6.33E+06	5.74E+06	2.77E+06
7	2.35E+00	2.35E+06	38	1.85E+00	2.35E+00	6.31E+06	5.72E+06	2.71E+06
6	2.48E+00	2.48E+06	39	2.35E+00	2.48E+00	1.42E+06	1.29E+06	6.01E+05
5	3.00E+00	3.00E+06	40	2.48E+00	3.00E+00	5.26E+06	4.75E+06	2.18E+06
4	4.80E+00	4.80E+06	41	3.00E+00	4.80E+00	9.51E+06	8.58E+06	3.89E+06
3	6.43E+00	6.43E+06	42	4.80E+00	6.43E+00	2.18E+06	1.98E+06	9.85E+05
2	8.19E+00	8.19E+06	43	6.43E+00	8.19E+00	6.72E+05	6.13E+05	3.09E+05
1	2.00E+01	2.00E+07	44	8.19E+00	2.00E+01	2.28E+05	2.08E+05	1.05E+05
			totals			5.11E+07	4.63E+07	2.21E+07



1.2 y	1.2 y	1.3 y	1.4 y	1.5 y	24 Assemblies
1.02E-07	1.02E-07	1.02E-07	1.02E-07	<b>1.02E-07</b>	2.44E-06
8.44E-08	8.44E-08	8.44E-08	8.44E-08	<b>8.44E-08</b>	2.02E-06
2.42E-07	2.42E-07	2.42E-07	2.42E-07	<b>2.42E-07</b>	5.81E-06
7.83E-08	7.83E-08	7.83E-08	7.83E-08	<b>7.83E-08</b>	1.88E-06
3.21E-07	3.21E-07	3.21E-07	3.21E-07	<b>3.21E-07</b>	7.70E-06
2.45E-06	2.45E-06	2.45E-06	2.45E-06	<b>2.45E-06</b>	5.88E-05
1.08E-06	1.08E-06	1.08E-06	1.08E-06	<b>1.08E-06</b>	2.60E-05
2.40E-06	2.40E-06	2.40E-06	2.40E-06	<b>2.40E-06</b>	5.76E-05
4.11E-06	4.11E-06	4.11E-06	4.11E-06	<b>4.11E-06</b>	9.87E-05
8.07E-06	8.07E-06	8.07E-06	8.07E-06	<b>8.07E-06</b>	1.94E-04
1.37E-05	1.37E-05	1.37E-05	1.37E-05	<b>1.37E-05</b>	3.29E-04
9.25E-06	9.25E-06	9.25E-06	9.25E-06	<b>9.25E-06</b>	2.22E-04
1.38E-05	1.38E-05	1.38E-05	1.38E-05	<b>1.38E-05</b>	3.31E-04
1.01E-05	1.01E-05	1.01E-05	1.01E-05	<b>1.01E-05</b>	2.41E-04
4.41E-04	4.32E-04	4.23E-04	4.15E-04	<b>4.08E-04</b>	9.80E-03
1.69E-04	1.64E-04	1.59E-04	1.55E-04	<b>1.52E-04</b>	3.64E-03
2.17E-04	2.06E-04	1.97E-04	1.88E-04	<b>1.80E-04</b>	4.32E-03
1.90E-04	1.84E-04	1.79E-04	1.74E-04	<b>1.70E-04</b>	4.08E-03
1.65E-03	1.59E-03	1.55E-03	1.51E-03	<b>1.47E-03</b>	3.52E-02
3.87E-03	3.74E-03	3.64E-03	3.53E-03	<b>3.45E-03</b>	8.27E-02
1.08E-02	1.04E-02	1.01E-02	9.83E-03	<b>9.58E-03</b>	2.30E-01
2.13E-02	2.06E-02	2.00E-02	1.95E-02	<b>1.90E-02</b>	4.55E-01
3.92E-02	3.79E-02	3.69E-02	3.58E-02	<b>3.49E-02</b>	8.38E-01
3.35E-02	3.25E-02	3.16E-02	3.07E-02	<b>3.00E-02</b>	7.19E-01
6.34E-02	6.14E-02	5.96E-02	5.80E-02	<b>5.65E-02</b>	1.36E+00
6.47E-02	6.26E-02	6.09E-02	5.92E-02	<b>5.77E-02</b>	1.39E+00
1.01E+00	9.75E-01	9.47E-01	9.20E-01	<b>8.98E-01</b>	2.15E+01
6.44E+00	6.22E+00	6.04E+00	5.87E+00	<b>5.72E+00</b>	1.37E+02
9.15E+01	8.85E+01	8.60E+01	8.35E+01	<b>8.14E+01</b>	1.95E+03
1.16E+03	1.12E+03	1.09E+03	1.06E+03	<b>1.03E+03</b>	2.48E+04
1.57E+04	1.52E+04	1.48E+04	1.44E+04	<b>1.40E+04</b>	3.36E+05
1.33E+04	1.28E+04	1.25E+04	1.21E+04	<b>1.18E+04</b>	2.83E+05
2.07E+05	2.00E+05	1.94E+05	1.89E+05	<b>1.84E+05</b>	4.41E+06
1.49E+06	1.44E+06	1.40E+06	1.36E+06	<b>1.33E+06</b>	3.18E+07
3.25E+06	3.14E+06	3.05E+06	2.96E+06	<b>2.89E+06</b>	6.93E+07
3.27E+06	3.16E+06	3.07E+06	2.98E+06	<b>2.90E+06</b>	6.96E+07
2.67E+06	2.58E+06	2.50E+06	2.42E+06	<b>2.36E+06</b>	5.67E+07
2.60E+06	2.51E+06	2.43E+06	2.36E+06	<b>2.29E+06</b>	5.50E+07
5.77E+05	5.56E+05	5.38E+05	5.21E+05	<b>5.06E+05</b>	1.22E+07
2.09E+06	2.01E+06	1.95E+06	1.88E+06	<b>1.83E+06</b>	4.39E+07
3.72E+06	3.58E+06	3.46E+06	3.34E+06	<b>3.24E+06</b>	7.79E+07
9.50E+05	9.19E+05	8.93E+05	8.68E+05	<b>8.46E+05</b>	2.03E+07
2.98E+05	2.89E+05	2.80E+05	2.73E+05	<b>2.66E+05</b>	6.38E+06
1.02E+05	9.85E+04	9.58E+04	9.32E+04	<b>9.09E+04</b>	2.18E+06
2.13E+07	2.05E+07	1.99E+07	1.93E+07	<b>1.88E+07</b>	4.50E+08

Energy Output Group	Assembly Sub Batch Core Offload							
	DD1	DD2	DD3	EE1	EE2	EE3	FF1	FF2
1	1.17E-04	4.13E-05	5.21E-06	9.48E-05	2.60E-05	5.46E-06	5.08E-06	6.72E-06
2	8.34E-05	2.94E-05	3.83E-06	6.79E-05	1.89E-05	4.01E-06	3.82E-06	5.01E-06
3	5.43E-05	1.98E-05	4.41E-06	4.92E-05	1.82E-05	4.53E-06	5.71E-06	6.74E-06
4	2.02E-04	7.07E-05	7.98E-06	1.61E-04	4.18E-05	8.41E-06	7.07E-06	9.77E-06
5	7.08E-05	2.54E-05	4.90E-06	6.12E-05	2.08E-05	5.04E-06	6.35E-06	7.43E-06
6	2.01E-04	7.46E-05	2.34E-05	1.94E-04	8.61E-05	2.38E-05	3.63E-05	3.96E-05
7	1.67E-04	6.05E-05	1.36E-05	1.49E-04	5.50E-05	1.40E-05	1.89E-05	2.15E-05
8	3.59E-04	1.30E-04	2.96E-05	3.20E-04	1.19E-04	3.04E-05	4.15E-05	4.71E-05
9	5.88E-04	2.13E-04	4.99E-05	5.28E-04	1.99E-04	5.11E-05	7.04E-05	7.97E-05
10	1.11E-03	4.04E-04	9.63E-05	1.00E-03	3.82E-04	9.86E-05	1.37E-04	1.55E-04
11	1.27E-03	4.63E-04	1.21E-04	1.16E-03	4.65E-04	1.24E-04	1.88E-04	2.06E-04
12	7.36E-04	2.70E-04	7.89E-05	6.92E-04	2.94E-04	8.03E-05	1.25E-04	1.36E-04
13	8.85E-04	3.30E-04	1.13E-04	8.70E-04	4.05E-04	1.14E-04	1.84E-04	1.98E-04
14	8.06E-04	2.96E-04	8.67E-05	7.58E-04	3.23E-04	8.82E-05	1.37E-04	1.49E-04
15	2.13E-01	7.90E-02	1.79E-02	2.05E-01	7.75E-02	1.85E-02	2.15E-02	2.68E-02
16	7.38E-02	2.74E-02	6.28E-03	7.12E-02	2.71E-02	6.50E-03	7.62E-03	9.46E-03
17	7.83E-02	2.92E-02	6.89E-03	7.62E-02	2.95E-02	7.12E-03	8.51E-03	1.05E-02
18	7.91E-02	2.94E-02	6.79E-03	7.65E-02	2.92E-02	7.02E-03	8.28E-03	1.02E-02
19	6.98E-01	2.60E-01	5.97E-02	6.75E-01	2.57E-01	6.17E-02	7.27E-02	9.00E-02
20	1.66E+00	6.19E-01	1.42E-01	1.61E+00	6.13E-01	1.47E-01	1.73E-01	2.14E-01
21	4.66E+00	1.74E+00	3.98E-01	4.51E+00	1.72E+00	4.12E-01	4.83E-01	5.99E-01
22	9.21E+00	3.43E+00	7.86E-01	8.90E+00	3.39E+00	8.13E-01	9.56E-01	1.18E+00
23	1.71E+01	6.35E+00	1.46E+00	1.65E+01	6.29E+00	1.51E+00	1.77E+00	2.19E+00
24	1.47E+01	5.48E+00	1.26E+00	1.42E+01	5.42E+00	1.30E+00	1.52E+00	1.89E+00
25	2.77E+01	1.03E+01	2.36E+00	2.68E+01	1.02E+01	2.45E+00	2.87E+00	3.56E+00
26	2.84E+01	1.06E+01	2.42E+00	2.75E+01	1.05E+01	2.50E+00	2.94E+00	3.64E+00
27	4.41E+02	1.64E+02	3.76E+01	4.26E+02	1.62E+02	3.89E+01	4.56E+01	5.66E+01
28	2.79E+03	1.04E+03	2.38E+02	2.69E+03	1.03E+03	2.46E+02	2.89E+02	3.59E+02
29	3.96E+04	1.47E+04	3.39E+03	3.83E+04	1.46E+04	3.50E+03	4.12E+03	5.10E+03
30	5.04E+05	1.87E+05	4.30E+04	4.87E+05	1.86E+05	4.45E+04	5.23E+04	6.48E+04
31	6.80E+06	2.53E+06	5.81E+05	6.58E+06	2.51E+06	6.01E+05	7.07E+05	8.76E+05
32	5.73E+06	2.13E+06	4.90E+05	5.54E+06	2.11E+06	5.06E+05	5.96E+05	7.38E+05
33	8.93E+07	3.32E+07	7.63E+06	8.63E+07	3.29E+07	7.89E+06	9.28E+06	1.15E+07
34	6.45E+08	2.40E+08	5.51E+07	6.23E+08	2.38E+08	5.70E+07	6.70E+07	8.30E+07
35	1.41E+09	5.24E+08	1.20E+08	1.36E+09	5.19E+08	1.24E+08	1.46E+08	1.81E+08
36	1.41E+09	5.24E+08	1.20E+08	1.36E+09	5.19E+08	1.24E+08	1.46E+08	1.81E+08
37	1.12E+09	4.19E+08	9.65E+07	1.09E+09	4.16E+08	9.98E+07	1.18E+08	1.46E+08
38	1.06E+09	3.94E+08	9.13E+07	1.02E+09	3.93E+08	9.44E+07	1.12E+08	1.38E+08
39	2.28E+08	8.51E+07	1.98E+07	2.22E+08	8.52E+07	2.05E+07	2.44E+07	3.01E+07
40	8.15E+08	3.04E+08	7.10E+07	7.91E+08	3.05E+08	7.34E+07	8.74E+07	1.08E+08
41	1.49E+09	5.55E+08	1.29E+08	1.45E+09	5.55E+08	1.33E+08	1.58E+08	1.96E+08
42	4.24E+08	1.58E+08	3.60E+07	4.09E+08	1.56E+08	3.73E+07	4.36E+07	5.42E+07
43	1.35E+08	5.02E+07	1.14E+07	1.30E+08	4.94E+07	1.18E+07	1.38E+07	1.72E+07
44	4.65E+07	1.73E+07	3.93E+06	4.48E+07	1.70E+07	4.07E+06	4.75E+06	5.91E+06
Totals	8.88E+09	3.31E+09	7.64E+08	8.60E+09	3.29E+09	7.90E+08	9.32E+08	1.15E+09



FF3	FF4	GG1	GG2	GG3	Total for Core Offload at 18 months
2.16E-05	9.78E-06	3.34E-07	3.43E-07	2.44E-06	3.36E-04
1.59E-05	7.21E-06	2.83E-07	2.92E-07	2.02E-06	2.42E-04
1.80E-05	8.50E-06	8.98E-07	9.39E-07	5.81E-06	1.97E-04
3.33E-05	1.49E-05	2.09E-07	2.06E-07	1.88E-06	5.58E-04
1.99E-05	9.33E-06	1.81E-06	1.72E-06	7.70E-06	2.42E-04
9.31E-05	4.49E-05	1.53E-05	1.44E-05	5.88E-05	9.06E-04
5.49E-05	2.60E-05	6.35E-06	6.03E-06	2.60E-05	6.19E-04
1.20E-04	5.68E-05	1.41E-05	1.34E-05	5.76E-05	1.34E-03
2.01E-04	9.55E-05	2.42E-05	2.30E-05	9.87E-05	2.22E-03
3.88E-04	1.85E-04	4.76E-05	4.51E-05	1.94E-04	4.25E-03
4.92E-04	2.35E-04	9.38E-05	9.10E-05	3.29E-04	5.24E-03
3.18E-04	1.53E-04	6.27E-05	6.04E-05	2.22E-04	3.23E-03
4.51E-04	2.18E-04	9.20E-05	8.78E-05	3.31E-04	4.28E-03
3.49E-04	1.68E-04	6.76E-05	6.51E-05	2.41E-04	3.54E-03
7.58E-02	3.50E-02	1.13E-03	1.08E-03	9.80E-03	7.81E-01
2.66E-02	1.23E-02	4.40E-04	4.22E-04	3.64E-03	2.73E-01
2.92E-02	1.35E-02	5.24E-04	5.10E-04	4.32E-03	2.94E-01
2.88E-02	1.33E-02	5.12E-04	4.92E-04	4.08E-03	2.94E-01
2.53E-01	1.17E-01	4.30E-03	4.14E-03	3.52E-02	2.59E+00
6.02E-01	2.79E-01	9.88E-03	9.50E-03	8.27E-02	6.16E+00
1.69E+00	7.80E-01	2.72E-02	2.61E-02	2.30E-01	1.73E+01
3.33E+00	1.54E+00	5.36E-02	5.16E-02	4.55E-01	3.41E+01
6.17E+00	2.86E+00	9.82E-02	9.44E-02	8.38E-01	6.32E+01
5.32E+00	2.46E+00	8.38E-02	8.05E-02	7.19E-01	5.45E+01
1.00E+01	4.64E+00	1.58E-01	1.52E-01	1.36E+00	1.03E+02
1.03E+01	4.75E+00	1.61E-01	1.55E-01	1.39E+00	1.05E+02
1.59E+02	7.37E+01	2.50E+00	2.40E+00	2.15E+01	1.63E+03
1.01E+03	4.67E+02	1.60E+01	1.54E+01	1.37E+02	1.03E+04
1.44E+04	6.64E+03	2.28E+02	2.19E+02	1.95E+03	1.47E+05
1.82E+05	8.44E+04	2.89E+03	2.78E+03	2.48E+04	1.87E+06
2.46E+06	1.14E+06	3.92E+04	3.77E+04	3.36E+05	2.52E+07
2.08E+06	9.61E+05	3.31E+04	3.18E+04	2.83E+05	2.12E+07
3.24E+07	1.50E+07	5.15E+05	4.95E+05	4.41E+06	3.31E+08
2.34E+08	1.08E+08	3.71E+06	3.56E+06	3.18E+07	2.39E+09
5.09E+08	2.36E+08	8.06E+06	7.75E+06	6.93E+07	5.21E+09
5.10E+08	2.36E+08	8.13E+06	7.82E+06	6.96E+07	5.21E+09
4.09E+08	1.89E+08	6.70E+06	6.46E+06	5.67E+07	4.18E+09
3.87E+08	1.79E+08	6.66E+06	6.43E+06	5.50E+07	3.94E+09
8.41E+07	3.89E+07	1.50E+06	1.45E+06	1.22E+07	8.53E+08
3.01E+08	1.39E+08	5.43E+06	5.26E+06	4.39E+07	3.05E+09
5.47E+08	2.53E+08	9.33E+06	9.02E+06	7.79E+07	5.56E+09
1.53E+08	7.06E+07	2.30E+06	2.21E+06	2.03E+07	1.57E+09
4.84E+07	2.24E+07	7.17E+05	6.89E+05	6.38E+06	4.97E+08
1.67E+07	7.71E+06	2.43E+05	2.33E+05	2.18E+06	1.71E+08
3.24E+09	1.50E+09	5.34E+07	5.14E+07	4.50E+08	3.30E+10

Neutron ENDF5 Group

grp

ORIGEN ENDF5 44 Group

	Max Energy		
45	0.000000001	0.00001	
44	0.000000003	0.003	1
43	<b>0.0000000075</b>	0.0075	2
42	0.000000001	0.01	3
41	0.0000000253	0.0253	4
40	0.000000003	0.03	5
39	0.000000004	0.04	6
38	0.000000005	0.05	7
37	0.000000007	0.07	8
36	0.00000001	0.1	9
35	0.000000015	0.15	10
34	0.00000002	0.2	11
33	0.0000000225	0.225	12
32	0.000000025	0.25	13
31	0.0000000275	0.275	14
30	0.0000000325	0.325	15
29	0.000000035	0.35	16
28	0.0000000375	0.375	17
27	0.00000004	0.4	18
26	0.0000000625	0.625	19
25	0.0000001	1	20
24	0.000000177	1.77	21
23	0.0000003	3	22
22	0.000000475	4.75	23
21	0.0000006	6	24
20	0.00000081	8.1	25
19	0.000001	10	26
18	0.000003	30	27
17	0.00001	100	28
16	0.000055	550	29
15	0.003	3000	30
14	0.017	17000	31
13	0.025	25000	32
12	0.1	100000	33
11	0.4	400000	34
10	0.9	900000	35
9	1.4	1400000	36
8	1.85	1850000	37
7	2.35	2354000	38
6	2.48	2479000	39
5	3	3000000	40
4	4.8	4800000	41
3	6.43	6434000	42
2	8.19	8187300	43
1	20	20000000	44

boundaries	mev	initial
0.00000000001	0.000000003	0.000008251
0.000000003	<b>0.0000000075</b>	0.000005884
0.0000000075	0.00000001	0.000003958
0.00000001	0.0000000253	0.00001414
0.0000000253	0.00000003	0.000005083
0.00000003	0.00000004	0.00001491
0.00000004	0.00000005	0.0000121
0.00000005	0.00000007	0.00002705
0.00000007	0.0000001	0.00004449
0.0000001	0.00000015	0.00008425
0.00000015	0.0000002	0.00009653
0.0000002	0.000000225	0.00005613
0.000000225	0.00000025	0.00006809
0.00000025	0.000000275	0.0000615
0.000000275	0.000000325	0.01937
0.000000325	0.00000035	0.007223
0.00000035	0.000000375	0.009438
0.000000375	0.0000004	0.007943
0.0000004	0.000000625	0.07022
0.000000625	0.000001	0.1668
0.000001	0.00000177	0.4665
0.00000177	0.000003	0.9258
0.000003	0.00000475	1.706
0.00000475	0.000006	1.464
0.000006	0.0000081	2.766
0.0000081	0.00001	2.824
0.00001	0.00003	44.06
0.00003	0.0001	280
0.0001	0.00055	3982
0.00055	0.003	50520
0.003	0.017	683300
0.017	0.025	576100
0.025	0.1	8979000
0.1	0.4	64850000
0.4	0.9	141500000
0.9	1.4	142000000
1.4	1.85	114900000
1.85	2.35	110000000
2.35	2.48	24120000
2.48	3	87140000
3	4.8	159200000
4.8	6.43	42150000
6.43	8.19	13300000
8.19	20	4565000
totals		914000000



1E-03 y	3E-03 y	1E-02 y	3E-02 y	0.1 y
0.000008251	0.000008251	0.000008251	0.000008251	0.000008251
0.000005884	0.000005884	0.000005884	0.000005884	0.000005884
0.000003958	0.000003958	0.000003958	0.000003958	0.000003958
0.00001414	0.00001414	0.00001414	0.00001414	0.00001414
0.000005083	0.000005083	0.000005083	0.000005083	0.000005084
0.00001491	0.00001491	0.00001491	0.00001491	0.00001491
0.0000121	0.0000121	0.0000121	0.0000121	0.0000121
0.00002704	0.00002704	0.000027	0.00002692	0.00002668
0.00004449	0.00004447	0.00004442	0.00004428	0.00004387
0.00008424	0.00008421	0.00008411	0.00008384	0.00008306
0.00009653	0.00009652	0.00009646	0.00009619	0.0000953
0.00005613	0.00005613	0.00005609	0.00005595	0.00005546
0.00006809	0.00006809	0.00006805	0.0000679	0.00006739
0.0000615	0.00006149	0.00006145	0.00006129	0.00006076
0.01938	0.01938	0.01936	0.01925	0.01892
0.007227	0.007228	0.007213	0.007161	0.006989
0.009442	0.00944	0.009406	0.009292	0.008916
0.007947	0.007948	0.00793	0.007867	0.007662
0.07026	0.07026	0.0701	0.06955	0.06772
0.1669	0.1669	0.1665	0.1652	0.1609
0.4668	0.4668	0.4658	0.4621	0.4502
0.9263	0.9264	0.9242	0.9169	0.8929
1.707	1.707	1.703	1.69	1.646
1.464	1.465	1.461	1.45	1.414
2.768	2.768	2.762	2.741	2.67
2.826	2.826	2.82	2.799	2.728
44.08	44.09	43.99	43.65	42.53
280.2	280.2	279.6	277.3	270.1
3984	3984	3975	3944	3841
50540	50550	50430	50040	48730
683600	683700	682100	676800	659000
576400	576500	575100	570600	555600
8983000	8984000	8964000	8893000	8659000
64880000	64890000	64740000	64230000	62540000
141500000	141500000	141200000	140100000	136400000
142100000	142100000	141800000	140600000	136900000
114900000	114900000	114700000	113700000	110600000
110100000	110100000	109800000	108800000	105700000
24130000	24130000	24060000	23850000	23120000
87180000	87180000	86950000	86130000	83430000
159300000	159300000	158900000	157400000	152500000
42170000	42180000	42090000	41770000	40710000
13300000	13300000	13280000	13180000	12850000
4567000	4568000	4558000	4525000	4416000
914500000	914600000	912300000	904600000	879100000

0.5 y	1.5 y	Five Assemblies
0.000008251	0.00000825	=5*N5
0.000005884	0.000005883	=5*N6
0.000003958	0.000003957	=5*N7
0.00001414	0.00001414	=5*N8
0.000005084	0.000005084	=5*N9
0.00001491	0.00001492	=5*N10
0.0000121	0.0000121	=5*N11
0.00002609	0.00002595	=5*N12
0.0000429	0.00004267	=5*N13
0.00008119	0.00008075	=5*N14
0.00009316	0.00009263	=5*N15
0.0000543	0.00005403	=5*N16
0.00006618	0.00006591	=5*N17
0.00005949	0.00005919	=5*N18
0.01749	0.0158	=5*N19
0.006273	0.005488	=5*N20
0.00738	0.00584	=5*N21
0.006809	0.005889	=5*N22
0.06013	0.05196	=5*N23
0.143	0.1238	=5*N24
0.4006	0.347	=5*N25
0.793	0.6854	=5*N26
1.465	1.27	=5*N27
1.261	1.096	=5*N28
2.379	2.064	=5*N29
2.434	2.115	=5*N30
37.86	32.83	=5*N31
239.8	207.3	=5*N32
3411	2949	=5*N33
43320	37490	=5*N34
585500	506300	=5*N35
493400	426400	=5*N36
7688000	6644000	=5*N37
55530000	47990000	=5*N38
121100000	104700000	=5*N39
121300000	104700000	=5*N40
97580000	83710000	=5*N41
92560000	78720000	=5*N42
20140000	17020000	=5*N43
72310000	60740000	=5*N44
132200000	111000000	=5*N45
36320000	31540000	=5*N46
11500000	10030000	=5*N47
3960000	3459000	=5*N48
773400000	661200000	=5*N49

Neutron ENDF5 Group

grp

ORIGEN ENDF5 44 Group

Max Energy

45	0.000000001	0.00001	
44	0.000000003	0.003	1
43	<b>0.0000000075</b>	0.0075	2
42	0.000000001	0.01	3
41	0.0000000253	0.0253	4
40	0.000000003	0.03	5
39	0.000000004	0.04	6
38	0.000000005	0.05	7
37	0.000000007	0.07	8
36	0.00000001	0.1	9
35	0.000000015	0.15	10
34	0.00000002	0.2	11
33	0.000000225	0.225	12
32	0.000000025	0.25	13
31	0.000000275	0.275	14
30	0.000000325	0.325	15
29	0.00000035	0.35	16
28	0.000000375	0.375	17
27	0.0000004	0.4	18
26	0.000000625	0.625	19
25	0.000001	1	20
24	0.00000177	1.77	21
23	0.000003	3	22
22	0.00000475	4.75	23
21	0.000006	6	24
20	0.0000081	8.1	25
19	0.00001	10	26
18	0.00003	30	27
17	0.0001	100	28
16	0.00055	550	29
15	0.003	3000	30
14	0.017	17000	31
13	0.025	25000	32
12	0.1	100000	33
11	0.4	400000	34
10	0.9	900000	35
9	1.4	1400000	36
8	1.85	1850000	37
7	2.35	2354000	38
6	2.48	2479000	39
5	3	3000000	40
4	4.8	4800000	41
3	6.43	6434000	42
2	8.19	8187300	43
1	20	20000000	44

boundaries	mev	initial	1E-03 y	3E-03 y
0.0000000001	0.000000003	0.000001303	0.000001303	0.000001303
0.000000003	<b>0.0000000075</b>	0.0000009583	0.0000009583	0.0000009583
0.0000000075	0.00000001	0.000001102	0.000001102	0.000001102
0.00000001	0.0000000253	0.000001996	0.000001996	0.000001996
0.0000000253	0.00000003	0.000001224	0.000001224	0.000001224
0.00000003	0.00000004	0.000005838	0.000005838	0.000005838
0.00000004	0.00000005	0.000003402	0.000003402	0.000003402
0.00000005	0.00000007	0.000007427	0.000007427	0.000007427
0.00000007	0.0000001	0.00001249	0.00001249	0.00001249
0.0000001	0.00000015	0.00002413	0.00002413	0.00002413
0.00000015	0.0000002	0.00003024	0.00003025	0.00003028
0.0000002	0.000000225	0.00001969	0.0000197	0.00001971
0.000000225	0.00000025	0.00002814	0.00002815	0.00002816
0.00000025	0.000000275	0.00002163	0.00002164	0.00002165
0.000000275	0.000000325	0.006247	0.006252	0.006254
0.000000325	0.00000035	0.002477	0.002479	0.002479
0.00000035	0.000000375	0.003706	0.003708	0.003707
0.000000375	0.0000004	0.002782	0.002784	0.002785
0.0000004	0.000000625	0.02458	0.02459	0.02459
0.000000625	0.000001	0.05822	0.05826	0.05826
0.000001	0.00000177	0.1626	0.1627	0.1627
0.00000177	0.000003	0.3237	0.3239	0.324
0.000003	0.00000475	0.5937	0.5942	0.5942
0.00000475	0.000006	0.5072	0.5076	0.5076
0.000006	0.0000081	0.9615	0.9622	0.9623
0.0000081	0.00001	0.979	0.9797	0.9798
0.00001	0.00003	15.33	15.34	15.34
0.00003	0.0001	97.97	98.04	98.05
0.0001	0.00055	1393	1394	1394
0.00055	0.003	17640	17650	17650
0.003	0.017	238900	239100	239100
0.017	0.025	201600	201800	201800
0.025	0.1	3143000	3145000	3145000
0.1	0.4	22700000	22710000	22710000
0.4	0.9	49500000	49540000	49540000
0.9	1.4	49880000	49910000	49910000
1.4	1.85	40720000	40750000	40750000
1.85	2.35	39600000	39620000	39630000
2.35	2.48	8774000	8780000	8780000
2.48	3	31990000	32010000	32010000
3	4.8	58260000	58300000	58300000
4.8	6.43	14590000	14600000	14600000
6.43	8.19	4569000	4572000	4573000
8.19	20	1560000	1561000	1562000
totals		325700000	326000000	326000000



1E-02 y	3E-02 y	0.1 y	0.3 y	1.0 y
0.000001303	0.000001303	0.000001303	0.000001303	0.000001303
0.0000009583	0.0000009583	0.0000009583	0.0000009583	0.0000009582
0.000001102	0.000001102	0.000001102	0.000001102	0.000001102
0.000001996	0.000001996	0.000001996	0.000001996	0.000001996
0.000001224	0.000001224	0.000001224	0.000001224	0.000001224
0.000005838	0.000005838	0.000005838	0.000005838	0.00000584
0.000003402	0.000003402	0.000003402	0.000003402	0.000003403
0.000007426	0.000007425	0.000007422	0.000007416	0.000007412
0.00001249	0.00001249	0.00001248	0.00001247	0.00001247
0.00002412	0.00002412	0.00002411	0.00002409	0.00002408
0.00003032	0.00003036	0.00003035	0.00003032	0.00003031
0.00001973	0.00001975	0.00001975	0.00001973	0.00001973
0.00002819	0.0000282	0.0000282	0.00002819	0.00002818
0.00002168	0.0000217	0.00002169	0.00002168	0.00002167
0.006238	0.006184	0.006003	0.005576	0.004744
0.002471	0.002443	0.002348	0.002126	0.001703
0.003688	0.003624	0.003411	0.002915	0.001993
0.002775	0.00274	0.002626	0.00236	0.001854
0.02451	0.0242	0.02319	0.02081	0.01632
0.05806	0.05733	0.05496	0.04938	0.0388
0.1622	0.1601	0.1535	0.138	0.1086
0.3228	0.3187	0.3054	0.2742	0.215
0.5921	0.5848	0.5608	0.5043	0.3973
0.5059	0.4997	0.4795	0.4321	0.3419
0.9589	0.9471	0.9084	0.8174	0.6449
0.9764	0.9646	0.9255	0.8338	0.6597
15.29	15.1	14.48	13.02	10.26
97.69	96.47	92.43	82.97	65.05
1389	1371	1314	1180	925.4
17590	17370	16650	14960	11750
238300	235300	225500	202500	158900
201100	198500	190200	170800	133900
3134000	3095000	2965000	2661000	2086000
22630000	22350000	21410000	19220000	15060000
49360000	48740000	46700000	41920000	32860000
49730000	49100000	47020000	42150000	32920000
40600000	40070000	38320000	34230000	26510000
39470000	38930000	37160000	33020000	25210000
8744000	8622000	8218000	7273000	5498000
31880000	31420000	29910000	26380000	19750000
58060000	57220000	54470000	48030000	35940000
14550000	14380000	13790000	12420000	9818000
4557000	4503000	4324000	3905000	3107000
1556000	1538000	1478000	1337000	1068000
324700000	320400000	306200000	272900000	210100000



1.5 y

Four Assemblies

0.000001303	=4*O5
0.0000009581	=4*O6
0.000001102	=4*O7
0.000001995	=4*O8
0.000001224	=4*O9
0.000005841	=4*O10
0.000003403	=4*O11
0.000007412	=4*O12
0.00001247	=4*O13
0.00002408	=4*O14
0.00003031	=4*O15
0.00001973	=4*O16
0.00002819	=4*O17
0.00002167	=4*O18
0.004466	=4*O19
0.00157	=4*O20
0.001722	=4*O21
0.001697	=4*O22
0.01492	=4*O23
0.03551	=4*O24
0.09948	=4*O25
0.1966	=4*O26
0.364	=4*O27
0.3138	=4*O28
0.5911	=4*O29
0.6053	=4*O30
9.402	=4*O31
59.48	=4*O32
846.5	=4*O33
10760	=4*O34
145300	=4*O35
122400	=4*O36
1908000	=4*O37
13770000	=4*O38
30040000	=4*O39
30070000	=4*O40
24130000	=4*O41
22830000	=4*O42
4959000	=4*O43
17750000	=4*O44
32280000	=4*O45
9005000	=4*O46
2856000	=4*O47
983100	=4*O48
190900000	=4*O49

Neutron ENDF5 Group

grp

ORIGEN ENDF5 44 Group

	Max Energy		
45	0.000000001	0.00001	
44	0.000000003	0.003	1
43	<b>0.0000000075</b>	0.0075	2
42	0.000000001	0.01	3
41	0.0000000253	0.0253	4
40	0.000000003	0.03	5
39	0.000000004	0.04	6
38	0.000000005	0.05	7
37	0.000000007	0.07	8
36	0.00000001	0.1	9
35	0.000000015	0.15	10
34	0.00000002	0.2	11
33	0.0000000225	0.225	12
32	0.000000025	0.25	13
31	0.0000000275	0.275	14
30	0.0000000325	0.325	15
29	0.000000035	0.35	16
28	0.0000000375	0.375	17
27	0.00000004	0.4	18
26	0.0000000625	0.625	19
25	0.0000001	1	20
24	0.000000177	1.77	21
23	0.0000003	3	22
22	0.000000475	4.75	23
21	0.0000006	6	24
20	0.00000081	8.1	25
19	0.000001	10	26
18	0.000003	30	27
17	0.00001	100	28
16	0.000055	550	29
15	0.003	3000	30
14	0.017	17000	31
13	0.025	25000	32
12	0.1	100000	33
11	0.4	400000	34
10	0.9	900000	35
9	1.4	1400000	36
8	1.85	1850000	37
7	2.35	2354000	38
6	2.48	2479000	39
5	3	3000000	40
4	4.8	4800000	41
3	6.43	6434000	42
2	8.19	8187300	43
1	20	20000000	44

boundaries	mev	initial	1E-03 y	3E-03 y
0.0000000001	0.000000003	0.000005928	0.000005928	0.000005928
0.000000003	<b>0.0000000075</b>	0.000004241	0.000004241	0.000004241
0.0000000075	0.00000001	0.000003075	0.000003075	0.000003075
0.00000001	0.0000000253	0.00001005	0.00001005	0.00001005
0.0000000253	0.00000003	0.000003828	0.000003828	0.000003828
0.00000003	0.00000004	0.00001212	0.00001212	0.00001212
0.00000004	0.00000005	0.00000931	0.00000931	0.00000931
0.00000005	0.00000007	0.0000205	0.0000205	0.0000205
0.00000007	0.0000001	0.00003384	0.00003384	0.00003383
0.0000001	0.00000015	0.00006426	0.00006426	0.00006424
0.00000015	0.0000002	0.00007441	0.00007441	0.00007442
0.0000002	0.000000225	0.00004415	0.00004415	0.00004416
0.000000225	0.00000025	0.00005535	0.00005536	0.00005536
0.00000025	0.000000275	0.00004841	0.00004841	0.00004842
0.000000275	0.000000325	0.01603	0.01604	0.01604
0.000000325	0.00000035	0.006043	0.006046	0.006047
0.00000035	0.000000375	0.008107	0.00811	0.008109
0.000000375	0.0000004	0.00667	0.006674	0.006674
0.0000004	0.000000625	0.05895	0.05899	0.05899
0.000000625	0.000001	0.14	0.14	0.1401
0.000001	0.00000177	0.3915	0.3917	0.3917
0.00000177	0.000003	0.7773	0.7777	0.7778
0.000003	0.00000475	1.431	1.432	1.432
0.00000475	0.000006	1.227	1.228	1.228
0.000006	0.0000081	2.32	2.321	2.322
0.0000081	0.00001	2.368	2.369	2.369
0.00001	0.00003	36.96	36.98	36.98
0.00003	0.0001	235.2	235.3	235.3
0.0001	0.00055	3344	3345	3346
0.00055	0.003	42410	42430	42430
0.003	0.017	573700	574000	574100
0.017	0.025	483800	484100	484100
0.025	0.1	7541000	7545000	7545000
0.1	0.4	54460000	54490000	54500000
0.4	0.9	118800000	118900000	118900000
0.9	1.4	119400000	119400000	119400000
1.4	1.85	96710000	96760000	96770000
1.85	2.35	92900000	92950000	92950000
2.35	2.48	20410000	20420000	20420000
2.48	3	73860000	73900000	73900000
3	4.8	134900000	134900000	134900000
4.8	6.43	35320000	35340000	35350000
6.43	8.19	11130000	11130000	11130000
8.19	20	3815000	3817000	3818000
totals		770300000	770700000	770700000

## Formulas

1E-02 y	3E-02 y	0.1 y	0.3 y	1.0 y
0.000005928	0.000005928	0.000005928	0.000005927	0.000005927
0.000004241	0.000004241	0.000004241	0.000004241	0.000004241
0.000003075	0.000003075	0.000003075	0.000003075	0.000003074
0.00001005	0.00001005	0.00001005	0.00001005	0.00001005
0.000003828	0.000003828	0.000003828	0.000003828	0.000003828
0.00001212	0.00001212	0.00001212	0.00001213	0.00001213
0.00000931	0.00000931	0.00000931	0.00000931	0.000009311
0.00002048	0.00002044	0.00002033	0.00002014	0.00002001
0.0000338	0.00003374	0.00003355	0.00003324	0.00003301
0.0000642	0.00006408	0.00006371	0.00006311	0.00006267
0.00007442	0.00007432	0.00007391	0.00007322	0.00007271
0.00004416	0.0000441	0.00004388	0.00004351	0.00004323
0.00005536	0.0000553	0.00005507	0.00005468	0.0000544
0.00004841	0.00004835	0.00004811	0.0000477	0.0000474
0.01601	0.01592	0.01561	0.01487	0.01336
0.006033	0.005984	0.005825	0.005448	0.004706
0.008077	0.00797	0.007618	0.006795	0.00524
0.006657	0.006599	0.006408	0.005957	0.005078
0.05884	0.05832	0.05662	0.05261	0.04479
0.1397	0.1385	0.1345	0.1251	0.1067
0.3907	0.3874	0.3763	0.35	0.2988
0.7758	0.769	0.7466	0.6938	0.5908
1.428	1.416	1.376	1.28	1.094
1.225	1.214	1.18	1.1	0.9427
2.316	2.296	2.231	2.077	1.776
2.363	2.343	2.278	2.122	1.819
36.89	36.57	35.53	33.07	28.26
234.7	232.6	225.9	209.9	178.7
3337	3308	3212	2985	2543
42330	41960	40750	37890	32300
572600	567600	551200	512300	436400
482900	478700	464700	431800	367700
7526000	7460000	7242000	6729000	5729000
54360000	53880000	52310000	48600000	41380000
118600000	117500000	114100000	106000000	90260000
119100000	118100000	114600000	106300000	90320000
96510000	95620000	92700000	85810000	72440000
92690000	91790000	88830000	81870000	68420000
20360000	20150000	19480000	17890000	14840000
73670000	72910000	70390000	64480000	53110000
134500000	133100000	128600000	117800000	97020000
35260000	34960000	33980000	31660000	27120000
11110000	11010000	10710000	10000000	8605000
3809000	3778000	3677000	3437000	2964000
768600000	761400000	737600000	681600000	573000000



1.5 y

16 Assemblies

0.000005927	=16*O5
0.000004241	=16*O6
0.000003074	=16*O7
0.00001004	=16*O8
0.000003828	=16*O9
0.00001213	=16*O10
0.000009312	=16*O11
0.00002	=16*O12
0.000033	=16*O13
0.00006265	=16*O14
0.00007268	=16*O15
0.00004322	=16*O16
0.00005439	=16*O17
0.00004738	=16*O18
0.0128	=16*O19
0.004452	=16*O20
0.004761	=16*O21
0.004782	=16*O22
0.04217	=16*O23
0.1005	=16*O24
0.2816	=16*O25
0.5563	=16*O26
1.031	=16*O27
0.8895	=16*O28
1.675	=16*O29
1.716	=16*O30
26.64	=16*O31
168.2	=16*O32
2394	=16*O33
30430	=16*O34
411000	=16*O35
346200	=16*O36
5394000	=16*O37
38960000	=16*O38
84980000	=16*O39
84970000	=16*O40
68010000	=16*O41
64010000	=16*O42
13850000	=16*O43
49450000	=16*O44
90330000	=16*O45
25580000	=16*O46
8128000	=16*O47
2802000	=16*O48
537200000	=16*O49

Neutron ENDF5 Group

grp

ORIGEN ENDF5 44 Group

Max Energy

45	0.000000001	0.00001	
44	0.000000003	0.003	1
43	<b>0.0000000075</b>	0.0075	2
42	0.000000001	0.01	3
41	0.0000000253	0.0253	4
40	0.000000003	0.03	5
39	0.000000004	0.04	6
38	0.000000005	0.05	7
37	0.000000007	0.07	8
36	0.00000001	0.1	9
35	0.000000015	0.15	10
34	0.00000002	0.2	11
33	0.000000225	0.225	12
32	0.00000025	0.25	13
31	0.000000275	0.275	14
30	0.000000325	0.325	15
29	0.00000035	0.35	16
28	0.000000375	0.375	17
27	0.0000004	0.4	18
26	0.000000625	0.625	19
25	0.000001	1	20
24	0.00000177	1.77	21
23	0.000003	3	22
22	0.00000475	4.75	23
21	0.000006	6	24
20	0.0000081	8.1	25
19	0.00001	10	26
18	0.00003	30	27
17	0.0001	100	28
16	0.00055	550	29
15	0.003	3000	30
14	0.017	17000	31
13	0.025	25000	32
12	0.1	100000	33
11	0.4	400000	34
10	0.9	900000	35
9	1.4	1400000	36
8	1.85	1850000	37
7	2.35	2354000	38
6	2.48	2479000	39
5	3	3000000	40
4	4.8	4800000	41
3	6.43	6434000	42
2	8.19	8187300	43
1	20	20000000	44

boundaries	mev	initial	0.2 y	1.0 y
0.0000000001	0.000000003	0.000002169	0.000002169	0.000002169
0.000000003	<b>0.0000000075</b>	0.000001576	0.000001576	0.000001576
0.0000000075	0.00000001	0.000001517	0.000001517	0.000001517
0.00000001	0.0000000253	0.00000348	<b>0.00000348</b>	0.00000348
0.0000000253	0.00000003	0.000001734	0.000001734	0.000001734
0.00000003	0.00000004	0.000007172	0.000007173	0.000007175
0.00000004	0.00000005	0.000004584	0.000004584	0.000004585
0.00000005	0.00000007	0.000009982	0.000009949	0.000009932
0.00000007	0.0000001	0.00001668	0.00001662	0.0000166
0.0000001	0.00000015	0.00003203	0.00003192	0.00003186
0.00000015	0.0000002	0.00003886	0.00003886	0.00003879
0.0000002	0.000000225	0.00002457	0.00002457	0.00002454
0.000000225	0.00000025	0.00003381	0.00003381	0.00003378
0.00000025	0.000000275	0.00002699	0.00002699	0.00002695
0.000000275	0.000000325	0.008672	0.007966	0.006813
0.000000325	0.00000035	0.003379	0.00301	0.002428
0.00000035	0.000000375	0.004877	0.00405	0.002791
0.000000375	0.0000004	0.003772	0.003329	0.002634
0.0000004	0.000000625	0.03333	0.02938	0.0232
0.000000625	0.000001	0.07902	0.06975	0.05522
0.000001	0.00000177	0.2208	0.195	0.1546
0.00000177	0.000003	0.4392	0.3873	0.3059
0.000003	0.00000475	0.8066	0.7128	0.5657
0.00000475	0.000006	0.6899	0.6111	0.4872
0.000006	0.0000081	1.307	1.156	0.9184
0.0000081	0.00001	1.332	1.179	0.9399
0.00001	0.00003	20.83	18.41	14.61
0.00003	0.0001	132.9	117.2	92.56
0.0001	0.00055	1889	1666	1317
0.00055	0.003	23940	21130	16730
0.003	0.017	324200	285900	226100
0.017	0.025	273500	241200	190500
0.025	0.1	4263000	3758000	2968000
0.1	0.4	30790000	27140000	21430000
0.4	0.9	67160000	59200000	46750000
0.9	1.4	67600000	59500000	46820000
1.4	1.85	55050000	48250000	37650000
1.85	2.35	53310000	46420000	35710000
2.35	2.48	11780000	10210000	7772000
2.48	3	42840000	36960000	27880000
3	4.8	78100000	67380000	50810000
4.8	6.43	19850000	17580000	14000000
6.43	8.19	6228000	5531000	4434000
8.19	20	2130000	1895000	1525000
totals		439700000	384400000	298200000

1.3 y	1.5 y	12 Assemblies
0.000002169	0.000002169	=12*K5
0.000001576	0.000001576	=12*K6
0.000001517	0.000001517	=12*K7
0.00000348	0.00000348	=12*K8
0.000001734	0.000001734	=12*K9
0.000007176	0.000007177	=12*K10
0.000004585	0.000004585	=12*K11
0.000009931	0.000009931	=12*K12
0.0000166	0.0000166	=12*K13
0.00003186	0.00003186	=12*K14
0.00003879	0.00003879	=12*K15
0.00002454	0.00002454	=12*K16
0.00003378	0.00003378	=12*K17
0.00002695	0.00002695	=12*K18
0.006555	0.006455	=12*K19
0.002306	0.00226	=12*K20
0.002544	0.002456	=12*K21
0.00249	0.002437	=12*K22
0.02192	0.02145	=12*K23
0.0522	0.05108	=12*K24
0.1462	0.1431	=12*K25
0.289	0.2828	=12*K26
0.5351	0.5238	=12*K27
0.4613	0.4517	=12*K28
0.8691	0.8508	=12*K29
0.8899	0.8714	=12*K30
13.82	13.53	=12*K31
87.45	85.57	=12*K32
1244	1218	=12*K33
15810	15470	=12*K34
213600	209000	=12*K35
180000	176100	=12*K36
2804000	2744000	=12*K37
20250000	19810000	=12*K38
44170000	43220000	=12*K39
44200000	43240000	=12*K40
35470000	34670000	=12*K41
33530000	32730000	=12*K42
7279000	7100000	=12*K43
26050000	25390000	=12*K44
47470000	46250000	=12*K45
13250000	12970000	=12*K46
4204000	4118000	=12*K47
1447000	1418000	=12*K48
280500000	274100000	=12*K49



Neutron ENDF5 Group

gfp

ORIGEN ENDF5 44 Group

Max Energy

45	0.000000001	0.00001
44	0.000000003	0.003
43	<b>0.0000000075</b>	0.0075
42	0.000000001	0.01
41	0.0000000253	0.0253
40	0.000000003	0.03
39	0.000000004	0.04
38	0.000000005	0.05
37	0.000000007	0.07
36	0.00000001	0.1
35	0.000000015	0.15
34	0.00000002	0.2
33	0.0000000225	0.225
32	0.000000025	0.25
31	0.0000000275	0.275
30	0.0000000325	0.325
29	0.000000035	0.35
28	0.0000000375	0.375
27	0.00000004	0.4
26	0.0000000625	0.625
25	0.0000001	1
24	0.000000177	1.77
23	0.0000003	3
22	0.000000475	4.75
21	0.0000006	6
20	0.00000081	8.1
19	0.000001	10
18	0.000003	30
17	0.00001	100
16	0.000055	550
15	0.003	3000
14	0.017	17000
13	0.025	25000
12	0.1	100000
11	0.4	400000
10	0.9	900000
9	1.4	1400000
8	1.85	1850000
7	2.35	2354000
6	2.48	2479000
5	3	3000000
4	4.8	4800000
3	6.43	6434000
2	8.19	8187300
1	20	20000000

	boundaries	mev	initial
1	0.0000000001	0.000000003	0.000001366
2	0.000000003	<b>0.0000000075</b>	0.000001003
3	0.0000000075	0.000000001	0.000001133
4	0.000000001	0.0000000253	0.000002103
5	0.0000000253	0.000000003	0.000001261
6	0.000000003	0.000000004	0.000005936
7	0.000000004	0.000000005	0.000003489
8	0.000000005	0.000000007	0.000007614
9	0.000000007	0.000000001	0.0000128
10	0.000000001	0.000000015	0.00002471
11	0.000000015	0.000000002	0.00003085
12	0.000000002	0.0000000225	0.00002003
13	0.0000000225	0.000000025	0.00002855
14	0.000000025	0.0000000275	0.00002201
15	0.0000000275	0.0000000325	0.00644
16	0.0000000325	0.000000035	0.00255
17	0.000000035	0.0000000375	0.003803
18	0.0000000375	0.00000004	0.002862
19	0.00000004	0.0000000625	0.02528
20	0.0000000625	0.00000001	0.0599
21	0.00000001	0.000000177	0.1673
22	0.000000177	0.00000003	0.333
23	0.00000003	0.000000475	0.6109
24	0.000000475	0.00000006	0.522
25	0.00000006	0.00000081	0.9894
26	0.00000081	0.00000001	1.007
27	0.00000001	0.0000003	15.77
28	0.00000003	0.00000001	100.8
29	0.00000001	0.00055	1433
30	0.00055	0.003	18150
31	0.003	0.017	245800
32	0.017	0.025	207400
33	0.025	0.1	3233000
34	0.1	0.4	23350000
35	0.4	0.9	50930000
36	0.9	1.4	51310000
37	1.4	1.85	41880000
38	1.85	2.35	40710000
39	2.35	2.48	9018000
40	2.48	3	32870000
41	3	4.8	59880000
42	4.8	6.43	15020000
43	6.43	8.19	4703000
44	8.19	20	1606000
	totals		335000000

1E-03 y	3E-03 y	1E-02 y	3E-02 y	0.1 y
0.000001366	0.000001366	0.000001366	0.000001366	0.000001366
0.000001003	0.000001003	0.000001003	0.000001003	0.000001003
0.000001134	0.000001134	0.000001134	0.000001134	0.000001134
0.000002103	0.000002103	0.000002103	0.000002103	0.000002103
0.000001261	0.000001261	0.000001261	0.000001261	0.000001261
0.000005936	0.000005936	0.000005936	0.000005936	0.000005936
0.000003489	0.000003489	0.000003489	0.000003489	0.000003489
0.000007614	0.000007614	0.000007614	0.000007612	0.000007608
0.0000128	0.0000128	0.0000128	0.0000128	0.00001279
0.00002471	0.0000247	0.0000247	0.0000247	0.00002469
0.00003086	0.00003088	0.00003093	0.00003096	0.00003095
0.00002004	0.00002005	0.00002008	0.00002009	0.00002009
0.00002855	0.00002856	0.00002859	0.00002861	0.0000286
0.00002202	0.00002203	0.00002206	0.00002207	0.00002207
0.006445	0.006447	0.006431	0.006375	0.006191
0.002552	0.002552	0.002544	0.002514	0.002418
0.003805	0.003804	0.003785	0.003719	0.003502
0.002864	0.002864	0.002854	0.002819	0.002703
0.0253	0.0253	0.02521	0.0249	0.02387
0.05994	0.05994	0.05973	0.05899	0.05657
0.1674	0.1674	0.1668	0.1648	0.1581
0.3333	0.3333	0.3321	0.328	0.3144
0.6113	0.6114	0.6093	0.6018	0.5773
0.5223	0.5224	0.5206	0.5143	0.4937
0.9901	0.9901	0.9867	0.9747	0.9351
1.008	1.008	1.005	0.9927	0.9528
15.78	15.78	15.73	15.54	14.9
100.9	100.9	100.5	99.26	95.14
1434	1434	1429	1411	1353
18160	18160	18100	17880	17140
246000	246000	245100	242100	232100
207600	207600	206900	204300	195800
3235000	3236000	3224000	3184000	3052000
23370000	23370000	23280000	22990000	22040000
50960000	50970000	50790000	50150000	48070000
51340000	51350000	51160000	50520000	48400000
41910000	41910000	41750000	41210000	39430000
40740000	40740000	40580000	40030000	38230000
9024000	9024000	8988000	8863000	8451000
32900000	32890000	32760000	32290000	30750000
59920000	59910000	59670000	58810000	56010000
15030000	15030000	14980000	14800000	14200000
4706000	4706000	4691000	4635000	4453000
1607000	1607000	1602000	1584000	1522000
335200000	335200000	333900000	329500000	315100000

0.3 y	1.0 y	1.5 y	Four Assemblies
0.000001366	0.000001366	0.000001366	=4*O5
0.000001003	0.000001003	0.000001003	=4*O6
0.000001134	0.000001133	0.000001133	=4*O7
0.000002103	0.000002103	0.000002103	=4*O8
0.000001261	0.000001261	0.000001261	=4*O9
0.000005936	0.000005938	0.000005939	=4*O10
0.000003489	0.00000349	0.00000349	=4*O11
0.000007601	0.000007597	0.000007597	=4*O12
0.00001278	0.00001277	0.00001277	=4*O13
0.00002466	0.00002465	0.00002465	=4*O14
0.00003093	0.00003091	0.00003091	=4*O15
0.00002008	0.00002007	0.00002007	=4*O16
0.00002859	0.00002858	0.00002858	=4*O17
0.00002205	0.00002204	0.00002205	=4*O18
0.005755	0.004906	0.004621	=4*O19
0.002191	0.00176	0.001624	=4*O20
0.002996	0.002056	0.00178	=4*O21
0.002431	0.001915	0.001755	=4*O22
0.02145	0.01686	0.01543	=4*O23
0.05088	0.04009	0.03673	=4*O24
0.1422	0.1122	0.1029	=4*O25
0.2825	0.2221	0.2033	=4*O26
0.5197	0.4105	0.3764	=4*O27
0.4453	0.3533	0.3246	=4*O28
0.8424	0.6663	0.6113	=4*O29
0.8593	0.6817	0.6261	=4*O30
13.42	10.6	9.724	=4*O31
85.49	67.21	61.52	=4*O32
1216	956.2	875.5	=4*O33
15410	12140	11120	=4*O34
208600	164100	150300	=4*O35
176000	138300	126600	=4*O36
2742000	2155000	1973000	=4*O37
19800000	15560000	14250000	=4*O38
43190000	33950000	31070000	=4*O39
43430000	34010000	31100000	=4*O40
35270000	27390000	24960000	=4*O41
34000000	26040000	23610000	=4*O42
7488000	5677000	5126000	=4*O43
27150000	20390000	18340000	=4*O44
49440000	37110000	33370000	=4*O45
12800000	10150000	9315000	=4*O46
4025000	3211000	2955000	=4*O47
1378000	1104000	1017000	=4*O48
281100000	217100000	197400000	=4*O49



Neutron ENDF5 Group

grp

ORIGEN ENDF5 44 Group

Max Energy

45	0.000000001	0.00001	
44	0.000000003	0.003	1
43	<b>0.0000000075</b>	0.0075	2
42	0.000000001	0.01	3
41	0.0000000253	0.0253	4
40	0.000000003	0.03	5
39	0.000000004	0.04	6
38	0.000000005	0.05	7
37	0.000000007	0.07	8
36	0.00000001	0.1	9
35	0.000000015	0.15	10
34	0.00000002	0.2	11
33	0.000000225	0.225	12
32	0.000000025	0.25	13
31	0.000000275	0.275	14
30	0.000000325	0.325	15
29	0.00000035	0.35	16
28	0.000000375	0.375	17
27	0.0000004	0.4	18
26	0.000000625	0.625	19
25	0.000001	1	20
24	0.00000177	1.77	21
23	0.000003	3	22
22	0.00000475	4.75	23
21	0.000006	6	24
20	0.0000081	8.1	25
19	0.00001	10	26
18	0.00003	30	27
17	0.0001	100	28
16	0.00055	550	29
15	0.003	3000	30
14	0.017	17000	31
13	0.025	25000	32
12	0.1	100000	33
11	0.4	400000	34
10	0.9	900000	35
9	1.4	1400000	36
8	1.85	1850000	37
7	2.35	2354000	38
6	2.48	2479000	39
5	3	3000000	40
4	4.8	4800000	41
3	6.43	6434000	42
2	8.19	8187300	43
1	20	20000000	44

boundaries	mev	initial	0.1 y	1.0 y
0.0000000001	0.000000003	0.0000006346	0.0000006346	0.0000006346
0.000000003	<b>0.0000000075</b>	0.0000004776	0.0000004776	0.0000004775
0.0000000075	0.00000001	0.000000714	0.0000007141	0.000000714
0.00000001	0.0000000253	0.0000008836	0.0000008836	0.0000008835
0.0000000253	0.00000003	0.0000007932	0.0000007932	0.0000007933
0.00000003	0.00000004	0.000004537	0.000004537	0.000004538
0.00000004	0.00000005	0.000002364	0.000002364	0.000002365
0.00000005	0.00000007	0.00000519	0.000005189	0.000005188
0.00000007	0.0000001	0.0000088	0.000008799	0.000008797
0.0000001	0.00000015	0.00001711	0.00001711	0.00001711
0.00000015	0.0000002	0.0000234	0.00002351	0.00002351
0.0000002	0.000000225	0.00001561	0.00001567	0.00001567
0.000000225	0.00000025	0.00002297	0.00002303	0.00002303
0.00000025	0.000000275	0.00001711	0.00001717	0.00001716
0.000000275	0.000000325	0.004057	0.003864	0.002893
0.000000325	0.00000035	0.001659	0.001556	0.001053
0.00000035	0.000000375	0.002627	0.002393	0.001274
0.000000375	0.0000004	0.001881	0.001758	0.001154
0.0000004	0.000000625	0.01661	0.01551	0.01014
0.000000625	0.000001	0.03929	0.03671	0.02408
0.000001	0.00000177	0.1096	0.1025	0.06735
0.00000177	0.000003	0.2186	0.2041	0.1334
0.000003	0.00000475	0.4001	0.374	0.2462
0.00000475	0.000006	0.3411	0.3191	0.2117
0.000006	0.0000081	0.6474	0.6054	0.3994
0.0000081	0.00001	0.6584	0.616	0.4083
0.00001	0.00003	10.32	9.652	6.356
0.00003	0.0001	66.17	61.79	40.37
0.0001	0.00055	940.3	878.2	574.3
0.00055	0.003	11900	11120	7291
0.003	0.017	161300	150700	98600
0.017	0.025	136200	127200	83120
0.025	0.1	2123000	1982000	1295000
0.1	0.4	15330000	14320000	9350000
0.4	0.9	33440000	31220000	20390000
0.9	1.4	33740000	31490000	20450000
1.4	1.85	27670000	25770000	16520000
1.85	2.35	27090000	25170000	15800000
2.35	2.48	6033000	5593000	3458000
2.48	3	22080000	20440000	12460000
3	4.8	40150000	37140000	22590000
4.8	6.43	9809000	9175000	6071000
6.43	8.19	3061000	2868000	1917000
8.19	20	1043000	978200	658100
totals		221900000	206400000	131100000

1.1 y	1.2 y	1.2 y	1.3 y	1.4 y
0.0000006345	0.0000006345	0.0000006345	0.0000006345	0.0000006345
0.0000004775	0.0000004775	0.0000004775	0.0000004775	0.0000004775
0.000000714	0.000000714	0.000000714	0.000000714	0.000000714
0.0000008835	0.0000008835	0.0000008835	0.0000008835	0.0000008835
0.0000007933	0.0000007933	0.0000007933	0.0000007933	0.0000007933
0.000004538	0.000004538	0.000004538	0.000004538	0.000004538
0.000002365	0.000002365	0.000002365	0.000002365	0.000002365
0.000005188	0.000005188	0.000005188	0.000005189	0.000005189
0.000008798	0.000008798	0.000008798	0.000008798	0.000008798
0.00001711	0.00001711	0.00001711	0.00001711	0.00001711
0.00002351	0.00002351	0.00002351	0.00002351	0.00002351
0.00001567	0.00001567	0.00001567	0.00001567	0.00001567
0.00002303	0.00002303	0.00002303	0.00002303	0.00002303
0.00001716	0.00001716	0.00001716	0.00001716	0.00001716
0.002849	0.00281	0.002775	0.002744	0.002714
0.001032	0.001012	0.000995	0.00098	0.0009654
0.001228	0.001187	0.001151	0.00112	0.00109
0.001128	0.001105	0.001085	0.001067	0.00105
0.009912	0.009707	0.009525	0.009368	0.009215
0.02354	0.02306	0.02263	0.02226	0.0219
0.06586	0.06451	0.06332	0.06229	0.06129
0.1304	0.1277	0.1253	0.1232	0.1212
0.2408	0.2359	0.2315	0.2278	0.2241
0.2071	0.203	0.1993	0.1961	0.193
0.3907	0.3828	0.3758	0.3697	0.3638
0.3995	0.3915	0.3844	0.3783	0.3724
6.216	6.09	5.978	5.881	5.787
39.46	38.64	37.91	37.29	36.68
561.4	549.8	539.5	530.6	522
7128	6982	6852	6740	6631
96380	94390	92630	91110	89630
81240	79560	78070	76780	75530
1266000	1239000	1216000	1196000	1177000
9138000	8949000	8781000	8636000	8495000
19930000	19520000	19150000	18830000	18520000
19980000	19560000	19190000	18870000	18560000
16130000	15780000	15470000	15200000	14940000
15400000	15050000	14740000	14470000	14210000
3369000	3288000	3218000	3157000	3098000
12120000	11820000	11560000	11330000	11110000
21980000	21440000	20950000	20540000	20140000
5938000	5819000	5713000	5622000	5533000
1876000	1840000	1808000	1779000	1752000
644300	632000	621000	611500	602300
128000000	125100000	122600000	120400000	118300000

1.5 y

Eight Assemblies

0.0000006345	=8*O5
0.0000004775	=8*O6
0.000000714	=8*O7
0.0000008835	=8*O8
0.0000007933	=8*O9
0.000004539	=8*O10
0.000002365	=8*O11
0.000005189	=8*O12
0.000008798	=8*O13
0.00001711	=8*O14
0.00002351	=8*O15
0.00001567	=8*O16
0.00002304	=8*O17
0.00001716	=8*O18
0.002688	=8*O19
0.0009528	=8*O20
0.001064	=8*O21
0.001035	=8*O22
0.009083	=8*O23
0.02159	=8*O24
0.06043	=8*O25
0.1195	=8*O26
0.221	=8*O27
0.1904	=8*O28
0.3587	=8*O29
0.3672	=8*O30
5.706	=8*O31
36.15	=8*O32
514.5	=8*O33
6537	=8*O34
88350	=8*O35
74450	=8*O36
1160000	=8*O37
8373000	=8*O38
18260000	=8*O39
18290000	=8*O40
14710000	=8*O41
13980000	=8*O42
3047000	=8*O43
10930000	=8*O44
19790000	=8*O45
5456000	=8*O46
1728000	=8*O47
594300	=8*O48
116500000	=8*O49



Neutron ENDF5 Group

grp

ORIGEN ENDF5 44 Group

Max Energy

45	0.000000001	0.00001	
44	0.000000003	0.003	1
43	<b>0.0000000075</b>	0.0075	2
42	0.00000001	0.01	3
41	0.0000000253	0.0253	4
40	0.00000003	0.03	5
39	0.00000004	0.04	6
38	0.00000005	0.05	7
37	0.00000007	0.07	8
36	0.0000001	0.1	9
35	0.00000015	0.15	10
34	0.0000002	0.2	11
33	0.000000225	0.225	12
32	0.00000025	0.25	13
31	0.000000275	0.275	14
30	0.000000325	0.325	15
29	0.00000035	0.35	16
28	0.000000375	0.375	17
27	0.0000004	0.4	18
26	0.000000625	0.625	19
25	0.000001	1	20
24	0.00000177	1.77	21
23	0.000003	3	22
22	0.00000475	4.75	23
21	0.000006	6	24
20	0.0000081	8.1	25
19	0.00001	10	26
18	0.00003	30	27
17	0.0001	100	28
16	0.00055	550	29
15	0.003	3000	30
14	0.017	17000	31
13	0.025	25000	32
12	0.1	100000	33
11	0.4	400000	34
10	0.9	900000	35
9	1.4	1400000	36
8	1.85	1850000	37
7	2.35	2354000	38
6	2.48	2479000	39
5	3	3000000	40
4	4.8	4800000	41
3	6.43	6434000	42
2	8.19	8187300	43
1	20	20000000	44

boundaries	mev	initial	0.1 y	1.1 y
0.0000000001	0.000000003	0.0000008403	0.0000008403	0.0000008402
0.000000003	<b>0.0000000075</b>	0.0000006261	0.0000006261	0.000000626
0.0000000075	0.00000001	0.0000008425	0.0000008425	0.0000008425
0.00000001	0.0000000253	0.000001221	0.000001221	0.000001221
0.0000000253	0.00000003	0.0000009284	0.0000009284	0.0000009285
0.00000003	0.00000004	0.000004952	0.000004952	0.000004954
0.00000004	0.00000005	0.000002692	0.000002693	0.000002693
0.00000005	0.00000007	0.000005896	0.000005894	0.000005892
0.00000007	0.0000001	0.000009968	0.000009965	0.000009962
0.0000001	0.00000015	0.00001933	0.00001933	0.00001932
0.00000015	0.0000002	0.00002567	0.00002578	0.00002577
0.0000002	0.000000225	0.00001697	0.00001703	0.00001702
0.000000225	0.00000025	0.00002468	0.00002474	0.00002474
0.00000025	0.000000275	0.0000186	0.00001866	0.00001866
0.000000275	0.000000325	0.004896	0.00468	0.003532
0.000000325	0.00000035	0.001978	0.001863	0.001272
0.00000035	0.000000375	0.003065	0.002803	0.001495
0.000000375	0.0000004	0.002234	0.002096	0.001387
0.0000004	0.000000625	0.01973	0.0185	0.01219
0.000000625	0.000001	0.0467	0.04381	0.02898
0.000001	0.00000177	0.1304	0.1223	0.08111
0.00000177	0.000003	0.2598	0.2436	0.1605
0.000003	0.00000475	0.4759	0.4466	0.2966
0.00000475	0.000006	0.406	0.3814	0.2552
0.000006	0.0000081	0.7703	0.7232	0.4813
0.0000081	0.00001	0.7837	0.7362	0.4923
0.00001	0.00003	12.28	11.53	7.659
0.00003	0.0001	78.63	73.72	48.58
0.0001	0.00055	1118	1048	691.2
0.00055	0.003	14150	13270	8778
0.003	0.017	191700	179800	118700
0.017	0.025	161900	151800	100000
0.025	0.1	2523000	2365000	1558000
0.1	0.4	18220000	17080000	11250000
0.4	0.9	39740000	37250000	24540000
0.9	1.4	40080000	37540000	24600000
1.4	1.85	32810000	30680000	19830000
1.85	2.35	32040000	29880000	18900000
2.35	2.48	7121000	6628000	4126000
2.48	3	26030000	24180000	14830000
3	4.8	47350000	43980000	26940000
4.8	6.43	11680000	10970000	7322000
6.43	8.19	3650000	3433000	2316000
8.19	20	1245000	1172000	795600
totals		262800000	245500000	157200000

1.2 y	1.2 y	1.3 y	1.4 y	1.5 y
0.0000008402	0.0000008402	0.0000008402	0.0000008402	0.0000008402
0.000000626	0.000000626	0.000000626	0.000000626	0.000000626
0.0000008425	0.0000008425	0.0000008425	0.0000008425	0.0000008425
0.000001221	0.000001221	0.000001221	0.000001221	0.000001221
0.0000009286	0.0000009286	0.0000009286	0.0000009286	0.0000009286
0.000004954	0.000004954	0.000004954	0.000004954	0.000004954
0.000002693	0.000002693	0.000002693	0.000002693	0.000002693
0.000005892	0.000005892	0.000005892	0.000005892	0.000005893
0.000009962	0.000009962	0.000009962	0.000009962	0.000009962
0.00001932	0.00001932	0.00001932	0.00001932	0.00001932
0.00002577	0.00002577	0.00002577	0.00002577	0.00002577
0.00001702	0.00001702	0.00001702	0.00001702	0.00001702
0.00002474	0.00002474	0.00002474	0.00002474	0.00002474
0.00001866	0.00001866	0.00001866	0.00001866	0.00001866
0.003487	0.003446	0.00341	0.003376	0.003345
0.00125	0.00123	0.001212	0.001196	0.001182
0.001449	0.001408	0.001372	0.001339	0.00131
0.001361	0.001337	0.001316	0.001298	0.001281
0.01196	0.01175	0.01157	0.0114	0.01125
0.02843	0.02795	0.02751	0.02711	0.02676
0.07959	0.07823	0.07701	0.07591	0.07492
0.1575	0.1547	0.1523	0.1501	0.1481
0.2911	0.2861	0.2817	0.2777	0.274
0.2505	0.2464	0.2426	0.2392	0.2362
0.4724	0.4644	0.4573	0.4508	0.4449
0.4833	0.4752	0.468	0.4614	0.4555
7.516	7.388	7.274	7.17	7.077
47.66	46.83	46.09	45.42	44.82
678.1	666.3	655.8	646.3	637.8
8612	8464	8332	8211	8104
116400	114400	112600	111000	109500
98120	96410	94890	93510	92270
1529000	1502000	1478000	1457000	1437000
11040000	10850000	10670000	10520000	10380000
24070000	23650000	23280000	22940000	22630000
24120000	23700000	23320000	22970000	22660000
19430000	19080000	18760000	18470000	18220000
18500000	18140000	17820000	17540000	17280000
4036000	3955000	3883000	3819000	3761000
14500000	14200000	13930000	13690000	13480000
26320000	25770000	25290000	24850000	24450000
7188000	7067000	6959000	6861000	6773000
2274000	2237000	2204000	2174000	2147000
781600	769100	757800	747600	738400
154000000	151100000	148600000	146200000	144200000

Eight Assemblies

=8\*N5  
=8\*N6  
=8\*N7  
=8\*N8  
=8\*N9  
=8\*N10  
=8\*N11  
=8\*N12  
=8\*N13  
=8\*N14  
=8\*N15  
=8\*N16  
=8\*N17  
=8\*N18  
=8\*N19  
=8\*N20  
=8\*N21  
=8\*N22  
=8\*N23  
=8\*N24  
=8\*N25  
=8\*N26  
=8\*N27  
=8\*N28  
=8\*N29  
=8\*N30  
=8\*N31  
=8\*N32  
=8\*N33  
=8\*N34  
=8\*N35  
=8\*N36  
=8\*N37  
=8\*N38  
=8\*N39  
=8\*N40  
=8\*N41  
=8\*N42  
=8\*N43  
=8\*N44  
=8\*N45  
=8\*N46  
=8\*N47  
=8\*N48  
=8\*N49



Neutron ENDF5 Group

grp

ORIGEN ENDF5 44 Group

Max Energy

45	0.000000001	0.00001	
44	0.000000003	0.003	1
43	<b>0.0000000075</b>	0.0075	2
42	0.000000001	0.01	3
41	0.0000000253	0.0253	4
40	0.000000003	0.03	5
39	0.000000004	0.04	6
38	0.000000005	0.05	7
37	0.000000007	0.07	8
36	0.000000001	0.1	9
35	0.000000015	0.15	10
34	0.000000002	0.2	11
33	0.0000000225	0.225	12
32	0.000000025	0.25	13
31	0.0000000275	0.275	14
30	0.0000000325	0.325	15
29	0.000000035	0.35	16
28	0.0000000375	0.375	17
27	0.000000004	0.4	18
26	0.0000000625	0.625	19
25	0.000000001	1	20
24	0.000000177	1.77	21
23	0.000000003	3	22
22	0.000000475	4.75	23
21	0.000000006	6	24
20	0.000000081	8.1	25
19	0.000000001	10	26
18	0.000000003	30	27
17	0.000000001	100	28
16	0.000000055	550	29
15	0.003	3000	30
14	0.017	17000	31
13	0.025	25000	32
12	0.1	100000	33
11	0.4	400000	34
10	0.9	900000	35
9	1.4	1400000	36
8	1.85	1850000	37
7	2.35	2354000	38
6	2.48	2479000	39
5	3	3000000	40
4	4.8	4800000	41
3	6.43	6434000	42
2	8.19	8187300	43
1	20	20000000	44

boundaries	mev	initial	0.1 y	1.1 y
0.0000000001	0.000000003	0.000001352	0.000001352	0.000001352
0.000000003	<b>0.0000000075</b>	0.0000009932	0.0000009932	0.0000009931
0.0000000075	0.000000001	0.000001125	0.000001125	0.000001125
0.000000001	0.0000000253	0.00000208	0.00000208	0.000002079
0.0000000253	0.000000003	0.000001243	0.000001243	0.000001243
0.000000003	0.000000004	0.000005817	0.000005817	0.000005819
0.000000004	0.000000005	0.000003432	0.000003432	0.000003433
0.000000005	0.000000007	0.000007487	0.000007482	0.000007472
0.000000007	0.000000001	0.00001259	0.00001258	0.00001256
0.000000001	0.000000015	0.00002429	0.00002427	0.00002424
0.000000015	0.000000002	0.00003068	0.00003078	0.00003074
0.000000002	0.000000225	0.00001986	0.00001991	0.0000199
0.000000225	0.000000025	0.00002817	0.00002822	0.00002821
0.000000025	0.000000275	0.0000218	0.00002186	0.00002184
0.000000275	0.000000325	0.006592	0.006338	0.004966
0.000000325	0.00000035	0.002608	0.002474	0.001773
0.00000035	0.000000375	0.003886	0.00358	0.002044
0.000000375	0.00000004	0.002927	0.002765	0.001926
0.00000004	0.000000625	0.02586	0.02441	0.01695
0.000000625	0.0000001	0.06127	0.05787	0.04033
0.0000001	0.00000177	0.1711	0.1617	0.1129
0.00000177	0.0000003	0.3406	0.3216	0.2234
0.0000003	0.00000475	0.6249	0.5906	0.4131
0.00000475	0.0000006	0.5339	0.5051	0.3557
0.0000006	0.0000081	1.012	0.9567	0.6706
0.0000081	0.000001	1.031	0.9748	0.6861
0.000001	0.000003	16.13	15.25	10.67
0.000003	0.00001	103.1	97.33	67.6
0.00001	0.00055	1465	1384	961.9
0.00055	0.003	18560	17530	12220
0.003	0.017	251400	237400	165100
0.017	0.025	212200	200300	139100
0.025	0.1	3307000	3122000	2168000
0.1	0.4	23880000	22550000	15660000
0.4	0.9	52090000	49180000	34150000
0.9	1.4	52480000	49510000	34210000
1.4	1.85	42840000	40340000	27520000
1.85	2.35	41640000	39100000	26140000
2.35	2.48	9223000	8645000	5694000
2.48	3	33620000	31460000	20440000
3	4.8	61230000	57290000	37190000
4.8	6.43	15360000	14530000	10210000
6.43	8.19	4811000	4556000	3234000
8.19	20	1643000	1558000	1112000
totals		342600000	322300000	218000000

1.2 y	1.2 y	1.3 y	1.4 y	1.5 y
0.000001352	0.000001352	0.000001352	0.000001352	0.000001352
0.0000009931	0.0000009931	0.0000009931	0.000000993	0.000000993
0.000001125	0.000001125	0.000001125	0.000001125	0.000001125
0.000002079	0.000002079	0.000002079	0.000002079	0.000002079
0.000001243	0.000001243	0.000001243	0.000001243	0.000001243
0.000005819	0.00000582	0.00000582	0.00000582	0.00000582
0.000003433	0.000003433	0.000003433	0.000003433	0.000003433
0.000007472	0.000007472	0.000007472	0.000007472	0.000007472
0.00001256	0.00001256	0.00001256	0.00001256	0.00001256
0.00002424	0.00002424	0.00002424	0.00002424	0.00002424
0.00003074	0.00003074	0.00003074	0.00003074	0.00003074
0.0000199	0.0000199	0.0000199	0.0000199	0.0000199
0.00002821	0.00002821	0.00002821	0.00002821	0.00002821
0.00002184	0.00002184	0.00002184	0.00002184	0.00002184
0.004911	0.004862	0.004818	0.004774	0.004736
0.001747	0.001723	0.001702	0.001682	0.001664
0.001989	0.00194	0.001899	0.001858	0.001823
0.001895	0.001867	0.001842	0.001818	0.001797
0.01667	0.01642	0.01621	0.01599	0.01581
0.03967	0.03908	0.03857	0.03807	0.03763
0.1111	0.1095	0.108	0.1066	0.1054
0.2197	0.2164	0.2136	0.2108	0.2083
0.4064	0.4004	0.3952	0.3901	0.3857
0.35	0.345	0.3406	0.3363	0.3326
0.6598	0.6501	0.6418	0.6336	0.6264
0.6752	0.6655	0.657	0.6487	0.6415
10.5	10.34	10.21	10.08	9.964
66.48	65.49	64.62	63.78	63.04
946	931.9	919.6	907.6	897.1
12020	11840	11680	11530	11400
162400	160000	157900	155800	154000
136800	134800	133000	131300	129800
2132000	2100000	2072000	2045000	2022000
15400000	15170000	14970000	14770000	14600000
33580000	33080000	32640000	32210000	31840000
33630000	33120000	32680000	32240000	31860000
27040000	26620000	26250000	25890000	25570000
25660000	25230000	24860000	24500000	24190000
5586000	5489000	5406000	5324000	5254000
20030000	19670000	19360000	19060000	18800000
36450000	35800000	35230000	34680000	34200000
10050000	9905000	9778000	9654000	9546000
3184000	3139000	3100000	3061000	3028000
1095000	1080000	1067000	1054000	1042000
214200000	210700000	207700000	204800000	202300000

16 Assemblies

=16\*N5  
=16\*N6  
=16\*N7  
=16\*N8  
=16\*N9  
=16\*N10  
=16\*N11  
=16\*N12  
=16\*N13  
=16\*N14  
=16\*N15  
=16\*N16  
=16\*N17  
=16\*N18  
=16\*N19  
=16\*N20  
=16\*N21  
=16\*N22  
=16\*N23  
=16\*N24  
=16\*N25  
=16\*N26  
=16\*N27  
=16\*N28  
=16\*N29  
=16\*N30  
=16\*N31  
=16\*N32  
=16\*N33  
=16\*N34  
=16\*N35  
=16\*N36  
=16\*N37  
=16\*N38  
=16\*N39  
=16\*N40  
=16\*N41  
=16\*N42  
=16\*N43  
=16\*N44  
=16\*N45  
=16\*N46  
=16\*N47  
=16\*N48  
=16\*N49



Neutron ENDF5 Group

gfp

ORIGEN ENDF5 44 Group

	Max Energy		
45	0.000000001	0.00001	
44	0.000000003	0.003	1
43	<b>0.0000000075</b>	0.0075	2
42	0.000000001	0.01	3
41	0.0000000253	0.0253	4
40	0.000000003	0.03	5
39	0.000000004	0.04	6
38	0.000000005	0.05	7
37	0.000000007	0.07	8
36	0.00000001	0.1	9
35	0.000000015	0.15	10
34	0.00000002	0.2	11
33	0.0000000225	0.225	12
32	0.000000025	0.25	13
31	0.0000000275	0.275	14
30	0.0000000325	0.325	15
29	0.000000035	0.35	16
28	0.0000000375	0.375	17
27	0.00000004	0.4	18
26	0.0000000625	0.625	19
25	0.0000001	1	20
24	0.000000177	1.77	21
23	0.0000003	3	22
22	0.000000475	4.75	23
21	0.0000006	6	24
20	0.00000081	8.1	25
19	0.000001	10	26
18	0.000003	30	27
17	0.0001	100	28
16	0.00055	550	29
15	0.003	3000	30
14	0.017	17000	31
13	0.025	25000	32
12	0.1	100000	33
11	0.4	400000	34
10	0.9	900000	35
9	1.4	1400000	36
8	1.85	1850000	37
7	2.35	2354000	38
6	2.48	2479000	39
5	3	3000000	40
4	4.8	4800000	41
3	6.43	6434000	42
2	8.19	8187300	43
1	20	20000000	44

boundaries	mev	initial	0.1 y	1.1 y
0.0000000001	0.000000003	0.000001223	0.000001223	0.000001223
0.000000003	<b>0.0000000075</b>	0.0000009013	0.0000009013	0.0000009012
0.0000000075	0.00000001	0.000001062	0.000001062	0.000001062
0.00000001	0.0000000253	0.00000186	0.00000186	0.000001859
0.0000000253	0.00000003	0.000001166	0.000001166	0.000001166
0.00000003	0.00000004	0.000005614	0.000005615	0.000005617
0.00000004	0.00000005	0.000003254	0.000003255	0.000003255
0.00000005	0.00000007	0.000007106	0.000007101	0.000007094
0.00000007	0.0000001	0.00001196	0.00001195	0.00001194
0.0000001	0.00000015	0.00002311	0.00002309	0.00002307
0.00000015	0.0000002	0.00002928	0.00002939	0.00002936
0.0000002	0.000000225	0.00001907	0.00001912	0.00001911
0.000000225	0.00000025	0.00002725	0.00002731	0.0000273
0.00000025	0.000000275	0.00002094	0.000021	0.00002098
0.000000275	0.000000325	0.006135	0.005894	0.004595
0.000000325	0.00000035	0.002434	0.002307	0.001643
0.00000035	0.000000375	0.003647	0.003356	0.001898
0.000000375	0.0000004	0.002735	0.002581	0.001785
0.0000004	0.000000625	0.02416	0.02279	0.01571
0.000000625	0.000001	0.05722	0.054	0.03737
0.000001	0.00000177	0.1598	0.1509	0.1046
0.00000177	0.000003	0.3182	0.3001	0.207
0.000003	0.00000475	0.5836	0.551	0.3827
0.00000475	0.000006	0.4985	0.4712	0.3295
0.000006	0.0000081	0.945	0.8926	0.6212
0.0000081	0.00001	0.9622	0.9094	0.6356
0.00001	0.00003	15.07	14.23	9.884
0.00003	0.0001	96.3	90.83	62.63
0.0001	0.00055	1369	1291	891.2
0.00055	0.003	17340	16360	11320
0.003	0.017	234800	221600	153000
0.017	0.025	198200	187000	128900
0.025	0.1	3089000	2914000	2009000
0.1	0.4	22310000	21040000	14510000
0.4	0.9	48660000	45900000	31640000
0.9	1.4	49030000	46210000	31690000
1.4	1.85	40030000	37670000	25510000
1.85	2.35	38940000	36530000	24230000
2.35	2.48	8628000	8080000	5280000
2.48	3	31460000	29410000	18950000
3	4.8	57300000	53550000	34490000
4.8	6.43	14340000	13550000	9460000
6.43	8.19	4490000	4249000	2995000
8.19	20	1533000	1452000	1030000
totals		320300000	301000000	202100000

1.2 y	1.2 y	1.3 y	1.4 y	1.5 y
0.000001223	0.000001223	0.000001223	0.000001223	0.000001223
0.0000009012	0.0000009012	0.0000009012	0.0000009012	0.0000009012
0.000001062	0.000001062	0.000001062	0.000001062	0.000001062
0.000001859	0.000001859	0.000001859	0.000001859	0.000001859
0.000001166	0.000001166	0.000001166	0.000001166	0.000001166
0.000005617	0.000005617	0.000005617	0.000005617	0.000005617
0.000003255	0.000003255	0.000003255	0.000003255	0.000003255
0.000007094	0.000007094	0.000007094	0.000007094	0.000007094
0.00001194	0.00001194	0.00001194	0.00001194	0.00001194
0.00002307	0.00002307	0.00002307	0.00002307	0.00002307
0.00002936	0.00002936	0.00002936	0.00002936	0.00002936
0.00001911	0.00001911	0.00001911	0.00001911	0.00001911
0.0000273	0.0000273	0.0000273	0.0000273	0.0000273
0.00002098	0.00002098	0.00002098	0.00002098	0.00002098
0.004543	0.004496	0.004455	0.004414	0.004378
0.001617	0.001595	0.001575	0.001556	0.001539
0.001846	0.0018	0.00176	0.001722	0.001689
0.001756	0.001729	0.001706	0.001683	0.001664
0.01545	0.01521	0.015	0.0148	0.01463
0.03675	0.03619	0.0357	0.03523	0.03482
0.1029	0.1013	0.1	0.09868	0.09754
0.2035	0.2004	0.1977	0.195	0.1928
0.3764	0.3707	0.3658	0.361	0.3569
0.3242	0.3194	0.3152	0.3112	0.3077
0.6111	0.6019	0.594	0.5863	0.5795
0.6253	0.6161	0.6081	0.6003	0.5935
9.722	9.576	9.449	9.325	9.218
61.58	60.64	59.82	59.02	58.33
876.2	862.8	851.2	839.8	830
11130	10960	10810	10670	10550
150400	148100	146100	144200	142500
126800	124800	123100	121500	120100
1975000	1945000	1918000	1893000	1870000
14260000	14040000	13850000	13670000	13510000
31100000	30630000	30210000	29810000	29460000
31150000	30670000	30250000	29840000	29480000
25050000	24650000	24300000	23960000	23660000
23780000	23380000	23030000	22690000	22390000
5178000	5086000	5007000	4930000	4864000
18570000	18230000	17940000	17650000	17410000
33790000	33170000	32630000	32110000	31660000
9306000	9168000	9048000	8931000	8829000
2947000	2905000	2868000	2832000	2800000
1014000	999200	986700	974500	963800
198400000	195200000	192300000	189600000	187200000

Eight Assemblies

=8\*N5  
=8\*N6  
=8\*N7  
=8\*N8  
=8\*N9  
=8\*N10  
=8\*N11  
=8\*N12  
=8\*N13  
=8\*N14  
=8\*N15  
=8\*N16  
=8\*N17  
=8\*N18  
=8\*N19  
=8\*N20  
=8\*N21  
=8\*N22  
=8\*N23  
=8\*N24  
=8\*N25  
=8\*N26  
=8\*N27  
=8\*N28  
=8\*N29  
=8\*N30  
=8\*N31  
=8\*N32  
=8\*N33  
=8\*N34  
=8\*N35  
=8\*N36  
=8\*N37  
=8\*N38  
=8\*N39  
=8\*N40  
=8\*N41  
=8\*N42  
=8\*N43  
=8\*N44  
=8\*N45  
=8\*N46  
=8\*N47  
=8\*N48  
=8\*N49



Neutron ENDF5 Group

grp

ORIGEN ENDF5 44 Group

Max Energy

45	0.000000001	0.00001	
44	0.000000003	0.003	1
43	<b>0.0000000075</b>	0.0075	2
42	0.000000001	0.01	3
41	0.0000000253	0.0253	4
40	0.000000003	0.03	5
39	0.000000004	0.04	6
38	0.000000005	0.05	7
37	0.000000007	0.07	8
36	0.00000001	0.1	9
35	0.000000015	0.15	10
34	0.00000002	0.2	11
33	0.0000000225	0.225	12
32	0.000000025	0.25	13
31	0.0000000275	0.275	14
30	0.0000000325	0.325	15
29	0.000000035	0.35	16
28	0.0000000375	0.375	17
27	0.00000004	0.4	18
26	0.0000000625	0.625	19
25	0.0000001	1	20
24	0.000000177	1.77	21
23	0.0000003	3	22
22	0.000000475	4.75	23
21	0.0000006	6	24
20	0.00000081	8.1	25
19	0.000001	10	26
18	0.000003	30	27
17	0.00001	100	28
16	0.000055	550	29
15	0.003	3000	30
14	0.017	17000	31
13	0.025	25000	32
12	0.1	100000	33
11	0.4	400000	34
10	0.9	900000	35
9	1.4	1400000	36
8	1.85	1850000	37
7	2.35	2354000	38
6	2.48	2479000	39
5	3	3000000	40
4	4.8	4800000	41
3	6.43	6434000	42
2	8.19	8187300	43
1	20	20000000	44

boundaries	mev	initial	3E-02 y
0.00000000001	0.000000003	0.00000004174	0.00000004174
0.000000003	<b>0.0000000075</b>	0.00000003539	0.00000003539
0.0000000075	0.00000001	0.0000001123	0.0000001123
0.00000001	0.0000000253	0.0000000261	0.0000000261
0.0000000253	0.00000003	0.0000002258	0.0000002258
0.00000003	0.00000004	0.000001909	0.000001909
0.00000004	0.00000005	0.0000007942	0.0000007942
0.00000005	0.00000007	0.000001764	0.000001764
0.00000007	0.0000001	0.000003026	0.000003026
0.0000001	0.00000015	0.000005945	0.000005945
0.00000015	0.0000002	0.00001163	0.00001173
0.0000002	0.000000225	0.000007782	0.000007836
0.000000225	0.00000025	0.00001144	0.00001149
0.00000025	0.000000275	0.000008401	0.000008455
0.000000275	0.000000325	0.0003221	0.0003155
0.000000325	0.00000035	0.0001511	0.0001475
0.00000035	0.000000375	0.0002843	0.0002757
0.000000375	0.0000004	0.0001799	0.0001755
0.0000004	0.000000625	0.001569	0.00153
0.000000625	0.000001	0.003659	0.003567
0.000001	0.00000177	0.01013	0.009873
0.00000177	0.000003	0.02029	0.01977
0.000003	0.00000475	0.03679	0.03585
0.00000475	0.000006	0.03106	0.03028
0.000006	0.0000081	0.05926	0.05776
0.0000081	0.00001	0.05995	0.05843
0.00001	0.00003	0.9445	0.9204
0.00003	0.0001	6.109	5.952
0.0001	0.00055	86.74	84.51
0.00055	0.003	1095	1067
0.003	0.017	14890	14500
0.017	0.025	12590	12270
0.025	0.1	196300	191200
0.1	0.4	1416000	1380000
0.4	0.9	3086000	3006000
0.9	1.4	3134000	3053000
1.4	1.85	2616000	2548000
1.85	2.35	2635000	2566000
2.35	2.48	598200	582400
2.48	3	2218000	2159000
3	4.8	3978000	3869000
4.8	6.43	882700	860000
6.43	8.19	271600	264600
8.19	20	91580	89250
totals		21150000	20600000

## Formulas

0.1 y	1.0 y	1.1 y	1.2 y	1.2 y
0.00000004174	0.00000004174	0.00000004174	0.00000004174	0.00000004174
0.00000003539	0.00000003539	0.00000003539	0.00000003539	0.00000003539
0.0000001123	0.0000001123	0.0000001123	0.0000001123	0.0000001123
0.0000000261	0.0000000261	0.0000000261	0.0000000261	0.0000000261
0.0000002258	0.0000002258	0.0000002258	0.0000002258	0.0000002258
0.000001909	0.000001909	0.000001909	0.000001909	0.000001909
0.0000007942	0.0000007942	0.0000007942	0.0000007942	0.0000007942
0.000001764	0.000001764	0.000001764	0.000001764	0.000001764
0.000003026	0.000003026	0.000003026	0.000003026	0.000003026
0.000005945	0.000005944	0.000005944	0.000005944	0.000005944
0.00001173	0.00001173	0.00001173	0.00001173	0.00001173
0.000007838	0.000007838	0.000007838	0.000007838	0.000007838
0.0000115	0.0000115	0.0000115	0.0000115	0.0000115
0.000008457	0.000008456	0.000008456	0.000008456	0.000008456
0.0002958	0.0001652	0.0001598	0.000155	0.0001508
0.000137	0.00006771	0.00006488	0.00006239	0.00006018
0.0002518	0.00009389	0.00008754	0.00008194	0.00007701
0.0001629	0.00007929	0.00007589	0.00007289	0.00007024
0.001418	0.0006736	0.0006434	0.0006166	0.0005931
0.003302	0.001555	0.001484	0.001421	0.001366
0.009138	0.004284	0.004086	0.003912	0.003758
0.01829	0.008496	0.008098	0.007747	0.007436
0.03318	0.01552	0.0148	0.01416	0.0136
0.02803	0.01319	0.01259	0.01205	0.01158
0.05345	0.02499	0.02383	0.0228	0.0219
0.05409	0.02541	0.02424	0.02321	0.0223
0.8514	0.3959	0.3774	0.361	0.3466
5.503	2.541	2.421	2.315	2.222
78.14	36.12	34.41	32.91	31.58
987.2	457.7	436.2	417.2	400.4
13410	6211	5918	5660	5432
11350	5249	5001	4783	4590
176800	81710	77850	74440	71430
1276000	589000	561100	536400	514700
2780000	1281000	1220000	1166000	1119000
2822000	1295000	1233000	1178000	1130000
2353000	1071000	1019000	973400	933000
2369000	1068000	1015000	968900	928200
537300	240500	228500	218000	208700
1990000	878900	834200	794800	760200
3561000	1533000	1451000	1379000	1315000
795200	366400	348900	333500	319900
244800	113700	108400	103700	99510
82590	38500	36700	35110	33710
19010000	8568000	8145000	7772000	7444000

1.3 y	1.4 y	1.5 y	Eight Assemblies
0.00000004174	0.00000004174	<b>0.00000004174</b>	=8*P5
0.00000003539	0.00000003539	<b>0.00000003539</b>	=8*P6
0.0000001123	0.0000001123	<b>0.0000001123</b>	=8*P7
0.0000000261	0.0000000261	<b>0.0000000261</b>	=8*P8
0.0000002258	0.0000002258	<b>0.0000002258</b>	=8*P9
0.000001909	0.000001909	<b>0.000001909</b>	=8*P10
0.0000007942	0.0000007942	<b>0.0000007942</b>	=8*P11
0.000001764	0.000001764	<b>0.000001764</b>	=8*P12
0.000003026	0.000003026	<b>0.000003025</b>	=8*P13
0.000005944	0.000005944	<b>0.000005944</b>	=8*P14
0.00001173	0.00001173	<b>0.00001173</b>	=8*P15
0.000007838	0.000007838	<b>0.000007838</b>	=8*P16
0.0000115	0.0000115	<b>0.0000115</b>	=8*P17
0.000008456	0.000008456	<b>0.000008456</b>	=8*P18
0.000147	0.0001437	<b>0.0001407</b>	=8*P19
0.00005824	0.0000565	<b>0.00005497</b>	=8*P20
0.00007267	0.00006882	<b>0.00006544</b>	=8*P21
0.00006791	0.00006583	<b>0.00006399</b>	=8*P22
0.0005723	0.0005538	<b>0.0005374</b>	=8*P23
0.001317	0.001273	<b>0.001235</b>	=8*P24
0.003622	0.003501	<b>0.003394</b>	=8*P25
0.007163	0.006919	<b>0.006704</b>	=8*P26
0.01311	0.01267	<b>0.01228</b>	=8*P27
0.01117	0.01079	<b>0.01047</b>	=8*P28
0.02111	0.0204	<b>0.01977</b>	=8*P29
0.0215	0.02078	<b>0.02015</b>	=8*P30
0.3338	0.3225	<b>0.3125</b>	=8*P31
2.139	2.066	<b>2.001</b>	=8*P32
30.4	29.36	<b>28.44</b>	=8*P33
385.7	372.5	<b>360.9</b>	=8*P34
5232	5053	<b>4895</b>	=8*P35
4420	4269	<b>4135</b>	=8*P36
68780	66420	<b>64340</b>	=8*P37
495500	478500	<b>463400</b>	=8*P38
1077000	1040000	<b>1007000</b>	=8*P39
1087000	1049000	<b>1016000</b>	=8*P40
897400	865700	<b>837900</b>	=8*P41
892300	860400	<b>832300</b>	=8*P42
200500	193300	<b>186900</b>	=8*P43
729700	702700	<b>678900</b>	=8*P44
1260000	1210000	<b>1166000</b>	=8*P45
307900	297200	<b>287800</b>	=8*P46
95840	92560	<b>89670</b>	=8*P47
32470	31370	<b>30390</b>	=8*P48
7154000	6897000	<b>6670000</b>	=8*P49



Neutron ENDF5 Group

grp

ORIGEN ENDF5 44 Group

	Max Energy		
45	0.000000001	0.00001	
44	0.000000003	0.003	1
43	<b>0.0000000075</b>	0.0075	2
42	0.00000001	0.01	3
41	0.0000000253	0.0253	4
40	0.00000003	0.03	5
39	0.00000004	0.04	6
38	0.00000005	0.05	7
37	0.00000007	0.07	8
36	0.0000001	0.1	9
35	0.00000015	0.15	10
34	0.0000002	0.2	11
33	0.000000225	0.225	12
32	0.00000025	0.25	13
31	0.000000275	0.275	14
30	0.000000325	0.325	15
29	0.00000035	0.35	16
28	0.000000375	0.375	17
27	0.0000004	0.4	18
26	0.000000625	0.625	19
25	0.000001	1	20
24	0.00000177	1.77	21
23	0.000003	3	22
22	0.00000475	4.75	23
21	0.000006	6	24
20	0.0000081	8.1	25
19	0.00001	10	26
18	0.00003	30	27
17	0.0001	100	28
16	0.00055	550	29
15	0.003	3000	30
14	0.017	17000	31
13	0.025	25000	32
12	0.1	100000	33
11	0.4	400000	34
10	0.9	900000	35
9	1.4	1400000	36
8	1.85	1850000	37
7	2.35	2354000	38
6	2.48	2479000	39
5	3	3000000	40
4	4.8	4800000	41
3	6.43	6434000	42
2	8.19	8187300	43
1	20	20000000	44