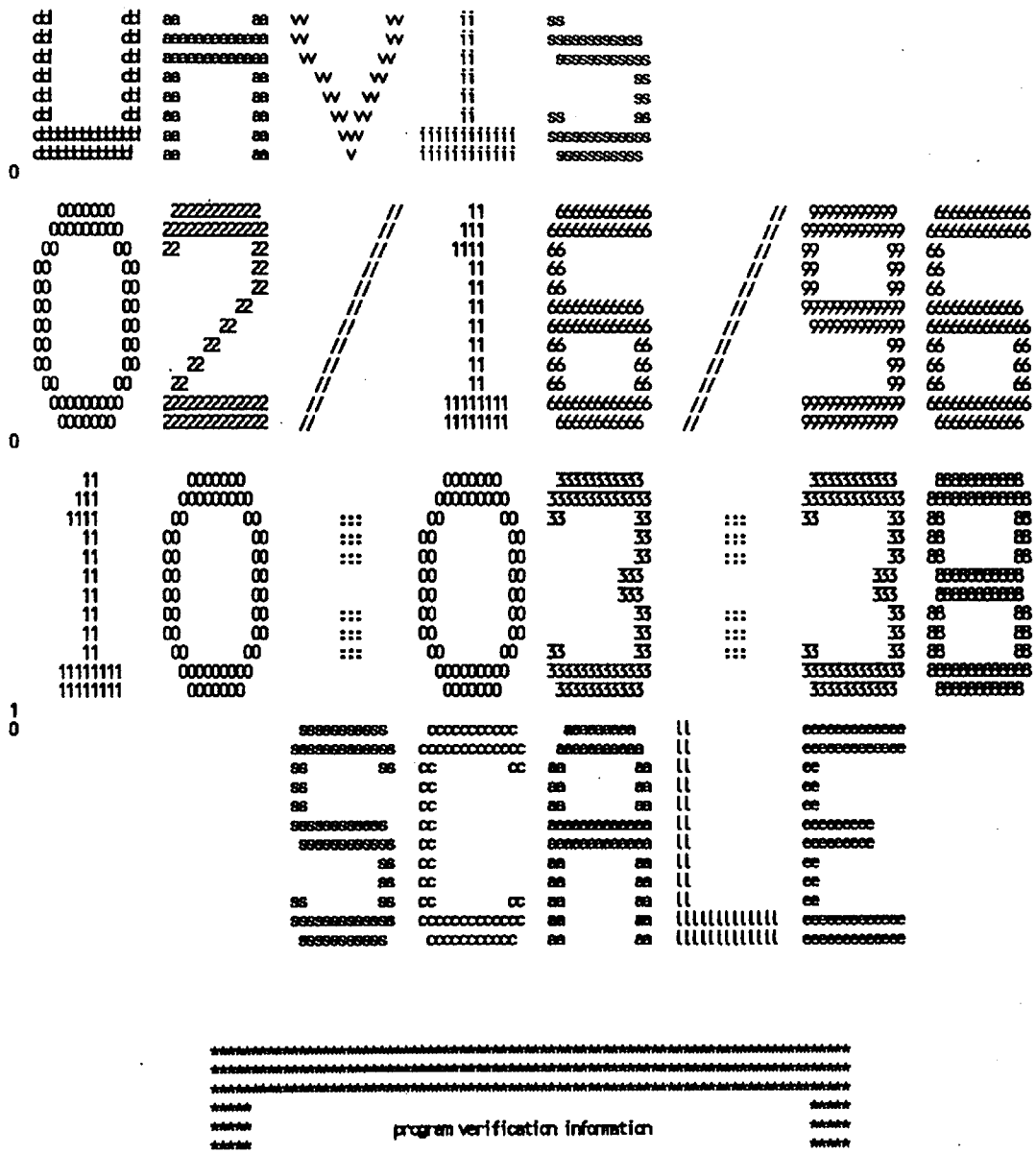
```
        sb-124        mt=102                          updated 10/13/89              id    51124
        xe-131        mt=102,103,104,105,106          updated 10/13/89              id    54131
        xe-132        mt=102,103,104,105,106          updated 10/13/89              id    54132
        xenon-135     endf/b-iv mat 1294              updated 10/13/89              id    54135
        xe-136          mt= 102, 103, 104, 105, 107                                 id    54136
        cesium-133    endf/b-iv mat 1141              updated 10/13/89              id    55133
        cs-134        mt=102                          updated 10/13/89              id    55134
        cs-135          mt= 102                                                     id    55135
        cs-137        mt=102                          updated 10/13/89              id    55137
        ba-136        mt=102                          updated 10/13/89              id    56136
        La-139        mt=102                          updated 10/13/89              id    57139
        ce-144          mt= 102                                                     id    58144
        pr-141        mt=102,103,104,105,106,107      updated 10/13/89              id    59141
        pr-143        mt=102                          updated 10/13/89              id    59143
        nd-143        mt=102                          updated 10/13/89              id    60143
        nd-145        mt=102                          updated 10/13/89              id    60145
        nd-147        mt=102                          updated 10/13/89              id    60147
        pm-147        mt=102                          updated 10/13/89              id    61147
        pm-148          mt= 102                                                     id    61148
        sm-147        endf/b-v fission product        updated 10/13/89              id    62147
        sm-149        mt=102,103,107                  updated 10/13/89              id    62149
        sm-150        mt=102                          updated 10/13/89              id    62150
        sm-151        mt=102,103,104,105,106,107      updated 10/13/89              id    62151
        sm-152        mt=102,103,104,105,106,107      updated 10/13/89              id    62152
        eu-153        mt=102,103,104,105,106,107      updated 10/13/89              id    63153
        eu-154        mt=102,103,104,105,106,107      updated 10/13/89              id    63154
        eu-155        mt=102,103,104,105,106,107      updated 10/13/89              id    63155
        gd-155        mt=102                          updated 10/13/89              id    64155
       u-234 1043 sigo=5+4 newlacs p-3 293k f-1/e-m(1.+5)                           id    92234
        uranium-235   endf/b-iv mat 1261              updated 10/13/89              id    92235
       u-236 1163 sigo=5+4 newlacs p-3 293k f-1/e-m(1.+5)                           id    92236
        uranium-238   endf/b-iv mat 1262              updated 10/13/89              id    92238
        neptunium-237 endf/b-iv mat 1263              updated 10/13/89              id    93237
       pu-238 1050 sigo=5+4 newlacs p-3 293k f-1/e-m(1.+5)                          id    94238
        plutonium-239 endf/b-iv mat 1264              updated 10/13/89              id    94239
        plutonium-240 endf/b-iv mat 1265              updated 10/13/89              id    94240
        plutonium-241 endf/b-iv mat 1266              updated 10/13/89              id    94241
        plutonium-242 endf/b-iv mat 1161              updated 10/13/89              id    94242
       am-241 1056 sigo=5+4 newlacs 218rgp p-3 293k                                 id    95241
       am-243 1057 218 gp wt f-1/e-m 090876 p3 293k                                 id    95243
        curium-244    endf/b-iv mat 1162              updated 10/13/89              id    96244
0       tape copy used      0 i/o's, and took     .00 seconds
1
                m       m  iiiiiiiiiii   ttttttttttt     aaaaaaaa    ww        ww  ll
                mm      m  iiiiiiiiiii   ttttttttttt    aaaaaaaaaa   ww        ww  ll
                mm      m      ii            tt       aa      aa    ww        ww  ll
                m m     m      ii            tt       aa      aa    ww        ww  ll
                m  m    m      ii            tt       aa      aa    ww        ww  ll
                m   m   m      ii            tt       aaaaaaaaaa    ww    w   ww  ll
                m    m  m      ii            tt       aaaaaaaaaa    ww   www  ww  ll
                m     m m      ii            tt       aa      aa    ww  ww ww  ww  ll
                m.     mm      ii            tt       aa      aa    ww ww   ww ww  ll
                m       mm     ii            tt       aa      aa    wwww     wwww  ll
                m        m iiiiiiiiiii       tt       aa      aa    www       www  lllllllllll
                m        m iiiiiiiiiii       tt       aa      aa    ww        ww   lllllllllll
0

  ddddddddd     aaaaaaa    w        w  fffffffffff    sssssssss
  ddddddddddd   aaaaaaaaa  w        w  fffffffffff    sssssssssss
  dd      dd   aa     aa   w        w      ff        ss     ss
  dd      dd   aa     aa   w        w      ff        ss
```



program verification information

```
                ******                code system:   scale  version:   4.2            ******
                ******                                                                ******
                ********************************************************************************
                ********************************************************************************
                ******                                                                ******
                ******                                                                ******
                ******                program:  c0c002                                ******
                ******                                                                ******
                ******           creation date:  04/27/95                             ******
                ******                                                                ******
                ******                library:  /neutronics/scale/exe                 ******
                ******                                                                ******
                ******                                                                ******
                ******      this is not a  scale  configuration controlled code       ******
                ******                                                                ******
                ******                jobname:  davis                                 ******
                ******                                                                ******
                ******      date of execution:  02/16/96                              ******
                ******                                                                ******
                ******      time of execution:  10:05:38                              ******
                ******                                                                ******
                ******                                                                ******
                ********************************************************************************
                ********************************************************************************
                ********************************************************************************
1
0       -1q array has       1 entries.
0        0q array has       9 entries.
0        1q array has      12 entries.
0select 65 nuclides from the master  library on logical  1
         0 nuclides from the working library on logical  2
         0 nuclides from the working library on logical  3
           to create the new working library on logical  4

        61 resonance calculations have been requested
         0 output option for anpx formatted cross section data
0the storage allocated for this case is 200000 words
0        2q array has      65 entries.
0        3q array has     915 entries.
0        4q array has      65 entries.
0 general information concerning cross section library
    tape identification number                  4321
    number of nuclides on tape                    66
    number of neutron energy groups               27
    first thermal neutron energy group            15
    number of gamma energy groups                  0
0   direct access unit number  9 requires 117 blocks of length  1484 words
- xsdrn tape   4321
                        scale 4.2 - 27 group neutron burnup library
                          based on endf-b version 4 data with endf-b version 5 fission products
                             compiled for nrc:      1/27/89
                               last updated:       9/16/95
                                 l.m.petrie  -  ornl
0 nuclides from xsdrn tape
     1    1/v cross sections normalized to 1.0 at 0.0253 ev                          999
     2     hydrogen        endf/b-iv mat 1269/thrmf1002    updated 10/13/89        1001
     3    b-10 1273 218ngp 042395 p-3 293k                                         5010
     4     boron-11        endf/b-iv mat 1160              updated 10/13/89        5011
     5     oxygen-16       endf/b-iv mat 1276              updated 10/13/89        8016
     6     oxygen-16       endf/b-iv mat 1276              updated 10/13/89           6
```

```
  7   kr-83          mt=102,103,103,105,106,107    updated 10/13/89          36083
  8   kr-85            mt= 102                                               36085
  9   sr-90          mt=102                        updated 10/13/89          38090
 10    y-89          mt=102                        updated 10/13/89          39089
 11   zr-93            mt= 102                                               40093
 12   zr-94          mt=102                        updated 10/13/89          40094
 13   zr-95          mt=102                        updated 10/13/89          40095
 14   zircalloy      endf/b-iv mat 1284            updated 10/13/89          40302
 15   nb-94          mt=102                        updated 10/13/89          41094
 16   mo-95          mt=102                        updated 10/13/89          42095
 17   tc-99          mt=102                        updated 10/13/89          43099
 18   ru-101         mt=102                        updated 10/13/89          44101
 19   ru-106         mt=102                        updated 10/13/89          44106
 20   rh-103         mt=102                        updated 10/13/89          45103
 21   rh-105           mt= 102                                               45105
 22   pd-105         mt=102                        updated 10/13/89          46105
 23   pd-108         mt=102                        updated 10/13/89          46108
 24   silver-109     endf/b-iv mat 1139            updated 10/13/89          47109
 25   sb-124         mt=102                        updated 10/13/89          51124
 26   xe-131         mt=102,103,104,105,106        updated 10/13/89          54131
 27   xe-132         mt=102,103,104,105,106        updated 10/13/89          54132
 28   xenon-135      endf/b-iv mat 1294            updated 10/13/89          54135
 29   xe-136           mt= 102, 103, 104, 105, 107                           54136
 30   cesium-133     endf/b-iv mat 1141            updated 10/13/89          55133
 31   cs-134         mt=102                        updated 10/13/89          55134
 32   cs-135           mt= 102                                               55135
 33   cs-137         mt=102                        updated 10/13/89          55137
 34   ba-136         mt=102                        updated 10/13/89          56136
 35   la-139         mt=102                        updated 10/13/89          57139
 36   ce-144           mt= 102                                               58144
 37   pr-141         mt=102,103,104,105,106,107    updated 10/13/89          59141
 38   pr-143         mt=102                        updated 10/13/89          59143
 39   nd-143         mt=102                        updated 10/13/89          60143
 40   nd-145         mt=102                        updated 10/13/89          60145
 41   nd-147         mt=102                        updated 10/13/89          60147
 42   pm-147         mt=102                        updated 10/13/89          61147
 43   pm-148           mt= 102                                               61148
 44   sm-147         endf/b-v fission product      updated 10/13/89          62147
 45   sm-149         mt=102,103,107                updated 10/13/89          62149
 46   sm-150         mt=102                        updated 10/13/89          62150
 47   sm-151         mt=102,103,104,105,106,107    updated 10/13/89          62151
 48   sm-152         mt=102,103,104,105,106,107    updated 10/13/89          62152
 49   eu-153         mt=102,103,104,105,106,107    updated 10/13/89          63153
 50   eu-154         mt=102,103,104,105,106,107    updated 10/13/89          63154
 51   eu-155         mt=102,103,104,105,106,107    updated 10/13/89          63155
 52   gd-155         mt=102                        updated 10/13/89          64155
 53  u-234 1043 sigp=5+4 nwxlacs p-3 295k f-1/e-n(1.+5)                       92234
 54   uranium-235    endf/b-iv mat 1261            updated 10/13/89          92235
 55  u-236 1143 sigp=5+4 nwxlacs p-3 295k f-1/e-n(1.+5)                       92236
 56   uranium-238    endf/b-iv mat 1262            updated 10/13/89          92238
 57   neptunium-237  endf/b-iv mat 1263            updated 10/13/89          93237
 58  pu-238 1050 sigp=5+4 nwxlacs p-3 295k f-1/e-n(1.+5)                       94238
 59   plutonium-239  endf/b-iv mat 1264            updated 10/13/89          94239
 60   plutonium-240  endf/b-iv mat 1265            updated 10/13/89          94240
 61   plutonium-241  endf/b-iv mat 1266            updated 10/13/89          94241
 62   plutonium-242  endf/b-iv mat 1161            updated 10/13/89          94242
 63  am-241 1056 sigp=5+4 nwxlacs 218ngp p-3 295k                             95241
 64  am-243 1057 218 gp wt f-1/e-n 09376 p3 295k                               95243
 65   curium-244     endf/b-iv mat 1162            updated 10/13/89          96244
01/v cross sections normalized to 1.0 at 0.0253 ev                  999     temperature=  975.00
```

```
0 hydrogen        endf/b-iv mat 1269/thrm1002    updated 10/13/89              1001    temperature=  607.60
                            thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0b-10 1273 218grp 042375 p-3 293k                                               5010    temperature=  607.60
                            thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0 boron-11        endf/b-iv mat 1160             updated 10/13/89              5011    temperature=  607.60
                            thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0 oxygen-16       endf/b-iv mat 1276             updated 10/13/89              8016    temperature=  975.00
0 oxygen-16       endf/b-iv mat 1276             updated 10/13/89                 6    temperature=  607.60
0 kr-83           mt=102,103,103,105,106,107     updated 10/13/89             36083    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   82.202              temperature(kelvin)      =  975.000
0potential scatter sigma  =    7.004              lumped nuclear density   = 1.6278995E-06
0spin factor (g)          = 4988.190              lump dimension (a-bar)   = 4.6812201E-01
0inner radius             = .0000000E+00          dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =   15.995                sigma(per absorber atom)= 1.0489573E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =  237.933                sigma(per absorber atom)= 1.1708092E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  11     -2.429425E-03     .000000E+00    -3.070467E-03
  12      2.164846E-02     .000000E+00     9.887995E-03
  13     -5.318041E-01     .000000E+00    -1.595370E-01
  14      4.783252E-05     .000000E+00    -1.723491E-05
0excess resonance integrals
0                 resolved
0absorption      1.4466OE+02
 fission          .00000E+00
- elapsed time    .00 min.
0 kr-85           mt=  102                                                      36085    temperature=  975.00
0 sr-90           mt=102                         updated 10/13/89              38090    temperature=  975.00
0 y-89            mt=102                         updated 10/13/89              39089    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   88.142              temperature(kelvin)      =  975.000
0potential scatter sigma  =    3.644              lumped nuclear density   = 1.4471508E-05
0spin factor (g)          =   78.664              lump dimension (a-bar)   = 4.6812201E-01
0inner radius             = .0000000E+00          dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =   15.995                sigma(per absorber atom)= 1.1799717E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =  237.933                sigma(per absorber atom)= 1.3164805E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
   9     -4.184804E-06     .000000E+00    -3.315778E-04
  10     -8.859182E-05     .000000E+00    -2.498568E-04
0excess resonance integrals
0                 resolved
0absorption      1.46374E-01
 fission          .00000E+00
- elapsed time    .00 min.
0 zr-93           mt=  102                                                      40093    temperature=  975.00
0 zr-94           mt=102                         updated 10/13/89              40094    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   93.100              temperature(kelvin)      =  975.000
0potential scatter sigma  =    3.779              lumped nuclear density   = 2.2886412E-05
0spin factor (g)          =  180.853              lump dimension (a-bar)   = 4.6812201E-01
```

```
0inner radius          =  .0000000E+00        dancoff correction (c)    = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1   =   15.995             sigma(per absorber atom)= 7.4611826E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2   =  257.933             sigma(per absorber atom)= 8.3243536E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
   8     -1.463173E-06    .000000E+00   -1.371799E-03
   9     -4.468161E-05    .000000E+00   -3.950988E-03
0excess resonance integrals
0              resolved
0absorption    3.43578E-02
 fission        .00000E+00
- elapsed time   .00 min.
0 zr-95        mt=102                  updated 10/13/89          40095    temperature=  975.00
0 zircalloy    endf/b-iv mat 1284      updated 10/13/89          40302    temperature=  650.00
0resonance data for this nuclide
0mass number (a)       =   90.436          temperature(kelvin)     =  650.000
0potential scatter sigma =   6.385         lumped nuclear density  = 4.251602E-02
0spin factor (g)       =   1.079           lump dimension (a-bar)  = 5.461000E-01
0inner radius          = 4.787899E-01      dancoff correction (c)  = 5.0364637E-01
0the absorber will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
   8     -1.780596E-03    .000000E+00   -1.286907E+00
   9     -5.893373E-02    .000000E+00   -2.695297E+00
  10     -6.959985E-02    .000000E+00   -1.601321E+00
  11     -1.883937E-01    .000000E+00   -7.920912E-01
0excess resonance integrals
0              resolved
0absorption    2.28539E-01
 fission        .00000E+00
- elapsed time   .02 min.
0 rb-94        mt=102                  updated 10/13/89          41094    temperature=  975.00
0resonance data for this nuclide
0mass number (a)       =   93.101          temperature(kelvin)     =  975.000
0potential scatter sigma =   3.779         lumped nuclear density  = 1.1977532E-11
0spin factor (g)       = 43808.801         lump dimension (a-bar)  = 4.6812201E-01
0inner radius          =  .0000000E+00     dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1   =   15.995          sigma(per absorber atom)= 1.4256668E+10
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2   =  257.933          sigma(per absorber atom)= 1.5905996E+10
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  13      1.043531E-02    .000000E+00    9.253882E-04
  14      9.836712E-03    .000000E+00   -4.064814E-04
0excess resonance integrals
0              resolved
0absorption    9.15001E+01
 fission        .00000E+00
- elapsed time   .02 min.
0 mo-95        mt=102                  updated 10/13/89          42095    temperature=  975.00
0resonance data for this nuclide
0mass number (a)       =   94.091          temperature(kelvin)     =  975.000
```

```
0potential scatter sigma =    3.806          lumped nuclear density    = 1.9850915E-05
0spin factor (g)         =  607.724          lump dimension (a-bar)    = 4.6812201E-01
0inner radius            = .0000000E+00      dancoff correction (c)    = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1     =   15.995          sigma(per absorber atom)= 8.6021064E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2     =  237.953          sigma(per absorber atom)= 9.5972686E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  10      -4.213186E-03    .000000E+00    -2.519524E-02
  11      -7.851104E-03    .000000E+00    -1.294423E-02
  12      -5.421113E+00    .000000E+00    -6.236693E+00
  13       1.567912E-04    .000000E+00    -2.000911E-05
0excess resonance integrals
0              resolved
0absorption    9.65135E+01
 fission       .00000E+00
- elapsed time    .02 min.
0 tc-99        mt=102                updated 10/13/89          43099     temperature=   975.00
0resonance data for this nuclide
0mass number (a)         =   98.150          temperature(kelvin)       =  975.000
0potential scatter sigma =    6.000          lumped nuclear density    = 2.2395130E-05
0spin factor (g)         = 4527.940          lump dimension (a-bar)    = 4.6812201E-01
0inner radius            = .0000000E+00      dancoff correction (c)    = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1     =   15.995          sigma(per absorber atom)= 7.6248579E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2     =  237.953          sigma(per absorber atom)= 8.5069639E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  11      -2.889046E-02    .000000E+00    -1.360966E-02
  12      -7.652462E-03    .000000E+00    -2.696194E-04
  13      -4.684640E-01    .000000E+00    -2.465246E-02
  14      -9.945614E+00    .000000E+00    -3.170968E-01
  15       1.069754E-02    .000000E+00    -5.385166E-04
  16       4.835994E-03    .000000E+00    -2.802095E-04
  17       2.074366E-04    .000000E+00    -1.191927E-05
0excess resonance integrals
0              resolved
0absorption    3.21540E+02
 fission       .00000E+00
- elapsed time    .03 min.
0 ru-101       mt=102                updated 10/13/89          44101     temperature=   975.00
0resonance data for this nuclide
0mass number (a)         =  100.089          temperature(kelvin)       =  975.000
0potential scatter sigma =    3.965          lumped nuclear density    = 2.0537844E-05
0spin factor (g)         = 8785.290          lump dimension (a-bar)    = 4.6812201E-01
0inner radius            = .0000000E+00      dancoff correction (c)    = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1     =   15.995          sigma(per absorber atom)= 8.3143926E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2     =  237.953          sigma(per absorber atom)= 9.2762695E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
```

```
  11     -3.670857E-02     .000000E+00   -3.695435E-03
  12     -1.758472E-01     .000000E+00   -4.277056E-02
  13     -5.516006E-01     .000000E+00   -1.485083E-02
  14      2.369341E-04     .000000E+00   -4.143942E-05
0excess resonance integrals
0                resolved
0absorption      7.90961E+01
 fission          .00000E+00
- elapsed time     .03 min.
0 ru-106         mt=102                  updated 10/13/89          44106    temperature=  975.00
0 rh-105         mt=102                  updated 10/13/89          45105    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   102.021          temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.408          lumped nuclear density   = 1.2443061E-05
0spin factor (g)          =      .500          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             = .0000000E+00       dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =   15.995           sigma(per absorber atom)= 1.3725287E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  237.933           sigma(per absorber atom)= 1.5310909E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
   9      1.220378E-03     .000000E+00    1.838315E-03
  10     -4.532174E-03     .000000E+00   -6.215322E-03
  11     -2.501817E-02     .000000E+00   -2.197417E-02
  12     -4.149507E-04     .000000E+00   -2.594820E-05
  13      .000000E+00      .000000E+00    .000000E+00
  14      .000000E+00      .000000E+00    .000000E+00
  15      2.257050E-01     .000000E+00    3.206996E-03
  16      2.989958E+01     .000000E+00   -7.773024E-02
  17     -1.871487E+02     .000000E+00   -1.707123E-01
  18      8.668073E+01     .000000E+00    2.604877E-01
  19      1.142152E+01     .000000E+00   -1.308896E-03
  20      1.081809E+00     .000000E+00   -2.425996E-03
  21      2.165767E-01     .000000E+00    1.925245E-03
  22      2.583930E-01     .000000E+00    2.928540E-03
  23     -9.878896E-02     .000000E+00    1.798803E-03
0excess resonance integrals
0                resolved
0absorption      1.13757E+03
 fission          .00000E+00
- elapsed time     .07 min.
0 rh-105          mt=  102                                         45105    temperature=  975.00
0 pd-105         mt=102                  updated 10/13/89          46105    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   104.004          temperature(kelvin)      =   975.000
0potential scatter sigma  =     4.069          lumped nuclear density   = 8.5490719E-06
0spin factor (g)          = 15210.000          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             = .0000000E+00       dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =   15.995           sigma(per absorber atom)= 1.9974053E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  237.933           sigma(per absorber atom)= 2.2284826E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  12     -6.388361E-02     .000000E+00   -1.983383E-03
```

```
  13     -5.664188E-02     .000000E+00   -1.451314E-03
  14      7.759710E-04     .000000E+00   -8.119541E-05
0excess resonance integrals
0                resolved
0absorption      6.11853E+01
 fission          .00000E+00
-  elapsed time    .07 min.
0 pd-108       mt=102                    updated 10/13/89          46108     temperature=  975.00
0resonance data for this nuclide
0mass number (a)        =   106.977          temperature(kelvin)     =  975.000
0potential scatter sigma =    4.146          lumped nuclear density  = 2.5205244E-06
0spin factor (g)        = 21175.100          lump dimension (a-bar)  = 4.6812201E-01
0inner radius           =  .0000000E+00      dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =   15.995           sigma(per absorber atom)= 6.7753055E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =  257.933           sigma(per absorber atom)= 7.5591289E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss        res scat
  11      1.169785E-04     .000000E+00    3.530870E-04
  12     -2.278071E+00     .000000E+00   -1.677253E+00
  13      6.742267E-03     .000000E+00    1.870996E-03
  14      8.561006E-02     .000000E+00   -3.209501E-05
  15     -1.841239E-01     .000000E+00    8.085533E-05
  16      2.946561E-04     .000000E+00   -9.255422E-06
0excess resonance integrals
0                resolved
0absorption      2.11309E+02
 fission          .00000E+00
-  elapsed time    .07 min.
0 silver-109   endf/b-iv mat 1139        updated 10/13/89          47109     temperature=  975.00
0resonance data for this nuclide
0mass number (a)        =   107.969          temperature(kelvin)     =  975.000
0potential scatter sigma =    4.988          lumped nuclear density  = 1.7285453E-06
0spin factor (g)        =  1441.870          lump dimension (a-bar)  = 4.6812201E-01
0inner radius           =  .0000000E+00      dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =   15.995           sigma(per absorber atom)= 9.8788094E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =  257.933           sigma(per absorber atom)= 1.1021671E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss        res scat
  10     -2.004977E-04     .000000E+00   -2.261492E-04
  11     -8.000466E-03     .000000E+00   -5.853405E-03
  12     -7.368214E-01     .000000E+00   -3.566251E-02
  13      7.668183E-01     .000000E+00    3.380727E-02
  14     -1.647573E+01     .000000E+00   -1.531124E+00
0excess resonance integrals
0                resolved
0absorption      1.38134E+03
 fission          .00000E+00
-  elapsed time    .07 min.
0 sb-124       mt=102                    updated 10/13/89          51124     temperature=  975.00
0 xe-131       mt=102,103,104,105,106    updated 10/13/89          54131     temperature=  975.00
0resonance data for this nuclide
0mass number (a)        =   129.781          temperature(kelvin)     =  975.000
```

```
0potential scatter sigma =    4.301          lumped nuclear density   = 1.016754E-05
0spin factor (g)         =  246.825          lump dimension (a-bar)   = 4.681220E-01
0inner radius            = .0000000E+00      dancoff correction (c)   = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1     =   15.995          sigma(per absorber atom)= 1.679459E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2     =  237.933          sigma(per absorber atom)= 1.873752E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
   9    -3.357824E-06   .000000E+00   -3.102342E-05
  10    -2.273006E-04   .000000E+00   -1.970430E-04
  11    -2.755318E-03   .000000E+00   -2.050894E-03
  12    -5.243095E-02   .000000E+00   -4.881767E-03
  13    -7.980522E+01   .000000E+00   -1.870293E+02
  14     1.050233E-02   .000000E+00    1.471501E-02
0excess resonance integrals
0                resolved
0absorption     7.4744E+02
 fission         .0000E+00
- elapsed time   .08 min.
0 xe-132       mt=102,103,104,105,106      updated 10/13/89          54132    temperature=  975.00
0resonance data for this nuclide
0mass number (a)         =  130.771          temperature(kelvin)      =  975.000
0potential scatter sigma =    4.301          lumped nuclear density   = 1.986096E-05
0spin factor (g)         =  675.899          lump dimension (a-bar)   = 4.681220E-01
0inner radius            = .0000000E+00      dancoff correction (c)   = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1     =   15.995          sigma(per absorber atom)= 8.597753E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2     =  237.933          sigma(per absorber atom)= 9.592412E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
   9    -3.071550E-05   .000000E+00   -1.421780E-04
  10    -9.333992E-03   .000000E+00   -1.188144E-01
  11     3.337750E-08   .000000E+00   -9.213736E-07
0excess resonance integrals
0                resolved
0absorption     9.6848E-01
 fission         .0000E+00
- elapsed time   .08 min.
0 xenon-135    endf/b-iv mat 1294          updated 10/13/89          54135    temperature=  975.00
0 xe-136         mt= 102, 103, 104, 105, 107                        54136    temperature=  975.00
0 cesium-133   endf/b-iv mat 1141          updated 10/13/89          55133    temperature=  975.00
0resonance data for this nuclide
0mass number (a)         =  131.764          temperature(kelvin)      =  975.000
0potential scatter sigma =    7.100          lumped nuclear density   = 2.457102E-05
0spin factor (g)         =  374.437          lump dimension (a-bar)   = 4.681220E-01
0inner radius            = .0000000E+00      dancoff correction (c)   = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1     =   15.995          sigma(per absorber atom)= 6.949634E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2     =  238.051          sigma(per absorber atom)= 7.454394E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
```

```
  9     -6.734279E-05     .000000E+00   -4.651886E-04
  10    -3.395013E-03     .000000E+00   -6.490357E-03
  11    -1.260395E-01     .000000E+00   -2.208344E-01
  12    -1.956238E-01     .000000E+00   -2.720965E-02
  13    -3.254609E-01     .000000E+00   -1.770940E-02
  14    -1.408704E+01     .000000E+00   -6.143198E-01
  15     5.619422E-03     .000000E+00   -4.043774E-04
  16     2.777897E-03     .000000E+00   -2.215109E-04
  17     2.352275E-03     .000000E+00   -1.830948E-04
  18     2.215023E-03     .000000E+00   -1.679522E-04
  19     1.317540E-03     .000000E+00   -9.688846E-05
Oexcess resonance integrals
0                resolved
Oabsorption      3.48530E+02
 fission          .00000E+00
- elapsed time    .10 min.
0 cs-134        mt=102                    updated 10/13/89          55134    temperature=  975.00
0 cs-135          mt=  102                                          55135    temperature=  975.00
0 cs-137        mt=102                    updated 10/13/89          55137    temperature=  975.00
0 ba-136        mt=102                    updated 10/13/89          56136    temperature=  975.00
Oresonance data for this nuclide
Omass number (a)          =   134.737        temperature(kelvin)     =   975.000
Opotential scatter sigma  =     4.835        lumped nuclear density  = 2.6654541E-07
Ospin factor (g)          =  1247.690        lump dimension (a-bar)  = 4.6812201E-01
Oinner radius             =  .0000000E+00    dancoff correction (c)  = 3.4269261E-01
Othe absorber will be treated by the nordheim integral method.
Omass of moderator-1      =    15.995        sigma(per absorber atom)= 6.4064013E+05
Omoderator-1 will be treated by the nordheim integral method.
Omass of moderator-2      =   257.953        sigma(per absorber atom)= 7.1475463E+05
Omoderator-2 will be treated by the nordheim integral method.
Othis resonance material will be treated as a 2-dimensional object.
Ovolume fraction of lump in cell used to account for spatial self-shielding=1.00000
Ogroup       res abs          res fiss         res scat
  10     9.8182274E-07     .000000E+00    4.1013685E-07
  11    -2.649077E-05      .000000E+00   -2.197985E-05
Oexcess resonance integrals
0                resolved
Oabsorption      1.38468E+00
 fission          .00000E+00
- elapsed time    .10 min.
0 la-139        mt=102                    updated 10/13/89          57139    temperature=  975.00
Oresonance data for this nuclide
Omass number (a)          =   137.713        temperature(kelvin)     =   975.000
Opotential scatter sigma  =     4.906        lumped nuclear density  = 2.3873978E-05
Ospin factor (g)          =   145.855        lump dimension (a-bar)  = 4.6812201E-01
Oinner radius             =  .0000000E+00    dancoff correction (c)  = 3.4269261E-01
Othe absorber will be treated by the nordheim integral method.
Omass of moderator-1      =    15.995        sigma(per absorber atom)= 7.1525449E+03
Omoderator-1 will be treated by the nordheim integral method.
Omass of moderator-2      =   257.953        sigma(per absorber atom)= 7.9800098E+03
Omoderator-2 will be treated by the nordheim integral method.
Othis resonance material will be treated as a 2-dimensional object.
Ovolume fraction of lump in cell used to account for spatial self-shielding=1.00000
Ogroup       res abs          res fiss         res scat
  9      -2.480891E-05     .000000E+00   -1.666073E-03
  10     -4.548107E-04     .000000E+00   -2.495017E-02
  11      .000000E+00      .000000E+00    .000000E+00
  12     -8.164309E-02     .000000E+00   -4.928368E-02
Oexcess resonance integrals
0                resolved
```

```
0absorption      8.05083E+00
 fission          .00000E+00
- elapsed time    .12 min.
0 ce-144          mt=  102                                              58144    temperature=  975.00
0 pr-141        mt=102,103,104,105,106,107    updated 10/13/89          59141    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   139.697          temperature(kelvin)      =  975.000
0potential scatter sigma  =     4.953          lumped nuclear density   = 2.0845648E-05
0spin factor (g)          =  1026.500          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 8.1916235E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.953          sigma(per absorber atom)= 9.1392979E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss        res scat
  10      -8.135539E-03     .000000E+00    -2.763613E-01
  11      -1.326336E-01     .000000E+00    -1.763402E+00
  12      -3.073294E-03     .000000E+00    -3.009180E-04
0excess resonance integrals
0                 resolved
0absorption      1.20611E+01
 fission          .00000E+00
- elapsed time    .12 min.
0 pr-143          mt=102                updated 10/13/89          59143    temperature=  975.00
0 nd-143          mt=102                updated 10/13/89          60143    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   141.682          temperature(kelvin)      =  975.000
0potential scatter sigma  =     5.000          lumped nuclear density   = 1.8286411E-05
0spin factor (g)          =  1964.860          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 9.3380645E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.953          sigma(per absorber atom)= 1.0418368E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss        res scat
  10      -1.801388E-04     .000000E+00    -1.069724E-04
  11      -4.224606E-01     .000000E+00    -4.906454E+00
  12      -2.802144E-01     .000000E+00    -1.378043E-01
0excess resonance integrals
0                 resolved
0absorption      5.0629BE+01
 fission          .00000E+00
- elapsed time    .12 min.
0 nd-145          mt=102                updated 10/13/89          60145    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   143.668          temperature(kelvin)      =  975.000
0potential scatter sigma  =     5.047          lumped nuclear density   = 1.3633068E-05
0spin factor (g)          =  1007.250          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 1.2525414E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.953          sigma(per absorber atom)= 1.3974456E+04
0moderator-2 will be treated by the nordheim integral method.
```

```
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  10       -5.566130E-03     .000000E+00     -8.732536E-02
  11       -8.356895E-02     .000000E+00     -2.531122E-01
  12       -1.992898E+00     .000000E+00     -1.253801E+01
  13        9.566028E-05     .000000E+00      2.045997E-04
  14       -1.869842E+00     .000000E+00     -4.860699E-02
  15        5.895222E-03     .000000E+00     -4.604220E-04
  16        1.326667E-03     .000000E+00     -1.451281E-04
  17        9.642541E-04     .000000E+00     -1.069925E-04
  18        8.539588E-04     .000000E+00     -9.313388E-05
  19        7.634191E-04     .000000E+00     -8.069647E-05
  20        2.839438E-05     .000000E+00     -2.920856E-06
0excess resonance integrals
0                resolved
0absorption     2.05303E+02
 fission         .00000E+00
- elapsed time    .13 min.
0 nd-147      mt=102                    updated 10/13/89          60147    temperature=  975.00
0 pm-147      mt=102                    updated 10/13/89          61147    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   145.653          temperature(kelvin)     =   975.000
0potential scatter sigma  =     5.093          lumped nuclear density  = 4.3050286E-06
0spin factor (g)          = 21589.500          lump dimension (a-bar)  = 4.6812201E-01
0inner radius             = .0000000E+00       dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 3.9664523E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.953          sigma(per absorber atom)= 4.4253242E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  12       -2.166141E-01     .000000E+00     -6.936160E-02
  13       -5.553136E-02     .000000E+00     -3.134629E-03
  14       -9.633698E+01     .000000E+00     -4.139169E+01
  15        4.126164E-02     .000000E+00      6.974615E-03
  16        1.697905E-02     .000000E+00      1.746689E-03
  17        1.369750E-02     .000000E+00      1.150443E-03
  18        1.253758E-02     .000000E+00      9.669043E-04
  19        6.999389E-04     .000000E+00      5.070706E-05
0excess resonance integrals
0                resolved
0absorption     1.99739E+03
 fission         .00000E+00
- elapsed time    .13 min.
0 pm-148      mt=  102                                                 61148    temperature=  975.00
0 sm-147      endf/b-v fission product  updated 10/13/89               62147    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   145.653          temperature(kelvin)     =   975.000
0potential scatter sigma  =     5.093          lumped nuclear density  = 1.7999949E-06
0spin factor (g)          =      .000          lump dimension (a-bar)  = 4.6812201E-01
0inner radius             = .0000000E+00       dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 9.4866766E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.953          sigma(per absorber atom)= 1.0584173E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
```

```
Ovolume fraction of lump in cell used to account for spatial self-shielding=1.00000
Ogroup      res abs        res fiss       res scat
  11      2.61199AE-01   .000000E+00   1.049366E+00
  12      7.963288E-01   .000000E+00   -1.698698E+00
  13      -4.507339E+00  .000000E+00   -2.825725E+00
  14      -5.416480E-01  .000000E+00   -7.173979E-03
  15      3.110962E-01   .000000E+00   -1.897037E-03
  16      7.287653E-03   .000000E+00   -3.739371E-04
  17      4.281464E-03   .000000E+00   -2.401531E-04
  18      3.510412E-03   .000000E+00   -1.997157E-04
  19      2.910591E-03   .000000E+00   -1.649537E-04
  20      8.434759E-04   .000000E+00   -4.626545E-05
Oexcess resonance integrals
0              resolved
Oabsorption    7.20794E+02
 fission       .00000E+00
- elapsed time  .15 min.
                    thermal scattering matrix number  3 at a temperature of   900.03 was selected.
0 sm-149      mt=102,103,107          updated 10/13/89          62149    temperature=  975.00
Oresonance data for this nuclide
Omass number (a)        =  147.638          temperature(kelvin)      =  975.000
Opotential scatter sigma =    3.260         lumped nuclear density   = 8.9113627E-08
Ospin factor (g)        = 10407.900         lump dimension (a-bar)   = 4.6812201E-01
Oinner radius           = .0000000E+00      dancoff correction (c)   = 3.4269261E-01
Othe absorber will be treated by the nordheim integral method.
Omass of moderator-1    =   15.995          sigma(per absorber atom)= 1.9162018E+06
Omoderator-1 will be treated by the nordheim integral method.
Omass of moderator-2    =  237.933          sigma(per absorber atom)= 2.1378838E+06
Omoderator-2 will be treated by the nordheim integral method.
Othis resonance material will be treated as a 2-dimensional object.
Ovolume fraction of lump in cell used to account for spatial self-shielding=1.00000
Ogroup      res abs        res fiss       res scat
  11      8.546577E-03   .000000E+00   3.071155E-02
  12      -5.576071E-02  .000000E+00   -1.828570E-01
  13      2.267975E-02   .000000E+00   2.764212E-03
  14      5.020254E-04   .000000E+00   -8.204340E-03
Oexcess resonance integrals
0              resolved
Oabsorption    8.04328E+02
 fission       .00000E+00
- elapsed time  .15 min.
0 sm-150      mt=102                  updated 10/13/89          62150    temperature=  975.00
Oresonance data for this nuclide
Omass number (a)        =  148.629          temperature(kelvin)      =  975.000
Opotential scatter sigma =    5.162         lumped nuclear density   = 5.0109784E-06
Ospin factor (g)        = 4376.420          lump dimension (a-bar)   = 4.6812201E-01
Oinner radius           = .0000000E+00      dancoff correction (c)   = 3.4269261E-01
Othe absorber will be treated by the nordheim integral method.
Omass of moderator-1    =   15.995          sigma(per absorber atom)= 3.4077117E+04
Omoderator-1 will be treated by the nordheim integral method.
Omass of moderator-2    =  237.933          sigma(per absorber atom)= 3.8019438E+04
Omoderator-2 will be treated by the nordheim integral method.
Othis resonance material will be treated as a 2-dimensional object.
Ovolume fraction of lump in cell used to account for spatial self-shielding=1.00000
Ogroup      res abs        res fiss       res scat
  10      -1.657741E-03  .000000E+00   -1.602149E-02
  11      -3.778702E-02  .000000E+00   -4.268902E-01
  12      -1.232369E-01  .000000E+00   -3.784020E-02
  13      -8.618197E+00  .000000E+00   -6.782185E+00
  14      1.064539E-04   .000000E+00   -6.370252E-05
```

```
0excess resonance integrals
0                resolved
0absorption      2.85057E+02
 fission          .00000E+00
- elapsed time    .15 min.
0 sm-151        mt=102,103,104,105,106,107    updated 10/13/89          62151    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   149.623          temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.185          lumped nuclear density   = 4.3263481E-07
0spin factor (g)          = 75574.703          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 3.9469706E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.953          sigma(per absorber atom)= 4.4035888E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  14      -2.494376E-01     .000000E+00   -2.305733E-02
  15       1.483915E+01     .000000E+00    7.504057E-02
  16      -2.183372E+01     .000000E+00   -6.208440E-02
  17       1.734995E+02     .000000E+00    8.262178E-01
  18      -3.207909E+02     .000000E+00   -1.785116E+00
  19       6.253349E+01     .000000E+00    3.857444E-01
  20       1.141094E+00     .000000E+00   -1.387528E-04
  21      -7.117627E-02     .000000E+00    1.244099E-02
  22       6.952599E-02     .000000E+00    3.838917E-03
  23      -1.091983E-02     .000000E+00    3.374087E-04
0excess resonance integrals
0                resolved
0absorption      2.05598E+03
 fission          .00000E+00
- elapsed time    .17 min.
0 sm-152        mt=102,103,104,105,106,107    updated 10/13/89          62152    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   150.615          temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.208          lumped nuclear density   = 2.3631050E-06
0spin factor (g)          =   853.594          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 7.2260695E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.953          sigma(per absorber atom)= 8.0620406E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
   9       2.402629E-06     .000000E+00    1.158523E-04
  10      -1.917727E-03     .000000E+00   -2.963686E-02
  11      -2.752391E-02     .000000E+00   -1.047432E-01
  12      -1.840857E-01     .000000E+00   -5.836282E-01
  13       4.164582E-02     .000000E+00    1.012530E-01
  14      -1.591912E+02     .000000E+00   -3.072400E+02
0excess resonance integrals
0                resolved
0absorption      2.70562E+03
 fission          .00000E+00
- elapsed time    .17 min.
0 eu-153        mt=102,103,104,105,106,107    updated 10/13/89          63153    temperature=  975.00
```

```
0resonance data for this nuclide
0mass number (a)          =   151.607          temperature(kelvin)      =   975.000
0potential scatter sigma  =     9.731          lumped nuclear density   = 1.530614E-06
0spin factor (g)          = 12265.900          lump dimension (a-bar)   = 4.681220E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 1.115628E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.953          sigma(per absorber atom)= 1.244695E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss         res scat
  12      -3.047509E-01     .000000E+00     -5.960166E-02
  13      -2.161284E-01     .000000E+00     -8.911429E-03
  14      -1.044091E+00     .000000E+00     -3.930978E-03
  15       6.298871E-01     .000000E+00     -5.131698E-02
  16      -3.304040E+00     .000000E+00      8.154124E-03
  17       1.506573E-01     .000000E+00     -3.437618E-03
  18       7.726880E-02     .000000E+00     -2.231212E-03
  19       5.055436E-02     .000000E+00     -1.541073E-03
  20      -1.253806E-01     .000000E+00     -1.274959E-03
0excess resonance integrals
0                 resolved
0absorption      1.35315E+03
 fission          .00000E+00
- elapsed time    .18 min.
0 eu-154       mt=102,103,104,105,106,107     updated 10/13/89          63154     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   152.601          temperature(kelvin)      =   975.000
0potential scatter sigma  =     9.731          lumped nuclear density   = 3.594682E-07
0spin factor (g)          = 19135.801          lump dimension (a-bar)   = 4.681220E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 4.750341E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.953          sigma(per absorber atom)= 5.299900E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss         res scat
  12      -3.975526E-01     .000000E+00     -6.197736E-02
  13      -3.375991E-01     .000000E+00     -2.584699E-02
  14       2.938449E-01     .000000E+00      1.397187E-02
  15       7.538726E-02     .000000E+00      2.060046E-02
  16       7.086454E+00     .000000E+00      9.177127E-02
  17      -1.446394E+02     .000000E+00     -1.899228E+00
  18       1.132616E+02     .000000E+00      1.855863E+00
  19      -1.014847E+02     .000000E+00      1.187440E+00
0excess resonance integrals
0                 resolved
0absorption      2.13582E+03
 fission          .00000E+00
- elapsed time    .18 min.
0 eu-155       mt=102,103,104,105,106,107     updated 10/13/89          63155     temperature=  975.00
0 gd-155       mt=102                         updated 10/13/89          64155     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   153.592          temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.277          lumped nuclear density   = 2.835299E-09
0spin factor (g)          = 12700.100          lump dimension (a-bar)   = 4.681220E-01
```

```
0inner radius            =  .0000000E+00          dancoff correction (c)    = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1     =    15.995              sigma(per absorber atom)= 6.0226324E+07
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2     =   237.983              sigma(per absorber atom)= 6.7195800E+07
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss        res scat
  12      -1.439346E+00     .000000E+00    -1.839517E-01
  13       1.540958E+00     .000000E+00     1.984828E-01
  14       2.188145E-01     .000000E+00     9.802756E-03
  15      -3.373435E-01     .000000E+00    -1.646314E-04
  16       1.477357E+00     .000000E+00    -4.148866E-03
  17       1.568662E-01     .000000E+00    -1.479115E-03
  18       9.605145E-02     .000000E+00    -1.078055E-03
  19       6.295369E-02     .000000E+00    -8.026906E-04
  20       1.670850E-02     .000000E+00     1.627252E-04
  21        .000000E+00     .000000E+00      .000000E+00
  22        .000000E+00     .000000E+00      .000000E+00
  23        .000000E+00     .000000E+00      .000000E+00
  24        .000000E+00     .000000E+00      .000000E+00
  25      -2.127942E+03     .000000E+00    -1.622130E+00
  26      -5.205795E+03     .000000E+00     1.961528E+00
  27      -1.660027E+03     .000000E+00     7.392855E-01
0excess resonance integrals
0                resolved
0absorption      3.97015E+04
 fission          .00000E+00
- elapsed time     .20 min.
0u-234 1043 sigo=5+4 nreslacs p-3 293k f-1/e-m(1.+5)                  92234     temperature=  975.00
0resonance data for this nuclide
0mass number (a)         =  232.029          temperature(kelvin)      =  975.000
0potential scatter sigma =   10.021          lumped nuclear density   = 4.2846223E-06
0spin factor (g)         =  6948.450         lump dimension (a-bar)   = 4.6812201E-01
0inner radius            =  .0000000E+00     dancoff correction (c)   = 3.4269861E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1     =    15.995         sigma(per absorber atom)= 3.9854086E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2     =   237.985         sigma(per absorber atom)= 4.4451117E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss        res scat
  11      -2.047309E-02     .000000E+00    -5.972941E-02
  12      -1.670755E-01     .000000E+00    -6.992950E-02
  13       7.760423E-04     .000000E+00    -6.473117E-04
  14      -1.645193E+01     .000000E+00    -2.694678E+00
0excess resonance integrals
0                resolved
0absorption      5.84469E+02
 fission          .00000E+00
- elapsed time     .20 min.
0 uranium-235   endf/b-iv mat 1261          updated 10/13/89          92235     temperature=  975.00
0resonance data for this nuclide
0mass number (a)         =  233.025          temperature(kelvin)      =  975.000
0potential scatter sigma =   11.500          lumped nuclear density   = 3.6445219E-04
0spin factor (g)         = 15171.100         lump dimension (a-bar)   = 4.6812201E-01
0inner radius            =  .0000000E+00     dancoff correction (c)   = 3.4269861E-01
0the absorber will be treated by the nordheim integral method.
```

```
0mass of moderator-1    =    15.995              sigma(per absorber atom)= 4.6853799E+02
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   238.049              sigma(per absorber atom)= 5.0281970E+02
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  12      -1.548013E+00   -9.642565E-01   -3.629514E-02
  13      -5.519265E+00   -2.750468E+00   -1.197143E-01
  14      -4.442442E+00   -2.737241E+00   -3.041829E-02
0excess resonance integrals
0                resolved
0absorption      2.14703E+02
 fission         1.27737E+02
-  elapsed time    .22 min.
0u-236 1163 sigo=5+4 newklacs p-3 293k f-1/e-m(1.+5)                92236    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   234.017          temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.995          lumped nuclear density  = 6.1558632E-05
0spin factor (g)          =  6328.490          lump dimension (a-bar)  = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995              sigma(per absorber atom)= 2.7739358E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   237.934              sigma(per absorber atom)= 3.0943074E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  11      -2.948088E-01    .000000E+00   -7.413376E-01
  12      -1.598138E+00    .000000E+00   -1.081784E+00
  13      -6.908284E-02    .000000E+00   -3.552606E-03
  14      -5.045822E+01    .000000E+00   -4.414418E+00
0excess resonance integrals
0                resolved
0absorption      2.68511E+02
 fission          .00000E+00
-  elapsed time    .22 min.
0 uranium-238   endf/b-iv mat 1262          updated 10/13/89          92238    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   236.006          temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.599          lumped nuclear density  = 2.1780336E-02
0spin factor (g)          =   656.527          lump dimension (a-bar)  = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995              sigma(per absorber atom)= 7.8400850E+00
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   235.041              sigma(per absorber atom)= 3.3757189E-01
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
   9      -3.927211E-02    .000000E+00   -4.035209E-01
  10      -1.023942E+00   -1.742067E-05   -6.471693E+00
  11      -9.702673E+00    .000000E+00   -2.688688E+01
  12      -4.305799E+01    .000000E+00   -4.997792E+01
  13      -5.400405E+01    .000000E+00   -1.768848E+01
  14      -1.044813E+02    .000000E+00   -6.058750E+00
0excess resonance integrals
0                resolved
```

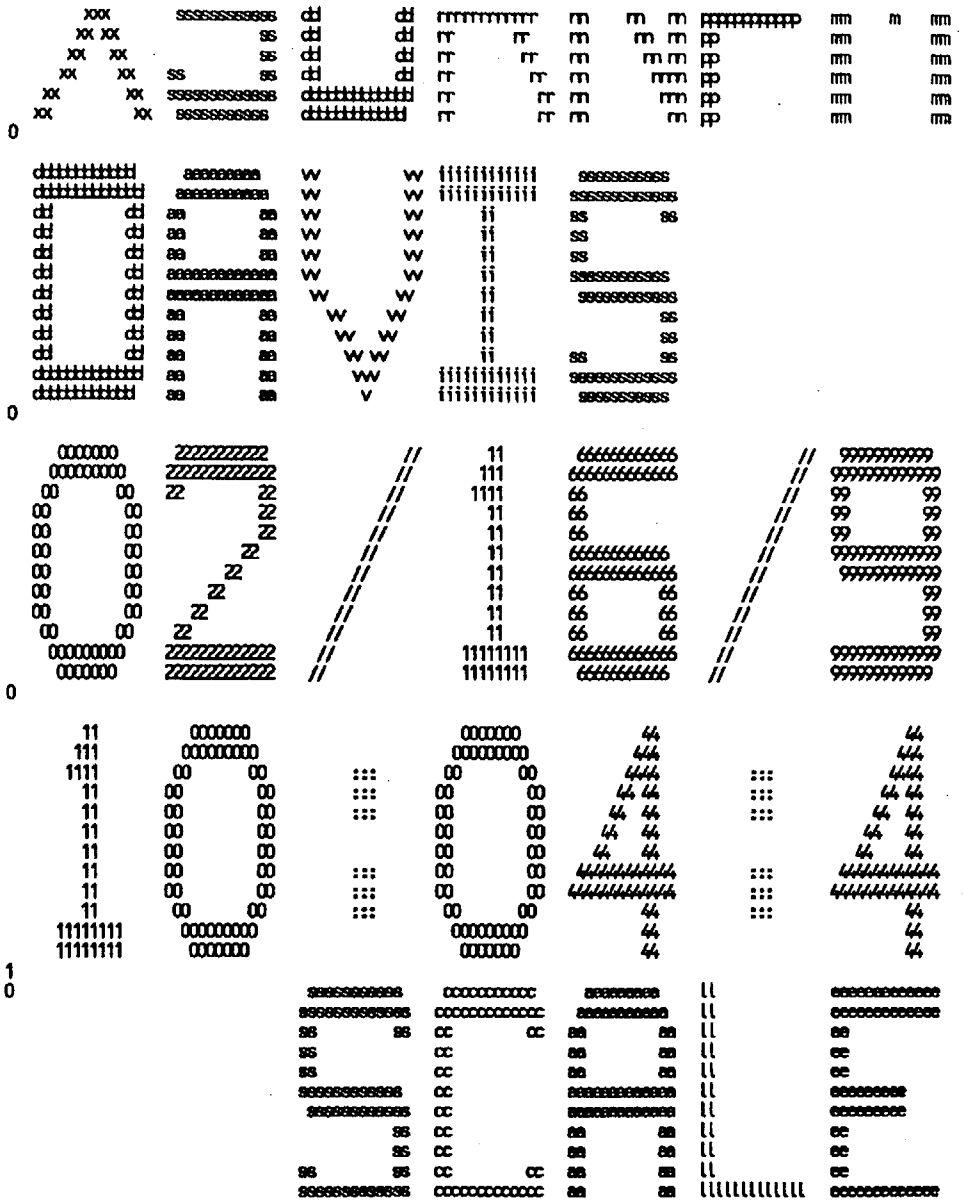
```
0absorption       1.80663E+01
 fission          5.04115E-04
- elapsed time     .25 min.
0 neptunium-237  endf/b-iv mat 1263          updated 10/13/89          93237     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   235.012          temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.500          lumped nuclear density  = 4.700386E-06
0spin factor (g)          = 10100.800          lump dimension (a-bar)  = 4.681220E-01
0inner radius             =  .0000000E+00      dancoff correction (c)  = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =   15.995           sigma(per absorber atom)= 3.652885E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  238.051           sigma(per absorber atom)= 3.896746E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs        res fiss       res scat
  11      -6.394980E-02  -2.252332E-06  -7.447753E-03
  12       1.017181E-02  -1.265774E-04   5.530881E-03
  13      -7.820910E-02   8.428399E-05  -3.659707E-03
  14      -1.376659E-01  -1.646240E-05  -2.075727E-03
0excess resonance integrals
0                resolved
0absorption       2.92875E+02
 fission          1.38520E-01
- elapsed time     .27 min.
0pu-238 1050 sigo=5+4 newlacs p-3 295k f-1/e-m(1.+5)                        94238     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   236.167          temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.890          lumped nuclear density  = 8.092880E-07
0spin factor (g)          = 13130.600          lump dimension (a-bar)  = 4.681220E-01
0inner radius             =  .0000000E+00      dancoff correction (c)  = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =   15.995           sigma(per absorber atom)= 2.109988E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  238.051           sigma(per absorber atom)= 2.265250E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs        res fiss       res scat
  11      -5.186105E-03  -8.081063E-04  -4.984089E-03
  12      -3.566360E-03  -4.077103E-04  -1.670922E-03
  13       3.811535E-01   7.427578E-02  -1.213191E-02
  14      -3.829654E-01  -7.001112E-02   8.539177E-03
0excess resonance integrals
0                resolved
0absorption       8.25002E+01
 fission          9.08183E+00
- elapsed time     .27 min.
0 plutonium-239  endf/b-iv mat 1264          updated 10/13/89          94239     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   236.999          temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.200          lumped nuclear density  = 1.168516E-04
0spin factor (g)          =  6435.710          lump dimension (a-bar)  = 4.681220E-01
0inner radius             =  .0000000E+00      dancoff correction (c)  = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =   15.995           sigma(per absorber atom)= 1.461336E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  238.051           sigma(per absorber atom)= 1.567475E+03
0moderator-2 will be treated by the nordheim integral method.
```

```
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  11      -2.433271E-01    -9.805850E-02    -7.439817E-02
  12      -2.148567E+00    -8.067330E-01    -2.823401E-01
  13      -7.017735E+00    -4.128114E+00    -1.074359E-01
  14      -2.236326E+00    -1.190446E+00    -1.976972E-02
0excess resonance integrals
0                 resolved
0absorption      3.05723E+02
 fission         1.71805E+02
- elapsed time     .28 min.
0 plutonium-240  endf/b-iv mat 1265          updated 10/13/89          9424O     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   237.992          temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.599          lumped nuclear density  = 2.568078E-05
0spin factor (g)          =   669.244          lump dimension (a-bar)  = 4.681220lE-01
0inner radius             = .0000000E+00       dancoff correction (c)  = 3.426986lE-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 6.649317E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   238.051          sigma(per absorber atom)= 7.132265lE+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
   9      -6.711484E-05    -2.113045E-06    -3.290113E-04
  10      -6.139901E-03    -3.798529E-04    -2.802343E-02
  11      -1.941598E-01    -1.123520E-03    -2.580830E-01
  12      -2.667725E+00    -1.456635E-02    -2.554560E+00
  13      -3.328218E-01    -2.040751E-03    -2.425588E-02
  14       .000000E+00      .000000E+00      .000000E+00
  15       1.726114E-02     3.294369E-06     3.385407E-03
  16       2.701083E+00     5.155136E-04     3.333627E-01
  17       4.089492E+02     7.709549E-02     3.578860E+01
  18      -8.924690E+03    -1.708316E+00    -7.052175E+02
  19       5.111390E+02     9.755294E-02     4.121003E+01
  20      -9.411130E+01    -1.796156E-02     1.798258E+00
0excess resonance integrals
0                 resolved
0absorption      4.12001E+03
 fission         1.79168E+00
- elapsed time     .32 min.
0 plutonium-241  endf/b-iv mat 1266          updated 10/13/89          9424l     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   238.978          temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.959          lumped nuclear density  = 1.476259E-05
0spin factor (g)          = 16402.100          lump dimension (a-bar)  = 4.681220lE-01
0inner radius             = .0000000E+00       dancoff correction (c)  = 3.426986lE-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 1.156720E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   238.051          sigma(per absorber atom)= 1.240734E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  12      -8.929748E-03    -8.586254E-05     5.350622E-04
  13      -9.712595E-01    -7.429292E-01    -2.818658E-02
  14      -9.685243E-01    -6.852704E-01    -2.741366E-03
```

```
  15      1.781677E-02    1.596397E-02   -4.625220E-04
0excess resonance integrals
0                resolved
0absorption      5.0889E+02
 fission         4.2505E+02
-  elapsed time    .32 min.
0 plutonium-242  endf/b-iv mat 1161          updated 10/13/89          9424.2     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   240.145          temperature(kelvin)      =   975.000
0potential scatter sigma  =    10.694          lumped nuclear density   = 2.0104515E-06
0spin factor (g)          =  6606.710          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 8.4935984E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   238.051          sigma(per absorber atom)= 9.1104984E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  11      -5.444985E-03     .0000000E+00    -1.480578E-02
  12      -1.144884E-01     .0000000E+00    -2.216890E-01
  13      -2.757552E-04     .0000000E+00     9.763988E-07
  14       8.116283E-02     .0000000E+00     1.516041E-02
  15      -3.984634E+01     .0000000E+00    -3.216101E+00
  16       4.027087E-02     .0000000E+00    -3.445925E-03
  17       1.550369E-02     .0000000E+00    -1.848117E-03
  18       1.112546E-02     .0000000E+00    -1.430697E-03
0excess resonance integrals
0                resolved
0absorption      1.0860E+03
 fission         .0000E+00
-  elapsed time    .32 min.
0am-241 1056 sigp-5+4 res-klacs 218grp p-3 295k                          9524.1     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   238.950          temperature(kelvin)      =   975.000
0potential scatter sigma  =     9.511          lumped nuclear density   = 5.1591286E-07
0spin factor (g)          = 82058.203          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 3.3098553E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   238.051          sigma(per absorber atom)= 3.5502538E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  13       4.837894E-01     1.207759E-02     4.451496E-03
  14      -4.743611E-01    -1.142380E-02    -5.411783E-03
0excess resonance integrals
0                resolved
0absorption      1.9541E+02
 fission         1.0756E+00
-  elapsed time    .33 min.
0am-243 1057 218 gp wt f-1/e-m 090576 p3 295k                            9524.3     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   240.940          temperature(kelvin)      =   975.000
0potential scatter sigma  =     9.511          lumped nuclear density   = 2.2520886E-07
0spin factor (g)          = 82052.602          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
```

```
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995              sigma(per absorber atom)= 7.5824494E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   238.051              sigma(per absorber atom)= 8.1331713E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  13      -9.115445E-03     .000000E+00    3.664919E-04
  14       1.020618E-02     .000000E+00    5.452318E-05
0excess resonance integrals
0                resolved
0absorption     1.60134E+02
 fission         .0000E+00
-  elapsed time    .33 min.
0 curium-244    endf/b-iv mat 1162          updated 10/13/89          9634    temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   242.133          temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.320          lumped nuclear density  = 2.6241885E-08
0spin factor (g)          =   5251.150          lump dimension (a-bar)  = 4.6812201E-01
0inner radius             =  .0000000E+00       dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995              sigma(per absorber atom)= 6.5071425E+06
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   238.051              sigma(per absorber atom)= 6.9797639E+06
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  11       1.785139E-04    4.906880E-06    1.973946E-04
  12       4.277681E-04    2.202040E-05    4.709649E-05
  13       2.291097E-03    1.158380E-04    6.961012E-04
  14      -4.282206E-02   -2.562004E-03   -1.985917E-02
0excess resonance integrals
0                resolved
0absorption     6.13745E+02
 fission        3.54127E+01
-  elapsed time    .33 min.
-  elapsed time    .33 min.
1     this xsdrn working tape was created 02/16/96 at 10:03:38
      the title of the parent case is as follows
      scale 4.2 - 27 group neutron burnup library
        based on endf-b version 4 data with endf-b version 5 fission products
          compiled for nrc     1/27/89
        tape id                      4321      number of nuclides          65
        number of neutron groups       27      number of gamma groups       0
        first thermal group            15      logical unit                 4
                                table of contents
      1/v cross sections normalized to 1.0 at 0.0253 ev                    id    999
       hydrogen       endf/b-iv mat 1269/thrm1002  updated 10/13/89       id   1001
      b-10 1273 218ngp 042375 p-3 293k                                     id   5010
       boron-11       endf/b-iv mat 1160           updated 10/13/89       id   5011
       oxygen-16      endf/b-iv mat 1276           updated 10/13/89       id   8016
       oxygen-16      endf/b-iv mat 1276           updated 10/13/89       id      6
       kr-85          mt=102,103,103,105,106,107   updated 10/13/89       id  36083
       kr-85             mt=  102                                          id  36085
       sr-90          mt=102                       updated 10/13/89       id  38090
        y-89          mt=102                       updated 10/13/89       id  39089
       zr-93             mt=  102                                          id  40093
       zr-94          mt=102                       updated 10/13/89       id  40094
```

```
        zr-95          mt=102                          updated 10/13/89          id    40095
        zircalloy      endf/b-iv mat 1284              updated 10/13/89          id    40302
        rb-94          mt=102                          updated 10/13/89          id    41094
        mo-95          mt=102                          updated 10/13/89          id    42095
        tc-99          mt=102                          updated 10/13/89          id    43099
        ru-101         mt=102                          updated 10/13/89          id    44101
        ru-106         mt=102                          updated 10/13/89          id    44106
        rh-103         mt=102                          updated 10/13/89          id    45103
        rh-105           mt=  102                                                id    45105
        pd-105         mt=102                          updated 10/13/89          id    46105
        pd-108         mt=102                          updated 10/13/89          id    46108
        silver-109     endf/b-iv mat 1139              updated 10/13/89          id    47109
        sb-124         mt=102                          updated 10/13/89          id    51124
        xe-131         mt=102,103,104,105,106          updated 10/13/89          id    54131
        xe-132         mt=102,103,104,105,106          updated 10/13/89          id    54132
        xenon-135      endf/b-iv mat 1294              updated 10/13/89          id    54135
        xe-136           mt=  102, 103, 104, 105, 107                            id    54136
        cesium-133     endf/b-iv mat 1141              updated 10/13/89          id    55133
        cs-134         mt=102                          updated 10/13/89          id    55134
        cs-135           mt=  102                                                id    55135
        cs-137         mt=102                          updated 10/13/89          id    55137
        ba-136         mt=102                          updated 10/13/89          id    56136
        la-139         mt=102                          updated 10/13/89          id    57139
        ce-144           mt=  102                                                id    58144
        pr-141         mt=102,103,104,105,106,107      updated 10/13/89          id    59141
        pr-143         mt=102                          updated 10/13/89          id    59143
        nd-143         mt=102                          updated 10/13/89          id    60143
        nd-145         mt=102                          updated 10/13/89          id    60145
        nd-147         mt=102                          updated 10/13/89          id    60147
        pm-147         mt=102                          updated 10/13/89          id    61147
        pm-148           mt=  102                                                id    61148
        sm-147         endf/b-v fission product        updated 10/13/89          id    62147
        sm-149         mt=102,105,107                  updated 10/13/89          id    62149
        sm-150         mt=102                          updated 10/13/89          id    62150
        sm-151         mt=102,103,104,105,106,107      updated 10/13/89          id    62151
        sm-152         mt=102,103,104,105,106,107      updated 10/13/89          id    62152
        eu-153         mt=102,103,104,105,106,107      updated 10/13/89          id    63153
        eu-154         mt=102,103,104,105,106,107      updated 10/13/89          id    63154
        eu-155         mt=102,103,104,105,106,107      updated 10/13/89          id    63155
        gd-155         mt=102                          updated 10/13/89          id    64155
       u-234 1043 sigp=5+4 nwa=lacs p-3 293k f-1/e-m(1.+5)                       id    92234
        uranium-235    endf/b-iv mat 1261              updated 10/13/89          id    92235
       u-236 1163 sigp=5+4 nwa=lacs p-3 293k f-1/e-m(1.+5)                       id    92236
        uranium-238    endf/b-iv mat 1262              updated 10/13/89          id    92238
        neptunium-237  endf/b-iv mat 1263              updated 10/13/89          id    93237
       pu-238 1050 sigp=5+4 nwa=lacs p-3 293k f-1/e-m(1.+5)                      id    94238
        plutonium-239  endf/b-iv mat 1264              updated 10/13/89          id    94239
        plutonium-240  endf/b-iv mat 1265              updated 10/13/89          id    94240
        plutonium-241  endf/b-iv mat 1266              updated 10/13/89          id    94241
        plutonium-242  endf/b-iv mat 1161              updated 10/13/89          id    94242
       am-241 1056 sigp=5+4 nwa=lacs 218ngp p-3 293k                             id    95241
       am-243 1057 218 gp wt f-1/e-m 09Oct76 p3 293k                             id    95243
        curium-244     endf/b-iv mat 1162              updated 10/13/89          id    96244
0         tape copy used       0 i/o's, and took      .00 seconds
1 xx          xx   ssssssssss    ddddddddddd   rrrrrrrrrr   rr       rr ppppppppp    rrr         rrr
   xx        xx  ssssssssssss   ddddddddddddd  rrrrrrrrrrr  rrr      rr pppppppppp   rrrr        rrrr
    xx      xx   ss        ss   dd        dd   rr       rr  rrrr     rr pp       pp   rrrrrr      rrrrrr
     xx    xx    ss             dd        dd   rr       rr  rr rr    rr pp       pp   rrr rrr    rrr rrr
      xx xx      ss             dd        dd   rr       rr  rr  rr   rr pp       pp   rrr  rrr  rrr  rrr
       xx xx      ss            dd        dd   rr       rr  rr   rr  rr pp       pp   rrr   rrrrr   rrr
        xxx       ssssssssssss  dd        dd   rrrrrrrrrrr  rr    rr rr ppppppppppp   rrr    rrrr    rrr
```



sssssssssss ccccccccccc aa aa lllllllllllll eeeeeeeeeeee

```
*****************************************************************
*****************************************************************
*****************************************************************
*****                                                       *****
*****                                                       *****
*****          program verification information              *****
*****                                                       *****
*****          code system:  scale  version:  4.2           *****
*****                                                       *****
*****************************************************************
*****************************************************************
*****                                                       *****
*****                                                       *****
*****                                                       *****
*****          program:  c0c001                             *****
*****                                                       *****
*****       creation date:  04/27/95                        *****
*****                                                       *****
*****          library:  /neutronics/scale/exe              *****
*****                                                       *****
*****                                                       *****
*****  this is not a  scale  configuration controlled code  *****
*****                                                       *****
*****          jobname:  davis                              *****
*****                                                       *****
*****  date of execution:  02/16/96                         *****
*****                                                       *****
*****  time of execution:  10:04:44                         *****
*****                                                       *****
*****                                                       *****
*****************************************************************
*****************************************************************
*****************************************************************
```

```
1
                  1040 d, sas2h: babcock wilcox 15x15, 3.00w%, 20gd/mtu burn high temp
0      -1q array has      1 entries.
0       1q array has     15 entries.
0       2q array has     10 entries.
0       3q array has     12 entries.
0       4q array has      9 entries.
0       5q array has     12 entries.
0direct access unit   9 requires    12 blocks of length  704 for cross section mixing.
1                  1040 d, sas2h: babcock wilcox 15x15, 3.00w%, 20gd/mtu burn high temp
0general problem description data block
0                        general problem data

 ige  1/2/3 = plane/cylinder/sphere      2      isn  quadrature order                  8
 izn  number of zones                    4      isct order of scattering               3
 im   number of special intervals       24      ievt 0/1/2/3/4/5/6=q/k/alpha/c/z/r/h   1
 ibl  0/1/2/3 = vacuum/refl/per/white    1      iim  inner iteration maximum         20
 ibr  right boundary condition           3      iom  outer iteration maximum         25
 mx   number of mixtures                 3      iclc -1/0/n--flat res/sn/cpt           0
 ms   mixing table length               65      ith  0/1 = forward/adjoint           0
 igm  number of energy groups           27      iflu not used(always igtd)             0
 nrg  number of neutron groups          27      iprt -2/-1/0/n=mixture xsec print     -2
 ngg  number of gamma groups             0      idl  0/1/2/3=no/prt nd/pch n/both     53
```

```
 iftg number of first thermal group      15        ipbt -1/0/1=none/fine/all bal. prt      0
0                                 special options

 ifg  0/1 = none/weighting calculation    1        ipn  0/1/2 diff. coef. param            0
 iqm  volumetric sources (0/1=no/yes)     0        idfm 0/1 = none/density factors 39*    1
 ipn  boundary sources (0/1=no/yes)       0        iaz  0/n = none/n activities by zone    0
 ifn  0/1/2 = input 39*/34*/use last     53        iai  0/1=none/activities by interval   0
 itmx maximum time (minutes)             10        ifct 0/1=no/yes upscatter scaling      0
 idt1 0/1/2/3=no/xsect/srce/flux--out     0        ipvt 0/1/2=no/k/alpha parametric srch  0
 isx  broad group fluxes                  0        isen outer iteration acceleration      0
 ibln activity data unit                  0        nbnd band rebaln parameter             0
 jbkl 0/1/2 buckling geometry             0
0                              weighting data (ifg=1)

 icon -1/0/1=cell/zone/region weight     -1        ihtf total xsect pen in brd gp tables  3
 igmf number of broad groups             27        ndsf pen g-g or file number            4
 itp  0/10/20/30/40 0/c/e/ac/a            0        nusf table length or max order         4
 ipp  -2/-1/0/n=wgted xsect print        -2        mxcm extra 1-d x-sect positions        0
 iap  -1/n anisn xsect print             -1
0                              floating point parameters

 eps  overall convergence       1.00000E-04       dy   cyl/pla ht for buckling    .00000E+00
 ptc  point convergence         1.00000E-04       dz   plane depth for buckling   .00000E+00
 xnf  normalization factor      1.00000E+00       vac  void streaming correction  .00000E+00
 ev   eigenvalue guess           .00000E+00       pv   ipvt=1/2--k/alpha          1.00000E+00
 evm  eigenvalue modifier        .00000E+00       eql  ev change eps for search   1.00000E-03
 bf   buckling factor=1.420892  1.42089E+00       xnpm new param mod for search   7.50000E-01
    this case will require       2535 locations for mixing
    this case has been allocated 200000 locations
1                    1040 d, sas2h: babcock wilcox 15x15, 3.00w%, 20gad/mtu burn high temp
0      13q array has      65 entries.
0      14q array has      65 entries.
0      15q array has      65 entries.
0                              data block 2 (mixing table, etc.)
0     nuclides      cccc                          mixing table                          extra
       on tape    identification          mixture   component   atom density        xsect id's
     1     999                                 1       92235   3.64452E-04
     2    1001                                 1       92234   4.28462E-06
     3    5010                                 1       92236   6.15585E-06
     4    5011                                 1       92238   2.17803E-02
     5    8016                                 1        8016   4.55359E-02
     6       6                                 3           6   2.09710E-02
     7   36083                                 1       36083   1.62790E-06
     8   36085                                 1       36085   7.82545E-07
     9   36090                                 1       36090   1.79089E-06
    10   39089                                 1       39089   1.44715E-06
    11   40093                                 1       42095   1.98509E-06
    12   40094                                 1       40093   1.44900E-06
    13   40095                                 1       40094   2.28864E-06
    14   40802                                 1       40095   1.96022E-06
    15   41094                                 1       41094   1.19775E-11
    16   42095                                 1       43099   2.23951E-06
    17   43099                                 1       45103   1.24431E-06
    18   44101                                 1       45105   2.38399E-08
    19   44106                                 1       44101   2.05378E-06
    20   45103                                 1       44106   3.08150E-06
    21   45105                                 1       46105   8.54907E-06
    22   46105                                 1       46108   2.52052E-06
    23   46108                                 1       47109   1.72855E-06
    24   47109                                 1       51124   3.86646E-10
```

25	51124	1	54131	1.01675E-05
26	54131	1	54132	1.98610E-05
27	54132	1	54135	6.66399E-09
28	54135	1	54136	3.91142E-05
29	54136	1	55134	1.27988E-06
30	55133	1	55135	1.24307E-05
31	55134	1	55137	2.41337E-05
32	55135	1	56136	2.66545E-07
33	55137	1	57139	2.38740E-05
34	56136	1	59141	2.08456E-05
35	57139	1	59143	3.65349E-07
36	58144	1	58144	6.86967E-06
37	59141	1	60143	1.82864E-05
38	59143	1	60145	1.36331E-05
39	60143	1	61147	4.30510E-06
40	60145	1	61148	1.28358E-08
41	60147	1	60147	1.29256E-07
42	61147	1	62147	1.79999E-06
43	61148	1	62149	8.91136E-08
44	62147	1	62150	5.01098E-06
45	62149	1	62151	4.32635E-07
46	62150	1	62152	2.36311E-06
47	62151	1	64155	2.83530E-09
48	62152	1	63153	1.53061E-06
49	63153	1	63154	3.59468E-07
50	63154	1	63155	1.67707E-07
51	63155	2	40802	4.25156E-02
52	64155	3	1001	4.19420E-02
53	92234	3	5010	3.81515E-06
54	92235	3	5011	1.54884E-05
55	92236	1	55133	2.45710E-05
56	92238	1	95237	4.70089E-06
57	95237	1	94238	8.09288E-07
58	94238	1	94239	1.16852E-04
59	94239	1	94240	2.56808E-05
60	94240	1	94241	1.47624E-05
61	94241	1	94242	2.01045E-06
62	94242	1	95241	5.15913E-07
63	95241	1	95243	2.25204E-07
64	95243	1	96244	2.62419E-08
65	96244	1	999	1.00000E-20

- elapsed time .00 min.
0 21649 locations will be used
0 35q array has 25 entries.
0 36q array has 24 entries.
0 38q array has 24 entries.
0 39q array has 4 entries.
0 40q array has 4 entries.
0 47q array has 27 entries.
0 51q array has 27 entries.
1 1040 d, sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp

neutron group parameters

0 gp	energy boundaries	lethargy boundaries	weighted velocities	broad gp numbers	calc type	group band	right albedo	left albedo
1	2.00000E+07	-6.93147E-01	4.60581E+09	1	0	1	1.00000E+00	
2	6.43400E+06	4.40989E-01	2.88737E+09	2	0	2	1.00000E+00	
3	3.00000E+06	1.20397E+00	2.12201E+09	3	0	3	1.00000E+00	
4	1.85000E+06	1.68740E+00	1.75673E+09	4	0	4	1.00000E+00	
5	1.40000E+06	1.96611E+00	1.46535E+09	5	0	5	1.00000E+00	
6	9.00000E+05	2.40795E+00	1.06520E+09	6	0	6	1.00000E+00	

7	4.00000E+05	3.21888E+00	6.07557E+08	7	0	7	1.00000E+00
8	1.00000E+05	4.60517E+00	2.72415E+08	8	0	8	1.00000E+00
9	1.70000E+04	6.37713E+00	1.13526E+08	9	0	9	1.00000E+00
10	3.00000E+03	8.11173E+00	4.82126E+07	10	0	10	1.00000E+00
11	5.50000E+02	9.80818E+00	2.05946E+07	11	0	11	1.00000E+00
12	1.00000E+02	1.15129E+01	1.01036E+07	12	0	12	1.00000E+00
13	3.00000E+01	1.27169E+01	5.69595E+06	13	0	13	1.00000E+00
14	1.00000E+01	1.38155E+01	3.20957E+06	14	0	14	1.00000E+00
15	3.04999E+00	1.50030E+01	2.10601E+06	15	0	15	1.00000E+00
16	1.77000E+00	1.55471E+01	1.70522E+06	16	0	16	1.00000E+00
17	1.29999E+00	1.58657E+01	1.52545E+06	17	0	17	1.00000E+00
18	1.12999E+00	1.59959E+01	1.42867E+06	18	0	18	1.00000E+00
19	1.00000E+00	1.61181E+01	1.31002E+06	19	0	19	1.00000E+00
20	8.00000E-01	1.63412E+01	9.05898E+05	20	0	20	1.00000E+00
21	4.00000E-01	1.70344E+01	8.17974E+05	21	0	21	1.00000E+00
22	3.25000E-01	1.72420E+01	6.90070E+05	22	0	22	1.00000E+00
23	2.25000E-01	1.76098E+01	4.89253E+05	23	0	23	1.00000E+00
24	9.99999E-02	1.84207E+01	3.57766E+05	24	0	24	1.00000E+00
25	5.00000E-02	1.91138E+01	2.71895E+05	25	0	25	1.00000E+00
26	3.00000E-02	1.96247E+01	1.87283E+05	26	0	26	1.00000E+00
27	1.00000E-02	2.07233E+01	8.88201E+04	27	0	27	1.00000E+00
28	1.00000E-05	2.76310E+01					

1 1040 d, sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0

	mixture by zone	order p(l) by zone	activity table matl no.	reaction	quadrature constants weights	directions	refl direc	wt x cos
1	1	3			0	-2.79004E-01	3	0
2	1	3			5.06143E-02	-1.97286E-01	3	-9.98548E-03
3	2	3			5.06143E-02	1.97286E-01	2	9.98548E-03
4	3	3			0	-6.04419E-01	8	0
5					5.55953E-02	-5.58410E-01	8	-3.10450E-02
6					5.55953E-02	-2.31301E-01	7	-1.28595E-02
7					5.55953E-02	2.31301E-01	6	1.28595E-02
8					5.55953E-02	5.58410E-01	5	3.10450E-02
9					0	-8.50774E-01	15	0
10					5.22844E-02	-8.21784E-01	15	-4.29665E-02
11					5.22844E-02	-6.01588E-01	14	-3.14537E-02
12					5.22844E-02	-2.20196E-01	13	-1.15128E-02
13					5.22844E-02	2.20196E-01	12	1.15128E-02
14					5.22844E-02	6.01588E-01	11	3.14537E-02
15					5.22844E-02	8.21784E-01	10	4.29665E-02
16					0	-9.89032E-01	24	0
17					4.53365E-02	-9.64143E-01	24	-4.37099E-02
18					4.53365E-02	-8.17361E-01	23	-3.70555E-02
19					4.53365E-02	-5.46143E-01	22	-2.47597E-02
20					4.53365E-02	-1.91780E-01	21	-8.69444E-03
21					4.53365E-02	1.91780E-01	20	8.69444E-03
22					4.53365E-02	5.46143E-01	19	2.47597E-02
23					4.53365E-02	8.17361E-01	18	3.70555E-02
24					4.53365E-02	9.64143E-01	17	4.37099E-02

0constants for p(3) scattering

0angl	set 1	set 2	set 3	set 4	set 5
1	-2.79004E-01	8.83236E-01	6.74143E-02	-6.16919E-01	-1.71701E-02
2	-1.97286E-01	8.83236E-01	.00000E+00	-4.36228E-01	1.21411E-02
3	1.97286E-01	8.83236E-01	.00000E+00	4.36228E-01	-1.21411E-02
4	-6.04419E-01	4.52016E-01	3.16379E-01	-8.04435E-01	-1.78564E-01
5	-5.58410E-01	4.52016E-01	2.25714E-01	-7.43201E-01	-6.68028E-02
6	-2.31301E-01	4.52016E-01	-2.25713E-01	-3.07844E-01	1.61278E-01
7	2.31301E-01	4.52016E-01	-2.25713E-01	3.07844E-01	-1.61278E-01
8	5.58410E-01	4.52016E-01	2.25713E-01	7.43201E-01	6.68028E-02
9	-8.50774E-01	-8.57235E-02	6.26843E-01	-1.98456E-01	-4.86885E-01

10	-8.21784E-01	-8.57235E-02	5.42862E-01	-1.91694E-01	-3.44245E-01
11	-6.01588E-01	-8.57235E-02	.00000E+00	-1.40330E-01	3.44244E-01
12	-2.20196E-01	-8.57235E-02	-5.42862E-01	-5.13643E-02	3.44245E-01
13	2.20196E-01	-8.57235E-02	-5.42862E-01	5.13643E-02	-3.44245E-01
14	6.01588E-01	-8.57235E-02	.00000E+00	1.40330E-01	-3.44245E-01
15	8.21784E-01	-8.57235E-02	5.42862E-01	1.91694E-01	3.44245E-01
16	-9.83052E-01	-4.49528E-01	8.36886E-01	5.00708E-01	-7.51005E-01
17	-9.64143E-01	-4.49528E-01	7.73181E-01	4.91083E-01	-6.23438E-01
18	-8.17361E-01	-4.49528E-01	3.20852E-01	4.16320E-01	1.46514E-01
19	-5.46143E-01	-4.49528E-01	-3.20852E-01	2.78176E-01	7.36575E-01
20	-1.91780E-01	-4.49528E-01	-7.73181E-01	9.76824E-02	4.17256E-01
21	1.91780E-01	-4.49528E-01	-7.73181E-01	-9.76824E-02	-4.17256E-01
22	5.46143E-01	-4.49528E-01	-3.20852E-01	-2.78176E-01	-7.36575E-01
23	8.17361E-01	-4.49528E-01	3.20852E-01	-4.16320E-01	-1.46514E-01
24	9.64143E-01	-4.49528E-01	7.73181E-01	-4.91083E-01	6.23438E-01

1 int

int	radii	mid pts	zone no.	areas	volumes	dens fact	radius mod	spec(int)
1	0	1.29551E-02	1	0	2.10906E-03	1.00000E+00	0	
2	2.59102E-02	4.33406E-02	1	1.62758E-01	9.49518E-03	1.00000E+00	0	
3	6.07710E-02	8.75100E-02	1	3.81835E-01	2.94045E-02	1.00000E+00	0	
4	1.14249E-01	1.74155E-01	1	7.17848E-01	1.31104E-01	1.00000E+00	0	
5	2.34061E-01	2.93967E-01	1	1.47066E+00	2.21299E-01	1.00000E+00		
6	3.53873E-01	3.80612E-01	1	2.22345E+00	1.27890E-01	1.00000E+00		
7	4.07351E-01	4.24781E-01	1	2.55946E+00	9.30429E-02	1.00000E+00		
8	4.42212E-01	4.55167E-01	1	2.77850E+00	7.41004E-02	1.00000E+00		
9	4.68122E-01	4.68814E-01	2	2.94130E+00	4.07946E-03	0		
10	4.69507E-01	4.71481E-01	2	2.95000E+00	1.16988E-02	0		
11	4.73456E-01	4.75431E-01	2	2.97481E+00	1.17968E-02	0		
12	4.77405E-01	4.78098E-01	2	2.99962E+00	4.16023E-03	0		
13	4.78790E-01	4.83159E-01	3	3.00833E+00	2.65268E-02	1.00000E+00		
14	4.87528E-01	4.99987E-01	3	3.06329E+00	7.82768E-02	1.00000E+00		
15	5.12445E-01	5.24903E-01	3	3.21979E+00	8.21777E-02	1.00000E+00		
16	5.37362E-01	5.41731E-01	3	3.37634E+00	2.97427E-02	1.00000E+00		
17	5.46100E-01	5.53513E-01	4	3.43125E+00	5.15631E-02	1.00000E+00		
18	5.60926E-01	5.70900E-01	4	3.52440E+00	7.15548E-02	1.00000E+00		
19	5.80874E-01	5.96175E-01	4	3.64974E+00	1.14628E-01	1.00000E+00		
20	6.11475E-01	6.45755E-01	4	3.84201E+00	2.78169E-01	1.00000E+00		
21	6.80034E-01	7.14313E-01	4	4.27278E+00	3.07702E-01	1.00000E+00		
22	7.48592E-01	7.63892E-01	4	4.70354E+00	1.46875E-01	1.00000E+00		
23	7.79193E-01	7.89167E-01	4	4.89582E+00	9.89116E-02	1.00000E+00		
24	7.99141E-01	8.06554E-01	4	5.02115E+00	7.51357E-02	1.00000E+00		
25	8.13968E-01			5.11431E+00				

- elapsed time .00 min.

1 outer

iter	inner iters	1 - balance	eigenvalue	1 - source ratio	1 - scatter ratio	1 - upscat ratio	search parameter	time (min)
1	119	-2.23557E-05	1.01176E+00	-1.25636E-02	1.00000E+00	-4.22462E-05	.00000E+00	.0000
2	185	8.53298E-06	1.01259E+00	-3.16201E-04	-1.23238E-03	-8.13098E-04	.00000E+00	.0000
3	232	3.91929E-06	1.01285E+00	-6.28068E-05	-2.22519E-04	-2.08430E-04	.00000E+00	.0000
4	265	-1.24623E-05	1.01309E+00	-1.67925E-05	-5.70544E-05	-4.65967E-05	.00000E+00	.0000

grp	to grp	inner iters	mid int.	max. flux difference	msf int.	max. scale factor	coarse mesh
1	1	1	1	5.78574E-08	24	1.00000E+00	1
2	2	1	1	6.59902E-08	24	1.00000E+00	1
3	3	1	1	5.81586E-08	24	1.00000E+00	1
4	4	1	1	5.37730E-08	24	1.00000E+00	1
5	5	1	1	4.50401E-08	24	1.00000E+00	1
6	6	1	1	2.47275E-08	24	1.00000E+00	1
7	7	1	1	1.02080E-08	24	1.00000E+00	1
8	8	1	24	1.38611E-08	24	1.00000E+00	1
9	9	1	1	2.17652E-08	24	1.00000E+00	1
10	10	1	1	1.83806E-08	24	1.00000E+00	1

11	11	1	1	1.91079E-08	24	1.00000E+00	1
12	12	1	24	4.32918E-09	24	1.00000E+00	1
13	13	1	24	1.11999E-08	24	1.00000E+00	1
14	14	1	24	1.24675E-08	24	1.00000E+00	1
15	15	1	24	4.54743E-05	24	9.99967E-01	1
16	16	1	24	5.61643E-05	24	9.99974E-01	1
17	17	1	18	2.29950E-05	24	9.99947E-01	1
18	18	1	22	2.51828E-05	24	9.99879E-01	2
19	19	1	19	2.14472E-05	24	9.99942E-01	1
20	20	1	24	5.17563E-05	24	9.99956E-01	1
21	21	1	18	3.11258E-05	24	9.99953E-01	1
22	22	1	24	5.35801E-05	24	9.99984E-01	1
23	23	1	24	4.10872E-06	24	1.00000E+00	1
24	24	1	2	1.26449E-05	24	1.00001E+00	1
25	25	1	24	2.19474E-05	24	1.00001E+00	1
26	26	1	21	1.67941E-05	24	1.00008E+00	2
27	27	1	2	6.65707E-06	24	1.00001E+00	2

5 292 -1.38947E-06 1.01298E+00 -3.34742E-06 -1.28053E-05 -1.06925E-05 .00000E+00 .0167

final monitor

lambda 1.01297E+00 production/absorption 1.01297E+00 angular flux on 16

- elapsed time .02 min.

1 1040 d, sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp

0 int. zone number radius int. midpoint area volume prod density

1	1	.00000E+00	1.29551E-02	.00000E+00	2.10906E-03	2.95670E-03
2	1	2.59102E-02	4.33406E-02	1.62798E-01	9.49318E-03	1.33025E-02
3	1	6.07710E-02	8.75100E-02	3.81836E-01	2.94045E-02	4.12845E-02
4	1	1.14249E-01	1.74155E-01	7.17848E-01	1.31104E-01	1.85931E-01
5	1	2.34061E-01	2.98967E-01	1.47066E+00	2.21299E-01	3.21681E-01
6	1	3.53873E-01	3.80612E-01	2.22345E+00	1.27890E-01	1.90999E-01
7	1	4.07351E-01	4.24781E-01	2.59944E+00	9.30429E-02	1.41781E-01
8	1	4.42212E-01	4.55167E-01	2.77850E+00	7.41004E-02	1.15053E-01
9	2	4.68122E-01	4.68814E-01	2.94130E+00	4.07946E-03	.00000E+00
10	2	4.69507E-01	4.71481E-01	2.95000E+00	1.16988E-02	.00000E+00
11	2	4.73456E-01	4.75431E-01	2.97481E+00	1.17968E-02	.00000E+00
12	2	4.77405E-01	4.78098E-01	2.99962E+00	4.16023E-03	.00000E+00
13	3	4.78790E-01	4.85159E-01	3.00833E+00	2.65268E-02	.00000E+00
14	3	4.87528E-01	4.99387E-01	3.06523E+00	7.82768E-02	.00000E+00
15	3	5.12345E-01	5.26903E-01	3.21979E+00	8.21777E-02	.00000E+00
16	3	5.37362E-01	5.41731E-01	3.37634E+00	2.97427E-02	.00000E+00
17	4	5.46100E-01	5.55513E-01	3.43125E+00	5.15631E-02	.00000E+00
18	4	5.60926E-01	5.70900E-01	3.52440E+00	7.15548E-02	.00000E+00
19	4	5.80874E-01	5.96175E-01	3.64974E+00	1.14628E-01	.00000E+00
20	4	6.11475E-01	6.45755E-01	3.84201E+00	2.78169E-01	.00000E+00
21	4	6.80034E-01	7.14313E-01	4.27278E+00	3.07702E-01	.00000E+00
22	4	7.48592E-01	7.63893E-01	4.70354E+00	1.46875E-01	.00000E+00
23	4	7.79193E-01	7.89167E-01	4.89582E+00	9.89116E-02	.00000E+00
24	4	7.99141E-01	8.06564E-01	5.02115E+00	7.51357E-02	.00000E+00
25		8.13988E-01		5.11431E+00		

1 1040 d, sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp

0 total flux

0 int. grp. 1 grp. 2 grp. 3 grp. 4 grp. 5 grp. 6 grp. 7 grp. 8

1	1.82381E-01	1.34291E+00	1.68857E+00	1.04443E+00	1.57780E+00	3.03195E+00	2.90620E+00	2.08230E+00
2	1.82446E-01	1.34355E+00	1.68941E+00	1.04492E+00	1.57850E+00	3.03325E+00	2.90686E+00	2.08236E+00
3	1.82389E-01	1.34295E+00	1.68864E+00	1.04447E+00	1.57772E+00	3.03165E+00	2.90584E+00	2.08217E+00
4	1.81984E-01	1.33866E+00	1.68321E+00	1.04117E+00	1.57268E+00	3.02121E+00	2.89956E+00	2.08111E+00
5	1.80930E-01	1.32767E+00	1.66940E+00	1.03282E+00	1.55925E+00	2.99534E+00	2.88408E+00	2.07849E+00
6	1.79713E-01	1.31511E+00	1.65383E+00	1.02348E+00	1.54463E+00	2.96699E+00	2.86721E+00	2.07560E+00
7	1.78740E-01	1.30525E+00	1.64179E+00	1.01635E+00	1.53357E+00	2.94605E+00	2.85485E+00	2.07341E+00
8	1.77771E-01	1.29562E+00	1.63023E+00	1.00960E+00	1.52326E+00	2.92691E+00	2.84365E+00	2.07136E+00
9	1.77241E-01	1.29041E+00	1.62401E+00	1.00601E+00	1.51784E+00	2.91694E+00	2.83787E+00	2.07027E+00

10	1.77130E-01	1.28936E+00	1.62277E+00	1.00532E+00	1.51684E+00	2.91516E+00	2.85688E+00	2.07007E+00
11	1.76969E-01	1.28783E+00	1.62097E+00	1.00433E+00	1.51542E+00	2.91262E+00	2.85549E+00	2.06979E+00
12	1.76862E-01	1.28682E+00	1.61980E+00	1.00368E+00	1.51451E+00	2.91100E+00	2.85460E+00	2.06960E+00
13	1.76663E-01	1.28495E+00	1.61757E+00	1.00244E+00	1.51270E+00	2.90757E+00	2.85267E+00	2.06922E+00
14	1.76123E-01	1.27964E+00	1.61103E+00	9.98605E-01	1.50690E+00	2.89632E+00	2.84627E+00	2.06817E+00
15	1.75517E-01	1.27521E+00	1.60262E+00	9.95285E-01	1.49851E+00	2.87971E+00	2.81670E+00	2.05702E+00
16	1.75221E-01	1.26965E+00	1.59758E+00	9.89811E-01	1.49279E+00	2.86817E+00	2.80999E+00	2.06650E+00
17	1.75078E-01	1.26761E+00	1.59446E+00	9.87479E-01	1.48881E+00	2.86022E+00	2.80534E+00	2.06636E+00
18	1.74891E-01	1.26497E+00	1.59046E+00	9.84505E-01	1.48378E+00	2.85026E+00	2.79948E+00	2.06521E+00
19	1.74657E-01	1.26188E+00	1.58583E+00	9.81138E-01	1.47808E+00	2.83912E+00	2.79292E+00	2.06597E+00
20	1.74345E-01	1.25778E+00	1.57995E+00	9.76919E-01	1.47101E+00	2.82529E+00	2.78479E+00	2.06563E+00
21	1.74130E-01	1.25494E+00	1.57578E+00	9.73952E-01	1.46598E+00	2.81548E+00	2.77910E+00	2.06553E+00
22	1.74132E-01	1.25482E+00	1.57549E+00	9.73649E-01	1.46546E+00	2.81447E+00	2.77866E+00	2.06575E+00
23	1.74211E-01	1.25568E+00	1.57661E+00	9.74378E-01	1.46663E+00	2.81676E+00	2.78014E+00	2.06608E+00
24	1.74301E-01	1.25670E+00	1.57798E+00	9.75278E-01	1.46809E+00	2.81961E+00	2.78193E+00	2.06631E+00

0 Int.	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	1.58921E+00	1.44937E+00	1.30922E+00	7.97325E-01	6.70089E-01	5.79053E-01	3.66095E-01	2.00079E-01
2	1.58914E+00	1.44927E+00	1.30902E+00	7.97092E-01	6.69877E-01	5.78762E-01	3.66058E-01	2.00050E-01
3	1.58852E+00	1.44948E+00	1.30948E+00	7.97844E-01	6.70348E-01	5.79495E-01	3.66142E-01	2.00105E-01
4	1.59084E+00	1.45068E+00	1.31210E+00	8.00739E-01	6.73022E-01	5.83560E-01	3.66607E-01	2.00422E-01
5	1.59285E+00	1.45362E+00	1.31854E+00	8.08382E-01	6.79621E-01	5.93649E-01	3.67730E-01	2.01200E-01
6	1.59573E+00	1.45682E+00	1.32559E+00	8.16797E-01	6.86881E-01	6.04828E-01	3.68941E-01	2.02049E-01
7	1.59785E+00	1.45917E+00	1.33078E+00	8.23036E-01	6.92256E-01	6.13181E-01	3.69813E-01	2.02672E-01
8	1.59993E+00	1.46130E+00	1.33550E+00	8.28766E-01	6.97186E-01	6.20889E-01	3.70595E-01	2.03239E-01
9	1.60102E+00	1.46240E+00	1.33795E+00	8.31742E-01	6.99748E-01	6.24898E-01	3.70998E-01	2.03533E-01
10	1.60121E+00	1.46258E+00	1.33834E+00	8.32220E-01	7.00165E-01	6.25634E-01	3.71060E-01	2.03583E-01
11	1.60149E+00	1.46283E+00	1.33890E+00	8.32908E-01	7.00761E-01	6.26443E-01	3.71156E-01	2.03655E-01
12	1.60168E+00	1.46300E+00	1.33926E+00	8.33345E-01	7.01147E-01	6.27032E-01	3.71219E-01	2.03702E-01
13	1.60205E+00	1.46334E+00	1.34001E+00	8.34246E-01	7.01955E-01	6.28233E-01	3.71347E-01	2.03797E-01
14	1.60306E+00	1.46442E+00	1.34257E+00	8.37065E-01	7.04402E-01	6.31994E-01	3.71758E-01	2.04095E-01
15	1.60418E+00	1.46597E+00	1.34571E+00	8.40955E-01	7.07803E-01	6.37174E-01	3.72340E-01	2.04507E-01
16	1.60470E+00	1.46700E+00	1.34791E+00	8.43664E-01	7.09998E-01	6.40507E-01	3.72724E-01	2.04772E-01
17	1.60499E+00	1.46777E+00	1.34956E+00	8.45309E-01	7.11576E-01	6.42957E-01	3.72957E-01	2.04948E-01
18	1.60541E+00	1.46881E+00	1.35180E+00	8.47832E-01	7.13717E-01	6.46246E-01	3.73175E-01	2.05175E-01
19	1.60594E+00	1.47000E+00	1.35436E+00	8.50735E-01	7.16187E-01	6.50067E-01	3.73455E-01	2.05440E-01
20	1.60668E+00	1.47151E+00	1.35761E+00	8.54433E-01	7.19332E-01	6.54930E-01	3.73798E-01	2.05773E-01
21	1.60724E+00	1.47258E+00	1.35993E+00	8.57070E-01	7.21546E-01	6.58373E-01	3.73974E-01	2.05987E-01
22	1.60730E+00	1.47269E+00	1.36015E+00	8.57303E-01	7.21694E-01	6.58641E-01	3.73883E-01	2.05970E-01
23	1.60715E+00	1.47242E+00	1.35957E+00	8.56618E-01	7.21070E-01	6.57712E-01	3.73725E-01	2.05877E-01
24	1.60696E+00	1.47208E+00	1.35884E+00	8.55773E-01	7.20315E-01	6.56577E-01	3.73568E-01	2.05775E-01

0 Int.	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	7.82863E-02	2.69570E-02	1.13867E-01	4.10013E-01	9.95276E-02	1.57997E-01	6.31219E-01	4.73088E-01
2	7.82533E-02	2.69523E-02	1.13813E-01	4.09906E-01	9.92614E-02	1.57891E-01	6.30820E-01	4.72764E-01
3	7.83247E-02	2.72522E-02	1.13940E-01	4.10122E-01	9.94738E-02	1.58659E-01	6.31851E-01	4.73661E-01
4	7.87325E-02	2.84738E-02	1.14653E-01	4.11368E-01	1.00609E-01	1.61872E-01	6.37561E-01	4.78570E-01
5	7.97463E-02	3.17259E-02	1.16400E-01	4.14425E-01	1.03452E-01	1.70245E-01	6.51725E-01	4.90771E-01
6	8.08692E-02	3.56440E-02	1.18308E-01	4.17768E-01	1.06642E-01	1.79806E-01	6.67412E-01	5.04329E-01
7	8.17081E-02	3.89239E-02	1.19704E-01	4.20212E-01	1.09059E-01	1.87209E-01	6.79125E-01	5.14496E-01
8	8.24852E-02	4.22680E-02	1.20966E-01	4.22441E-01	1.11319E-01	1.94259E-01	6.89955E-01	5.23925E-01
9	8.28871E-02	4.40729E-02	1.21615E-01	4.23596E-01	1.12469E-01	1.97970E-01	6.95551E-01	5.28835E-01
10	8.29525E-02	4.42788E-02	1.21719E-01	4.23788E-01	1.12678E-01	1.98482E-01	6.96413E-01	5.29573E-01
11	8.30460E-02	4.45735E-02	1.21867E-01	4.24060E-01	1.12980E-01	1.99216E-01	6.97641E-01	5.30622E-01
12	8.31065E-02	4.47651E-02	1.21963E-01	4.24237E-01	1.13094E-01	1.99691E-01	6.98433E-01	5.31298E-01
13	8.32302E-02	4.51538E-02	1.22160E-01	4.24598E-01	1.13429E-01	2.00657E-01	7.00053E-01	5.32679E-01
14	8.36166E-02	4.63501E-02	1.22785E-01	4.25729E-01	1.14474E-01	2.03655E-01	7.05094E-01	5.36978E-01
15	8.41472E-02	4.79546E-02	1.23660E-01	4.27288E-01	1.15906E-01	2.07717E-01	7.11953E-01	5.42533E-01
16	8.44875E-02	4.89584E-02	1.24252E-01	4.28278E-01	1.16820E-01	2.10281E-01	7.16346E-01	5.46157E-01
17	8.47383E-02	4.97102E-02	1.24644E-01	4.28965E-01	1.17523E-01	2.12276E-01	7.19791E-01	5.49282E-01
18	8.50828E-02	5.07558E-02	1.25202E-01	4.29877E-01	1.18513E-01	2.15121E-01	7.25068E-01	5.54466E-01
19	8.54797E-02	5.19561E-02	1.25845E-01	4.30982E-01	1.19658E-01	2.18430E-01	7.31367E-01	5.60608E-01

20	8.59855E-02	5.34785E-02	1.26663E-01	4.32570E-01	1.21128E-01	2.22687E-01	7.39738E-01	5.68908E-01
21	8.63460E-02	5.45636E-02	1.27238E-01	4.33319E-01	1.22187E-01	2.25765E-01	7.46050E-01	5.75576E-01
22	8.63782E-02	5.46656E-02	1.27277E-01	4.33332E-01	1.22296E-01	2.26093E-01	7.46975E-01	5.76605E-01
23	8.62857E-02	5.43984E-02	1.27114E-01	4.33010E-01	1.22089E-01	2.25354E-01	7.45693E-01	5.75577E-01
24	8.61717E-02	5.40651E-02	1.26918E-01	4.32637E-01	1.21716E-01	2.24422E-01	7.44007E-01	5.74114E-01

0 int.	grp. 25	grp. 26	grp. 27
1	1.97809E-01	1.20966E-01	1.60694E-02
2	1.97673E-01	1.20879E-01	1.60684E-02
3	1.98139E-01	1.21327E-01	1.62073E-02
4	2.00612E-01	1.23589E-01	1.68403E-02
5	2.05762E-01	1.29239E-01	1.84460E-02
6	2.13629E-01	1.35609E-01	2.03164E-02
7	2.18803E-01	1.40479E-01	2.18147E-02
8	2.23636E-01	1.45084E-01	2.32969E-02
9	2.26160E-01	1.47501E-01	2.40885E-02
10	2.26528E-01	1.47851E-01	2.41809E-02
11	2.27051E-01	1.48299E-01	2.43123E-02
12	2.27389E-01	1.48600E-01	2.43969E-02
13	2.28075E-01	1.49212E-01	2.45686E-02
14	2.30159E-01	1.51057E-01	2.50764E-02
15	2.32871E-01	1.53420E-01	2.57046E-02
16	2.34493E-01	1.54804E-01	2.60551E-02
17	2.36123E-01	1.56460E-01	2.66003E-02
18	2.39822E-01	1.59853E-01	2.75966E-02
19	2.42120E-01	1.62871E-01	2.87764E-02
20	2.44627E-01	1.67670E-01	3.08020E-02
21	2.50227E-01	1.71590E-01	3.15666E-02
22	2.51013E-01	1.72598E-01	3.19426E-02
23	2.50646E-01	1.72256E-01	3.18991E-02
24	2.49827E-01	1.71622E-01	3.17584E-02

- elapsed time .02 min.

1fine group summary for zone 1 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	2.31854E-02	.00000E+00	1.29920E-02	1.08272E-02	3.28173E-03	1.14174E-02	9.98839E-01
2	.00000E+00	1.94563E-01	2.39775E-03	1.68250E-01	6.70948E-02	1.36782E-02	1.16197E-01	1.00004E+00
3	.00000E+00	2.15975E-01	2.65706E-02	1.61584E-01	8.15227E-02	1.55117E-02	1.45510E-01	1.00000E+00
4	.00000E+00	1.23748E-01	3.92102E-02	1.05664E-01	6.79576E-02	7.37861E-03	8.76398E-02	1.00001E+00
5	.00000E+00	1.63943E-01	6.82620E-02	2.60009E-01	9.47533E-02	4.37817E-03	1.33075E-01	9.99992E-01
6	.00000E+00	1.76779E-01	1.35034E-01	6.53824E-01	5.43663E-02	6.84980E-03	2.50581E-01	1.00003E+00
7	.00000E+00	8.73119E-02	9.85313E-02	7.44390E-01	3.63357E-02	7.33608E-03	1.42170E-01	1.00001E+00
8	.00000E+00	1.34466E-02	4.25851E-02	6.30482E-01	2.15198E-02	1.36461E-02	2.08633E-02	1.00005E+00
9	.00000E+00	9.75775E-04	2.17433E-02	5.35903E-01	2.07200E-02	2.26987E-02	-2.06991E-02	9.99988E-01
10	.00000E+00	7.24738E-05	2.07420E-02	4.63053E-01	1.07345E-02	3.52242E-02	-2.51446E-02	1.00001E+00
11	.00000E+00	5.70172E-06	1.07355E-02	4.25674E-01	8.17823E-03	5.77065E-02	-5.51421E-02	1.00001E+00
12	.00000E+00	4.00535E-07	8.17628E-03	2.41088E-01	9.39423E-03	6.42022E-02	-6.54166E-02	9.99958E-01
13	.00000E+00	6.36013E-08	9.39424E-03	1.80250E-01	6.15279E-03	6.02052E-02	-5.69640E-02	1.00000E+00
14	.00000E+00	1.26041E-08	6.15280E-03	1.52071E-01	7.32639E-03	8.58341E-02	-8.70078E-02	1.00000E+00
15	.00000E+00	1.42440E-09	7.41172E-03	8.37812E-02	8.80050E-03	7.59718E-03	-9.07206E-03	1.00525E+00
16	.00000E+00	4.18253E-10	8.95337E-03	4.19522E-02	9.42420E-03	6.31422E-03	-6.86555E-03	1.00884E+00
17	.00000E+00	1.34698E-10	7.50465E-03	1.39004E-02	7.06917E-03	9.38662E-03	-8.97564E-03	1.00149E+00
18	.00000E+00	9.64398E-11	6.83582E-03	7.55428E-03	3.41334E-03	3.01750E-02	-2.67613E-02	1.00026E+00
19	.00000E+00	1.36345E-10	5.69446E-03	2.23549E-02	8.17551E-03	1.21377E-02	-1.46440E-02	1.00126E+00
20	.00000E+00	2.21711E-10	9.23074E-03	9.78588E-02	9.27267E-03	2.63381E-02	-2.64688E-02	1.00249E+00
21	.00000E+00	3.24514E-11	8.61736E-03	1.95256E-02	7.60776E-03	2.56944E-02	-2.47096E-02	1.00074E+00
22	.00000E+00	3.76510E-11	1.11111E-02	3.68291E-02	8.31380E-03	7.35241E-02	-7.07650E-02	1.00047E+00
23	.00000E+00	3.59985E-11	1.32075E-02	1.53627E-01	1.69174E-02	1.20477E-01	-1.26354E-01	1.00107E+00
24	.00000E+00	9.79834E-12	2.07954E-02	1.08285E-01	2.09913E-02	1.07959E-01	-1.08866E-01	1.00087E+00
25	.00000E+00	2.86831E-12	1.79975E-02	4.12148E-02	1.36521E-02	5.83624E-02	-5.40646E-02	1.00066E+00
26	.00000E+00	2.01128E-12	8.69672E-03	2.88298E-02	6.16425E-03	5.23895E-02	-4.98851E-02	1.00050E+00
27	.00000E+00	4.79258E-13	1.95224E-03	4.33982E-03	1.06015E-03	1.47001E-02	-1.38526E-02	1.00029E+00

28	.00000E+00	1.00000E+00	6.17724E-01	5.39535E+00	6.17724E-01	9.43008E-01	5.86340E-02	1.00043E+00
0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	n2n rate	fiss rate	flux*dr**2	total flux
1	1.77270E-01	1.14174E-02	1.82319E-01	.00000E+00	2.31132E-03	2.68495E-03	.00000E+00	1.24165E-01
2	1.29068E+00	1.16197E-01	1.34229E+00	.00000E+00	1.68508E-05	1.18944E-02	.00000E+00	9.10051E-01
3	1.62434E+00	1.45510E-01	1.68776E+00	.00000E+00	.00000E+00	1.44862E-02	.00000E+00	1.14443E+00
4	1.00619E+00	8.76398E-02	1.04395E+00	.00000E+00	.00000E+00	6.23336E-03	.00000E+00	7.08168E-01
5	1.51810E+00	1.33075E-01	1.57709E+00	.00000E+00	.00000E+00	1.77908E-03	.00000E+00	1.06904E+00
6	2.91742E+00	2.50581E-01	3.03060E+00	.00000E+00	.00000E+00	1.46332E-03	.00000E+00	2.05374E+00
7	2.83813E+00	1.42170E-01	2.90547E+00	.00000E+00	.00000E+00	1.36962E-03	.00000E+00	1.98068E+00
8	2.07082E+00	2.08633E-02	2.08220E+00	.00000E+00	.00000E+00	1.35758E-03	.00000E+00	1.43005E+00
9	1.60097E+00	-2.06991E-02	1.58681E+00	.00000E+00	.00000E+00	1.78092E-03	.00000E+00	1.09748E+00
10	1.46235E+00	-2.51446E-02	1.44949E+00	.00000E+00	.00000E+00	3.79331E-03	.00000E+00	1.00167E+00
11	1.33784E+00	-5.51421E-02	1.30947E+00	.00000E+00	.00000E+00	8.20207E-03	.00000E+00	9.09815E-01
12	8.31615E-01	-6.54166E-02	7.97617E-01	.00000E+00	.00000E+00	1.08575E-02	.00000E+00	5.59027E-01
13	6.99638E-01	-5.69640E-02	6.70851E-01	.00000E+00	.00000E+00	1.27581E-02	.00000E+00	4.70086E-01
14	6.24730E-01	-8.70078E-02	5.79429E-01	.00000E+00	.00000E+00	7.86777E-03	.00000E+00	4.12048E-01
15	3.70981E-01	-9.07206E-03	3.66144E-01	.00000E+00	.00000E+00	1.78316E-03	.00000E+00	2.53509E-01
16	2.08522E-01	-6.84656E-03	2.00115E-01	.00000E+00	.00000E+00	1.26621E-03	.00000E+00	1.38764E-01
17	8.28729E-02	-8.97564E-03	7.85298E-02	.00000E+00	.00000E+00	1.37635E-03	.00000E+00	5.52578E-02
18	4.40207E-02	-2.67613E-02	2.69833E-02	.00000E+00	.00000E+00	8.73139E-04	.00000E+00	2.31790E-02
19	1.21593E-01	-1.46440E-02	1.13940E-01	.00000E+00	.00000E+00	2.18628E-03	.00000E+00	8.09934E-02
20	4.23559E-01	-2.64688E-02	4.10153E-01	.00000E+00	.00000E+00	1.44888E-02	.00000E+00	2.86288E-01
21	1.12658E-01	-2.47096E-02	9.94272E-02	.00000E+00	.00000E+00	1.53465E-02	.00000E+00	7.21953E-02
22	1.97834E-01	-7.07650E-02	1.58213E-01	.00000E+00	.00000E+00	4.39653E-02	.00000E+00	1.20200E-01
23	6.95310E-01	-1.24354E-01	6.31728E-01	.00000E+00	.00000E+00	7.19866E-02	.00000E+00	4.53379E-01
24	5.28625E-01	-1.08266E-01	4.73507E-01	.00000E+00	.00000E+00	6.39588E-02	.00000E+00	3.41955E-01
25	2.26057E-01	-5.40646E-02	1.98004E-01	.00000E+00	.00000E+00	3.61555E-02	.00000E+00	1.44427E-01
26	1.47409E-01	-4.96861E-02	1.21120E-01	.00000E+00	.00000E+00	3.31709E-02	.00000E+00	9.09579E-02
27	2.40635E-02	-1.38526E-02	1.60978E-02	.00000E+00	.00000E+00	9.39859E-03	.00000E+00	1.33072E-02
28	2.31779E+01	5.86341E-02	2.31411E+01	.00000E+00	2.32821E-03	3.83485E-01	.00000E+00	1.59444E+01

1fine group summary for zone 2 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-7.45058E-09	1.00000E+00
2	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-3.72529E-08	1.00000E+00
3	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-1.49012E-08	1.00000E+00
4	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-5.21541E-08	1.00000E+00
5	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-5.96046E-08	1.00000E+00
6	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-2.98023E-08	1.00000E+00
7	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-5.96046E-08	1.00000E+00
8	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-4.09782E-08	1.00000E+00
9	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-4.65661E-08	1.00000E+00
10	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	3.35276E-08	9.99999E-01
11	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-1.11759E-08	1.00000E+00
12	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-7.45058E-09	1.00000E+00
13	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.00000E+00
14	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-7.45058E-09	1.00000E+00
15	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	2.32831E-08	9.99997E-01
16	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-1.86265E-09	1.00000E+00
17	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.00000E+00
18	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	5.58794E-09	1.00000E+00
19	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.11759E-08	9.99999E-01
20	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	5.58794E-09	1.00000E+00
21	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.86265E-09	1.00000E+00
22	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	2.23517E-08	1.00000E+00
23	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-7.45058E-09	1.00000E+00
24	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.49012E-08	1.00000E+00
25	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.00000E+00
26	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.11759E-08	1.00000E+00
27	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	9.31323E-10	1.00000E+00
28	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-2.33762E-07	1.00001E+00

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r2n rate	fiss rate	flux*dv**2	total flux
1	1.76835E-01	1.14174E-02	1.77270E-01	1.14174E-02	.00000E+00	.00000E+00	.00000E+00	5.61870E-03
2	1.28657E+00	1.16197E-01	1.29068E+00	1.16197E-01	.00000E+00	.00000E+00	.00000E+00	4.08957E-02
3	1.61950E+00	1.45510E-01	1.62434E+00	1.45510E-01	.00000E+00	.00000E+00	.00000E+00	5.14705E-02
4	1.00362E+00	8.76397E-02	1.00619E+00	8.76398E-02	.00000E+00	.00000E+00	.00000E+00	3.18883E-02
5	1.51428E+00	1.33075E-01	1.51810E+00	1.33075E-01	.00000E+00	.00000E+00	.00000E+00	4.81149E-02
6	2.91059E+00	2.50581E-01	2.91742E+00	2.50581E-01	.00000E+00	.00000E+00	.00000E+00	9.24733E-02
7	2.83438E+00	1.42170E-01	2.83813E+00	1.42170E-01	.00000E+00	.00000E+00	.00000E+00	9.00073E-02
8	2.06955E+00	2.08632E-02	2.07052E+00	2.08633E-02	.00000E+00	.00000E+00	.00000E+00	6.56897E-02
9	1.60173E+00	-2.06992E-02	1.60097E+00	-2.06991E-02	.00000E+00	.00000E+00	.00000E+00	5.08198E-02
10	1.46304E+00	-2.51446E-02	1.46235E+00	-2.51446E-02	.00000E+00	.00000E+00	.00000E+00	4.64198E-02
11	1.33956E+00	-5.51421E-02	1.33784E+00	-5.51421E-02	.00000E+00	.00000E+00	.00000E+00	4.24815E-02
12	8.33455E-01	-6.54166E-02	8.31615E-01	-6.54166E-02	.00000E+00	.00000E+00	.00000E+00	2.64215E-02
13	7.01244E-01	-5.69640E-02	6.99638E-01	-5.69640E-02	.00000E+00	.00000E+00	.00000E+00	2.22259E-02
14	6.27179E-01	-8.70078E-02	6.24730E-01	-8.70078E-02	.00000E+00	.00000E+00	.00000E+00	1.98658E-02
15	3.71241E-01	-9.07204E-03	3.70981E-01	-9.07206E-03	.00000E+00	.00000E+00	.00000E+00	1.17772E-02
16	2.08716E-01	-6.84555E-03	2.08522E-01	-6.84556E-03	.00000E+00	.00000E+00	.00000E+00	6.46190E-03
17	8.31268E-02	-8.97564E-03	8.28729E-02	-8.97564E-03	.00000E+00	.00000E+00	.00000E+00	2.63399E-03
18	4.48153E-02	-2.67613E-02	4.40207E-02	-2.67613E-02	.00000E+00	.00000E+00	.00000E+00	1.40988E-03
19	1.21993E-01	-1.46440E-02	1.21593E-01	-1.46440E-02	.00000E+00	.00000E+00	.00000E+00	3.86513E-03
20	4.26294E-01	-2.64688E-02	4.23659E-01	-2.64688E-02	.00000E+00	.00000E+00	.00000E+00	1.34533E-02
21	1.13141E-01	-2.47096E-02	1.12458E-01	-2.47096E-02	.00000E+00	.00000E+00	.00000E+00	3.57981E-03
22	1.99810E-01	-7.07660E-02	1.97834E-01	-7.07650E-02	.00000E+00	.00000E+00	.00000E+00	6.31047E-03
23	6.98619E-01	-1.24354E-01	6.95310E-01	-1.24354E-01	.00000E+00	.00000E+00	.00000E+00	2.21200E-02
24	5.31462E-01	-1.08266E-01	5.28625E-01	-1.08266E-01	.00000E+00	.00000E+00	.00000E+00	1.68227E-02
25	2.27468E-01	-5.40646E-02	2.26057E-01	-5.40646E-02	.00000E+00	.00000E+00	.00000E+00	7.19716E-03
26	1.48571E-01	-4.96861E-02	1.47409E-01	-4.96861E-02	.00000E+00	.00000E+00	.00000E+00	4.69892E-03
27	2.44175E-02	-1.38526E-02	2.40685E-02	-1.38526E-02	.00000E+00	.00000E+00	.00000E+00	7.69458E-04
28	2.31740E+01	5.86336E-02	2.31779E+01	5.86341E-02	.00000E+00	.00000E+00	.00000E+00	7.35498E-01

1fine group summary for zone 3 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	3.89747E-03	2.92165E-03	1.49722E-05	-2.85240E-03	1.00001E+00
2	.00000E+00	.00000E+00	5.10259E-04	2.62155E-02	1.88109E-02	5.20813E-05	-1.85530E-02	1.00000E+00
3	.00000E+00	.00000E+00	2.68711E-03	5.03761E-02	1.59284E-02	1.37782E-04	-1.33780E-02	9.99995E-01
4	.00000E+00	.00000E+00	5.17995E-03	4.22153E-02	5.46897E-03	1.03634E-04	-3.89208E-04	9.99995E-01
5	.00000E+00	.00000E+00	1.11564E-02	8.17470E-02	5.16988E-03	1.52295E-04	5.85398E-03	1.00000E+00
6	.00000E+00	.00000E+00	1.85975E-02	2.35127E-01	3.21249E-03	3.20176E-04	1.50649E-02	1.00000E+00
7	.00000E+00	.00000E+00	1.23687E-02	2.35259E-01	1.18253E-03	3.44858E-04	1.08316E-02	9.99998E-01
8	.00000E+00	.00000E+00	2.16706E-03	1.58680E-01	7.64071E-03	2.95102E-04	-5.76934E-03	1.00008E+00
9	.00000E+00	.00000E+00	7.67421E-03	1.05330E-01	8.78040E-04	1.11068E-03	5.48567E-03	9.99998E-01
10	.00000E+00	.00000E+00	8.79224E-04	8.57581E-02	8.50869E-04	8.37479E-04	-8.09178E-04	1.00000E+00
11	.00000E+00	.00000E+00	8.50931E-04	7.72865E-02	8.72815E-04	1.34101E-03	-1.36291E-03	1.00000E+00
12	.00000E+00	.00000E+00	8.72821E-04	4.69086E-02	8.72719E-04	4.17641E-05	-4.17754E-05	1.00000E+00
13	.00000E+00	.00000E+00	8.72720E-04	3.94952E-02	8.05675E-04	5.99651E-05	7.15256E-06	9.99999E-01
14	.00000E+00	.00000E+00	8.05678E-04	3.55857E-02	6.70617E-04	9.47841E-05	4.02625E-05	1.00000E+00
15	.00000E+00	.00000E+00	7.13866E-04	2.04259E-02	8.36128E-04	8.20439E-05	-2.05717E-04	9.99941E-01
16	.00000E+00	.00000E+00	9.30922E-04	1.07411E-02	9.30516E-04	5.06144E-05	-4.98118E-05	9.99949E-01
17	.00000E+00	.00000E+00	9.80395E-04	3.84579E-03	9.46652E-04	2.32333E-05	1.05482E-05	9.99996E-01
18	.00000E+00	.00000E+00	9.90550E-04	2.03659E-03	6.57734E-04	1.39492E-05	3.19820E-04	1.00000E+00
19	.00000E+00	.00000E+00	7.12318E-04	6.13518E-03	9.05190E-04	3.97476E-05	-2.32544E-04	9.99995E-01
20	.00000E+00	.00000E+00	1.07841E-03	2.33730E-02	9.95670E-04	1.75780E-04	-8.82149E-05	9.99970E-01
21	.00000E+00	.00000E+00	1.21549E-03	5.31273E-03	1.26902E-03	5.85300E-05	-1.11971E-04	9.99997E-01
22	.00000E+00	.00000E+00	1.60204E-03	1.03677E-02	1.38561E-03	1.20802E-04	9.59337E-05	9.99996E-01
23	.00000E+00	.00000E+00	2.08594E-03	3.77100E-02	2.76865E-03	5.71084E-04	-1.25364E-03	1.00000E+00
24	.00000E+00	.00000E+00	3.43304E-03	2.71211E-02	3.72196E-03	6.31776E-04	-9.20936E-04	1.00000E+00
25	.00000E+00	.00000E+00	3.36262E-03	1.05188E-02	2.70740E-03	3.57771E-04	2.97349E-04	1.00000E+00
26	.00000E+00	.00000E+00	1.40900E-03	7.68174E-03	1.01514E-03	3.35432E-04	5.84386E-05	9.99999E-01
27	.00000E+00	.00000E+00	2.94362E-04	1.44654E-03	7.46856E-07	1.06021E-04	1.87586E-04	1.00000E+00
28	.00000E+00	.00000E+00	8.34216E-02	1.39060E+00	8.34216E-02	7.47136E-03	-7.36431E-03	9.99977E-01

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r2n rate	fiss rate	flux*dv**2	total flux

1	1.75162E-01	8.58500E-03	1.76835E-01	1.14174E-02	1.04387E-04	.00000E+00	.00000E+00	3.81077E-02
2	1.26884E+00	9.78441E-02	1.28657E+00	1.16197E-01	.00000E+00	.00000E+00	.00000E+00	2.76644E-01
3	1.59635E+00	1.32132E-01	1.61950E+00	1.45510E-01	.00000E+00	.00000E+00	.00000E+00	3.48232E-01
4	9.88902E-01	8.72505E-02	1.00352E+00	8.76397E-02	.00000E+00	.00000E+00	.00000E+00	2.15825E-01
5	1.49125E+00	1.38909E-01	1.51428E+00	1.33075E-01	.00000E+00	.00000E+00	.00000E+00	3.25626E-01
6	2.86502E+00	2.65644E-01	2.91059E+00	2.50581E-01	.00000E+00	.00000E+00	.00000E+00	6.25798E-01
7	2.80816E+00	1.53002E-01	2.85438E+00	1.42170E-01	.00000E+00	.00000E+00	.00000E+00	6.11420E-01
8	2.06641E+00	1.50939E-02	2.09955E+00	2.08652E-02	.00000E+00	.00000E+00	.00000E+00	4.48106E-01
9	1.60480E+00	-1.50135E-02	1.60173E+00	-2.06992E-02	.00000E+00	.00000E+00	.00000E+00	3.47536E-01
10	1.46727E+00	-2.59539E-02	1.46304E+00	-2.51446E-02	.00000E+00	.00000E+00	.00000E+00	3.17550E-01
11	1.34849E+00	-5.65051E-02	1.39356E+00	-5.51421E-02	.00000E+00	.00000E+00	.00000E+00	2.91301E-01
12	8.44113E-01	-6.54584E-02	8.33455E-01	-6.54166E-02	.00000E+00	.00000E+00	.00000E+00	1.81847E-01
13	7.10562E-01	-5.69569E-02	7.01264E-01	-5.69640E-02	.00000E+00	.00000E+00	.00000E+00	1.53041E-01
14	6.41366E-01	-8.69875E-02	6.27179E-01	-8.70078E-02	.00000E+00	.00000E+00	.00000E+00	1.37547E-01
15	3.72832E-01	-9.27576E-03	3.71241E-01	-9.07204E-03	.00000E+00	.00000E+00	.00000E+00	8.06345E-02
16	2.04843E-01	-6.85536E-03	2.03716E-01	-6.86555E-03	.00000E+00	.00000E+00	.00000E+00	4.42783E-02
17	8.45783E-02	-8.96509E-03	8.31368E-02	-8.97564E-03	.00000E+00	.00000E+00	.00000E+00	1.81810E-02
18	4.92158E-02	-2.64424E-02	4.48153E-02	-2.67613E-02	.00000E+00	.00000E+00	.00000E+00	1.02229E-02
19	1.24387E-01	-1.48766E-02	1.21993E-01	-1.46440E-02	.00000E+00	.00000E+00	.00000E+00	2.67089E-02
20	4.28547E-01	-2.65570E-02	4.26294E-01	-2.64688E-02	.00000E+00	.00000E+00	.00000E+00	9.24392E-02
21	1.17061E-01	-2.48216E-02	1.13141E-01	-2.47096E-02	.00000E+00	.00000E+00	.00000E+00	2.49690E-02
22	2.10954E-01	-7.06690E-02	1.99810E-01	-7.07850E-02	.00000E+00	.00000E+00	.00000E+00	4.45862E-02
23	7.17324E-01	-1.25608E-01	6.98619E-01	-1.24354E-01	.00000E+00	.00000E+00	.00000E+00	1.53571E-01
24	5.47018E-01	-1.09187E-01	5.31452E-01	-1.08966E-01	.00000E+00	.00000E+00	.00000E+00	1.16997E-01
25	2.34880E-01	-5.37672E-02	2.27468E-01	-5.40646E-02	.00000E+00	.00000E+00	.00000E+00	5.01775E-02
26	1.55127E-01	-4.96277E-02	1.48671E-01	-4.96861E-02	.00000E+00	.00000E+00	.00000E+00	3.29944E-02
27	2.61341E-02	-1.36450E-02	2.44175E-02	-1.38526E-02	.00000E+00	.00000E+00	.00000E+00	5.50192E-03
28	2.31498E+01	5.12699E-02	2.31740E+01	5.86336E-02	1.04387E-04	.00000E+00	.00000E+00	5.01984E+00

1fine group summary for zone 4 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	6.15890E-03	8.15102E-03	4.34413E-04	-8.58500E-03	9.99950E-01
2	.00000E+00	.00000E+00	4.67689E-03	7.71794E-02	1.01438E-01	1.08683E-03	-9.78441E-02	9.99961E-01
3	.00000E+00	.00000E+00	4.81474E-02	6.92896E-02	1.80278E-01	5.44607E-06	-1.32132E-01	9.99978E-01
4	.00000E+00	.00000E+00	7.06872E-02	4.59665E-02	1.57956E-01	3.23892E-06	-8.72505E-02	9.99988E-01
5	.00000E+00	.00000E+00	1.30458E-01	1.48682E-01	2.69367E-01	3.77982E-06	-1.38909E-01	9.99991E-01
6	.00000E+00	.00000E+00	2.75673E-01	4.55453E-01	5.41308E-01	1.14811E-05	-2.65644E-01	9.99998E-01
7	.00000E+00	.00000E+00	5.53301E-01	7.95434E-01	7.06287E-01	2.53698E-05	-1.53002E-01	9.99987E-01
8	.00000E+00	.00000E+00	7.35840E-01	1.00151E+00	7.50953E-01	4.70397E-05	-1.50957E-02	9.99912E-01
9	.00000E+00	.00000E+00	7.41206E-01	9.16999E-01	7.26178E-01	9.60052E-05	1.50135E-02	9.99885E-01
10	.00000E+00	.00000E+00	7.22838E-01	8.66981E-01	6.96747E-01	2.11842E-04	2.59539E-02	9.99896E-01
11	.00000E+00	.00000E+00	7.01622E-01	8.07529E-01	6.44700E-01	4.58675E-04	5.65050E-02	9.99940E-01
12	.00000E+00	.00000E+00	5.61142E-01	4.20778E-01	4.95097E-01	5.98718E-04	6.54584E-02	9.99979E-01
13	.00000E+00	.00000E+00	4.91056E-01	3.37808E-01	4.33217E-01	8.97295E-04	5.69569E-02	9.99970E-01
14	.00000E+00	.00000E+00	4.70578E-01	3.19919E-01	3.82167E-01	1.44786E-03	8.69675E-02	9.99989E-01
15	.00000E+00	.00000E+00	2.50034E-01	1.27859E-01	2.39475E-01	1.27366E-03	9.27523E-03	9.99999E-01
16	.00000E+00	.00000E+00	1.65622E-01	5.36826E-02	1.57869E-01	8.67361E-04	6.89527E-03	9.99997E-01
17	.00000E+00	.00000E+00	8.49281E-02	1.45222E-02	7.55986E-02	4.05641E-04	8.96078E-03	1.00004E+00
18	.00000E+00	.00000E+00	7.48727E-02	8.81425E-03	4.81625E-02	2.69682E-04	2.64364E-02	1.00005E+00
19	.00000E+00	.00000E+00	1.20894E-01	3.17342E-02	1.05325E-01	6.95580E-04	1.48701E-02	1.00004E+00
20	.00000E+00	.00000E+00	2.95333E-01	2.33311E-01	2.63790E-01	2.98487E-03	2.65563E-02	1.00001E+00
21	.00000E+00	.00000E+00	1.35923E-01	4.23052E-02	1.10055E-01	1.04825E-03	2.48134E-02	1.00004E+00
22	.00000E+00	.00000E+00	2.55156E-01	1.17117E-01	1.82259E-01	2.22618E-03	7.06706E-02	9.99999E-01
23	.00000E+00	.00000E+00	5.96057E-01	7.01015E-01	4.60338E-01	1.01064E-02	1.25608E-01	1.00001E+00
24	.00000E+00	.00000E+00	6.04357E-01	6.26760E-01	4.85801E-01	1.13627E-02	1.09190E-01	1.00000E+00
25	.00000E+00	.00000E+00	3.90581E-01	2.56743E-01	3.30301E-01	6.51192E-03	5.37661E-02	1.00001E+00
26	.00000E+00	.00000E+00	3.08856E-01	2.73811E-01	2.52900E-01	6.32557E-03	4.96356E-02	9.99981E-01
27	.00000E+00	.00000E+00	1.02984E-01	5.72154E-02	8.71618E-02	2.17708E-03	1.36453E-02	9.99998E-01
28	.00000E+00	.00000E+00	8.89081E+00	8.81445E+00	8.89081E+00	5.15827E-02	-5.12840E-02	9.99967E-01

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r2n rate	fiss rate	flux*dr**2	total flux
1	1.74348E-01	3.18745E-09	1.75162E-01	8.58500E-03	4.50774E-10	.00000E+00	.00000E+00	1.99543E-01

2	1.25725E+00	-1.07280E-08	1.26884E+00	9.78441E-02	.00000E+00	.00000E+00	.00000E+00	1.43947E+00
3	1.57869E+00	-1.82101E-07	1.59635E+00	1.32132E-01	.00000E+00	.00000E+00	.00000E+00	1.80807E+00
4	9.75745E-01	-1.69666E-08	9.88900E-01	8.72505E-02	.00000E+00	.00000E+00	.00000E+00	1.11792E+00
5	1.46886E+00	-6.87630E-10	1.49125E+00	1.38909E-01	.00000E+00	.00000E+00	.00000E+00	1.68525E+00
6	2.82110E+00	1.04633E-07	2.86502E+00	2.65646E-01	.00000E+00	.00000E+00	.00000E+00	3.23295E+00
7	2.78287E+00	-5.72649E-08	2.80814E+00	1.53002E-01	.00000E+00	.00000E+00	.00000E+00	3.18702E+00
8	2.06644E+00	1.45577E-07	2.06641E+00	1.50939E-02	.00000E+00	.00000E+00	.00000E+00	2.36439E+00
9	1.60686E+00	-2.25194E-08	1.60480E+00	-1.50135E-02	.00000E+00	.00000E+00	.00000E+00	1.83398E+00
10	1.47191E+00	4.32910E-08	1.46727E+00	-2.59538E-02	.00000E+00	.00000E+00	.00000E+00	1.68428E+00
11	1.35846E+00	-1.14983E-08	1.34845E+00	-5.65051E-02	.00000E+00	.00000E+00	.00000E+00	1.55401E+00
12	8.55330E-01	1.09428E-08	8.44113E-01	-6.54584E-02	.00000E+00	.00000E+00	.00000E+00	9.78115E-01
13	7.19921E-01	-4.60423E-09	7.10562E-01	-5.69568E-02	.00000E+00	.00000E+00	.00000E+00	8.23415E-01
14	6.55984E-01	8.07822E-09	6.41366E-01	-8.69675E-02	.00000E+00	.00000E+00	.00000E+00	7.49799E-01
15	3.73492E-01	-5.27418E-07	3.72852E-01	-9.27576E-03	.00000E+00	.00000E+00	.00000E+00	4.27740E-01
16	2.05725E-01	-8.87998E-08	2.04863E-01	-6.89536E-03	.00000E+00	.00000E+00	.00000E+00	2.35497E-01
17	8.61152E-02	-4.30856E-06	8.45783E-02	-8.96503E-03	.00000E+00	.00000E+00	.00000E+00	9.84392E-02
18	5.38955E-02	-6.05269E-06	4.92158E-02	-2.64424E-02	.00000E+00	.00000E+00	.00000E+00	6.12879E-02
19	1.26821E-01	-6.40948E-06	1.24387E-01	-1.48766E-02	.00000E+00	.00000E+00	.00000E+00	1.44999E-01
20	4.32657E-01	-6.47404E-07	4.28547E-01	-2.65570E-02	.00000E+00	.00000E+00	.00000E+00	4.94870E-01
21	1.21553E-01	-8.18020E-06	1.17061E-01	-2.48216E-02	.00000E+00	.00000E+00	.00000E+00	1.38726E-01
22	2.29582E-01	1.60042E-06	2.10954E-01	-7.06690E-02	.00000E+00	.00000E+00	.00000E+00	2.55149E-01
23	7.43059E-01	-1.16484E-07	7.17324E-01	-1.25608E-01	.00000E+00	.00000E+00	.00000E+00	8.47534E-01
24	5.73308E-01	3.00804E-06	5.47018E-01	-1.09187E-01	.00000E+00	.00000E+00	.00000E+00	6.52516E-01
25	2.49426E-01	-1.13063E-06	2.34880E-01	-5.37672E-02	.00000E+00	.00000E+00	.00000E+00	2.88057E-01
26	1.71255E-01	7.89560E-06	1.55127E-01	-4.96277E-02	.00000E+00	.00000E+00	.00000E+00	1.98862E-01
27	3.16723E-02	3.10201E-07	2.61341E-02	-1.36450E-02	.00000E+00	.00000E+00	.00000E+00	3.50186E-02
28	2.31865E+01	-1.47269E-05	2.31496E+01	5.12699E-02	4.50774E-10	.00000E+00	.00000E+00	2.65287E+01

1fine group summary for system

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	2.31854E-02	.00000E+00	2.30478E-02	2.18999E-02	3.73111E-03	3.18745E-09	9.98834E-01
2	.00000E+00	1.94563E-01	7.38490E-03	2.71685E-01	1.87344E-01	1.48171E-02	-1.07280E-08	1.00002E+00
3	.00000E+00	2.15975E-01	7.74051E-02	2.81250E-01	2.77729E-01	1.56549E-02	-1.82101E-07	9.99987E-01
4	.00000E+00	1.23748E-01	1.15077E-01	1.93846E-01	2.31340E-01	7.48549E-03	-1.69666E-08	1.00000E+00
5	.00000E+00	1.63943E-01	2.09877E-01	4.90432E-01	3.69290E-01	4.53424E-03	-6.87630E-10	9.99989E-01
6	.00000E+00	1.76773E-01	4.29805E-01	1.34440E+00	5.98887E-01	7.18146E-03	1.04633E-07	1.00001E+00
7	.00000E+00	8.73119E-02	6.64191E-01	1.77508E+00	7.43805E-01	7.70625E-03	-5.72649E-08	9.99990E-01
8	.00000E+00	1.34466E-02	7.80592E-01	1.79067E+00	7.80114E-01	1.39882E-02	1.45577E-07	9.99920E-01
9	.00000E+00	9.75775E-04	7.70623E-01	1.55823E+00	7.47778E-01	2.39053E-02	-2.25194E-08	9.99892E-01
10	.00000E+00	7.24738E-05	7.44459E-01	1.41579E+00	7.08333E-01	3.62736E-02	4.32910E-08	9.99900E-01
11	.00000E+00	5.70172E-06	7.13208E-01	1.31049E+00	6.55746E-01	5.95061E-02	-1.14983E-08	9.99942E-01
12	.00000E+00	4.00536E-07	5.70191E-01	7.08725E-01	5.05364E-01	6.48427E-02	1.09428E-08	9.99974E-01
13	.00000E+00	6.36013E-08	5.01323E-01	5.57594E-01	4.40175E-01	6.11625E-02	-4.60423E-09	9.99971E-01
14	.00000E+00	1.26041E-08	4.77534E-01	5.07578E-01	3.90164E-01	8.73767E-02	8.07822E-09	9.99988E-01
15	.00000E+00	1.42440E-09	2.58149E-01	2.32040E-01	2.49112E-01	8.95289E-03	-5.27418E-07	1.00033E+00
16	.00000E+00	4.18253E-10	1.75506E-01	1.06278E-01	1.68214E-01	7.23219E-03	-8.87998E-08	1.00034E+00
17	.00000E+00	1.34698E-10	9.34131E-02	3.22685E-02	8.35744E-02	9.81550E-03	-4.30856E-06	1.00029E+00
18	.00000E+00	9.66398E-11	8.26991E-02	1.84055E-02	5.22340E-02	3.04588E-02	-6.05269E-06	1.00015E+00
19	.00000E+00	1.36345E-10	1.27300E-01	6.02243E-02	1.14404E-01	1.28730E-02	-6.40948E-06	1.00024E+00
20	.00000E+00	2.21711E-10	3.03643E-01	3.54578E-01	2.74056E-01	2.94967E-02	-6.47404E-07	1.00030E+00
21	.00000E+00	3.26514E-11	1.45756E-01	6.71435E-02	1.18552E-01	2.68012E-02	-8.18020E-06	1.00021E+00
22	.00000E+00	3.76510E-11	2.67869E-01	1.66314E-01	1.91959E-01	7.58710E-02	1.60042E-06	1.00014E+00
23	.00000E+00	3.59986E-11	6.11351E-01	8.92352E-01	4.80024E-01	1.31174E-01	-1.16484E-07	1.00025E+00
24	.00000E+00	9.79834E-12	6.28588E-01	7.62166E-01	5.08515E-01	1.19953E-01	3.00804E-06	1.00018E+00
25	.00000E+00	2.86831E-12	4.11941E-01	3.08477E-01	3.46660E-01	6.52521E-02	-1.13063E-06	1.00012E+00
26	.00000E+00	2.01128E-12	3.19162E-01	3.10822E-01	2.60080E-01	5.90505E-02	7.89560E-06	1.00007E+00
27	.00000E+00	4.79298E-13	1.05211E-01	6.30048E-02	8.82227E-02	1.69852E-02	3.10201E-07	1.00004E+00
28	.00000E+00	1.00000E+00	9.59196E+00	1.56004E+01	9.59196E+00	1.00206E+00	-1.46431E-05	1.00004E+00

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	n2n rate	fiss rate	flux*bdy**2	total flux
1	1.74348E-01	3.18745E-09	1.82519E-01	.00000E+00	2.41571E-03	2.68493E-03	.00000E+00	3.67435E-01
2	1.25725E+00	-1.07280E-08	1.34225E+00	.00000E+00	1.68906E-05	1.18944E-02	.00000E+00	2.66704E+00

3	1.57869E+00	-1.82101E-07	1.68778E+00	.00000E+00	.00000E+00	1.44862E-02	.00000E+00	3.35220E+00
4	9.75745E-01	-1.69666E-08	1.04395E+00	.00000E+00	.00000E+00	6.23335E-03	.00000E+00	2.07380E+00
5	1.46885E+00	-6.87630E-10	1.57709E+00	.00000E+00	.00000E+00	1.77908E-03	.00000E+00	3.12603E+00
6	2.82110E+00	1.04633E-07	3.03060E+00	.00000E+00	.00000E+00	1.46332E-03	.00000E+00	6.00496E+00
7	2.78287E+00	-5.72649E-08	2.90547E+00	.00000E+00	.00000E+00	1.36962E-03	.00000E+00	5.86908E+00
8	2.06644E+00	1.45577E-07	2.08220E+00	.00000E+00	.00000E+00	1.35758E-03	.00000E+00	4.30823E+00
9	1.60686E+00	-2.25194E-08	1.59831E+00	.00000E+00	.00000E+00	1.78092E-03	.00000E+00	3.33482E+00
10	1.47191E+00	4.32910E-08	1.44949E+00	.00000E+00	.00000E+00	3.79531E-03	.00000E+00	3.04992E+00
11	1.35846E+00	-1.14983E-08	1.30947E+00	.00000E+00	.00000E+00	8.20207E-03	.00000E+00	2.79760E+00
12	8.55330E-01	1.09428E-08	7.97617E-01	.00000E+00	.00000E+00	1.08675E-02	.00000E+00	1.78541E+00
13	7.19921E-01	-4.60425E-09	6.70851E-01	.00000E+00	.00000E+00	1.27581E-02	.00000E+00	1.46872E+00
14	6.55984E-01	8.07822E-09	5.79429E-01	.00000E+00	.00000E+00	7.85777E-03	.00000E+00	1.31926E+00
15	3.73492E-01	-5.27418E-07	3.66144E-01	.00000E+00	.00000E+00	1.78314E-03	.00000E+00	7.73660E-01
16	2.05725E-01	-8.87998E-08	2.00115E-01	.00000E+00	.00000E+00	1.26621E-03	.00000E+00	4.25001E-01
17	8.61152E-02	-4.30856E-06	7.85296E-02	.00000E+00	.00000E+00	1.37635E-03	.00000E+00	1.74490E-01
18	5.38955E-02	-6.05269E-06	2.69853E-02	.00000E+00	.00000E+00	8.73139E-04	.00000E+00	9.60996E-02
19	1.26821E-01	-6.40948E-06	1.13940E-01	.00000E+00	.00000E+00	2.18628E-03	.00000E+00	2.56267E-01
20	4.32457E-01	-6.47404E-07	4.10153E-01	.00000E+00	.00000E+00	1.44888E-02	.00000E+00	8.87050E-01
21	1.21553E-01	-8.18020E-06	9.94272E-02	.00000E+00	.00000E+00	1.53465E-02	.00000E+00	2.39470E-01
22	2.23952E-01	1.60042E-06	1.58213E-01	.00000E+00	.00000E+00	4.39663E-02	.00000E+00	4.26248E-01
23	7.43099E-01	-1.16484E-07	6.31728E-01	.00000E+00	.00000E+00	7.19866E-02	.00000E+00	1.47661E+00
24	5.75308E-01	3.00804E-06	4.73507E-01	.00000E+00	.00000E+00	6.39585E-02	.00000E+00	1.12809E+00
25	2.49426E-01	-1.13063E-06	1.98004E-01	.00000E+00	.00000E+00	3.61556E-02	.00000E+00	4.84839E-01
26	1.71255E-01	7.89560E-06	1.21120E-01	.00000E+00	.00000E+00	3.31709E-02	.00000E+00	3.21495E-01
27	3.16725E-02	3.10201E-07	1.60976E-02	.00000E+00	.00000E+00	9.39899E-03	.00000E+00	5.45972E-02
28	2.31869E+01	-1.47269E-05	2.31411E+01	.00000E+00	2.43260E-03	3.82485E-01	.00000E+00	4.82284E+01

- elapsed time .02 min.
Odirect access unit 9 requires 516 blocks of length 1456 for cross section weighting.
1 transport cross section weighting function

Ozone	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	2.44142E-03	2.50605E-02	3.15479E-02	1.90445E-02	2.90598E-02	5.55530E-02	3.16283E-02	4.65972E-03
2	3.83808E-03	3.90608E-02	4.89146E-02	2.94610E-02	4.47346E-02	8.42353E-02	4.77920E-02	7.01339E-03
3	3.11866E-03	3.33234E-02	4.31853E-02	2.71725E-02	4.22334E-02	8.01441E-02	4.58173E-02	5.61041E-03
4	1.07652E-03	1.22616E-02	1.65539E-02	1.09259E-02	1.73865E-02	3.32588E-02	1.92301E-02	2.01638E-03
5	1.78270E-03	1.90932E-02	2.47798E-02	1.55854E-02	2.42532E-02	4.62917E-02	2.65346E-02	3.34108E-03

Ozone	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	4.63308E-03	5.63482E-03	1.25243E-02	1.45637E-02	1.26860E-02	1.92469E-02	2.05110E-03	1.53102E-03
2	6.95824E-03	8.45264E-03	1.85366E-02	2.19306E-02	1.91490E-02	2.92486E-02	3.04961E-03	2.30128E-03
3	5.57143E-03	7.93525E-03	1.73397E-02	2.03325E-02	1.76985E-02	2.70290E-02	2.84990E-03	2.13457E-03
4	1.86599E-03	3.23037E-03	7.04299E-03	8.16508E-03	7.14230E-03	1.08660E-02	1.23569E-03	8.86530E-04
5	3.23366E-03	4.59516E-03	1.00371E-02	1.17991E-02	1.02578E-02	1.56012E-02	1.70112E-03	1.25011E-03

Ozone	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	1.98569E-03	5.33941E-03	3.29442E-03	5.92742E-03	5.39561E-03	1.51634E-02	2.74520E-02	2.38008E-02
2	3.01714E-03	8.99564E-03	4.92252E-03	8.89748E-03	8.30597E-03	2.37884E-02	4.18057E-02	3.63958E-02
3	2.78715E-03	8.26566E-03	4.58600E-03	8.23783E-03	7.69597E-03	2.19730E-02	3.88298E-02	3.37803E-02
4	1.11695E-03	3.26190E-03	1.87186E-03	3.38396E-03	3.08957E-03	8.79571E-03	1.55383E-02	1.38418E-02
5	1.60716E-03	4.55747E-03	2.67149E-03	4.81468E-03	4.41125E-03	1.25014E-02	2.25243E-02	1.95556E-02

Ozone	grp. 25	grp. 26	grp. 27	grp. 28
1	1.18321E-02	1.07284E-02	2.85632E-03	3.85430E-01
2	1.81747E-02	1.67030E-02	4.66005E-03	5.90891E-01
3	1.67546E-02	1.54259E-02	4.26971E-03	5.44104E-01
4	6.79941E-03	6.16208E-03	1.56505E-03	2.18950E-01
5	9.67400E-03	8.79807E-03	2.32082E-03	3.13532E-01

1 1040 d, sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp
Ocell averaged fluxes

Ozone	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	1.80866E-01	1.32187E+00	1.66255E+00	1.02865E+00	1.55283E+00	2.98314E+00	2.87690E+00	2.07722E+00
2	1.77049E-01	1.28859E+00	1.62187E+00	1.00482E+00	1.51614E+00	2.91390E+00	2.80619E+00	2.06995E+00
3	1.75835E-01	1.27648E+00	1.60680E+00	9.95850E-01	1.50249E+00	2.88754E+00	2.82119E+00	2.05763E+00

4	1.74344E-01	1.25768E+00	1.57973E+00	9.76742E-01	1.47068E+00	2.82468E+00	2.78454E+00	2.05580E+00
5	1.76529E-01	1.28134E+00	1.61052E+00	9.96328E-01	1.50186E+00	2.88500E+00	2.81969E+00	2.06983E+00

Ozone	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	1.59415E+00	1.45498E+00	1.32155E+00	8.12016E-01	6.82752E-01	5.98522E-01	3.68256E-01	2.01562E-01
2	1.60135E+00	1.46271E+00	1.33863E+00	8.32560E-01	7.00462E-01	6.25985E-01	3.71108E-01	2.03619E-01
3	1.60359E+00	1.46523E+00	1.34411E+00	8.39073E-01	7.06158E-01	6.34666E-01	3.72061E-01	2.04307E-01
4	1.60674E+00	1.47158E+00	1.35778E+00	8.54593E-01	7.19430E-01	6.55110E-01	3.73722E-01	2.05757E-01
5	1.60217E+00	1.46529E+00	1.34407E+00	8.38659E-01	7.05627E-01	6.33821E-01	3.71695E-01	2.04186E-01

Ozone	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	8.02358E-02	3.36687E-02	1.17211E-01	4.15848E-01	1.04868E-01	1.74597E-01	6.58868E-01	4.96708E-01
2	8.29991E-02	4.44256E-02	1.21793E-01	4.23925E-01	1.12802E-01	1.98847E-01	6.97023E-01	5.30094E-01
3	8.38900E-02	4.71700E-02	1.23239E-01	4.26520E-01	1.15211E-01	2.05739E-01	7.08601E-01	5.39841E-01
4	8.60077E-02	5.35481E-02	1.26888E-01	4.32575E-01	1.21207E-01	2.22927E-01	7.40504E-01	5.69938E-01
5	8.38323E-02	4.61697E-02	1.23120E-01	4.26171E-01	1.15060E-01	2.04785E-01	7.09415E-01	5.41976E-01

Ozone	grp. 25	grp. 26	grp. 27
1	2.09788E-01	1.52092E-01	1.98294E-02
2	2.26788E-01	1.48063E-01	2.42462E-02
3	2.31527E-01	1.52241E-01	2.53868E-02
4	2.47234E-01	1.68506E-01	3.05963E-02
5	2.32834E-01	1.54457E-01	2.62305E-02

Oflux disadvantage factors (zone average/cell average-flux)

Ozone	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	1.02168E+00	1.03163E+00	1.03218E+00	1.03244E+00	1.03394E+00	1.03402E+00	1.02029E+00	1.00857E+00
2	1.00295E+00	1.00566E+00	1.00705E+00	1.00853E+00	1.00951E+00	1.01002E+00	1.00586E+00	1.00005E+00
3	9.98069E-01	9.98209E-01	9.97689E-01	9.99520E-01	1.00042E+00	1.00088E+00	1.00063E+00	9.98938E-01
4	9.87622E-01	9.81536E-01	9.80885E-01	9.80341E-01	9.79841E-01	9.79090E-01	9.87533E-01	9.98053E-01
5	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00

Ozone	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	9.94997E-01	9.92963E-01	9.85248E-01	9.68847E-01	9.67581E-01	9.44308E-01	9.90498E-01	9.87149E-01
2	9.99493E-01	9.98236E-01	9.95946E-01	9.92896E-01	9.92680E-01	9.87640E-01	9.98422E-01	9.97225E-01
3	1.00089E+00	9.99958E-01	1.00003E+00	1.00061E+00	1.00075E+00	1.00133E+00	1.00099E+00	1.00059E+00
4	1.00286E+00	1.00429E+00	1.01018E+00	1.01912E+00	1.01956E+00	1.03359E+00	1.00546E+00	1.00769E+00
5	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00

Ozone	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	9.57099E-01	7.29237E-01	9.52011E-01	9.75778E-01	9.11495E-01	8.52587E-01	9.28310E-01	9.16477E-01
2	9.90061E-01	9.62222E-01	9.89223E-01	9.94726E-01	9.80465E-01	9.71005E-01	9.82532E-01	9.78077E-01
3	1.00069E+00	1.02166E+00	1.00097E+00	1.00084E+00	1.00140E+00	1.00465E+00	9.98862E-01	9.98062E-01
4	1.02595E+00	1.15981E+00	1.02898E+00	1.01456E+00	1.05351E+00	1.08859E+00	1.04382E+00	1.05159E+00
5	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00

Ozone	grp. 25	grp. 26	grp. 27
1	9.00633E-01	8.55204E-01	7.36906E-01
2	9.73612E-01	9.58604E-01	9.24351E-01
3	9.98958E-01	9.85655E-01	9.67855E-01
4	1.06165E+00	1.09096E+00	1.16644E+00
5	1.00000E+00	1.00000E+00	1.00000E+00

Ocell averaged currents

Ozone	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	2.44142E-03	2.50505E-02	3.15479E-02	1.90445E-02	2.90898E-02	5.55530E-02	3.16283E-02	4.69972E-03
2	3.83808E-03	3.90608E-02	4.89146E-02	2.94610E-02	4.47346E-02	8.42353E-02	4.77920E-02	7.01338E-03
3	3.11865E-03	3.33234E-02	4.31853E-02	2.71725E-02	4.22334E-02	8.01441E-02	4.58173E-02	5.61041E-03
4	1.07652E-03	1.22614E-02	1.66535E-02	1.09259E-02	1.73895E-02	3.32588E-02	1.92301E-02	2.01638E-03
5	1.78270E-03	1.90952E-02	2.47793E-02	1.55854E-02	2.42532E-02	4.62917E-02	2.65346E-02	3.34108E-03

Ozone	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	4.63308E-03	5.63482E-03	1.25243E-02	1.45637E-02	1.26850E-02	1.59469E-02	2.05110E-03	1.53102E-03
2	6.95804E-03	8.45264E-03	1.85366E-02	2.19905E-02	1.91490E-02	2.92486E-02	3.04061E-03	2.30118E-03
3	5.57143E-03	7.95529E-03	1.73397E-02	2.03325E-02	1.76980E-02	2.70290E-02	2.84990E-03	2.13457E-03
4	1.84599E-03	3.23037E-03	7.04299E-03	8.16008E-03	7.14230E-03	1.08660E-02	1.25569E-03	8.86530E-04
5	3.23366E-03	4.59514E-03	1.00871E-02	1.17591E-02	1.02578E-02	1.56012E-02	1.70112E-03	1.25011E-03

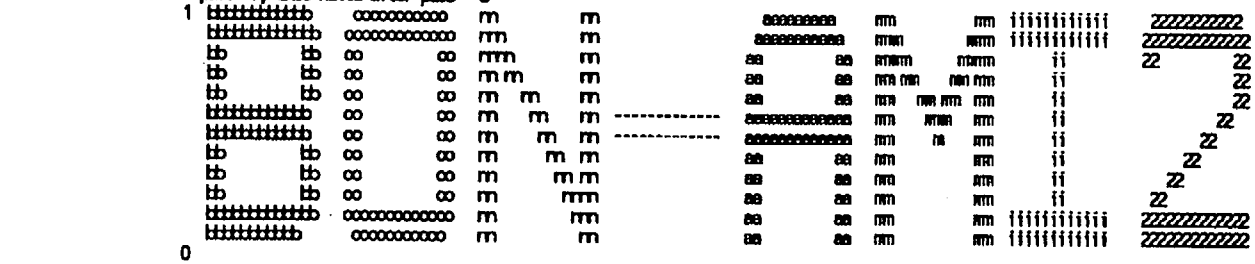
Ozone	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	1.98569E-03	5.33941E-03	3.29442E-03	5.92742E-03	5.39561E-03	1.51634E-02	2.74520E-02	2.38003E-02
2	3.01714E-03	8.99564E-03	4.92252E-03	8.89748E-03	8.30397E-03	2.37889E-02	4.18057E-02	3.63958E-02
3	2.78715E-03	8.26565E-03	4.58600E-03	8.25783E-03	7.69397E-03	2.19730E-02	3.88298E-02	3.37803E-02
4	1.11695E-03	3.26190E-03	1.87189E-03	3.38396E-03	3.08957E-03	8.79571E-03	1.59383E-02	1.38418E-02
5	1.60716E-03	4.55747E-03	2.67149E-03	4.81468E-03	4.41125E-03	1.25014E-02	2.25243E-02	1.95555E-02

Ozone	grp. 25	grp. 26	grp. 27
1	1.18321E-02	1.07284E-02	2.85632E-03
2	1.81747E-02	1.67030E-02	4.45006E-03
3	1.67546E-02	1.54299E-02	4.26991E-03
4	6.79941E-03	6.16208E-03	1.56606E-03
5	9.67400E-03	8.79807E-03	2.32082E-03

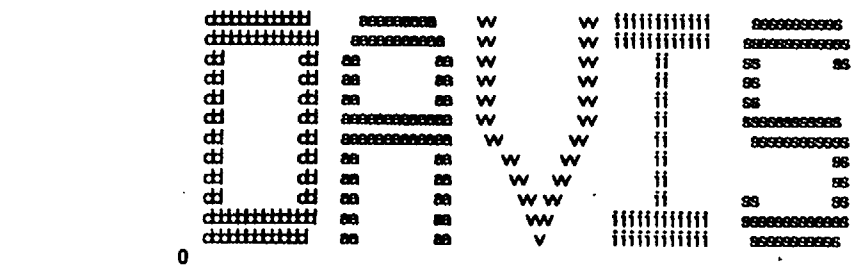
Ozone	volume	vol. fraction
1	6.88443E-01	3.30753E-01
2	3.17352E-02	1.52468E-02
3	2.16724E-01	1.04122E-01
4	1.14454E+00	5.49878E-01
5	2.08144E+00	1.00000E+00

- elapsed time .03 min.

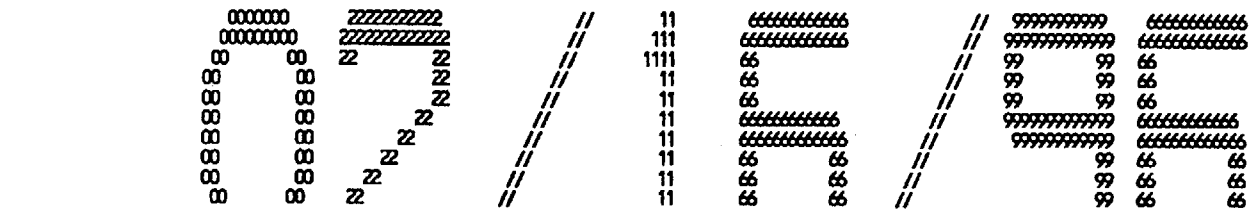
Orequested parm=halt8,skipcellwt,skipshipdata
pass= 7, exec halts after pass 8

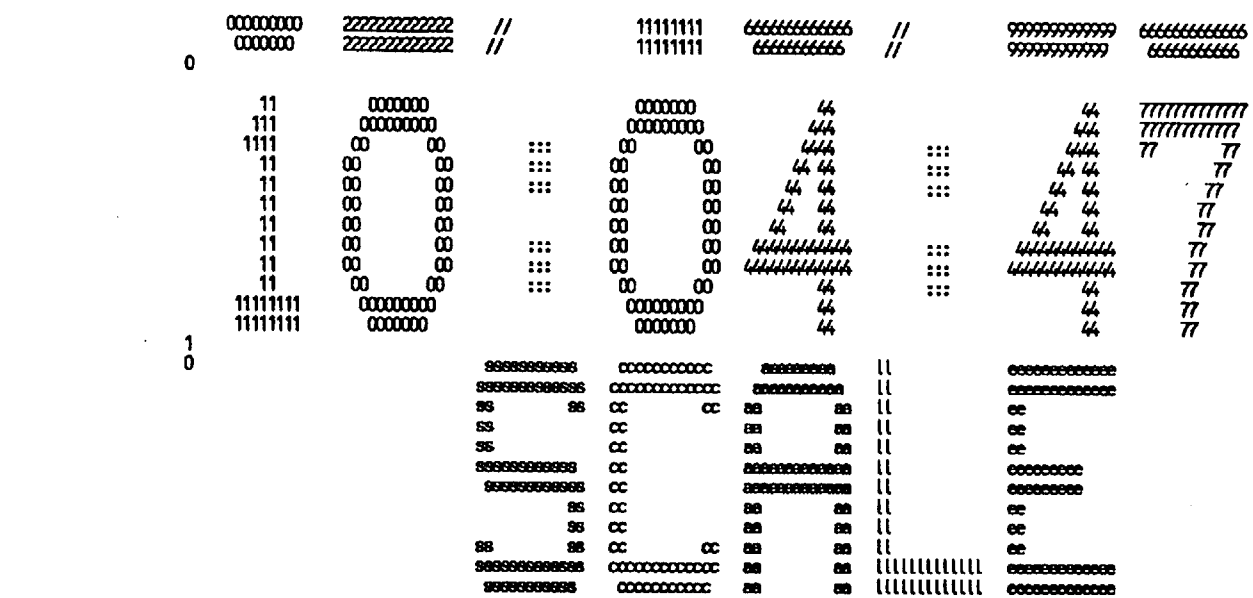


0



0





program verification information

code system: scale version: 4.2

program: c0c008

creation date: 04/27/95

library: /nautronics/scale/exe

this is not a scale configuration controlled code

jobname: davis

date of execution: 02/16/96

time of execution: 10:04:47

```
                    *****                                                    *****
                    *****                                                    *****
                    ************************************************************
                    ************************************************************
                    ************************************************************

1
0      -1q array has      1 entries.
0       0q array has      4 entries.
0       1q array has      6 entries.
0       2q array has      2 entries.
1logical assignments
0master library   12
 working library  17
 scratch file     18
 new library       1
0p r o b l e m   d e s c r i p t i o n
0igr--geometry (0/1/2/3--inf med/slab/cyl/sphere                    2
0izm--number of zones or material regions                           4
0ms--mixing table length                                           70
0ibl--shielded cross section edit option (0/1--no/yes)              0
0ibr--bondarenko factor edit option (0/1--no/yes)                   0
0issopt--dancoff factor option                                      0
0convergence criterion    1.00000E-03
0geometry correction factor for wigner rational approximation  1.350E+00
0       3q array has     70 entries.
0       4q array has     70 entries.
0       5q array has     70 entries.
0       6q array has      4 entries.
0       7q array has      4 entries.
0       8q array has      4 entries.
0       9q array has      4 entries.
0      10q array has     70 entries.
0      11q array has      4 entries.
0m i x i n g   t a b l e
0entry  mixture  isotope  number density  new identifier
    1        3     8016    2.09710E-02          201
    2        3     1001    4.19420E-02          202
    3        3     5010    3.81515E-06          203
    4        3     5011    1.54884E-05          204
    5        2    40302    4.25156E-02          205
    6        1    92235    1.20544E-04       200006
    7        1    92234    1.41715E-06       200007
    8        1    92236    2.03607E-05       200008
    9        1    92238    7.20891E-03       200009
   10        1     8016    1.50611E-02       200010
   11        1     8016    1.15315E-02       200011
   12        1    36083    5.38432E-07       200012
   13        1    36085    2.58829E-07       200013
   14        1    38090    5.92541E-06       200014
   15        1    39089    4.78649E-06       200015
   16        1    42095    6.56575E-06       200016
   17        1    40093    4.79260E-06       200017
   18        1    40094    7.56974E-06       200018
   19        1    40095    6.48349E-07       200019
   20        1    41094    3.96160E-12       200020
   21        1    43099    7.40725E-06       200021
   22        1    45103    4.11558E-06       200022
   23        1    45105    7.86511E-09       200023
   24        1    44101    6.79259E-06       200024
   25        1    44106    1.01922E-06       200025
```

26	1	46105	2.82763E-06	200026
27	1	46108	8.33604E-07	200027
28	1	47109	5.71721E-07	200028
29	1	51134	1.27225E-10	200029
30	1	54131	3.36294E-06	200030
31	1	54132	6.56907E-06	200031
32	1	54135	2.20413E-09	200032
33	1	54136	1.29571E-05	200033
34	1	55134	4.23524E-07	200034
35	1	55135	4.11148E-06	200035
36	1	55137	7.98225E-06	200036
37	1	56136	8.81606E-08	200037
38	1	57139	7.89638E-06	200038
39	1	59141	6.89476E-06	200039
40	1	59143	1.20840E-07	200040
41	1	58144	2.27216E-06	200041
42	1	60143	6.04828E-06	200042
43	1	60145	4.50917E-06	200043
44	1	61147	1.42392E-06	200044
45	1	61148	4.24549E-09	200045
46	1	60147	4.27517E-08	200046
47	1	62147	5.95353E-07	200047
48	1	62149	2.94746E-08	200048
49	1	62150	1.65740E-06	200049
50	1	62151	1.43095E-07	200050
51	1	62152	7.81604E-07	200051
52	1	64155	9.37783E-10	200052
53	1	63153	5.06256E-07	200053
54	1	63154	1.18895E-07	200054
55	1	63155	5.54695E-08	200055
56	1	40302	4.42681E-08	200056
57	1	1001	2.30630E-02	200057
58	1	5010	2.09787E-06	200058
59	1	5011	8.51673E-06	200059
60	1	55133	8.12694E-06	200060
61	1	98257	1.55467E-06	200061
62	1	94238	2.67674E-07	200062
63	1	94239	3.86490E-05	200063
64	1	94240	8.42899E-06	200064
65	1	94241	4.88270E-06	200065
66	1	94242	6.64962E-07	200066
67	1	95241	1.70640E-07	200067
68	1	95243	7.44868E-08	200068
69	1	96244	8.67958E-09	200069
70	1	999	3.30753E-21	200070

Ogeometry and material description

Ozone	mixture	outer dimension	temperature	extra xs	type (0/1--fuel/mod)
1	3	6.32460E-01	6.07600E+02	7.90564E-01	0
2	2	6.73100E-01	6.50000E+02	1.25052E+01	0
3	3	8.14000E-01	6.07600E+02	3.54852E+00	0
4	1	2.96100E+00	9.75000E+02	2.32883E-01	0

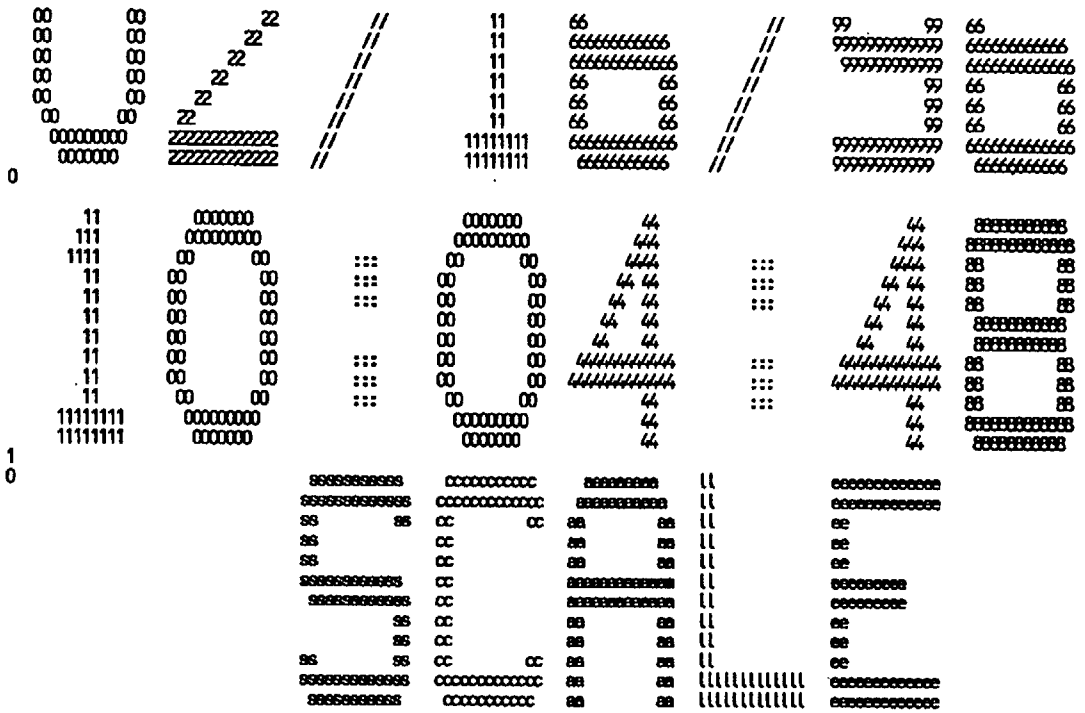
8067 locations of 200000 available are required to make a new master containing the self-shielded values
Ono nuclides in your problem have bondarenko factor data**bonami will copy from logical 12 to logical 1

Ocopy 999 1/v cross sectio from log 12 to log 1 bondarenko trigger 0
Ocopy 1001 hydrogen from log 12 to log 18 bondarenko trigger 0
Ocopy 1001 hydrogen from log 18 to log 1 bondarenko trigger 0
Ocopy 1001 hydrogen from log 18 to log 1 bondarenko trigger 0
Ocopy 5010 b-10 1273 218grp from log 12 to log 18 bondarenko trigger 0
Ocopy 5010 b-10 1273 218grp from log 18 to log 1 bondarenko trigger 0
Ocopy 5010 b-10 1273 218grp from log 18 to log 1 bondarenko trigger 0

```
0copy    5011  boron-11          from lag 12 to lag 18  bondarenko trigger 0
0copy    5011  boron-11          from lag 18 to lag  1  bondarenko trigger 0
0copy    5011  boron-11          from lag 18 to lag  1  bondarenko trigger 0
0copy    8016  oxygen-16         from lag 12 to lag 18  bondarenko trigger 0
0copy    8016  oxygen-16         from lag 18 to lag  1  bondarenko trigger 0
0copy    8016  oxygen-16         from lag 18 to lag  1  bondarenko trigger 0
0copy    8016  oxygen-16         from lag 18 to lag  1  bondarenko trigger 0
0copy   36083  kr-83             from lag 12 to lag  1  bondarenko trigger 0
0copy   36085  kr-85             from lag 12 to lag  1  bondarenko trigger 0
0copy   38090  sr-90             from lag 12 to lag  1  bondarenko trigger 0
0copy   39089   y-89             from lag 12 to lag  1  bondarenko trigger 0
0copy   40093  zr-93             from lag 12 to lag  1  bondarenko trigger 0
0copy   40094  zr-94             from lag 12 to lag  1  bondarenko trigger 0
0copy   40095  zr-95             from lag 12 to lag  1  bondarenko trigger 0
0copy   40302  zircalloy         from lag 12 to lag 18  bondarenko trigger 0
0copy   40302  zircalloy         from lag 18 to lag  1  bondarenko trigger 0
0copy   40302  zircalloy         from lag 18 to lag  1  bondarenko trigger 0
0copy   41094  nb-94             from lag 12 to lag  1  bondarenko trigger 0
0copy   42095  mo-95             from lag 12 to lag  1  bondarenko trigger 0
0copy   43099  tc-99             from lag 12 to lag  1  bondarenko trigger 0
0copy   44101  ru-101            from lag 12 to lag  1  bondarenko trigger 0
0copy   44106  ru-106            from lag 12 to lag  1  bondarenko trigger 0
0copy   45103  rh-103            from lag 12 to lag  1  bondarenko trigger 0
0copy   45105  rh-105            from lag 12 to lag  1  bondarenko trigger 0
0copy   46105  pd-105            from lag 12 to lag  1  bondarenko trigger 0
0copy   46108  pd-108            from lag 12 to lag  1  bondarenko trigger 0
0copy   47109  silver-109        from lag 12 to lag  1  bondarenko trigger 0
0copy   51126  sb-126            from lag 12 to lag  1  bondarenko trigger 0
0copy   54131  xe-131            from lag 12 to lag  1  bondarenko trigger 0
0copy   54132  xe-132            from lag 12 to lag  1  bondarenko trigger 0
0copy   54135  xenon-135         from lag 12 to lag  1  bondarenko trigger 0
0copy   54136  xe-136            from lag 12 to lag  1  bondarenko trigger 0
0copy   55133  cesium-133        from lag 12 to lag  1  bondarenko trigger 0
0copy   55134  cs-134            from lag 12 to lag  1  bondarenko trigger 0
0copy   55135  cs-135            from lag 12 to lag  1  bondarenko trigger 0
0copy   55137  cs-137            from lag 12 to lag  1  bondarenko trigger 0
0copy   56136  ba-136            from lag 12 to lag  1  bondarenko trigger 0
0copy   57139  la-139            from lag 12 to lag  1  bondarenko trigger 0
0copy   58144  ce-144            from lag 12 to lag  1  bondarenko trigger 0
0copy   59141  pr-141            from lag 12 to lag  1  bondarenko trigger 0
0copy   59143  pr-143            from lag 12 to lag  1  bondarenko trigger 0
0copy   60143  nd-143            from lag 12 to lag  1  bondarenko trigger 0
0copy   60145  nd-145            from lag 12 to lag  1  bondarenko trigger 0
0copy   60147  nd-147            from lag 12 to lag  1  bondarenko trigger 0
0copy   61147  pm-147            from lag 12 to lag  1  bondarenko trigger 0
0copy   61148  pm-148            from lag 12 to lag  1  bondarenko trigger 0
0copy   62147  sm-147            from lag 12 to lag  1  bondarenko trigger 0
0copy   62149  sm-149            from lag 12 to lag  1  bondarenko trigger 0
0copy   62150  sm-150            from lag 12 to lag  1  bondarenko trigger 0
0copy   62151  sm-151            from lag 12 to lag  1  bondarenko trigger 0
0copy   62152  sm-152            from lag 12 to lag  1  bondarenko trigger 0
0copy   63153  eu-153            from lag 12 to lag  1  bondarenko trigger 0
0copy   63154  eu-154            from lag 12 to lag  1  bondarenko trigger 0
0copy   63155  eu-155            from lag 12 to lag  1  bondarenko trigger 0
0copy   64155  gd-155            from lag 12 to lag  1  bondarenko trigger 0
0copy   92234  u-234 1043 sigc=  from lag 12 to lag  1  bondarenko trigger 0
0copy   92235  uranium-235       from lag 12 to lag  1  bondarenko trigger 0
0copy   92236  u-236 1163 sigc=  from lag 12 to lag  1  bondarenko trigger 0
0copy   92238  uranium-238       from lag 12 to lag  1  bondarenko trigger 0
0copy   93237  neptunium-237     from lag 12 to lag  1  bondarenko trigger 0
```

```
0copy    94238  pu-238 1050 sigp from log 12 to log  1    bondarenko trigger 0
0copy    94239  plutonium-239   from log 12 to log  1    bondarenko trigger 0
0copy    94240  plutonium-240   from log 12 to log  1    bondarenko trigger 0
0copy    94241  plutonium-241   from log 12 to log  1    bondarenko trigger 0
0copy    94242  plutonium-242   from log 12 to log  1    bondarenko trigger 0
0copy    95241  am-241 1056 sigp from log 12 to log  1    bondarenko trigger 0
0copy    95243  am-243 1057 218  from log 12 to log  1    bondarenko trigger 0
0copy    96244  curium-244      from log 12 to log  1    bondarenko trigger 0
1     scale 4.2 - 27 group neutron burnup library
        based on endf-b version 4 data with endf-b version 5 fission products
           compiled for nrc      1/27/89
              last updated      9/16/93
                 l.m.petrie  -  ornl
          tape id                          4321        number of nuclides          70
          number of neutron groups           27        number of gamma groups       0
          first thermal group                15        logical unit                 1
                                  table of contents
        1/v cross sections normalized to 1.0 at 0.0253 ev                          id   200070
         hydrogen        endf/b-iv mat 1269/thrml002    updated 10/13/89           id      202
         hydrogen        endf/b-iv mat 1269/thrml002    updated 10/13/89           id   200057
        b-10 1273 218ngp 042575 p-3 295k                                           id      203
        b-10 1273 218ngp 042575 p-3 295k                                           id   200058
         boron-11        endf/b-iv mat 1160             updated 10/13/89           id      204
         boron-11        endf/b-iv mat 1160             updated 10/13/89           id   200059
         oxygen-16       endf/b-iv mat 1276             updated 10/13/89           id      201
         oxygen-16       endf/b-iv mat 1276             updated 10/13/89           id   200010
         oxygen-16       endf/b-iv mat 1276             updated 10/13/89           id   200011
         kr-83           mt=102,103,103,105,106,107     updated 10/13/89           id   200012
         kr-85             mt=  102                                                 id   200013
         sr-90           mt=102                         updated 10/13/89           id   200014
          y-89           mt=102                         updated 10/13/89           id   200015
         zr-93             mt=  102                                                 id   200017
         zr-94           mt=102                         updated 10/13/89           id   200018
         zr-95           mt=102                         updated 10/13/89           id   200019
         zircalloy       endf/b-iv mat 1284             updated 10/13/89           id      205
         zircalloy       endf/b-iv mat 1284             updated 10/13/89           id   200056
         nb-94           mt=102                         updated 10/13/89           id   200020
         mo-95           mt=102                         updated 10/13/89           id   200016
         tc-99           mt=102                         updated 10/13/89           id   200021
         ru-101          mt=102                         updated 10/13/89           id   200024
         ru-106          mt=102                         updated 10/13/89           id   200025
         rh-103          mt=102                         updated 10/13/89           id   200022
         rh-105            mt=  102                                                 id   200023
         pd-105          mt=102                         updated 10/13/89           id   200026
         pd-108          mt=102                         updated 10/13/89           id   200027
         silver-109      endf/b-iv mat 1139             updated 10/13/89           id   200028
         sb-124          mt=102                         updated 10/13/89           id   200029
         xe-131          mt=102,103,104,105,106         updated 10/13/89           id   200030
         xe-132          mt=102,103,104,105,106         updated 10/13/89           id   200031
         xenon-135       endf/b-iv mat 1294             updated 10/13/89           id   200032
         xe-136            mt=  102,  103,  104,  105,  107                         id   200033
         cesium-133      endf/b-iv mat 1141             updated 10/13/89           id   200060
         cs-134          mt=102                         updated 10/13/89           id   200034
         cs-135            mt=  102                                                 id   200035
         cs-137          mt=102                         updated 10/13/89           id   200036
         ba-136          mt=102                         updated 10/13/89           id   200037
         la-139          mt=102                         updated 10/13/89           id   200038
         ce-144            mt=  102                                                 id   200041
         pr-141          mt=102,103,104,105,106,107     updated 10/13/89           id   200039
         pr-143          mt=102                         updated 10/13/89           id   200040
```

```
        nd-143      mt=102                          updated 10/13/89            id   20042
        nd-145      mt=102                          updated 10/13/89            id   20043
        nd-147      mt=102                          updated 10/13/89            id   20046
        pm-147      mt=102                          updated 10/13/89            id   20044
        pm-148        mt=  102                                                  id   20045
        sm-147      endf/b-v fission product        updated 10/13/89            id   20047
        sm-149      mt=102,103,107                  updated 10/13/89            id   20048
        sm-150      mt=102                          updated 10/13/89            id   20049
        sm-151      mt=102,103,104,105,106,107      updated 10/13/89            id   20050
        sm-152      mt=102,103,104,105,106,107      updated 10/13/89            id   20051
        eu-153      mt=102,103,104,105,106,107      updated 10/13/89            id   20053
        eu-154      mt=102,103,104,105,106,107      updated 10/13/89            id   20054
        eu-155      mt=102,103,104,105,106,107      updated 10/13/89            id   20055
        gd-155      mt=102                          updated 10/13/89            id   20052
       u-234 1043 sigz=5+4 newklacs p-3 293k f-1/e-m(1.+5)                      id   20007
        uranium-235  endf/b-iv mat 1261             updated 10/13/89            id   20006
       u-236 1163 sigz=5+4 newklacs p-3 293k f-1/e-m(1.+5)                      id   20008
        uranium-238  endf/b-iv mat 1262             updated 10/13/89            id   20009
        neptunium-237  endf/b-iv mat 1263           updated 10/13/89            id   20061
       pu-238 1050 sigz=5+4 newklacs p-3 293k f-1/e-m(1.+5)                     id   20062
        plutonium-239  endf/b-iv mat 1264           updated 10/13/89            id   20063
        plutonium-240  endf/b-iv mat 1265           updated 10/13/89            id   20064
        plutonium-241  endf/b-iv mat 1266           updated 10/13/89            id   20065
        plutonium-242  endf/b-iv mat 1161           updated 10/13/89            id   20066
       am-241 1056 sigz=5+4 newklacs 218hgp p-3 293k                            id   20067
       am-243 1057 218 gp wt f-1/e-m 090876 p3 293k                             id   20068
        curium-244  endf/b-iv mat 1162              updated 10/13/89            id   20069
0        tape copy used     0 i/o's, and took     .00 seconds
1                m        m  iiiiiiiiiiii   ttttttttttttt     eeeeeeee    ww        ww  ll
                 mm       m  iiiiiiiiiiii   ttttttttttttt    eeeeeeeeee   ww        ww  ll
                 mmm      m      ii             tt        ee        ee  ww        ww  ll
                 m mm     m      ii             tt        ee        ee  ww        ww  ll
                 m  m     m      ii             tt        ee        ee  ww        ww  ll
                 m   m    m      ii             tt        eeeeeeeeeeee  ww    w   ww  ll
                 m    m   m      ii             tt        eeeeeeeeeeee  ww   www  ww  ll
                 m     m  m      ii             tt        ee        ee  ww  ww ww  ww  ll
                 m      mm      ii             tt        ee        ee  ww ww   ww ww  ll
                 m       mm     ii             tt        ee        ee  wwww     wwww  ll
                 m        m  iiiiiiiiiiii       tt        ee        ee  ww        ww  llllllllllll
                 m        m  iiiiiiiiiiii       tt        ee        ee  ww        ww  llllllllllll
0

   ddddddddddd     eeeeeeee    w        w  iiiiiiiiiiii   ssssssssss
   ddddddddddd    eeeeeeeeee   w        w  iiiiiiiiiiii  ssssssssssss
   dd       dd   ee        ee  w        w      ii       ss      ss
   dd       dd   ee        ee  w        w      ii       ss
   dd       dd   ee        ee  w        w      ii       ss
   dd       dd   eeeeeeeeeeee  w        w      ii       ssssssssss
   dd       dd   eeeeeeeeeeee   w      w       ii        ssssssssss
   dd       dd   ee        ee    w    w        ii              ss
   dd       dd   ee        ee     w  w         ii              ss
   dd       dd   ee        ee      ww          ii       ss     ss
   ddddddddddd   ee        ee      ww     iiiiiiiiiiii  ssssssssssss
   ddddddddddd   ee        ee       v     iiiiiiiiiiii   ssssssssss
0

     000000     zzzzzzzzzz          //       11       66666666666          //   9999999999   66666666666
   00000000     zzzzzzzzzz          //      111       66666666666          //   9999999999   66666666666
  00      00          zz22          //     1111       66                   //   99       99  66
  00      00          zz22          //       11       66                   //   99       99  66
```



program verification information

code system: scale version: 4.2

program: c0c002

creation date: 04/27/95

library: /nautronics/scale/exe

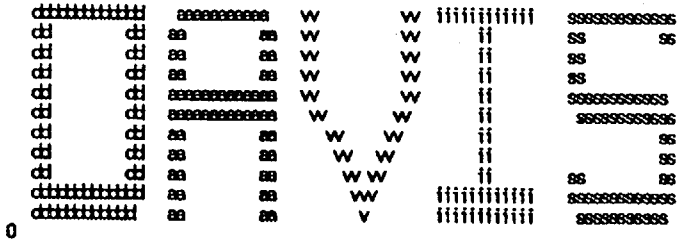
this is not a scale configuration controlled code

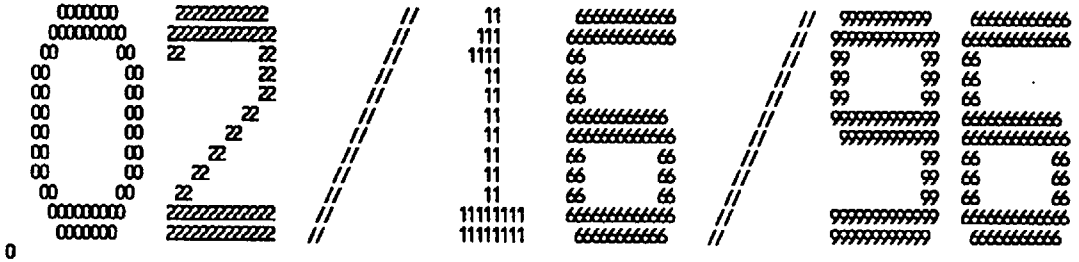
```
                    *****                                                  *****
                    *****           jobname:  davis                        *****
                    *****                                                  *****
                    *****    date of execution:  02/16/96                  *****
                    *****                                                  *****
                    *****    time of execution:  10:04:48                  *****
                    *****                                                  *****
                    *****                                                  *****
                    ********************************************************************
                    ********************************************************************
                    ********************************************************************

1
0      -1q array has      1 entries.
0       0q array has      4 entries.
0       1q array has     12 entries.
0select  5 nuclides from the master  library on logical  1
        65 nuclides from the working library on logical  3
         0 nuclides from the working library on logical  0
           to create the new working library on logical  4

         1 resonance calculations have been requested
         0 output option for anpx formatted cross section data
0the storage allocated for this case is 200000 words
0       2q array has     70 entries.
0       3q array has     15 entries.
0       4q array has      5 entries.
0 general information concerning cross section library
    tape identification number                4349
    number of nuclides on tape                  65
    number of neutron energy groups             27
    first thermal neutron energy group          15
    number of gamma energy groups                0
0  direct access unit number  9 requires  72 blocks of length  1484 words
- xsdrn tape   4321
                        scale 4.2 - 27 group neutron burnup library
                          based on endf-b version 4 data with endf-b version 5 fission products
                            compiled for nrc      1/27/89
                              last updated        9/16/93
                                l.w.petrie   -    ornl
-  work tape   4349

 xsdrn weighted tape--parent case entitled-- 1040 d, sas2h: babcock wilcox 15x15,
  3.00wt%, 20gwd/mtu burn high temp



0 nuclides from xsdrn tape
     1     hydrogen        endf/b-iv mat 1269/thrm1002   updated 10/13/89          202
     2    b-10 1273 218ngp 042375 p-3 293k                                         203
     3     boron-11        endf/b-iv mat 1160            updated 10/13/89          204
     4     oxygen-16       endf/b-iv mat 1276            updated 10/13/89          201
     5     zircalloy       endf/b-iv mat 1284            updated 10/13/89          205
0 nuclides from  work tape
     6    1/v cross sections normalized to 1.0 at 0.0253 ev                         999
     7     hydrogen        endf/b-iv mat 1269/thrm1002   updated 10/13/89         1001
     8    b-10 1273 218ngp 042375 p-3 293k                                        5010
     9     boron-11        endf/b-iv mat 1160            updated 10/13/89         5011
    10     oxygen-16       endf/b-iv mat 1276            updated 10/13/89         8016
    11     oxygen-16       endf/b-iv mat 1276            updated 10/13/89            6
    12     kr-83           mt=102,103,103,105,106,107    updated 10/13/89        36083
```

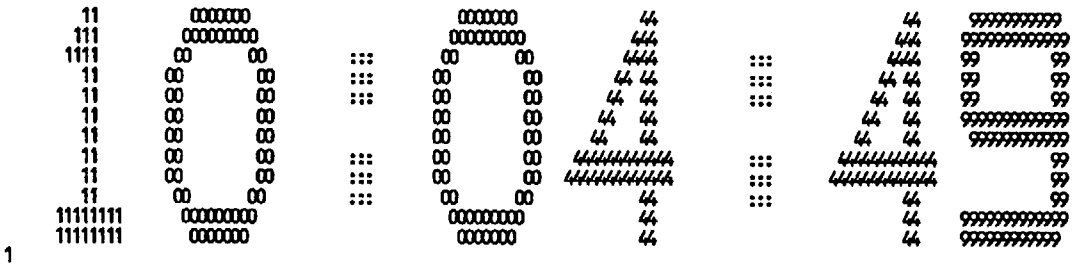
```
 13    kr-85          mt=  102                                                36085
 14    sr-90          mt=102                        updated 10/13/89          38090
 15     y-89          mt=102                        updated 10/13/89          39089
 16    zr-93          mt=  102                                                40093
 17    zr-94          mt=102                        updated 10/13/89          40094
 18    zr-95          mt=102                        updated 10/13/89          40095
 19    zircalloy      endf/b-iv mat 1284            updated 10/13/89          40302
 20    nb-94          mt=102                        updated 10/13/89          41094
 21    mo-95          mt=102                        updated 10/13/89          42095
 22    tc-99          mt=102                        updated 10/13/89          43099
 23    ru-101         mt=102                        updated 10/13/89          44101
 24    ru-106         mt=102                        updated 10/13/89          44106
 25    rh-103         mt=102                        updated 10/13/89          45103
 26    rh-105         mt=  102                                                45105
 27    pd-105         mt=102                        updated 10/13/89          46105
 28    pd-108         mt=102                        updated 10/13/89          46108
 29    silver-109     endf/b-iv mat 1139            updated 10/13/89          47109
 30    sb-124         mt=102                        updated 10/13/89          51124
 31    xe-131         mt=102,103,104,105,106        updated 10/13/89          54131
 32    xe-132         mt=102,103,104,105,106        updated 10/13/89          54132
 33    xenon-135      endf/b-iv mat 1294            updated 10/13/89          54135
 34    xe-136         mt=  102, 103, 104, 105, 107                            54136
 35    cesium-133     endf/b-iv mat 1141            updated 10/13/89          55133
 36    cs-134         mt=102                        updated 10/13/89          55134
 37    cs-135         mt=  102                                                55135
 38    cs-137         mt=102                        updated 10/13/89          55137
 39    ba-136         mt=102                        updated 10/13/89          56136
 40    la-139         mt=102                        updated 10/13/89          57139
 41    ce-144         mt=  102                                                58144
 42    pr-141         mt=102,103,104,105,106,107    updated 10/13/89          59141
 43    pr-143         mt=102                        updated 10/13/89          59143
 44    nd-143         mt=102                        updated 10/13/89          60143
 45    nd-145         mt=102                        updated 10/13/89          60145
 46    nd-147         mt=102                        updated 10/13/89          60147
 47    pm-147         mt=102                        updated 10/13/89          61147
 48    pm-148         mt=  102                                                61148
 49    sm-147         endf/b-v fission product      updated 10/13/89          62147
 50    sm-149         mt=102,103,107                updated 10/13/89          62149
 51    sm-150         mt=102                        updated 10/13/89          62150
 52    sm-151         mt=102,103,104,105,106,107    updated 10/13/89          62151
 53    sm-152         mt=102,103,104,105,106,107    updated 10/13/89          62152
 54    eu-153         mt=102,103,104,105,106,107    updated 10/13/89          63153
 55    eu-154         mt=102,103,104,105,106,107    updated 10/13/89          63154
 56    eu-155         mt=102,103,104,105,106,107    updated 10/13/89          63155
 57    gd-155         mt=102                        updated 10/13/89          64155
 58   u-234 1043 sigo=5+4 nsx=1acs p-3 293k f-1/e-n(1.+5)                       92234
 59    uranium-235    endf/b-iv mat 1261            updated 10/13/89          92235
 60   u-236 1163 sigo=5+4 nsx=1acs p-3 293k f-1/e-n(1.+5)                       92236
 61    uranium-238    endf/b-iv mat 1262            updated 10/13/89          92238
 62    neptunium-237  endf/b-iv mat 1263            updated 10/13/89          93237
 63   pu-238 1050 sigo=5+4 nsx=1acs p-3 293k f-1/e-n(1.+5)                       94238
 64    plutonium-239  endf/b-iv mat 1264            updated 10/13/89          94239
 65    plutonium-240  endf/b-iv mat 1265            updated 10/13/89          94240
 66    plutonium-241  endf/b-iv mat 1266            updated 10/13/89          94241
 67    plutonium-242  endf/b-iv mat 1161            updated 10/13/89          94242
 68   am-241 1056 sigo=5+4 nsx=1acs 218rgp p-3 293k                             95241
 69   am-243 1057 218 gp wt f-1/e-n 0.0576 p3 293k                              95243
 70    curium-244     endf/b-iv mat 1162            updated 10/13/89          96244
0 hydrogen      endf/b-iv mat 1269/thrm1002   updated 10/13/89          202   temperature=  607.60
                      thermal scattering matrix number  2 at a temperature of   550.00 was selected.
```

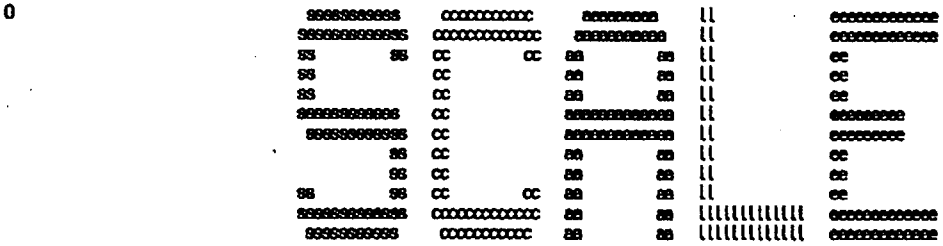
```
0b-10 1273 218ngp 042375 p-3 295k                                    203    temperature=  607.60
                        thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0 boron-11      endf/b-iv mat 1160          updated 10/13/89         204    temperature=  607.60
                        thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0 oxygen-16     endf/b-iv mat 1276          updated 10/13/89         201    temperature=  607.60
0 zircalloy     endf/b-iv mat 1284          updated 10/13/89         205    temperature=  650.00
0resonance data for this nuclide
0mass number (a)          =   90.436          temperature(kelvin)      =  650.000
0potential scatter sigma  =    6.385          lumped nuclear density   = 4.251560E-02
0spin factor (g)          =    1.079          lump dimension (a-bar)   = 6.730999E-01
0inner radius             = 6.324600E-01      dancoff correction (c)   = 1.680590E-01
0the absorber will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  8      -1.156752E-03    .000000E+00   -7.806083E-01
  9      -4.625978E-02    .000000E+00   -2.073270E+00
 10      -5.962230E-02    .000000E+00   -1.351984E+00
 11      -1.761672E-01    .000000E+00   -7.350731E-01
0excess resonance integrals
0              resolved
0absorption    2.924.02E-01
 fission       .00000E+00
-  elapsed time    .00 min.
-  elapsed time    .02 min.
1     this xsdrn working tape was created 02/16/96 at 10:04:48
      the title of the parent case is as follows
      xsdrn weighted tape-parent case entitled-- 1040 d, sas2h: babcock wilcox 15x15,
       3.00wt%, 20gwd/mtu burn high temp

        tape id                          8670        number of nuclides              70
        number of neutron groups           27        number of gamma groups           0
        first thermal group                15        logical unit                     4
                                  table of contents
       hydrogen       endf/b-iv mat 1269/thrm1002   updated 10/13/89          id    202
      b-10 1273 218ngp 042375 p-3 295k                                        id    208
       boron-11       endf/b-iv mat 1160            updated 10/13/89          id    204
       oxygen-16      endf/b-iv mat 1276            updated 10/13/89          id    201
       zircalloy      endf/b-iv mat 1284            updated 10/13/89          id    205
      1/v cross sections normalized to 1.0 at 0.0253 ev                       id    999
       hydrogen       endf/b-iv mat 1269/thrm1002   updated 10/13/89          id   1001
      b-10 1273 218ngp 042375 p-3 295k                                        id   5010
       boron-11       endf/b-iv mat 1160            updated 10/13/89          id   5011
       oxygen-16      endf/b-iv mat 1276            updated 10/13/89          id   8016
       oxygen-16      endf/b-iv mat 1276            updated 10/13/89          id      6
       kr-83          mt=102,103,103,105,106,107    updated 10/13/89          id  36083
       kr-85            mt=  102                                              id  36085
       sr-90          mt=102                        updated 10/13/89          id  38090
        y-89          mt=102                        updated 10/13/89          id  39089
       zr-93            mt=  102                                              id  40093
       zr-94          mt=102                        updated 10/13/89          id  40094
       zr-95          mt=102                        updated 10/13/89          id  40095
       zircalloy      endf/b-iv mat 1284            updated 10/13/89          id  40902
       rb-94          mt=102                        updated 10/13/89          id  41094
       mo-95          mt=102                        updated 10/13/89          id  42095
       tc-99          mt=102                        updated 10/13/89          id  43099
       ru-101         mt=102                        updated 10/13/89          id  44101
       ru-106         mt=102                        updated 10/13/89          id  44106
       rh-103         mt=102                        updated 10/13/89          id  45103
       rh-105           mt=  102                                              id  45105
```

```
        pd-105          mt=102                          updated 10/13/89            id    46105
        pd-108          mt=102                          updated 10/13/89            id    46108
        silver-109      endf/b-iv mat 1139              updated 10/13/89            id    47109
        sb-124          mt=102                          updated 10/13/89            id    51124
        xe-131          mt=102,103,104,105,106          updated 10/13/89            id    54131
        xe-132          mt=102,103,104,105,106          updated 10/13/89            id    54132
        xenon-135       endf/b-iv mat 1294              updated 10/13/89            id    54135
        xe-136            mt=  102, 103,  104,  105,  107                           id    54136
        cesium-133      endf/b-iv mat 1141              updated 10/13/89            id    55133
        cs-134          mt=102                          updated 10/13/89            id    55134
        cs-135            mt=  102                                                  id    55135
        cs-137          mt=102                          updated 10/13/89            id    55137
        ba-136          mt=102                          updated 10/13/89            id    56136
        la-139          mt=102                          updated 10/13/89            id    57139
        ce-144            mt=  102                                                  id    58144
        pr-141          mt=102,103,104,105,106,107      updated 10/13/89            id    59141
        pr-143          mt=102                          updated 10/13/89            id    59143
        nd-143          mt=102                          updated 10/13/89            id    60143
        nd-145          mt=102                          updated 10/13/89            id    60145
        nd-147          mt=102                          updated 10/13/89            id    60147
        pm-147          mt=102                          updated 10/13/89            id    61147
        pm-148            mt=  102                                                  id    61148
        sm-147          endf/b-v fission product        updated 10/13/89            id    62147
        sm-149          mt=102,103,107                  updated 10/13/89            id    62149
        sm-150          mt=102                          updated 10/13/89            id    62150
        sm-151          mt=102,103,104,105,106,107      updated 10/13/89            id    62151
        sm-152          mt=102,103,104,105,106,107      updated 10/13/89            id    62152
        eu-153          mt=102,103,104,105,106,107      updated 10/13/89            id    63153
        eu-154          mt=102,103,104,105,106,107      updated 10/13/89            id    63154
        eu-155          mt=102,103,104,105,106,107      updated 10/13/89            id    63155
        gd-155          mt=102                          updated 10/13/89            id    64155
       u-234 1043 sigo=5+4 nresclacs p-3 293k f-1/e-m(1.+5)                         id    92234
        uranium-235     endf/b-iv mat 1261              updated 10/13/89            id    92235
       u-236 1163 sigo=5+4 nresclacs p-3 293k f-1/e-m(1.+5)                         id    92236
        uranium-238     endf/b-iv mat 1262              updated 10/13/89            id    92238
        neptunium-237   endf/b-iv mat 1263              updated 10/13/89            id    95237
       pu-238 1050 sigo=5+4 nresclacs p-3 293k f-1/e-m(1.+5)                        id    94238
        plutonium-239   endf/b-iv mat 1264              updated 10/13/89            id    94239
        plutonium-240   endf/b-iv mat 1265              updated 10/13/89            id    94240
        plutonium-241   endf/b-iv mat 1266              updated 10/13/89            id    94241
        plutonium-242   endf/b-iv mat 1161              updated 10/13/89            id    94242
       am-241 1056 sigo=5+4 nresclacs 218grp p-3 293k                               id    95241
       am-243 1057 218 gp wt f-1/e-m 090876 p3 293k                                 id    95243
        curium-244      endf/b-iv mat 1162              updated 10/13/89            id    96244
0         tape copy used      0 i/o's, and took     .00 seconds
1 xx         xx   ssssssssss   ddddddddddd   rrrrrrrrrr   rr        rr  pppppppppp   rrr         rrr
   xx        xx  ssssssssssss  ddddddddddddd  rrrrrrrrrrr  rrr       rr  ppppppppppp  rrrr        rrrr
    xx      xx   ss      ss    dd      dd    rr      rr    rrrr      rr  pp      pp    rrrrrr      rrrrrr
     xx    xx    ss            dd      dd    rr      rr    rr rr     rr  pp      pp    rr  rrr    rrr rrr
      xx  xx     ss            dd      dd    rr      rr    rr  rr    rr  pp      pp    rr   rrr   rrr rrr
       xxx       ssssssssss    dd      dd    rrrrrrrrrrr   rr   rr   rr  ppppppppppp   rr    rrrr  rrr
       xxx        ssssssssss   dd      dd    rrrrrrrrrr    rr    rr  rr  ppppppppppp   rr     rr   rrr
      xx xx             ss    dd      dd    rr  rr        rr     rr rr  pp            rr          rrr
     xx   xx    ss      ss    dd      dd    rr   rr       rr      rrrr  pp            rr          rrr
    xx     xx   ssssssssssss  ddddddddddddd  rr    rr     rr       rrr  pp            rr          rrr
   xx       xx  ssssssssss    ddddddddddddd  rr     rr    rr       rrr  pp            rr          rrr
0
  ddddddddddd     eeeeeeee    w       w  fffffffffff    sssssssss
```









```
                    ******
                    ******                                                  ******
                    ******          program verification information         ******
                    ******                                                  ******
                    ******        code system:   scale  version:   4.2      ******
                    ******                                                  ******
                    ********************************************************************
                    ********************************************************************
                    ******                                                  ******
                    ******                                                  ******
                    ******              program:  c0c001                    ******
                    ******                                                  ******
                    ******           creation date:  04/27/95               ******
                    ******                                                  ******
                    ******              library:  /neutronics/scale/exe     ******
                    ******                                                  ******
                    ******                                                  ******
                    ******      this is not a  scale  configuration controlled code
                    ******                                                  ******
                    ******              jobname:  davis                     ******
                    ******                                                  ******
                    ******      date of execution:  02/16/96                ******
                    ******                                                  ******
                    ******      time of execution:  10:04:49                ******
                    ******                                                  ******
                    ******                                                  ******
                    ********************************************************************
                    ********************************************************************
                    ********************************************************************
1
                    1040 d, second part of sas2h pass to make library
0       -1q array has      1 entries.
0        0q array has     11 entries.
0        1q array has     15 entries.
0        2q array has     10 entries.
0        3q array has     12 entries.
0        4q array has      9 entries.
0        5q array has     12 entries.
0direct access unit  9 requires    12 blocks of length  704 for cross section mixing.
1                    1040 d, second part of sas2h pass to make library
0general problem description data block
0                              general problem data

 ige  1/2/3 = plane/cylinder/sphere      2      isn  quadrature order                 8
 izm  number of zones                    4      isct order of scattering              3
 im   number of special intervals       28      ievt 0/1/2/3/4/5/6=q/k/alpha/c/z/r/h  1
 ibl  0/1/2/3 = vacuum/refl/per/white    1      iim  inner iteration maximum        20
 ibr  right boundary condition           3      iom  outer iteration maximum        25
 mxx  number of mixtures                 3      iclc -1/0/n--flat res/sn/cpt          0
 ms   mixing table length               70      ith  0/1 = forward/adjoint           0
 igm  number of energy groups           27      iflu not used(always wgtd)            0
 nrg  number of neutron groups          27      iprt -2/-1/0/n=mixture xsec print    -2
 ngg  number of gamma groups             0      idl  0/1/2/3=no/prt nd/pch n/both   14
 iftg number of first thermal group     15      ipbt -1/0/1=none/fine/all bal. prt    0
0                              special options

 ifg  0/1 = none/weighting calculation   1      ipn  0/1/2 diff. coef. param         0
 iqm  volumetric sources (0/n=no/yes)    0      idfm 0/1 = none/density factors 39*  0
 ipm  boundary sources (0/n=no/yes)      0      isz  0/n = none/n activities by zone 0
 ifn  0/1/2 = input 33*/34*/use last    14      iai  0/1=none/activities by interval 0
 itmx maximum time (minutes)            10      ifct 0/1=no/yes upscatter scaling    0
```

```
 idt1 0/1/2/3=no/xsect/srce/flux--out      0        ipvt 0/1/2=no/k/alpha parametric srch    0
 isx  broad group fluxes                  0        isen outer iteration acceleration        0
 ibln activity data unit                  0        nbnd band rebaln parameter               0
 jtkl 0/1/2 buckling geometry             0
0                              weighting data (ifg=1)

 icon -1/0/1=cell/zone/region weight      -1        ihtf total xsect pen in brd gp tables    3
 igmf number of broad groups               3        ndsf pen g-g or file number              4
 itp  0/10/20/30/40 0/c/e/ec/a             0        nusf table length or max order           6
 ipp  -2/-1/0/n=wgted xsect print         -2        msm  extra 1-d x-sect positions         0
 iap  -1/n anisn xsect print              -1
0                              floating point parameters

 eps  overall convergence       1.00000E-04        dy   cyl/pln ht for buckling     .00000E+00
 ptc  point convergence         1.00000E-04        dz   plane depth for buckling  2.00000E+02
 xnf  normalization factor      1.00000E+00        vac  void streaming correction   .00000E+00
 ev   eigenvalue guess           .00000E+00        pv   ipvt=1/2--k/alpha          1.00000E+00
 evm  eigenvalue modifier        .00000E+00        eql  ev change eps for search   1.00000E-03
 bf   buckling factor=1.420892  1.42089E+00        xpm  new param mod for search  7.50000E-01
     this case will require       2611 locations for mixing
     this case has been allocated 200000 locations
1                    1040 d, second part of sas2h pass to make library
0       13q array has     70 entries.
0       14q array has     70 entries.
0       15q array has     70 entries.
0                              data block 2 (mixing table, etc.)
0     nuclides      cccc                          mixing table                              extra
        on tape     identification          mixture  component   atom density           xsect id's
     1      202                                     3        201   2.09710E-02
     2      203                                     3        202   4.19420E-02
     3      204                                     3        203   3.81515E-06
     4      201                                     3        204   1.54884E-05
     5      205                                     2        205   4.25156E-02
     6      999                                     1      92235   1.20544E-04
     7     1001                                     1      92234   1.41715E-06
     8     5010                                     1      92236   2.03607E-05
     9     5011                                     1      92238   7.20891E-03
    10     8016                                     1       8016   1.50611E-02
    11        6                                     1          6   1.15315E-02
    12    36083                                     1      36083   5.38432E-07
    13    36085                                     1      36085   2.58829E-07
    14    38090                                     1      38090   5.92341E-06
    15    39089                                     1      39089   4.78649E-06
    16    40093                                     1      42095   6.56575E-06
    17    40094                                     1      40093   4.79260E-06
    18    40095                                     1      40094   7.56974E-06
    19    40302                                     1      40095   6.48349E-07
    20    41094                                     1      41094   3.96160E-12
    21    42095                                     1      43099   7.40725E-06
    22    43099                                     1      45103   4.11558E-06
    23    44101                                     1      45105   7.88511E-09
    24    44106                                     1      44101   6.79295E-06
    25    45103                                     1      44106   1.01922E-06
    26    45105                                     1      46105   2.82763E-06
    27    46105                                     1      46108   8.33604E-07
    28    46108                                     1      47109   5.71721E-07
    29    47109                                     1      51124   1.27225E-10
    30    51124                                     1      54131   3.36294E-06
    31    54131                                     1      54132   6.56907E-06
    32    54132                                     1      54135   2.20413E-09
```

33	54135	1	54136	1.29571E-05
34	54136	1	55134	4.23334E-07
35	55133	1	55135	4.11148E-06
36	55134	1	55137	7.98229E-06
37	55135	1	56136	8.81606E-08
38	55137	1	57139	7.89638E-06
39	56136	1	59141	6.89478E-06
40	57139	1	59143	1.20840E-07
41	58144	1	58144	2.27216E-06
42	59141	1	60143	6.04828E-06
43	59143	1	60145	4.50917E-06
44	60143	1	61147	1.42392E-06
45	60145	1	61148	4.26549E-09
46	60147	1	60147	4.27517E-08
47	61147	1	62147	5.95353E-07
48	61148	1	62149	2.94746E-08
49	62147	1	62150	1.65740E-06
50	62149	1	62151	1.43095E-07
51	62150	1	62152	7.81604E-07
52	62151	1	64155	9.37783E-10
53	62152	1	63153	5.06255E-07
54	63153	1	63154	1.18895E-07
55	63154	1	63155	5.54695E-08
56	63155	1	40302	4.42681E-08
57	64155	1	1001	2.30530E-02
58	92234	1	5010	2.09787E-06
59	92235	1	5011	8.51673E-06
60	92236	1	55133	8.12694E-06
61	92238	1	95237	1.55467E-06
62	95237	1	94238	2.67674E-07
63	94238	1	94239	3.86490E-06
64	94239	1	94240	8.49899E-06
65	94240	1	94241	4.88270E-06
66	94241	1	94242	6.64962E-07
67	94242	1	95241	1.70640E-07
68	95241	1	95243	7.44868E-08
69	95243	1	96244	8.67958E-09
70	96244	1	999	3.30753E-21

- elapsed time .00 min.
0 24259 locations will be used
0 35q array has 29 entries.
0 36q array has 28 entries.
0 39q array has 4 entries.
0 40q array has 4 entries.
0 47q array has 27 entries.
0 51q array has 27 entries.
1 1040 d, second part of sas2h pass to make library

neutron group parameters

0 gp	energy boundaries	lethargy boundaries	weighted velocities	broad gp numbers	calc type	group band	right albedo	left albedo
1	2.00000E+07	-6.93147E-01	4.60581E+09	1	0	1	1.00000E+00	
2	6.43400E+06	4.40989E-01	2.88737E+09	1	0	2	1.00000E+00	
3	3.00000E+06	1.20397E+00	2.12201E+09	1	0	3	1.00000E+00	
4	1.85000E+06	1.68740E+00	1.75673E+09	1	0	4	1.00000E+00	
5	1.40000E+06	1.96611E+00	1.46535E+09	1	0	5	1.00000E+00	
6	9.00000E+05	2.40795E+00	1.06620E+09	2	0	6	1.00000E+00	
7	4.00000E+05	3.21888E+00	6.07557E+08	2	0	7	1.00000E+00	
8	1.00000E+05	4.60517E+00	2.72415E+08	2	0	8	1.00000E+00	
9	1.70000E+04	6.37713E+00	1.13526E+08	2	0	9	1.00000E+00	
10	3.00000E+03	8.11173E+00	4.82126E+07	2	0	10	1.00000E+00	

11	5.50000E+02	9.80818E+00	2.05946E+07	2	0	11	1.00000E+00
12	1.00000E+02	1.15129E+01	1.01036E+07	2	0	12	1.00000E+00
13	3.00000E+01	1.27169E+01	5.69595E+06	2	0	13	1.00000E+00
14	1.00000E+01	1.38155E+01	3.20957E+06	2	0	14	1.00000E+00
15	3.04999E+00	1.50030E+01	2.10601E+06	2	0	15	1.00000E+00
16	1.77000E+00	1.55471E+01	1.70522E+06	2	0	16	1.00000E+00
17	1.29999E+00	1.58657E+01	1.52545E+06	2	0	17	1.00000E+00
18	1.12999E+00	1.59959E+01	1.42867E+06	2	0	18	1.00000E+00
19	1.00000E+00	1.61181E+01	1.31002E+06	2	0	19	1.00000E+00
20	8.00000E-01	1.63412E+01	9.05898E+05	2	0	20	1.00000E+00
21	4.00000E-01	1.70844E+01	8.17974E+05	3	0	21	1.00000E+00
22	3.25000E-01	1.73420E+01	6.90070E+05	3	0	22	1.00000E+00
23	2.25000E-01	1.76098E+01	4.86953E+05	3	0	23	1.00000E+00
24	9.99999E-02	1.84207E+01	3.57766E+05	3	0	24	1.00000E+00
25	5.00000E-02	1.91138E+01	2.71895E+05	3	0	25	1.00000E+00
26	3.00000E-02	1.96247E+01	1.87283E+05	3	0	26	1.00000E+00
27	1.00000E-02	2.07235E+01	8.88201E+04	3	0	27	1.00000E+00
28	1.00000E-05	2.76310E+01					

1 1040 d, second part of sas2h pass to make library

0

	mixture by zone	order p(l) by zone	activity table matl no.	activity table reaction	quadrature constants weights	quadrature constants directions	quadrature constants refl direc	quadrature constants wt x cos
1	3	3			0	-2.79004E-01	3	0
2	2	3			5.05143E-02	-1.97286E-01	3	-9.98548E-03
3	3	3			5.05143E-02	1.97286E-01	2	9.98548E-03
4	1	3			0	-6.04419E-01	8	0
5					5.55953E-02	-5.58410E-01	8	-3.10450E-02
6					5.55953E-02	-2.31301E-01	7	-1.28598E-02
7					5.55953E-02	2.31301E-01	6	1.28598E-02
8					5.55953E-02	5.58410E-01	5	3.10450E-02
9					0	-8.50774E-01	15	0
10					5.22844E-02	-8.21784E-01	15	-4.29665E-02
11					5.22844E-02	-6.01588E-01	14	-3.14537E-02
12					5.22844E-02	-2.20196E-01	13	-1.15128E-02
13					5.22844E-02	2.20196E-01	12	1.15128E-02
14					5.22844E-02	6.01588E-01	11	3.14537E-02
15					5.22844E-02	8.21784E-01	10	4.29665E-02
16					0	-9.83032E-01	24	0
17					4.53365E-02	-9.64143E-01	24	-4.37099E-02
18					4.53365E-02	-8.17361E-01	23	-3.70655E-02
19					4.53365E-02	-5.46143E-01	22	-2.47597E-02
20					4.53365E-02	-1.91780E-01	21	-8.69444E-03
21					4.53365E-02	1.91780E-01	20	8.69444E-03
22					4.53365E-02	5.46143E-01	19	2.47597E-02
23					4.53365E-02	8.17361E-01	18	3.70655E-02
24					4.53365E-02	9.64143E-01	17	4.37099E-02

0constants for p(3) scattering

0angl	set 1	set 2	set 3	set 4	set 5
1	-2.79004E-01	8.83236E-01	6.74143E-02	-6.16919E-01	-1.71701E-02
2	-1.97286E-01	8.83236E-01	.00000E+00	-4.36228E-01	1.21411E-02
3	1.97286E-01	8.83236E-01	.00000E+00	4.36228E-01	-1.21411E-02
4	-6.04419E-01	4.52016E-01	3.16379E-01	-8.04435E-01	-1.74564E-01
5	-5.58410E-01	4.52016E-01	2.25714E-01	-7.43201E-01	-6.68028E-02
6	-2.31301E-01	4.52016E-01	-2.25713E-01	-3.07844E-01	1.61278E-01
7	2.31301E-01	4.52016E-01	-2.25713E-01	3.07844E-01	-1.61278E-01
8	5.58410E-01	4.52016E-01	2.25713E-01	7.43201E-01	6.68028E-02
9	-8.50774E-01	-8.57235E-02	6.26863E-01	-1.98456E-01	-4.85885E-01
10	-8.21784E-01	-8.57235E-02	5.42862E-01	-1.91694E-01	-3.44245E-01
11	-6.01588E-01	-8.57235E-02	.00000E+00	-1.40530E-01	3.44244E-01
12	-2.20196E-01	-8.57235E-02	-5.42862E-01	-5.13643E-02	3.44245E-01
13	2.20196E-01	-8.57235E-02	-5.42862E-01	5.13643E-02	-3.44245E-01

14	6.01588E-01	-8.57235E-02	.00000E+00	1.40330E-01	-3.44245E-01
15	8.21784E-01	-8.57235E-02	5.42852E-01	1.91694E-01	3.44245E-01
16	-9.83052E-01	-4.49528E-01	8.36886E-01	5.00708E-01	-7.51005E-01
17	-9.64143E-01	-4.49528E-01	7.73181E-01	4.91083E-01	-6.24439E-01
18	-8.17361E-01	-4.49528E-01	3.20852E-01	4.16520E-01	1.46514E-01
19	-5.46143E-01	-4.49528E-01	-3.20852E-01	2.78176E-01	7.36575E-01
20	-1.91780E-01	-4.49528E-01	-7.73181E-01	9.76824E-02	4.17234E-01
21	1.91780E-01	-4.49528E-01	-7.73181E-01	-9.76824E-02	-4.17234E-01
22	5.46143E-01	-4.49528E-01	-3.20852E-01	-2.78176E-01	-7.36575E-01
23	8.17361E-01	-4.49528E-01	3.20852E-01	-4.16520E-01	-1.46514E-01
24	9.64143E-01	-4.49528E-01	7.73181E-01	-4.91083E-01	6.24439E-01

1 int radii mid pts zone no. areas volumes dens fact radius mod spec(int)

1	0	1.97644E-02	1	0	4.90881E-03		0
2	3.95287E-02	5.92931E-02	1	2.48366E-01	1.47264E-02		0
3	7.90575E-02	1.18586E-01	1	4.96733E-01	5.89067E-02		0
4	1.58115E-01	1.97644E-01	1	9.93466E-01	9.81762E-02		0
5	2.37172E-01	2.76701E-01	1	1.49020E+00	1.37447E-01		
6	3.16230E-01	3.55759E-01	1	1.98693E+00	1.76717E-01		
7	3.95288E-01	4.34816E-01	1	2.48366E+00	2.15988E-01		
8	4.74345E-01	5.13874E-01	1	2.98040E+00	2.55258E-01		
9	5.53403E-01	5.73167E-01	1	3.47713E+00	1.42355E-01		
10	5.92931E-01	6.12696E-01	1	3.72550E+00	1.52173E-01		
11	6.32460E-01	6.42620E-01	2	3.97386E+00	8.20460E-02		
12	6.52780E-01	6.62940E-01	2	4.10154E+00	8.46405E-02		
13	6.73100E-01	6.98588E-01	3	4.22921E+00	2.05562E-01		
14	7.20067E-01	7.43550E-01	3	4.52431E+00	2.19422E-01		
15	7.67033E-01	7.90517E-01	3	4.81941E+00	2.33282E-01		
16	8.14000E-01	8.62795E-01	4	5.11451E+00	5.29051E-01		
17	9.11591E-01	9.60388E-01	4	5.72769E+00	5.88891E-01		
18	1.00918E+00	1.10577E+00	4	6.34088E+00	1.35731E+00		
19	1.20436E+00	1.30195E+00	4	7.56724E+00	1.59667E+00		
20	1.39955E+00	1.49714E+00	4	8.79360E+00	1.83603E+00		
21	1.59473E+00	1.69252E+00	4	1.00200E+01	2.07540E+00		
22	1.78991E+00	1.88750E+00	4	1.12463E+01	2.31476E+00		
23	1.98509E+00	2.08268E+00	4	1.24727E+01	2.55412E+00		
24	2.18027E+00	2.27786E+00	4	1.36991E+01	2.79349E+00		
25	2.37545E+00	2.47305E+00	4	1.49254E+01	3.03285E+00		
26	2.57064E+00	2.66823E+00	4	1.61518E+01	3.27221E+00		
27	2.76582E+00	2.81461E+00	4	1.73781E+01	1.72587E+00		
28	2.86341E+00	2.91220E+00	4	1.79913E+01	1.78571E+00		
29	2.96100E+00			1.86045E+01			

- elapsed time .00 min.

1 outer iter | inner iters | 1 - balance | eigenvalue | 1 - source ratio | 1 - scatter ratio | 1 - upscat ratio | search parameter | time (min)

1	158	-1.38670E-05	1.01990E+00	-2.16600E-02	1.00000E+00	-6.74411E-05	.00000E+00	.0000
2	253	-3.84269E-07	1.02189E+00	-5.59663E-04	-2.64721E-03	-1.18196E-05	.00000E+00	.0000
3	290	-1.95462E-06	1.02227E+00	-9.94730E-05	-4.33499E-04	-2.89140E-04	.00000E+00	.0167
4	331	3.72298E-06	1.02250E+00	-2.39066E-05	-1.07205E-04	-6.81095E-05	.00000E+00	.0167

grp to grp	inner iters	mfd int.	max. flux difference	msf int.	max. scale factor	coarse mesh
1	1	17	5.46690E-07	28	1.00000E+00	1
2	1	17	6.50441E-07	28	1.00000E+00	1
3	1	17	6.09149E-07	28	1.00000E+00	1
4	1	17	5.95387E-07	28	1.00000E+00	1
5	1	17	6.33868E-07	28	1.00000E+00	1
6	1	17	4.42394E-07	28	1.00000E+00	1
7	1	24	1.34014E-06	28	9.99999E-01	2
8	1	28	2.25154E-07	28	1.00000E+00	2
9	1	27	1.43450E-05	28	1.00001E+00	3
10	1	26	1.70372E-06	28	9.99999E-01	3

11	11	1	26	3.75121E-06	28	9.99996E-01	3
12	12	1	25	1.61102E-06	28	9.99999E-01	3
13	13	1	26	3.67547E-06	28	1.00000E+00	3
14	14	1	28	2.95231E-07	28	1.00000E+00	3
15	15	1	2	6.39406E-05	28	9.99926E-01	2
16	16	1	2	7.66618E-05	28	9.99938E-01	2
17	17	1	2	9.14770E-05	28	9.99858E-01	3
18	18	2	28	3.36478E-05	28	1.00001E+00	3
19	19	2	2	4.54975E-06	28	1.00000E+00	3
20	20	1	2	6.84650E-05	28	9.99872E-01	3
21	21	2	28	3.42746E-05	28	1.00001E+00	3
22	22	1	6	5.43675E-05	28	9.99950E-01	3
23	23	1	27	7.16428E-06	28	1.00001E+00	4
24	24	1	28	2.38330E-05	9	1.00002E+00	4
25	25	1	26	3.36758E-05	8	1.00001E+00	5
26	26	1	28	1.49048E-05	6	1.00001E+00	6
27	27	1	1	1.15270E-05	5	1.00001E+00	8

5 361 -2.95269E-06 1.02239E+00 -5.86852E-06 -2.53599E-05 -1.54551E-05 .00000E+00 .0167
final monitor
lambda 1.02236E+00 production/absorption 1.08575E+00 angular flux on 16
elapsed time .02 min.
1 1040 d, second part of sas2h pass to make library
0 int. zone number radius int. midpoint area volume prod density

1	1	.00000E+00	1.97644E-02	.00000E+00	4.90851E-03	.00000E+00
2	1	3.95287E-02	5.92931E-02	2.48366E-01	1.47264E-02	.00000E+00
3	1	7.90575E-02	1.18586E-01	4.96733E-01	5.89067E-02	.00000E+00
4	1	1.58115E-01	1.97644E-01	9.93466E-01	9.81762E-02	.00000E+00
5	1	2.37172E-01	2.76701E-01	1.49020E+00	1.37447E-01	.00000E+00
6	1	3.16230E-01	3.55759E-01	1.98693E+00	1.76717E-01	.00000E+00
7	1	3.95288E-01	4.34816E-01	2.48366E+00	2.15988E-01	.00000E+00
8	1	4.74345E-01	5.13874E-01	2.98040E+00	2.55258E-01	.00000E+00
9	1	5.53403E-01	5.73167E-01	3.47713E+00	1.42365E-01	.00000E+00
10	1	5.92931E-01	6.12698E-01	3.72550E+00	1.52173E-01	.00000E+00
11	2	6.32460E-01	6.42520E-01	3.97386E+00	8.20460E-02	.00000E+00
12	2	6.52780E-01	6.62940E-01	4.10154E+00	8.46405E-02	.00000E+00
13	3	6.73100E-01	6.98883E-01	4.22921E+00	2.05562E-01	.00000E+00
14	3	7.20067E-01	7.43550E-01	4.52431E+00	2.19422E-01	.00000E+00
15	3	7.67033E-01	7.90517E-01	4.81941E+00	2.33282E-01	.00000E+00
16	4	8.14000E-01	8.62795E-01	5.11451E+00	5.29051E-01	2.33636E-02
17	4	9.11591E-01	9.60386E-01	5.72769E+00	5.88891E-01	2.54094E-02
18	4	1.00918E+00	1.10577E+00	6.34088E+00	1.35731E+00	5.73426E-02
19	4	1.20434E+00	1.30195E+00	7.56724E+00	1.59667E+00	6.60501E-02
20	4	1.39955E+00	1.49714E+00	8.79860E+00	1.83603E+00	7.48427E-02
21	4	1.59473E+00	1.69232E+00	1.00200E+01	2.07540E+00	8.36843E-02
22	4	1.78991E+00	1.88750E+00	1.12463E+01	2.31476E+00	9.25790E-02
23	4	1.98509E+00	2.08268E+00	1.24727E+01	2.55412E+00	1.01535E-01
24	4	2.18027E+00	2.27786E+00	1.36991E+01	2.79349E+00	1.10567E-01
25	4	2.37545E+00	2.47305E+00	1.49254E+01	3.03285E+00	1.19692E-01
26	4	2.57064E+00	2.66823E+00	1.61518E+01	3.27221E+00	1.28942E-01
27	4	2.76582E+00	2.81461E+00	1.73781E+01	1.72587E+00	6.79867E-02
28	4	2.86341E+00	2.91220E+00	1.79913E+01	1.78571E+00	7.03808E-02
29		2.96100E+00		1.86045E+01		

1 1040 d, second part of sas2h pass to make library
0 total flux
0 int. grp. 1 grp. 2 grp. 3 grp. 4 grp. 5 grp. 6 grp. 7 grp. 8

1	1.30631E-02	9.11124E-02	1.12710E-01	6.90754E-02	1.02786E-01	1.92805E-01	1.95104E-01	1.47033E-01
2	1.30578E-02	9.10612E-02	1.12645E-01	6.90372E-02	1.02733E-01	1.92775E-01	1.95065E-01	1.47028E-01
3	1.30585E-02	9.10743E-02	1.12667E-01	6.90552E-02	1.02767E-01	1.92789E-01	1.95117E-01	1.47039E-01
4	1.30653E-02	9.11553E-02	1.12780E-01	6.91335E-02	1.02897E-01	1.93031E-01	1.95273E-01	1.47068E-01
5	1.30777E-02	9.12977E-02	1.12975E-01	6.92665E-02	1.03113E-01	1.93430E-01	1.95521E-01	1.47112E-01

6	1.30946E-02	9.14936E-02	1.13245E-01	6.94469E-02	1.03410E-01	1.93978E-01	1.93859E-01	1.47168E-01
7	1.31160E-02	9.17443E-02	1.13591E-01	6.96879E-02	1.03798E-01	1.94694E-01	1.94300E-01	1.47238E-01
8	1.31417E-02	9.20575E-02	1.14051E-01	6.99953E-02	1.04303E-01	1.95629E-01	1.94877E-01	1.47321E-01
9	1.31634E-02	9.23330E-02	1.14426E-01	7.02773E-02	1.04771E-01	1.96496E-01	1.95411E-01	1.47391E-01
10	1.31782E-02	9.25488E-02	1.14755E-01	7.05256E-02	1.05192E-01	1.97282E-01	1.95898E-01	1.47439E-01
11	1.31906E-02	9.27279E-02	1.15081E-01	7.07340E-02	1.05545E-01	1.97957E-01	1.96315E-01	1.47484E-01
12	1.32041E-02	9.28611E-02	1.15206E-01	7.08424E-02	1.05715E-01	1.98294E-01	1.96518E-01	1.47528E-01
13	1.32524E-02	9.31038E-02	1.15475E-01	7.09799E-02	1.05904E-01	1.98632E-01	1.96709E-01	1.47598E-01
14	1.32739E-02	9.34006E-02	1.15980E-01	7.12352E-02	1.06278E-01	1.99290E-01	1.97088E-01	1.47688E-01
15	1.33228E-02	9.38882E-02	1.16655E-01	7.16218E-02	1.06874E-01	2.00861E-01	1.97715E-01	1.47790E-01
16	1.33988E-02	9.47851E-02	1.17573E-01	7.22669E-02	1.07888E-01	2.02200E-01	1.98805E-01	1.47960E-01
17	1.34738E-02	9.55779E-02	1.18590E-01	7.29151E-02	1.08917E-01	2.04091E-01	1.99946E-01	1.48157E-01
18	1.35332E-02	9.62197E-02	1.19424E-01	7.34508E-02	1.09782E-01	2.05724E-01	2.00960E-01	1.48361E-01
19	1.35850E-02	9.67859E-02	1.20172E-01	7.39342E-02	1.10571E-01	2.07248E-01	2.01925E-01	1.48573E-01
20	1.36154E-02	9.71309E-02	1.20628E-01	7.42324E-02	1.11064E-01	2.08229E-01	2.02562E-01	1.48728E-01
21	1.36343E-02	9.73508E-02	1.20927E-01	7.44284E-02	1.11392E-01	2.08859E-01	2.03006E-01	1.48844E-01
22	1.36464E-02	9.74953E-02	1.21125E-01	7.45592E-02	1.11613E-01	2.09262E-01	2.03319E-01	1.48931E-01
23	1.36540E-02	9.75851E-02	1.21254E-01	7.46450E-02	1.11760E-01	2.09578E-01	2.03536E-01	1.48998E-01
24	1.36584E-02	9.76397E-02	1.21332E-01	7.46975E-02	1.11851E-01	2.09879E-01	2.03676E-01	1.49035E-01
25	1.36603E-02	9.76647E-02	1.21369E-01	7.47225E-02	1.11895E-01	2.09982E-01	2.03749E-01	1.49056E-01
26	1.36598E-02	9.76614E-02	1.21367E-01	7.47212E-02	1.11895E-01	2.09990E-01	2.03756E-01	1.49057E-01
27	1.36581E-02	9.76412E-02	1.21341E-01	7.47057E-02	1.11866E-01	2.09936E-01	2.03719E-01	1.49043E-01
28	1.36555E-02	9.76115E-02	1.21301E-01	7.46772E-02	1.11822E-01	2.09844E-01	2.03656E-01	1.49023E-01

0 int.	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	1.15991E-01	1.07257E-01	1.01035E-01	6.55136E-02	5.59119E-02	5.31478E-02	2.89529E-02	1.59864E-02
2	1.15991E-01	1.07239E-01	1.01039E-01	6.55185E-02	5.59168E-02	5.31550E-02	2.89563E-02	1.59868E-02
3	1.15989E-01	1.07230E-01	1.01019E-01	6.54946E-02	5.58941E-02	5.31213E-02	2.89385E-02	1.59829E-02
4	1.15985E-01	1.07209E-01	1.00970E-01	6.54371E-02	5.58395E-02	5.30400E-02	2.89120E-02	1.59735E-02
5	1.15979E-01	1.07178E-01	1.00895E-01	6.53495E-02	5.57566E-02	5.29168E-02	2.88873E-02	1.59594E-02
6	1.15969E-01	1.07132E-01	1.00793E-01	6.52301E-02	5.56444E-02	5.27494E-02	2.88648E-02	1.59406E-02
7	1.15958E-01	1.07074E-01	1.00668E-01	6.50757E-02	5.54981E-02	5.25305E-02	2.88136E-02	1.59166E-02
8	1.15945E-01	1.06996E-01	1.00480E-01	6.48577E-02	5.53056E-02	5.22426E-02	2.87618E-02	1.58856E-02
9	1.15935E-01	1.06922E-01	1.00313E-01	6.46753E-02	5.51283E-02	5.19744E-02	2.87152E-02	1.58573E-02
10	1.15936E-01	1.06853E-01	1.00158E-01	6.45008E-02	5.49672E-02	5.17308E-02	2.86745E-02	1.58320E-02
11	1.15942E-01	1.06799E-01	1.00056E-01	6.43630E-02	5.48394E-02	5.15385E-02	2.86389E-02	1.58108E-02
12	1.15938E-01	1.06779E-01	9.99898E-02	6.43094E-02	5.47870E-02	5.14616E-02	2.86194E-02	1.58008E-02
13	1.15895E-01	1.06753E-01	9.99274E-02	6.42270E-02	5.47117E-02	5.13468E-02	2.86027E-02	1.57901E-02
14	1.15823E-01	1.06690E-01	9.97850E-02	6.40486E-02	5.45524E-02	5.11008E-02	2.85751E-02	1.57695E-02
15	1.15748E-01	1.06587E-01	9.95517E-02	6.37679E-02	5.43034E-02	5.07145E-02	2.85335E-02	1.57373E-02
16	1.15644E-01	1.06416E-01	9.91649E-02	6.33056E-02	5.38918E-02	5.00737E-02	2.84578E-02	1.56825E-02
17	1.15551E-01	1.06248E-01	9.87784E-02	6.28431E-02	5.34794E-02	4.94296E-02	2.83675E-02	1.56230E-02
18	1.15488E-01	1.06105E-01	9.84479E-02	6.24484E-02	5.31108E-02	4.88787E-02	2.82707E-02	1.55654E-02
19	1.15433E-01	1.05973E-01	9.81396E-02	6.20809E-02	5.27655E-02	4.83651E-02	2.81684E-02	1.55071E-02
20	1.15409E-01	1.05890E-01	9.79403E-02	6.18437E-02	5.25383E-02	4.80328E-02	2.80916E-02	1.54651E-02
21	1.15397E-01	1.05833E-01	9.78018E-02	6.16785E-02	5.23780E-02	4.78013E-02	2.80352E-02	1.54339E-02
22	1.15391E-01	1.05798E-01	9.77031E-02	6.15616E-02	5.22627E-02	4.76362E-02	2.79888E-02	1.54106E-02
23	1.15388E-01	1.05765E-01	9.76331E-02	6.14782E-02	5.21802E-02	4.75187E-02	2.79560E-02	1.53935E-02
24	1.15386E-01	1.05746E-01	9.75854E-02	6.14214E-02	5.21259E-02	4.74387E-02	2.79336E-02	1.53818E-02
25	1.15384E-01	1.05734E-01	9.75569E-02	6.13876E-02	5.20906E-02	4.73912E-02	2.79210E-02	1.53752E-02
26	1.15381E-01	1.05730E-01	9.75478E-02	6.13767E-02	5.20808E-02	4.73765E-02	2.79191E-02	1.53741E-02
27	1.15379E-01	1.05732E-01	9.75531E-02	6.13834E-02	5.20887E-02	4.73867E-02	2.79264E-02	1.53769E-02
28	1.15378E-01	1.05738E-01	9.75685E-02	6.14018E-02	5.21083E-02	4.74137E-02	2.79347E-02	1.53820E-02

0 int.	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	6.94169E-03	5.15677E-03	1.04522E-02	3.48803E-02	1.07715E-02	2.19647E-02	7.43973E-02	6.11483E-02
2	6.94248E-03	5.15839E-03	1.04537E-02	3.48831E-02	1.07728E-02	2.19666E-02	7.43925E-02	6.11342E-02
3	6.93900E-03	5.14951E-03	1.04471E-02	3.48684E-02	1.07613E-02	2.19509E-02	7.42767E-02	6.10113E-02
4	6.93057E-03	5.12816E-03	1.04314E-02	3.48337E-02	1.07353E-02	2.18978E-02	7.40220E-02	6.07472E-02
5	6.91774E-03	5.09532E-03	1.04077E-02	3.47818E-02	1.06961E-02	2.17278E-02	7.36443E-02	6.03563E-02
6	6.90032E-03	5.05026E-03	1.03756E-02	3.47125E-02	1.06429E-02	2.15630E-02	7.31411E-02	5.98359E-02
7	6.87751E-03	4.99051E-03	1.03339E-02	3.46233E-02	1.05755E-02	2.13482E-02	7.24998E-02	5.91743E-02

8	6.84746E-03	4.91067E-03	1.02795E-02	3.45086E-02	1.04822E-02	2.10578E-02	7.16854E-02	5.83441E-02
9	6.81942E-03	4.88538E-03	1.02291E-02	3.44036E-02	1.03971E-02	2.08078E-02	7.09605E-02	5.76034E-02
10	6.79884E-03	4.76615E-03	1.01835E-02	3.43099E-02	1.03194E-02	2.05725E-02	7.03268E-02	5.69669E-02
11	6.77361E-03	4.71521E-03	1.01471E-02	3.42345E-02	1.02598E-02	2.03954E-02	6.98653E-02	5.65237E-02
12	6.76557E-03	4.69444E-03	1.01321E-02	3.42020E-02	1.02390E-02	2.03362E-02	6.97226E-02	5.64109E-02
13	6.75365E-03	4.69958E-03	1.01120E-02	3.41611E-02	1.02047E-02	2.02278E-02	6.94480E-02	5.61308E-02
14	6.72790E-03	4.58115E-03	1.00698E-02	3.40782E-02	1.01267E-02	1.99813E-02	6.88385E-02	5.54928E-02
15	6.68714E-03	4.45700E-03	1.00082E-02	3.39507E-02	1.00029E-02	1.95979E-02	6.79478E-02	5.45820E-02
16	6.61995E-03	4.23675E-03	9.89262E-03	3.37936E-02	9.79978E-03	1.89639E-02	6.65751E-02	5.32308E-02
17	6.55290E-03	4.01852E-03	9.77843E-03	3.35165E-02	9.59862E-03	1.83353E-02	6.51780E-02	5.18795E-02
18	6.49577E-03	3.85638E-03	9.67505E-03	3.33034E-02	9.42917E-03	1.78142E-02	6.39643E-02	5.05816E-02
19	6.44216E-03	3.71947E-03	9.57562E-03	3.30901E-02	9.27190E-03	1.73354E-02	6.25040E-02	4.92714E-02
20	6.40747E-03	3.64195E-03	9.50892E-03	3.29898E-02	9.17041E-03	1.70308E-02	6.15494E-02	4.83350E-02
21	6.38521E-03	3.59261E-03	9.46147E-03	3.28287E-02	9.09941E-03	1.68178E-02	6.08343E-02	4.76327E-02
22	6.36584E-03	3.55988E-03	9.42710E-03	3.27459E-02	9.04842E-03	1.66657E-02	6.02929E-02	4.71011E-02
23	6.35348E-03	3.53778E-03	9.40340E-03	3.26851E-02	9.01177E-03	1.65563E-02	5.98869E-02	4.67025E-02
24	6.34510E-03	3.52511E-03	9.38564E-03	3.26429E-02	8.98642E-03	1.64800E-02	5.95936E-02	4.64128E-02
25	6.34021E-03	3.51411E-03	9.37535E-03	3.26178E-02	8.97059E-03	1.64315E-02	5.94000E-02	4.62181E-02
26	6.33889E-03	3.51021E-03	9.37219E-03	3.26092E-02	8.96424E-03	1.64095E-02	5.93053E-02	4.61142E-02
27	6.33966E-03	3.51041E-03	9.37432E-03	3.26153E-02	8.96549E-03	1.64098E-02	5.92958E-02	4.60909E-02
28	6.34271E-03	3.51357E-03	9.37994E-03	3.26301E-02	8.97200E-03	1.64256E-02	5.93455E-02	4.61238E-02

0 int.

	grp. 25	grp. 26	grp. 27
1	2.76841E-02	1.99823E-02	3.79587E-03
2	2.76737E-02	1.99707E-02	3.79306E-03
3	2.76081E-02	1.99133E-02	3.78129E-03
4	2.74687E-02	1.97921E-02	3.75634E-03
5	2.72622E-02	1.96114E-02	3.71861E-03
6	2.69868E-02	1.93684E-02	3.66698E-03
7	2.66370E-02	1.90571E-02	3.59948E-03
8	2.62000E-02	1.86651E-02	3.51247E-03
9	2.58125E-02	1.83160E-02	3.43384E-03
10	2.54844E-02	1.80181E-02	3.36633E-03
11	2.52650E-02	1.78264E-02	3.32550E-03
12	2.52179E-02	1.77973E-02	3.32276E-03
13	2.50615E-02	1.76540E-02	3.28428E-03
14	2.47068E-02	1.73142E-02	3.19161E-03
15	2.42130E-02	1.68350E-02	3.05401E-03
16	2.34987E-02	1.61513E-02	2.85330E-03
17	2.27967E-02	1.55051E-02	2.68047E-03
18	2.21285E-02	1.49207E-02	2.54960E-03
19	2.14546E-02	1.43525E-02	2.43131E-03
20	2.09787E-02	1.39678E-02	2.35915E-03
21	2.06254E-02	1.36921E-02	2.31045E-03
22	2.03608E-02	1.34919E-02	2.27668E-03
23	2.01638E-02	1.33463E-02	2.25264E-03
24	2.00215E-02	1.32429E-02	2.23593E-03
25	1.99253E-02	1.31734E-02	2.22483E-03
26	1.98715E-02	1.31333E-02	2.21844E-03
27	1.98555E-02	1.31191E-02	2.21608E-03
28	1.98661E-02	1.31221E-02	2.21593E-03

- elapsed time .02 min.

1fine group summary for zone 1 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	5.08807E-04	6.73448E-04	5.60754E-05	-7.29488E-04	9.99952E-01
2	.00000E+00	.00000E+00	3.86411E-04	6.18527E-05	8.12940E-05	1.76752E-04	-7.91942E-03	9.99961E-01
3	.00000E+00	.00000E+00	3.86166E-03	5.47456E-05	1.42437E-02	9.23477E-05	-1.04747E-02	9.99978E-01
4	.00000E+00	.00000E+00	5.60190E-03	3.60437E-05	1.29842E-02	4.20527E-05	-6.82427E-03	9.99988E-01
5	.00000E+00	.00000E+00	1.02841E-02	1.15346E-02	2.08972E-02	4.97074E-05	-1.06226E-02	9.99991E-01
6	.00000E+00	.00000E+00	2.15307E-02	3.45064E-02	4.10111E-02	8.43132E-05	-1.95644E-02	9.99998E-01
7	.00000E+00	.00000E+00	4.22615E-02	6.09831E-02	5.41484E-02	6.12344E-05	-1.19475E-02	9.99989E-01

8	.00000E+00	.00000E+00	5.63771E-02	7.83791E-02	5.87701E-02	3.64181E-05	-2.42432E-03	9.99912E-01
9	.00000E+00	.00000E+00	5.78094E-02	7.26623E-02	5.75418E-02	2.92961E-05	2.44917E-04	9.99886E-01
10	.00000E+00	.00000E+00	5.71180E-02	6.92491E-02	5.56520E-02	3.61033E-05	1.43695E-03	9.99895E-01
11	.00000E+00	.00000E+00	5.59294E-02	6.57025E-02	5.24543E-02	5.52482E-05	3.42326E-03	9.99939E-01
12	.00000E+00	.00000E+00	4.54778E-02	3.51525E-02	4.13612E-02	6.05469E-05	4.05705E-03	9.99979E-01
13	.00000E+00	.00000E+00	4.06273E-02	2.85889E-02	3.66633E-02	8.46892E-05	3.88059E-03	9.99968E-01
14	.00000E+00	.00000E+00	3.95045E-02	2.81294E-02	3.36026E-02	1.35753E-04	5.76659E-03	9.99988E-01
15	.00000E+00	.00000E+00	2.16405E-02	1.08173E-02	2.02651E-02	1.12237E-04	1.26324E-03	9.99998E-01
16	.00000E+00	.00000E+00	1.41888E-02	4.54909E-03	1.34020E-02	7.58638E-05	7.10851E-04	1.00000E+00
17	.00000E+00	.00000E+00	7.27320E-03	1.27368E-03	6.62890E-03	3.64605E-05	6.09795E-04	1.00001E+00
18	.00000E+00	.00000E+00	6.43510E-03	8.98864E-04	4.90890E-03	2.81071E-05	1.49873E-03	9.99994E-01
19	.00000E+00	.00000E+00	1.05953E-02	2.83870E-03	9.42141E-03	6.35785E-05	1.10845E-03	9.99990E-01
20	.00000E+00	.00000E+00	2.58651E-02	2.04986E-02	2.31765E-02	2.67345E-04	2.42103E-03	1.00001E+00
21	.00000E+00	.00000E+00	1.23161E-02	4.04375E-03	1.05197E-02	1.01411E-04	1.69514E-03	9.99988E-01
22	.00000E+00	.00000E+00	2.42796E-02	1.22770E-02	1.91057E-02	2.35809E-04	4.95791E-03	1.00001E+00
23	.00000E+00	.00000E+00	6.26124E-02	7.51956E-02	4.95789E-02	1.09159E-03	1.21406E-02	1.00002E+00
24	.00000E+00	.00000E+00	6.67371E-02	7.12650E-02	5.50100E-02	1.29652E-03	1.04295E-02	1.00002E+00
25	.00000E+00	.00000E+00	4.44666E-02	3.02755E-02	3.89495E-02	7.69478E-04	4.74715E-03	1.00001E+00
26	.00000E+00	.00000E+00	3.55385E-02	3.38695E-02	3.12826E-02	7.83284E-04	3.47208E-03	1.00001E+00
27	.00000E+00	.00000E+00	1.20651E-02	7.35278E-03	1.12012E-02	2.79875E-04	5.84006E-04	1.00000E+00
28	.00000E+00	.00000E+00	7.80781E-01	7.75815E-01	7.80781E-01	6.14270E-03	-6.12084E-03	9.99972E-01

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	n2n rate	fiss rate	flux*db**2	total flux
1	1.31853E-02	-7.29488E-04	1.30674E-02	.00000E+00	3.72434E-11	.00000E+00	2.01837E-05	1.64865E-02
2	9.26630E-02	-7.91942E-03	9.11561E-02	.00000E+00	.00000E+00	.00000E+00	8.98523E-05	1.15361E-01
3	1.14935E-01	-1.04747E-02	1.12766E-01	.00000E+00	.00000E+00	.00000E+00	9.25174E-05	1.42855E-01
4	7.06657E-02	-6.82427E-03	6.91094E-02	.00000E+00	.00000E+00	.00000E+00	4.18087E-05	8.76592E-02
5	1.05432E-01	-1.06626E-02	1.02854E-01	.00000E+00	.00000E+00	.00000E+00	4.94142E-05	1.30585E-01
6	1.97731E-01	-1.95646E-02	1.92888E-01	.00000E+00	.00000E+00	.00000E+00	8.34434E-05	2.44938E-01
7	1.96177E-01	-1.19475E-02	1.95146E-01	.00000E+00	.00000E+00	.00000E+00	5.92902E-05	2.44337E-01
8	1.47464E-01	-2.42632E-03	1.47040E-01	.00000E+00	.00000E+00	.00000E+00	3.27367E-05	1.85039E-01
9	1.15989E-01	2.44917E-04	1.15990E-01	.00000E+00	.00000E+00	.00000E+00	2.16887E-05	1.45719E-01
10	1.06813E-01	1.43595E-03	1.07254E-01	.00000E+00	.00000E+00	.00000E+00	1.91827E-05	1.34530E-01
11	1.00069E-01	3.42526E-03	1.01028E-01	.00000E+00	.00000E+00	.00000E+00	1.79574E-05	1.26438E-01
12	6.44000E-02	4.05705E-03	6.55046E-02	.00000E+00	.00000E+00	.00000E+00	1.05291E-05	8.17133E-02
13	5.48750E-02	3.88059E-03	5.59031E-02	.00000E+00	.00000E+00	.00000E+00	8.75085E-06	6.98860E-02
14	5.15911E-02	5.76659E-03	5.31350E-02	.00000E+00	.00000E+00	.00000E+00	8.44713E-06	6.59272E-02
15	2.86524E-02	1.26324E-03	2.89305E-02	.00000E+00	.00000E+00	.00000E+00	4.45646E-06	3.61966E-02
16	1.58179E-02	7.10851E-04	1.59043E-02	.00000E+00	.00000E+00	.00000E+00	2.22619E-06	1.99934E-02
17	6.77923E-03	6.09795E-04	6.94042E-03	.00000E+00	.00000E+00	.00000E+00	8.83672E-07	8.63346E-03
18	4.72622E-03	1.49873E-03	5.15355E-03	.00000E+00	.00000E+00	.00000E+00	6.23650E-07	6.24587E-03
19	1.01572E-02	1.10845E-03	1.04495E-02	.00000E+00	.00000E+00	.00000E+00	1.35716E-06	1.29705E-02
20	3.42582E-02	2.42103E-03	3.48768E-02	.00000E+00	.00000E+00	.00000E+00	5.09612E-06	4.34790E-02
21	1.02744E-02	1.69514E-03	1.07880E-02	.00000E+00	.00000E+00	.00000E+00	1.21584E-06	1.32601E-02
22	2.04379E-02	4.95791E-03	2.19562E-02	.00000E+00	.00000E+00	.00000E+00	2.44508E-06	2.67465E-02
23	6.99668E-02	1.21406E-02	7.43764E-02	.00000E+00	.00000E+00	.00000E+00	7.49844E-06	9.09125E-02
24	5.66064E-02	1.04295E-02	6.11340E-02	.00000E+00	.00000E+00	.00000E+00	4.54638E-06	7.41708E-02
25	2.53000E-02	4.74715E-03	2.76795E-02	.00000E+00	.00000E+00	.00000E+00	1.58049E-06	3.33762E-02
26	1.78504E-02	3.47208E-03	1.99808E-02	.00000E+00	.00000E+00	.00000E+00	8.34278E-07	2.38563E-02
27	3.32835E-03	5.84006E-04	3.79604E-03	.00000E+00	.00000E+00	.00000E+00	9.85233E-08	4.50026E-03
28	1.73609E+00	-6.12083E-03	1.74283E+00	.00000E+00	3.72434E-11	.00000E+00	5.88445E-04	2.18562E+00

1fine group summary for zone 2 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	2.24988E-04	1.68657E-04	2.53012E-06	-1.65172E-04	1.00001E+00
2	.00000E+00	.00000E+00	2.94556E-05	1.46776E-03	1.05176E-03	1.41177E-05	-1.03644E-03	1.00000E+00
3	.00000E+00	.00000E+00	1.51427E-04	2.77590E-03	8.77709E-04	2.08129E-05	-7.46537E-04	9.99995E-01
4	.00000E+00	.00000E+00	2.88326E-04	2.30800E-03	2.98856E-04	1.31156E-05	-2.35979E-05	9.99996E-01
5	.00000E+00	.00000E+00	6.19828E-04	4.42024E-03	2.79546E-04	1.68779E-05	3.25387E-04	1.00000E+00
6	.00000E+00	.00000E+00	1.02631E-03	1.24084E-02	1.69533E-04	2.70751E-05	8.29713E-04	9.99999E-01
7	.00000E+00	.00000E+00	6.74451E-04	1.25976E-02	6.35222E-05	2.68222E-05	5.84320E-04	9.99999E-01
8	.00000E+00	.00000E+00	1.17649E-04	9.21166E-03	4.43556E-04	2.21210E-05	-3.48074E-04	1.00002E+00

9	.00000E+00	.00000E+00	4.45404E-04	6.36399E-03	5.30609E-05	7.67624E-05	3.15607E-04	9.99976E-01
10	.00000E+00	.00000E+00	5.31162E-05	4.99400E-03	4.95492E-05	5.94116E-05	-5.58461E-05	1.00000E+00
11	.00000E+00	.00000E+00	4.95526E-05	4.46284E-03	5.04012E-05	9.01826E-05	-9.10230E-05	9.99998E-01
12	.00000E+00	.00000E+00	5.04015E-05	2.76630E-03	5.14660E-05	5.68334E-06	-6.75069E-06	1.00000E+00
13	.00000E+00	.00000E+00	5.14661E-05	2.35784E-03	4.80988E-05	6.31783E-06	-2.94857E-06	1.00000E+00
14	.00000E+00	.00000E+00	4.80988E-05	2.22086E-03	4.18529E-05	8.48148E-06	-2.23611E-06	1.00000E+00
15	.00000E+00	.00000E+00	4.44262E-05	1.20907E-03	4.94833E-05	6.26148E-06	-1.12508E-05	9.99948E-01
16	.00000E+00	.00000E+00	5.53666E-05	6.39105E-04	5.53666E-05	3.78787E-06	-3.74473E-06	9.99948E-01
17	.00000E+00	.00000E+00	5.99443E-05	2.38688E-04	5.87533E-05	1.77427E-06	-5.64052E-07	9.99971E-01
18	.00000E+00	.00000E+00	6.16488E-05	1.56228E-04	5.04447E-05	1.30066E-06	9.90450E-06	9.99999E-01
19	.00000E+00	.00000E+00	5.24101E-05	3.88229E-04	5.72797E-05	3.01256E-06	-7.88085E-06	9.99999E-01
20	.00000E+00	.00000E+00	6.98617E-05	1.44216E-03	6.13114E-05	1.23987E-05	-3.75649E-06	9.99963E-01
21	.00000E+00	.00000E+00	8.02968E-05	3.63502E-04	8.68274E-05	4.50589E-06	-1.10328E-05	9.99998E-01
22	.00000E+00	.00000E+00	1.14353E-04	7.89522E-04	1.05490E-04	1.01916E-05	-1.28942E-06	9.99998E-01
23	.00000E+00	.00000E+00	1.63415E-04	2.85667E-03	2.09727E-04	4.66582E-05	-9.29758E-05	1.00000E+00
24	.00000E+00	.00000E+00	2.70704E-04	2.18185E-03	2.99426E-04	5.35567E-05	-8.23066E-05	1.00000E+00
25	.00000E+00	.00000E+00	2.77361E-04	8.81992E-04	2.27013E-04	3.12126E-05	1.91191E-05	1.00000E+00
26	.00000E+00	.00000E+00	1.18124E-04	6.91231E-04	9.13480E-05	3.10308E-05	-4.26173E-06	1.00000E+00
27	.00000E+00	.00000E+00	2.64874E-05	1.45979E-04	7.52139E-08	1.08304E-05	1.55798E-05	1.00000E+00
28	.00000E+00	.00000E+00	4.99988E-03	8.05625E-02	4.99988E-03	6.06334E-04	-6.00056E-04	9.99976E-01

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	n2n rate	fiss rate	flux*db**2	total flux
1	1.32122E-02	-8.94660E-04	1.31853E-02	-7.29488E-04	6.02595E-06	.00000E+00	1.66582E-06	2.19984E-03
2	9.29294E-02	-8.95589E-03	9.26630E-02	-7.91942E-03	.00000E+00	.00000E+00	1.12058E-05	1.54678E-02
3	1.15283E-01	-1.12212E-02	1.14955E-01	-1.04747E-02	.00000E+00	.00000E+00	1.27208E-05	1.91888E-02
4	7.08834E-02	-6.84786E-03	7.06657E-02	-6.82427E-03	.00000E+00	.00000E+00	7.44974E-06	1.17996E-02
5	1.05770E-01	-1.03392E-02	1.05432E-01	-1.06626E-02	.00000E+00	.00000E+00	8.64313E-06	1.78073E-02
6	1.98404E-01	-1.87349E-02	1.97731E-01	-1.95646E-02	.00000E+00	.00000E+00	1.01784E-05	3.30253E-02
7	1.96582E-01	-1.13632E-02	1.96177E-01	-1.19475E-02	.00000E+00	.00000E+00	8.35573E-06	3.27408E-02
8	1.47551E-01	-2.77239E-03	1.47464E-01	-2.42632E-03	.00000E+00	.00000E+00	5.27678E-06	2.45873E-02
9	1.15980E-01	5.60524E-04	1.15989E-01	2.44917E-04	.00000E+00	.00000E+00	4.58694E-06	1.95256E-02
10	1.05774E-01	1.38010E-03	1.05813E-01	1.43695E-03	.00000E+00	.00000E+00	4.91625E-06	1.78002E-02
11	9.99771E-02	3.33223E-03	1.00069E-01	3.42526E-03	.00000E+00	.00000E+00	4.77306E-06	1.66707E-02
12	6.42927E-02	4.05025E-03	6.44000E-02	4.05705E-03	.00000E+00	.00000E+00	3.22043E-06	1.07239E-02
13	5.47702E-02	3.87764E-03	5.48750E-02	3.88059E-03	.00000E+00	.00000E+00	2.73792E-06	9.13656E-03
14	5.14373E-02	5.76435E-03	5.15911E-02	5.76659E-03	.00000E+00	.00000E+00	2.56605E-06	8.58426E-03
15	2.86134E-02	1.25199E-03	2.86524E-02	1.26524E-03	.00000E+00	.00000E+00	1.40600E-06	4.77207E-03
16	1.57978E-02	7.07105E-04	1.58179E-02	7.10851E-04	.00000E+00	.00000E+00	7.76270E-07	2.63460E-03
17	6.76315E-03	6.09231E-04	6.77923E-03	6.09795E-04	.00000E+00	.00000E+00	3.32313E-07	1.12859E-03
18	4.68868E-03	1.50864E-03	4.72622E-03	1.49873E-03	.00000E+00	.00000E+00	2.30829E-07	7.84039E-04
19	1.01271E-02	1.10057E-03	1.01572E-02	1.10845E-03	.00000E+00	.00000E+00	4.97368E-07	1.69012E-03
20	3.41952E-02	2.41728E-03	3.42582E-02	2.42108E-03	.00000E+00	.00000E+00	1.67613E-06	5.70867E-03
21	1.02328E-02	1.68411E-03	1.02744E-02	1.69514E-03	.00000E+00	.00000E+00	5.01216E-07	1.70840E-03
22	2.03196E-02	4.93662E-03	2.04379E-02	4.93791E-03	.00000E+00	.00000E+00	9.94632E-07	3.39463E-03
23	6.96812E-02	1.20476E-02	6.99665E-02	1.21406E-02	.00000E+00	.00000E+00	3.39660E-06	1.16835E-02
24	5.68807E-02	1.03470E-02	5.66054E-02	1.04258E-02	.00000E+00	.00000E+00	2.75136E-06	9.41220E-03
25	2.52058E-02	4.76627E-03	2.53000E-02	4.74715E-03	.00000E+00	.00000E+00	1.21359E-06	4.20734E-03
26	1.77922E-02	3.46782E-03	1.78504E-02	3.47208E-03	.00000E+00	.00000E+00	8.47439E-07	2.98596E-03
27	3.32857E-03	5.99588E-04	3.32855E-03	5.84006E-04	.00000E+00	.00000E+00	1.53309E-07	5.54084E-04
28	1.73691E+00	-6.72040E-03	1.73609E+00	-6.12088E-03	6.02595E-06	.00000E+00	1.08054E-04	2.89449E-01

1fine group summary for zone 3 by group including sun for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	2.69753E-04	3.57040E-04	2.97258E-05	-3.86751E-04	9.99985E-01
2	.00000E+00	.00000E+00	2.04852E-04	3.30162E-03	4.33957E-03	9.43482E-05	-4.22868E-03	9.99787E-01
3	.00000E+00	.00000E+00	2.06094E-03	2.92649E-03	7.61417E-03	4.96864E-05	-5.60274E-03	9.99991E-01
4	.00000E+00	.00000E+00	2.99355E-03	1.92964E-03	6.63005E-03	2.25188E-05	-3.65894E-03	9.99994E-01
5	.00000E+00	.00000E+00	5.50080E-03	6.18498E-03	1.12053E-02	2.66537E-05	-5.73107E-03	9.99995E-01
6	.00000E+00	.00000E+00	1.15325E-02	1.84974E-02	2.19843E-02	4.51967E-05	-1.04966E-02	9.99999E-01
7	.00000E+00	.00000E+00	2.26490E-02	3.23975E-02	2.87664E-02	3.25309E-05	-6.14985E-03	9.99992E-01
8	.00000E+00	.00000E+00	3.00023E-02	4.11818E-02	3.08789E-02	1.91347E-05	-8.98589E-04	9.99919E-01
9	.00000E+00	.00000E+00	3.04366E-02	3.80164E-02	3.01055E-02	1.53275E-05	3.19259E-04	9.99888E-01

10	.00000E+00	.00000E+00	2.99168E-02	3.61453E-02	2.90481E-02	1.88945E-05	8.52902E-04	9.99900E-01
11	.00000E+00	.00000E+00	2.92117E-02	3.41197E-02	2.72359E-02	2.86907E-05	1.94490E-03	9.99946E-01
12	.00000E+00	.00000E+00	2.36427E-02	1.81249E-02	2.13262E-02	3.12186E-05	2.28573E-03	9.99988E-01
13	.00000E+00	.00000E+00	2.10027E-02	1.47218E-02	1.85797E-02	4.36105E-05	2.08006E-03	9.99973E-01
14	.00000E+00	.00000E+00	2.05710E-02	1.43555E-02	1.71248E-02	6.91833E-05	3.17721E-03	9.99991E-01
15	.00000E+00	.00000E+00	1.10725E-02	5.62012E-03	1.05287E-02	5.83130E-05	4.85421E-04	1.00000E+00
16	.00000E+00	.00000E+00	7.31027E-03	2.36113E-03	6.95609E-03	3.95758E-05	3.14775E-04	1.00000E+00
17	.00000E+00	.00000E+00	3.75166E-03	6.52729E-04	3.39612E-03	1.88851E-05	3.36823E-04	1.00001E+00
18	.00000E+00	.00000E+00	3.31651E-03	4.31850E-04	2.35972E-03	1.35128E-05	9.43295E-04	9.99997E-01
19	.00000E+00	.00000E+00	5.41422E-03	1.44921E-03	4.80979E-03	3.24579E-05	5.72027E-04	9.99992E-01
20	.00000E+00	.00000E+00	1.32184E-02	1.05701E-02	1.19509E-02	1.37856E-04	1.12952E-03	1.00001E+00
21	.00000E+00	.00000E+00	6.28054E-03	2.02878E-03	5.27818E-03	5.08822E-05	9.51661E-04	9.99990E-01
22	.00000E+00	.00000E+00	1.22782E-02	6.01960E-03	9.35780E-03	1.15620E-04	2.79469E-03	1.00000E+00
23	.00000E+00	.00000E+00	3.09778E-02	3.74115E-02	2.45674E-02	5.43090E-04	5.86650E-03	1.00001E+00
24	.00000E+00	.00000E+00	3.27886E-02	3.50198E-02	2.70321E-02	6.37115E-04	5.11886E-03	1.00001E+00
25	.00000E+00	.00000E+00	2.17112E-02	1.47145E-02	1.85300E-02	3.73979E-04	2.40684E-03	1.00001E+00
26	.00000E+00	.00000E+00	1.72806E-02	1.61215E-02	1.48904E-02	3.72856E-04	2.01724E-03	1.00001E+00
27	.00000E+00	.00000E+00	5.85767E-03	3.41123E-03	5.19675E-03	1.29847E-04	5.11274E-04	1.00000E+00
28	.00000E+00	.00000E+00	4.00764E-01	3.97985E-01	4.00764E-01	3.05024E-03	-3.03835E-03	9.99971E-01

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r2n rate	fiss rate	flux*dv**2	total flux
1	1.33503E-02	-1.28141E-03	1.32122E-02	-8.94660E-04	1.97453E-11	.00000E+00	1.07007E-05	8.74062E-03
2	9.42736E-02	-1.31865E-02	9.29294E-02	-8.95586E-03	.00000E+00	.00000E+00	4.78553E-05	6.15782E-02
3	1.16919E-01	-1.68240E-02	1.15283E-01	-1.12212E-02	.00000E+00	.00000E+00	4.94563E-05	7.63660E-02
4	7.18507E-02	-1.05068E-02	7.08824E-02	-6.84786E-03	.00000E+00	.00000E+00	2.29828E-05	4.69294E-02
5	1.07250E-01	-1.60703E-02	1.05770E-01	-1.03392E-02	.00000E+00	.00000E+00	2.64964E-05	7.00213E-02
6	2.01003E-01	-2.92315E-02	1.98404E-01	-1.87346E-02	.00000E+00	.00000E+00	4.47304E-05	1.31301E-01
7	1.98091E-01	-1.75129E-02	1.96582E-01	-1.13632E-02	.00000E+00	.00000E+00	3.14980E-05	1.29804E-01
8	1.47844E-01	-3.66539E-03	1.47551E-01	-2.77239E-03	.00000E+00	.00000E+00	1.72005E-05	9.72223E-02
9	1.15706E-01	8.79825E-04	1.15950E-01	5.60524E-04	.00000E+00	.00000E+00	1.13474E-05	7.62395E-02
10	1.06524E-01	2.23300E-03	1.05774E-01	1.38010E-03	.00000E+00	.00000E+00	1.00126E-05	7.02192E-02
11	9.94111E-02	5.27714E-03	9.99771E-02	3.33223E-03	.00000E+00	.00000E+00	9.31503E-06	6.56899E-02
12	6.35998E-02	6.33602E-03	6.42927E-02	4.05029E-03	.00000E+00	.00000E+00	5.42889E-06	4.21322E-02
13	5.41550E-02	5.95770E-03	5.47702E-02	3.87764E-03	.00000E+00	.00000E+00	4.50622E-06	3.58864E-02
14	5.04836E-02	8.94156E-03	5.14373E-02	5.76435E-03	.00000E+00	.00000E+00	4.30490E-06	3.35983E-02
15	2.85108E-02	1.73741E-03	2.86134E-02	1.25199E-03	.00000E+00	.00000E+00	2.31536E-06	1.88060E-02
16	1.57187E-02	1.02188E-03	1.57978E-02	7.07106E-04	.00000E+00	.00000E+00	1.15547E-06	1.03772E-02
17	6.66279E-03	9.46053E-04	6.76315E-03	6.09251E-04	.00000E+00	.00000E+00	4.52860E-07	4.42453E-03
18	4.38194E-03	2.45192E-03	4.68868E-03	1.50864E-03	.00000E+00	.00000E+00	2.99826E-07	3.00277E-03
19	9.96347E-03	1.67260E-03	1.01271E-02	1.10057E-03	.00000E+00	.00000E+00	6.98853E-07	6.62169E-03
20	3.38777E-02	3.54679E-03	3.41952E-02	2.41728E-03	.00000E+00	.00000E+00	2.62780E-06	2.24198E-02
21	9.92834E-03	2.63577E-03	1.02328E-02	1.68411E-03	.00000E+00	.00000E+00	6.10040E-07	6.65319E-03
22	1.98691E-02	7.73131E-03	2.05196E-02	4.93662E-03	.00000E+00	.00000E+00	1.19886E-06	1.31142E-02
23	6.74292E-02	1.79141E-02	6.96812E-02	1.20478E-02	.00000E+00	.00000E+00	3.73068E-06	4.52315E-02
24	5.40547E-02	1.54658E-02	5.68807E-02	1.03470E-02	.00000E+00	.00000E+00	2.23410E-06	3.64477E-02
25	2.39886E-02	7.17311E-03	2.52058E-02	4.76627E-03	.00000E+00	.00000E+00	7.68146E-07	1.62214E-02
26	1.65561E-02	5.48606E-03	1.77922E-02	3.46782E-03	.00000E+00	.00000E+00	3.97109E-07	1.13554E-02
27	2.97030E-03	1.11086E-03	3.32287E-03	5.99588E-04	.00000E+00	.00000E+00	4.56166E-08	2.08788E-03
28	1.73379E+00	-9.75886E-03	1.73691E+00	-6.72040E-03	1.97453E-11	.00000E+00	3.11764E-04	1.14246E+00

1fine group summary for zone 4 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	2.34835E-02	.00000E+00	2.17709E-02	2.06866E-02	3.82560E-03	1.28141E-03	9.98905E-01
2	.00000E+00	1.95460E-01	7.16469E-03	2.52450E-01	1.74080E-01	1.55724E-02	1.31865E-02	1.00002E+00
3	.00000E+00	2.16133E-01	7.19728E-02	2.58305E-01	2.55072E-01	1.62136E-02	1.68239E-02	9.99888E-01
4	.00000E+00	1.23637E-01	1.05989E-01	1.77132E-01	2.11393E-01	7.72605E-03	1.05068E-02	9.99993E-01
5	.00000E+00	1.63627E-01	1.98659E-01	4.44990E-01	3.35072E-01	5.14701E-03	1.60702E-02	9.99990E-01
6	.00000E+00	1.76243E-01	3.91730E-01	1.19120E+00	5.30639E-01	8.09488E-03	2.92314E-02	1.00001E+00
7	.00000E+00	8.69766E-02	5.95850E-01	1.56388E+00	6.55305E-01	8.01626E-03	1.75114E-02	9.99991E-01
8	.00000E+00	1.33875E-02	6.89659E-01	1.57564E+00	6.86432E-01	1.30071E-02	3.66520E-03	9.99921E-01
9	.00000E+00	9.71502E-04	6.78514E-01	1.37304E+00	6.58906E-01	2.15359E-02	-8.70875E-04	9.99879E-01
10	.00000E+00	7.21551E-05	6.55899E-01	1.25082E+00	6.25794E-01	3.24757E-02	-2.25398E-03	9.99902E-01

11	.00000E+00	5.67662E-06	6.29784E-01	1.16619E+00	5.81763E-01	5.33410E-02	-5.27941E-03	9.99945E-01
12	.00000E+00	3.98772E-07	5.06664E-01	6.37356E-01	4.54473E-01	5.85405E-02	-6.33669E-03	9.99976E-01
13	.00000E+00	6.33213E-08	4.49136E-01	5.05960E-01	3.99414E-01	5.56927E-02	-5.95657E-03	9.99968E-01
14	.00000E+00	1.25486E-08	4.31362E-01	4.67818E-01	3.59604E-01	8.07050E-02	-8.94152E-03	9.99989E-01
15	.00000E+00	1.41813E-09	2.36346E-01	2.13907E-01	2.29645E-01	8.36335E-03	-1.74555E-03	1.00035E+00
16	.00000E+00	4.16412E-10	1.61206E-01	9.82015E-02	1.55434E-01	6.73931E-03	-1.02677E-03	1.00036E+00
17	.00000E+00	1.34105E-10	8.60151E-02	3.00328E-02	7.77842E-02	9.15592E-03	-9.50470E-04	1.00029E+00
18	.00000E+00	9.60152E-11	7.63121E-02	1.75281E-02	4.97439E-02	2.90143E-02	-2.45152E-03	1.00007E+00
19	.00000E+00	1.35745E-10	1.17873E-01	5.65410E-02	1.07407E-01	1.21168E-02	-1.67242E-03	1.00018E+00
20	.00000E+00	2.20735E-10	2.82360E-01	3.33729E-01	2.57942E-01	2.78825E-02	-3.56150E-03	1.00034E+00
21	.00000E+00	3.23085E-11	1.38148E-01	6.48419E-02	1.14855E-01	2.59073E-02	-2.63464E-03	1.00014E+00
22	.00000E+00	3.74853E-11	2.60617E-01	1.64582E-01	1.92272E-01	7.60364E-02	-7.73609E-03	1.00016E+00
23	.00000E+00	3.58401E-11	6.20191E-01	9.31170E-01	5.00905E-01	1.37039E-01	-1.79119E-02	1.00025E+00
24	.00000E+00	9.75521E-12	6.55841E-01	8.13847E-01	5.42596E-01	1.28184E-01	-1.54664E-02	1.00019E+00
25	.00000E+00	2.85568E-12	4.35719E-01	3.31623E-01	3.72678E-01	7.01614E-02	-7.17637E-03	1.00013E+00
26	.00000E+00	2.00242E-12	3.38241E-01	3.34190E-01	2.80084E-01	6.36089E-02	-5.48519E-03	1.00010E+00
27	.00000E+00	4.77188E-13	1.11814E-01	6.78414E-02	9.47151E-02	1.82548E-02	-1.11083E-03	1.00004E+00
28	.00000E+00	1.00000E+00	8.92510E+00	1.43444E+01	8.92510E+00	9.92138E-01	9.72608E-03	1.00004E+00

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r2h rate	fiss rate	flux*df**2	total flux
1	1.36540E-02	-4.06352E-09	1.33508E-02	-1.28141E-05	2.28188E-05	2.53618E-05	3.01199E-04	3.47079E-01
2	9.75930E-02	-3.14073E-08	9.42736E-02	-1.31845E-02	1.56948E-05	1.10529E-02	1.60436E-03	2.47821E+00
3	1.21277E-01	-5.16775E-08	1.16919E-01	-1.68240E-02	.00000E+00	1.33044E-02	1.88580E-03	3.07873E+00
4	7.46607E-02	-2.17850E-08	7.18507E-02	-1.05068E-02	.00000E+00	5.69588E-03	8.89991E-04	1.85499E+00
5	1.11794E-01	-5.68470E-08	1.07250E-01	-1.60705E-02	.00000E+00	1.61424E-03	1.05291E-03	2.83638E+00
6	2.09787E-01	-1.08298E-07	2.01008E-01	-2.92515E-02	.00000E+00	1.29656E-03	1.73187E-03	5.32064E+00
7	2.08616E-01	-1.49683E-06	1.98091E-01	-1.75129E-02	.00000E+00	1.20666E-03	1.22692E-03	5.17072E+00
8	1.49010E-01	-1.80777E-07	1.47844E-01	-3.66538E-03	.00000E+00	1.19455E-03	6.98720E-04	3.79087E+00
9	1.15378E-01	8.94787E-06	1.15706E-01	8.79823E-04	.00000E+00	1.56926E-03	4.71727E-04	2.93848E+00
10	1.05742E-01	-9.79025E-07	1.06524E-01	2.23300E-03	.00000E+00	3.35129E-03	4.29086E-04	2.69452E+00
11	9.75792E-02	-2.26843E-06	9.94111E-02	5.27714E-03	.00000E+00	7.29890E-03	3.87307E-04	2.48955E+00
12	6.14143E-02	-6.68124E-07	6.35998E-02	6.33602E-03	.00000E+00	9.78411E-03	2.27668E-04	1.56965E+00
13	5.21211E-02	1.12594E-06	5.41550E-02	5.95770E-03	.00000E+00	1.15766E-02	1.94110E-04	1.33271E+00
14	4.74317E-02	3.77203E-08	5.04836E-02	8.94156E-03	.00000E+00	7.25150E-03	1.72654E-04	1.21592E+00
15	2.79425E-02	-8.13845E-06	2.85108E-02	1.75741E-03	.00000E+00	1.64382E-03	1.10066E-04	7.13204E-01
16	1.53859E-02	-4.88585E-06	1.57187E-02	1.02188E-03	.00000E+00	1.17001E-03	5.65870E-05	3.92712E-01
17	6.34546E-03	-4.41698E-06	6.66279E-03	9.46053E-04	.00000E+00	1.28100E-03	2.04740E-05	1.62408E-01
18	3.51575E-03	4.10572E-07	4.38194E-03	2.45198E-03	.00000E+00	8.31515E-04	7.67634E-06	9.15184E-02
19	9.38344E-03	1.79238E-07	9.96347E-03	1.67260E-03	.00000E+00	2.05257E-03	3.10823E-05	2.40695E-01
20	3.26433E-02	-1.47142E-05	3.38777E-02	3.54679E-03	.00000E+00	1.36368E-02	1.20340E-04	8.34891E-01
21	8.97624E-03	1.12438E-06	9.92884E-03	2.63577E-03	.00000E+00	1.48204E-02	2.47962E-05	2.31261E-01
22	1.64378E-02	-4.77990E-06	1.95691E-02	7.73131E-03	.00000E+00	4.40380E-02	4.15552E-05	4.26944E-01
23	5.98809E-02	2.26603E-06	6.74292E-02	1.79141E-02	.00000E+00	7.51179E-02	1.58562E-04	1.54084E+00
24	4.61492E-02	-6.00261E-07	5.40547E-02	1.54688E-02	.00000E+00	6.82952E-02	9.75683E-05	1.20458E+00
25	1.98757E-02	-3.25380E-06	2.39285E-02	7.17311E-03	.00000E+00	3.88690E-02	3.35964E-05	5.21228E-01
26	1.31258E-02	-1.31666E-07	1.65561E-02	5.48504E-03	.00000E+00	3.57222E-02	1.66405E-05	3.46220E-01
27	2.21605E-03	2.86444E-08	2.97080E-03	1.11085E-03	.00000E+00	1.00907E-02	1.71561E-06	5.86150E-02
28	1.72243E+00	-3.26864E-05	1.73379E+00	-9.75889E-05	2.29757E-03	3.86281E-01	1.19206E-02	4.39235E+01

1fine group summary for system

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	2.34835E-02	.00000E+00	2.27714E-02	2.18857E-02	3.91394E-03	-4.06352E-09	9.98905E-01
2	.00000E+00	1.95460E-01	7.78542E-03	2.63402E-01	1.87601E-01	1.56577E-02	-3.14073E-08	1.00001E+00
3	.00000E+00	2.16133E-01	7.80468E-02	2.69482E-01	2.77807E-01	1.63765E-02	-5.16775E-08	9.99985E-01
4	.00000E+00	1.23637E-01	1.14872E-01	1.84974E-01	2.30700E-01	7.80374E-03	-2.17850E-08	9.99998E-01
5	.00000E+00	1.63627E-01	2.09064E-01	4.67130E-01	3.67454E-01	5.24025E-03	-5.68470E-08	9.99990E-01
6	.00000E+00	1.76263E-01	4.25820E-01	1.25661E+00	5.98804E-01	8.25152E-03	-1.08298E-07	1.00001E+00
7	.00000E+00	8.69766E-02	6.59435E-01	1.66986E+00	7.38283E-01	8.13485E-03	-1.49683E-06	9.99991E-01
8	.00000E+00	1.33693E-02	7.76156E-01	1.70441E+00	7.78525E-01	1.30848E-02	-1.80777E-07	9.99919E-01
9	.00000E+00	9.71502E-04	7.67208E-01	1.49008E+00	7.46605E-01	2.16573E-02	8.94787E-06	9.99880E-01
10	.00000E+00	7.21551E-05	7.42987E-01	1.36120E+00	7.10544E-01	3.25901E-02	-9.79025E-07	9.99901E-01
11	.00000E+00	5.67662E-06	7.14975E-01	1.27047E+00	6.61507E-01	5.35151E-02	-2.26843E-06	9.99944E-01

12	.00000E+00	3.98772E-07	5.75835E-01	6.95399E-01	5.17212E-01	5.86380E-02	-6.68124E-07	9.99978E-01
13	.00000E+00	6.33213E-08	5.10817E-01	5.51628E-01	4.55005E-01	5.58274E-02	1.12596E-06	9.99967E-01
14	.00000E+00	1.25489E-08	4.91286E-01	5.12504E-01	4.10373E-01	8.09184E-02	3.77208E-08	9.99988E-01
15	.00000E+00	1.41813E-09	2.69104E-01	2.31554E-01	2.60489E-01	8.54015E-03	-8.13845E-06	1.00031E+00
16	.00000E+00	4.16412E-10	1.82759E-01	1.05751E-01	1.75848E-01	6.85833E-03	-4.88588E-06	1.00052E+00
17	.00000E+00	1.34105E-10	9.70999E-02	3.21979E-02	8.78660E-02	9.21284E-03	-4.41693E-06	1.00026E+00
18	.00000E+00	9.60152E-11	8.61253E-02	1.90144E-02	5.70624E-02	2.90572E-02	4.10572E-07	1.00006E+00
19	.00000E+00	1.35745E-10	1.39583E-01	6.12171E-02	1.21695E-01	1.22158E-02	1.79238E-07	1.00016E+00
20	.00000E+00	2.20735E-10	3.21513E-01	3.66239E-01	2.95130E-01	2.83001E-02	-1.47142E-05	1.00080E+00
21	.00000E+00	3.23085E-11	1.56825E-01	7.12781E-02	1.30740E-01	2.60641E-02	1.12438E-06	1.00012E+00
22	.00000E+00	3.74853E-11	2.97289E-01	1.83668E-01	2.20851E-01	7.63980E-02	-4.77990E-06	1.00015E+00
23	.00000E+00	3.58401E-11	7.13944E-01	1.04663E+00	5.75061E-01	1.38720E-01	2.26603E-06	1.00029E+00
24	.00000E+00	9.75521E-12	7.55638E-01	9.22314E-01	6.25339E-01	1.30171E-01	-6.00261E-07	1.00017E+00
25	.00000E+00	2.85568E-12	5.02174E-01	3.77501E-01	4.30784E-01	7.13361E-02	-3.25380E-06	1.00011E+00
26	.00000E+00	2.00242E-12	3.91178E-01	3.84872E-01	3.26348E-01	6.47961E-02	-1.31666E-07	1.00009E+00
27	.00000E+00	4.77188E-13	1.29773E-01	7.85514E-02	1.11113E-01	1.86553E-02	2.86444E-08	1.00004E+00
28	.00000E+00	1.00000E+00	1.01116E+01	1.59987E+01	1.01116E+01	1.00194E+00	-3.26679E-05	1.00004E+00

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	rxn rate	fiss rate	flux*dv**2	total flux
1	1.36540E-02	-4.06352E-09	1.30674E-02	.00000E+00	2.28790E-03	2.53618E-03	3.33749E-04	3.76506E-01
2	9.75980E-02	-3.14073E-08	9.11561E-02	.00000E+00	1.56948E-05	1.10523E-02	1.75307E-03	2.67062E+00
3	1.21277E-01	-5.16775E-08	1.12766E-01	.00000E+00	.00000E+00	1.33044E-02	1.99049E-03	3.31714E+00
4	7.46607E-02	-2.17850E-08	6.91094E-02	.00000E+00	.00000E+00	5.69588E-03	9.57632E-04	2.04138E+00
5	1.11794E-01	-5.68470E-08	1.02834E-01	.00000E+00	.00000E+00	1.61424E-03	1.11746E-03	3.05460E+00
6	2.09787E-01	-1.08295E-07	1.92888E-01	.00000E+00	.00000E+00	1.29656E-03	1.87022E-03	5.72991E+00
7	2.03616E-01	-1.49683E-06	1.95146E-01	.00000E+00	.00000E+00	1.20666E-03	1.32606E-03	5.57760E+00
8	1.49010E-01	-1.80777E-07	1.47040E-01	.00000E+00	.00000E+00	1.19455E-03	7.53954E-04	4.09772E+00
9	1.15376E-01	8.94787E-06	1.15990E-01	.00000E+00	.00000E+00	1.56926E-03	5.09350E-04	3.17978E+00
10	1.05742E-01	-9.79025E-07	1.07234E-01	.00000E+00	.00000E+00	3.35129E-03	4.63148E-04	2.91707E+00
11	9.75792E-02	-2.26843E-06	1.01028E-01	.00000E+00	.00000E+00	7.29890E-03	4.19333E-04	2.69832E+00
12	6.14143E-02	-6.68124E-07	6.55046E-02	.00000E+00	.00000E+00	9.76411E-03	2.46847E-04	1.70421E+00
13	5.21211E-02	1.12596E-06	5.59081E-02	.00000E+00	.00000E+00	1.15766E-02	2.10105E-04	1.44742E+00
14	4.74317E-02	3.77208E-08	5.31350E-02	.00000E+00	.00000E+00	7.25150E-03	1.87772E-04	1.32403E+00
15	2.79425E-02	-8.13845E-06	2.89305E-02	.00000E+00	.00000E+00	1.64382E-03	1.18243E-04	7.72978E-01
16	1.53869E-02	-4.88588E-06	1.59843E-02	.00000E+00	.00000E+00	1.17001E-03	6.07455E-05	4.25717E-01
17	6.34546E-03	-4.41693E-06	6.94042E-03	.00000E+00	.00000E+00	1.28100E-03	2.21429E-05	1.76589E-01
18	3.51575E-03	4.10572E-07	5.15355E-03	.00000E+00	.00000E+00	8.31515E-04	8.89067E-06	1.01551E-01
19	9.38344E-03	1.79238E-07	1.04495E-02	.00000E+00	.00000E+00	2.05257E-03	3.36297E-05	2.61876E-01
20	3.26433E-02	-1.47142E-05	3.48768E-02	.00000E+00	.00000E+00	1.36368E-02	1.29640E-04	9.06495E-01
21	8.97624E-03	1.12638E-06	1.07880E-02	.00000E+00	.00000E+00	1.48204E-02	2.71253E-05	2.52883E-01
22	1.64376E-02	-4.77990E-06	2.19562E-02	.00000E+00	.00000E+00	4.40880E-02	4.61988E-05	4.70199E-01
23	5.98809E-02	2.26603E-06	7.43784E-02	.00000E+00	.00000E+00	7.51179E-02	1.73188E-04	1.68862E+00
24	4.61492E-02	-6.00261E-07	6.11340E-02	.00000E+00	.00000E+00	6.82952E-02	1.07080E-04	1.32461E+00
25	1.98757E-02	-3.25380E-06	2.78795E-02	.00000E+00	.00000E+00	3.88690E-02	3.71587E-05	5.75033E-01
26	1.31258E-02	-1.31666E-07	1.99808E-02	.00000E+00	.00000E+00	3.57222E-02	1.87192E-05	3.84401E-01
27	2.21605E-03	2.86444E-08	3.79604E-03	.00000E+00	.00000E+00	1.00907E-02	2.01286E-06	6.57572E-02
28	1.72243E+00	-3.26864E-05	1.74283E+00	.00000E+00	2.30360E-03	3.86281E-01	1.29259E-02	4.75410E+01

- elapsed time .02 min.

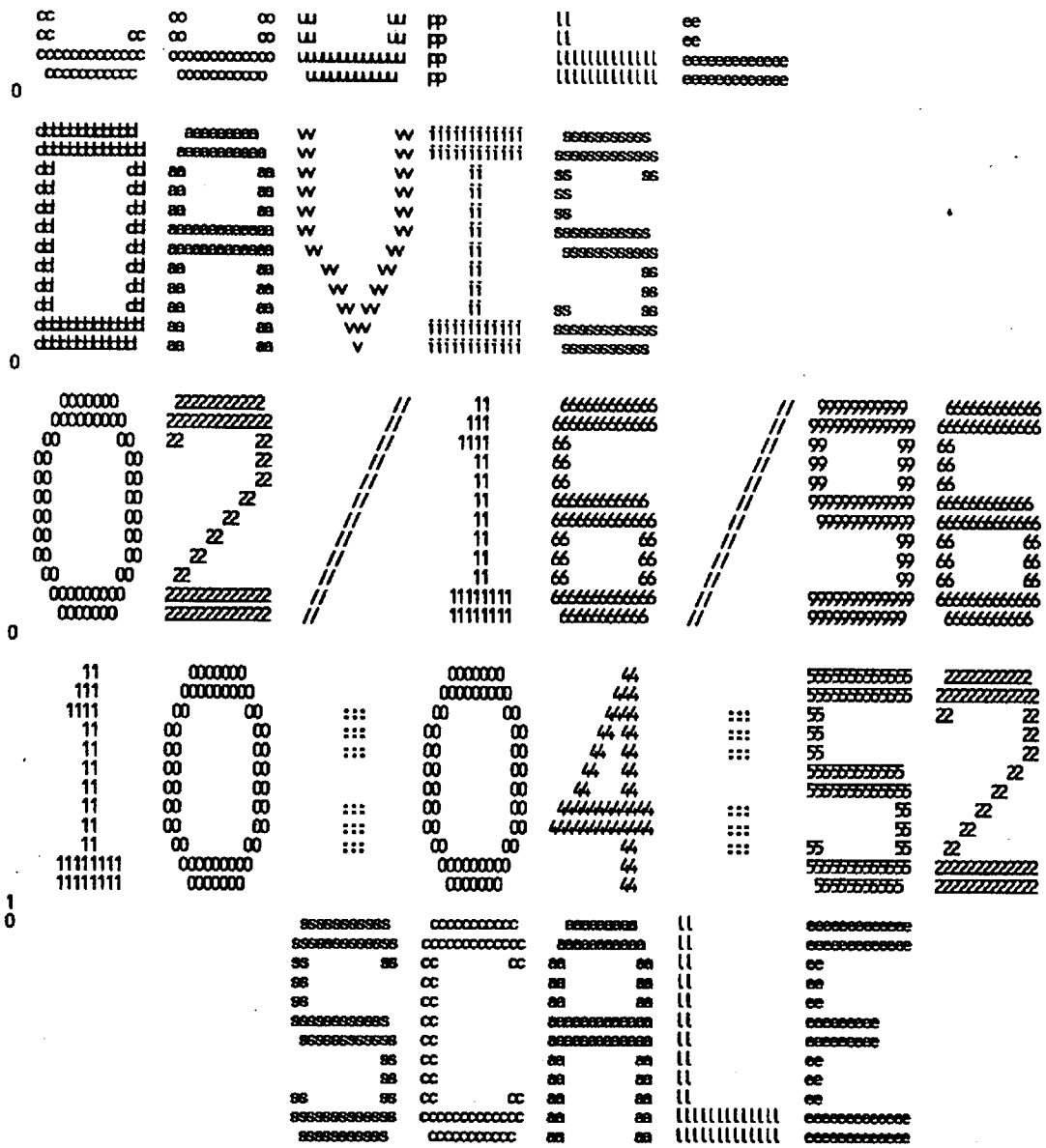
0direct access unit 9 requires 556 blocks of length 216 for cross section weighting.

1 transport cross section weighting function

0zone	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	1.16983E-03	5.09076E-03	5.31188E-03	2.51372E-03	3.18427E-03	5.52368E-03	3.71568E-03	1.74438E-03
2	7.12394E-04	5.02709E-03	5.81052E-03	3.44971E-03	4.30069E-03	6.14866E-03	4.39003E-03	2.14950E-03
3	1.19887E-03	5.51743E-03	5.89598E-03	2.91929E-03	3.86183E-03	6.77437E-03	4.37578E-03	1.82692E-03
4	8.25241E-04	4.33250E-03	4.95395E-03	2.39850E-03	2.83056E-03	4.80355E-03	3.32700E-03	1.79775E-03
5	8.47338E-04	4.39962E-03	4.99795E-03	2.41794E-03	2.88005E-03	4.88868E-03	3.37582E-03	1.79998E-03

0zone	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	1.11378E-03	1.01461E-03	1.09514E-03	8.75250E-04	8.00304E-04	1.06257E-03	3.23771E-04	1.70254E-04
2	1.79209E-03	1.95514E-03	2.04391E-03	1.60444E-03	1.43145E-03	1.72953E-03	6.30977E-04	3.50116E-04
3	1.12212E-03	1.05307E-03	1.29135E-03	1.22526E-03	1.13412E-03	1.61667E-03	3.92363E-04	2.16574E-04
4	1.19668E-03	1.09578E-03	1.08083E-03	6.78130E-04	6.01984E-04	6.44863E-04	3.11345E-04	1.61402E-04

```
     5 1.19472E-03 1.09624E-03 1.04603E-03 7.05757E-04 6.28769E-04 6.93699E-04 3.15782E-04 1.64261E-04
Ozone   grp. 17     grp. 18     grp. 19     grp. 20     grp. 21     grp. 22     grp. 23     grp. 24
     1 1.12105E-04 2.43536E-04 2.00417E-04 4.96986E-04 2.89852E-04 8.25432E-04 2.10826E-03 1.78616E-03
     2 1.97688E-04 3.77700E-04 3.32597E-04 8.83234E-04 4.56858E-04 1.26564E-03 3.23641E-03 2.75062E-03
     3 1.70829E-04 4.19462E-04 3.02611E-04 6.85905E-04 4.61946E-04 1.34799E-03 3.21262E-03 2.75750E-03
     4 7.30702E-05 8.18574E-05 1.23139E-04 3.84512E-04 1.38982E-04 3.43480E-04 1.04633E-03 8.17017E-04
     5 7.79415E-05 9.90924E-05 1.32221E-04 3.99865E-04 1.55418E-04 3.95056E-04 1.15980E-03 9.19309E-04
Ozone   grp. 25     grp. 26     grp. 27     grp. 28
     1 8.03128E-04 5.66114E-04 8.62278E-05 4.22234E-02
     2 1.25379E-03 9.09085E-04 1.56284E-04 5.52854E-02
     3 1.27844E-03 9.49288E-04 1.77223E-04 5.21736E-02
     4 3.39997E-04 2.06277E-04 2.56439E-05 3.45620E-02
     5 3.88940E-04 2.44704E-04 3.28211E-05 3.54578E-02
1broad group parameters
  grp   upper energy   mid energy     velocity    fiss spec
    1     2.0000E+07   2.6627E+06   1.9701E+09   7.2234E-01
    2     9.0000E+05   1.5164E+05   1.0141E+07   2.7766E-01
    3     4.0000E-01   1.2480E-01   3.6435E+05   1.2072E-10
    4     1.0000E-05
1                        1040 d, second part of sas2h pass to make library
0cell averaged fluxes

Ozone   grp. 1      grp. 2      grp. 3
     1 3.98269E-01 1.13464E+00 2.12528E-01
     2 3.97532E-01 1.13571E+00 2.08251E-01
     3 4.00499E-01 1.13588E+00 1.99177E-01
     4 4.17691E-01 1.13730E+00 1.70043E-01
     5 4.15998E-01 1.13714E+00 1.72869E-01
0flux disadvantage factors (zone average/cell average-flux)

Ozone   grp. 1      grp. 2      grp. 3
     1 9.42959E-01 9.97802E-01 1.22826E+00
     2 9.55611E-01 9.98743E-01 1.17575E+00
     3 9.62742E-01 9.98959E-01 1.15218E+00
     4 1.00407E+00 1.00015E+00 9.83650E-01
     5 1.00000E+00 1.00000E+00 1.00000E+00
0cell averaged currents

Ozone   grp. 1      grp. 2      grp. 3
     1 1.72699E-02 1.84908E-02 6.46326E-03
     2 1.98002E-02 2.59569E-02 1.00284E-02
     3 1.99834E-02 2.26012E-02 1.01790E-02
     4 1.53335E-02 1.63107E-02 2.91772E-03
     5 1.55429E-02 1.66189E-02 3.29605E-03
Ozone       volume      vol. fraction

    1     1.25666E+00     4.56234E-02
    2     1.66687E-01     6.05165E-03
    3     6.58266E-01     2.38987E-02
    4     2.54624E+01     9.24126E-01
    5     2.75440E+01     1.00000E+00
-  elapsed time    .02 min.
1   ccccccccc     ccccccccc   EE        EE  ppppppppp   ll          eeeeeeeeee
   ccccccccccc   ccccccccccc  EE        EE  ppppppppppp  ll          eeeeeeeeeee
   cc       cc   oo       oo  EE        EE  pp      pp  ll          ee
   cc            oo       oo  EE        EE  pp      pp  ll          ee
   cc            oo       oo  EE        EE  pp      pp  ll          ee
   cc            oo       oo  EEEEEEEEEE    ppppppppp   ll          eeeeeeee
   cc            oo       oo  EEEEEEEEEE    ppppppppp   ll          eeeeeeee
   cc            oo       oo  EE        EE  pp          ll          ee
```



```
                program verification information
                code system:   scale  version:   4.2

                program:  c0c005
              creation date:  04/27/95
                library:  /neutronics/scale/exe

          this is not a  scale  configuration controlled code
                jobname:  davis
          date of execution:  02/16/96
          time of execution:  10:04:52

1
0      -1q array has      1 entries.
0       0q array has      1 entries.
0       0q array has      1 entries.
0       1q array has      1 entries.
0       1q array has      1 entries.
0       1q array has      1 entries.
0       1q array has      1 entries.
0       1q array has      1 entries.
0       2q array has      1 entries.
0        * core allocated to array-data (by -196 or default) was   200000 words. *
1         * broad 3-group flux weighting factors *
0
0               therm =   .5126
0               res   =   .4497
0               fast  =  3.4893
0 user requested (see jackl) that only the nuclide transitions presently included in
0 origen library be updated.
1cross sections, available from ampx (normalized to thermal flux), barns

                    10010 to  10020  2.85588E-01
                    10010 tot-cap    2.85588E-01
                    50100 to  40100  2.50160E-02
                    50100 to  10010  2.50160E-02
                    50100 to  40090  3.85350E-03
```

50100	to	10020	3.85350E-05
50100	to	30070	3.28386E+03
50100	to	20040	3.28404E+03
50100	to	10030	9.39563E-02
50100	tot-cap		3.28398E+03
50110	to	50100	1.11152E-05
50110	to	50120	4.34943E-05
50110	to	40110	1.41841E-06
50110	to	10010	1.41841E-06
50110	to	40090	1.26578E-05
50110	to	10030	1.26578E-05
50110	to	30080	1.65242E-04
50110	to	20040	1.65242E-04
50110	tot-cap		4.53987E-05
80160	to	80170	1.52575E-04
80160	to	70160	9.72558E-05
80160	to	10010	9.72558E-05
80160	to	70150	1.83423E-05
80160	to	10020	1.83423E-05
80160	to	60130	2.69575E-02
80160	to	20040	2.69575E-02
80160	to	80161	4.26530E-05
80160	tot-cap		2.72256E-02
360830	to	360820	2.20799E-02
360830	to	360810	2.33108E-09
360830	to	360840	1.55894E+02
360830	to	350830	9.01086E-04
360830	to	10010	9.01086E-04
360830	to	350820	7.29238E-06
360830	to	10020	7.29238E-06
360830	to	350810	2.54882E-06
360830	to	10030	2.54882E-06
360830	to	340810	4.12506E-08
360830	to	20030	4.12506E-08
360830	to	340800	4.84378E-05
360830	to	20040	4.84378E-05
360830	tot-cap		1.55917E+02
360850	to	360860	1.41363E+00
360850	tot-cap		1.41363E+00
380900	to	380910	6.34958E-01
380900	tot-cap		6.34958E-01
390890	to	390900	9.98628E-01
390890	tot-cap		9.98628E-01
400930	to	400940	1.37852E+01
400930	tot-cap		1.37852E+01
400940	to	400950	1.90769E-01
400940	tot-cap		1.90769E-01
400950	to	400960	2.28487E+00
400950	tot-cap		2.28487E+00
410940	to	410950	3.94339E+01
410940	tot-cap		3.94339E+01
420950	to	420960	3.86075E+01
420950	tot-cap		3.86075E+01
430990	to	430980	6.69735E-03
430990	to	431000	9.06183E+01
430990	tot-cap		9.06250E+01
441010	to	441020	2.89488E+01
441010	tot-cap		2.89488E+01
441060	to	441070	8.90233E-01
441060	tot-cap		8.90233E-01

451030 to 451020 2.42626E-03
451030 to 451040 3.50205E+02
451030 tot-cap 3.50209E+02
451050 to 451060 8.21154E+03
451050 tot-cap 8.21154E+03
461050 to 461060 3.46009E+01
461050 tot-cap 3.46009E+01
461080 to 461090 6.99666E+01
461080 tot-cap 6.99666E+01
471090 to 471080 5.64211E-03
471090 to 471100 3.75733E+02
471090 to 461090 3.18502E-04
471090 to 10010 3.18502E-04
471090 to 461060 2.64343E-04
471090 to 20040 2.64343E-04
471090 to 471091 6.56022E-01
471090 tot-cap 3.75740E+02
511240 to 511250 1.23093E+01
511240 tot-cap 1.23093E+01
541310 to 541300 6.84125E-02
541310 to 541290 1.43052E-05
541310 to 541320 2.57092E+02
541310 to 531310 4.09207E-05
541310 to 10010 4.09207E-05
541310 to 531300 5.73707E-07
541310 to 10020 5.73707E-07
541310 to 531290 5.88279E-07
541310 to 10080 5.88279E-07
541310 to 521280 1.91871E-05
541310 to 20040 1.91871E-05
541310 tot-cap 2.57161E+02
541320 to 541310 1.10517E-02
541320 to 541300 2.34359E-05
541320 to 541330 9.44700E-01
541320 to 531320 8.41414E-06
541320 to 10010 8.41414E-06
541320 to 531310 3.56199E-07
541320 to 10020 3.56199E-07
541320 to 531300 4.79622E-08
541320 to 10080 4.79622E-08
541320 to 521290 1.08868E-06
541320 to 20040 1.08868E-06
541320 tot-cap 9.55785E-01
541350 to 541360 1.47549E+06
541350 tot-cap 1.47549E+06
541360 to 541350 1.89047E-02
541360 to 541340 5.77395E-05
541360 to 541370 1.24662E-01
541360 to 531360 3.49083E-07
541360 to 10010 3.49083E-07
541360 to 531350 1.29964E-07
541360 to 10020 1.29964E-07
541360 to 531340 2.93612E-08
541360 to 10080 2.93612E-08
541360 to 521330 2.92831E-07
541360 to 20040 2.92831E-07
541360 tot-cap 1.43626E-01
551330 to 551320 8.85273E-03
551330 to 551340 1.02523E+02
551330 to 541330 9.52659E-04

551330	to 10010	9.52659E-04
551330	to 531300	1.51250E-05
551330	to 20040	1.51250E-05
551330	tot-cap	1.02533E+02
551340	to 551350	1.30626E+02
551340	tot-cap	1.30626E+02
551350	to 551360	2.19227E+01
551350	tot-cap	2.19227E+01
551370	to 551380	2.34914E-01
551370	tot-cap	2.34914E-01
561360	to 561370	9.22416E-01
561360	tot-cap	9.22416E-01
571390	to 571400	8.04501E+00
571390	tot-cap	8.04501E+00
581440	to 581450	1.25978E+00
581440	tot-cap	1.25978E+00
591410	to 591400	6.34364E-03
591410	to 591390	1.82268E-06
591410	to 571370	2.72050E-06
591410	to 20040	5.61475E-05
591410	to 581400	1.95316E-05
591410	to 10010	5.48838E-05
591410	to 591420	1.20027E+01
591410	to 581410	5.17146E-05
591410	to 10020	1.61624E-05
591410	to 581390	1.69499E-06
591410	to 10080	1.69499E-06
591410	to 571390	1.63694E-08
591410	to 20080	1.63694E-08
591410	to 571380	5.34270E-05
591410	tot-cap	1.20091E+01
591430	to 591440	9.95397E+01
591430	tot-cap	9.95397E+01
601430	to 601420	9.70131E-02
601430	to 601410	9.90531E-06
601430	to 581390	2.12889E-05
601430	to 20040	5.94627E-04
601430	to 591420	4.14677E-06
601430	to 10010	4.25411E-05
601430	to 601440	2.00228E+02
601430	to 591430	4.09788E-05
601430	to 10020	2.58548E-06
601430	to 591410	3.72423E-06
601430	to 10080	3.72423E-06
601430	to 581410	1.78934E-08
601430	to 20080	1.78934E-08
601430	to 581400	5.73388E-04
601430	tot-cap	2.00325E+02
601450	to 601440	1.24443E-01
601450	to 601430	1.26481E-04
601450	to 581410	8.90192E-06
601450	to 20040	2.22408E-04
601450	to 591440	2.37587E-06
601450	to 10010	1.54304E-05
601450	to 601460	7.95926E+01
601450	to 591450	1.44827E-05
601450	to 10020	1.42819E-06
601450	to 591430	2.25157E-06
601450	to 10030	2.25157E-06
601450	to 581430	4.58420E-09

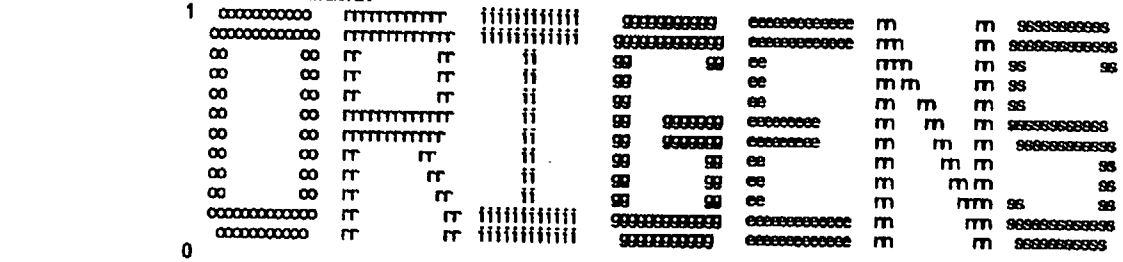
601450 to 20080 4.58420E-09
601450 to 581420 2.13506E-04
601450 tot-cap 7.97175E+01
601470 to 601480 1.93197E+02
601470 tot-cap 1.93197E+02
611470 to 611460 3.40804E-02
611470 to 611450 1.06336E-04
611470 to 591430 9.41176E-06
611470 to 20040 8.70684E-05
611470 to 601460 1.30198E-05
611470 to 10010 2.96081E-05
611470 to 611480 5.90057E+02
611470 to 601470 2.63915E-05
611470 to 10020 9.80754E-06
611470 to 601450 3.70296E-06
611470 to 10080 3.70296E-06
611470 to 591450 5.56751E-09
611470 to 20080 5.56751E-09
611470 to 591440 7.76667E-05
611470 tot-cap 5.90092E+02
611480 to 611490 1.20917E+04
611480 tot-cap 1.20917E+04
621470 to 621460 8.89080E-02
621470 to 621450 8.00633E-03
621470 to 601430 6.87306E-05
621470 to 20040 1.30955E-03
621470 to 611460 1.61345E-04
621470 to 10010 2.29758E-04
621470 to 621480 2.37921E+02
621470 to 611470 2.02560E-04
621470 to 10020 1.34146E-04
621470 to 611450 1.44042E-04
621470 to 10080 1.44042E-04
621470 to 601450 6.62765E-06
621470 to 20080 6.62765E-06
621470 to 601440 1.24082E-03
621470 to 621471 1.71350E+00
621470 tot-cap 2.38020E+02
621490 to 621480 5.02408E-02
621490 to 621470 3.99081E-05
621490 to 621500 4.52520E+04
621490 to 611490 5.10998E-04
621490 to 10010 5.10998E-04
621490 to 601460 5.10998E-04
621490 to 20040 5.10998E-04
621490 tot-cap 4.52520E+04
621500 to 621510 1.35845E+02
621500 tot-cap 1.35845E+02
621510 to 621500 1.67358E-01
621510 to 621490 1.50152E-04
621510 to 601470 1.67820E-05
621510 to 20040 1.30450E-04
621510 to 611500 2.05602E-06
621510 to 10010 1.59581E-05
621510 to 621520 4.98487E+03
621510 to 611510 1.47020E-05
621510 to 10020 7.99870E-07
621510 to 611490 1.45571E-06
621510 to 10080 1.45571E-06
621510 to 601490 1.49760E-09

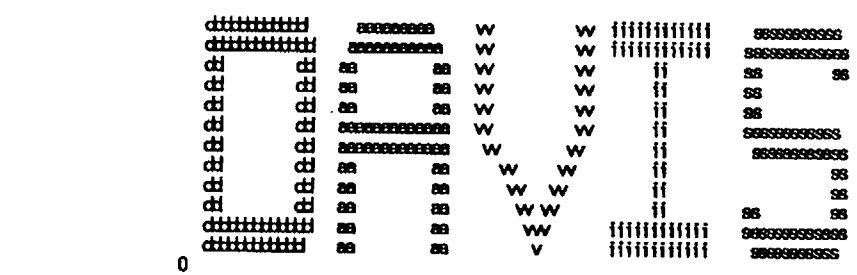
621510	to 20030	1.49760E-09
621510	to 601480	1.13668E-04
621510	tot-cap	4.98503E+03
621520	to 621510	2.01070E-02
621520	to 621500	1.35864E-04
621520	to 601480	3.08558E-06
621520	to 20040	1.26060E-05
621520	to 611510	8.70916E-07
621520	to 10010	2.57005E-06
621520	to 621530	7.34953E+02
621520	to 611520	2.28300E-06
621520	to 10020	5.83865E-07
621520	to 611500	1.51849E-07
621520	to 10030	1.51849E-07
621520	to 601500	4.60190E-10
621520	to 20030	4.60190E-10
621520	to 601490	9.57046E-06
621520	tot-cap	7.34973E+02
631530	to 631520	1.95289E-02
631530	to 631510	2.91623E-05
631530	to 611490	4.53018E-05
631530	to 20040	6.61191E-04
631530	to 621520	8.16303E-06
631530	to 10010	6.84505E-05
631530	to 631540	6.29703E+02
631530	to 621530	6.56649E-05
631530	to 10020	5.37745E-06
631530	to 621510	1.20554E-06
631530	to 10030	1.20554E-06
631530	to 611510	2.75607E-08
631530	to 20030	2.75607E-08
631530	to 611500	6.15869E-04
631530	tot-cap	6.29725E+02
631540	to 631530	3.12189E-02
631540	to 631520	1.12145E-05
631540	to 611500	1.09041E-10
631540	to 20040	7.95581E-04
631540	to 621530	2.45459E-06
631540	to 10010	1.30024E-05
631540	to 631550	1.07871E+03
631540	to 621540	1.30024E-05
631540	to 10020	2.45323E-06
631540	to 621520	4.15495E-06
631540	to 10030	4.15495E-06
631540	to 611520	1.76198E-08
631540	to 20030	1.76198E-08
631540	to 611510	7.95581E-04
631540	tot-cap	1.07874E+03
631550	to 631540	2.56319E-02
631550	to 631530	7.17750E-05
631550	to 611510	1.93124E-06
631550	to 20040	9.50444E-06
631550	to 621540	3.91376E-06
631550	to 10010	8.20598E-06
631550	to 631560	2.56940E+03
631550	to 621550	6.30167E-06
631550	to 10020	2.00945E-06
631550	to 621530	6.65198E-07
631550	to 10030	6.65198E-07
631550	to 611530	1.50770E-10

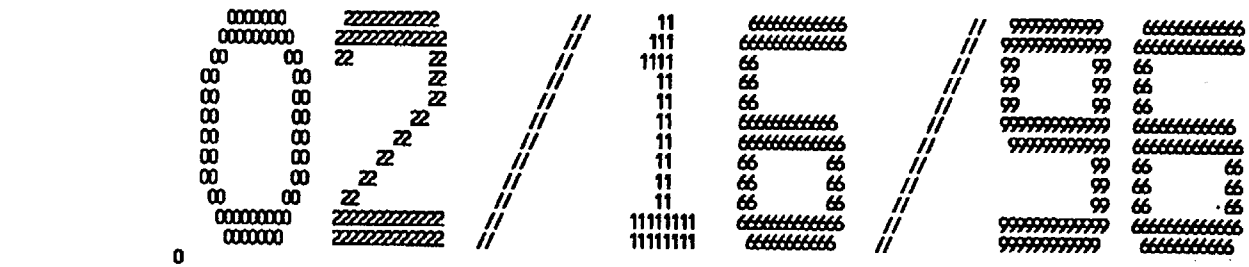
631550	to 20030	1.50770E-10
631550	to 611520	7.57320E-06
631550	tot-cap	2.56943E+03
641550	to 641560	1.71533E+04
641550	tot-cap	1.71533E+04
922340	to 922330	6.71520E-03
922340	fission	4.59102E+00
922340	nu-sigf	1.20723E+01
922340	to 922320	9.73665E-05
922340	to 922350	1.89714E+02
922340	to 922341	3.07043E+00
922340	tot-cap	1.94312E+02
922350	to 922340	3.05974E-02
922350	fission	3.64309E+02
922350	nu-sigf	8.82275E+02
922350	to 922330	2.95301E-05
922350	to 922360	8.71018E+01
922350	to 922351	8.73287E-02
922350	tot-cap	4.51442E+02
922360	to 922350	3.42086E-02
922360	fission	1.97200E+00
922360	nu-sigf	5.41556E+00
922360	to 922340	4.55888E-04
922360	to 922370	7.20735E+01
922360	to 922361	3.35903E+00
922360	tot-cap	7.40802E+01
922380	to 922370	6.83171E-02
922380	fission	9.89546E-01
922380	nu-sigf	2.78747E+00
922380	to 922360	4.41539E-04
922380	to 922390	8.69045E+00
922380	tot-cap	9.74876E+00
932370	to 932360	1.55753E-02
932370	fission	5.32347E+00
932370	nu-sigf	1.60571E+01
932370	to 932350	5.95861E-05
932370	to 932380	3.04246E+02
932370	to 932371	7.87315E-01
932370	tot-cap	3.09586E+02
942380	to 942370	2.50851E-03
942380	fission	2.28012E+01
942380	nu-sigf	6.46745E+01
942380	to 942360	1.40109E-05
942380	to 942390	2.67456E+02
942380	to 942381	3.08822E+00
942380	tot-cap	2.90260E+02
942390	to 942380	1.32440E-02
942390	fission	8.33475E+02
942390	nu-sigf	2.39854E+03
942390	to 942370	2.25568E-05
942390	to 942360	2.23609E-08
942390	to 942400	4.65603E+02
942390	tot-cap	1.29909E+03
942400	to 942390	6.23485E-05
942400	fission	6.00277E+00
942400	nu-sigf	1.88168E+01
942400	to 942380	6.08429E-05
942400	to 942410	1.30940E+03
942400	tot-cap	1.31541E+03
942410	to 942400	7.85761E-02

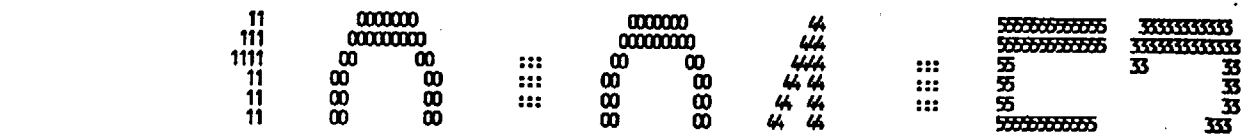
```
                    942410 fission   8.97827E+02
                    942410 nu-sigf   2.63446E+03
                    942410 to 942390 1.30186E-04
                    942410 to 942420 2.92690E+02
                    942410 tot-cap   1.19060E+03
                    942420 to 942410 2.54158E-02
                    942420 fission   4.61698E+00
                    942420 nu-sigf   1.44685E+01
                    942420 to 942400 3.08991E-04
                    942420 to 942430 3.36161E+02
                    942420 tot-cap   3.40804E+02
                    952410 fission   1.26157E+01
                    952410 nu-sigf   4.08108E+01
                    952410 to 952420 1.01243E+03
                    952410 tot-cap   1.02506E+03
                    952430 fission   3.56483E+00
                    952430 nu-sigf   1.19874E+01
                    952430 to 952440 4.26547E+02
                    952430 tot-cap   4.30111E+02
                    962440 to 962430 6.10822E-05
                    962440 fission   1.57846E+01
                    962440 nu-sigf   5.29118E+01
                    962440 to 962420 6.09135E-05
                    962440 to 962450 1.44656E+02
                    962440 to 962441 3.93822E+00
                    962440 tot-cap   1.60446E+02
Othe reaction  50100 to  30070 was not used, because  50100 is not in library., (in subr pool)
                                    in the search of library number 3
Othe reaction  50100 to  40090 was not used, because  50100 is not in library., (in subr pool)
                                    in the search of library number 3
Othe reaction  50110 to  40090 was not used, because  50110 is not in library., (in subr pool)
                                    in the search of library number 3
Othe reaction  50100 to  40100 was not used, because  50100 is not in library., (in subr pool)
                                    in the search of library number 3
Othe reaction  80160 to  80161 was not used, because  80161 is not in library., (in subr pool)
Othe reaction 621470 to 621471 was not used, because 621471 is not in library., (in subr pool)
Othe fission product transitions for  922340 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe reaction  922340 to 922341 was not used, because  922341 is not in library., (in subr pool)
Othe reaction  922360 to 922361 was not used, because  922361 is not in library., (in subr pool)
Othe fission product transitions for  922360 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe reaction  922360 to 922361 was not used, because  922361 is not in library., (in subr pool)
Othe fission product transitions for  952370 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe reaction  952370 to 952371 was not used, because  952371 is not in library., (in subr pool)
Othe fission product transitions for  942380 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe reaction  942380 to 942381 was not used, because  942381 is not in library., (in subr pool)
Othe fission product transitions for  942400 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe fission product transitions for  942420 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe fission product transitions for  952410 were not used.  library fissile nuclides are
```

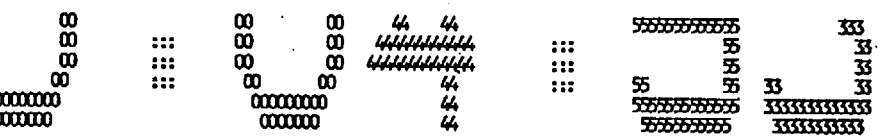
```
  922330  922350  942410  922380  942390
0use substitute nuclide in block 8 data.  or, update with new fission yield data.
0the fission product transitions for  952430 were not used.  library fissile nuclides are
  922330  922350  942410  922380  942390
0use substitute nuclide in block 8 data.  or, update with new fission yield data.
0the fission product transitions for  962440 were not used.  library fissile nuclides are
  922330  922350  942410  922380  942390
0use substitute nuclide in block 8 data.  or, update with new fission yield data.
0the reaction  962440 to 962441 was not used, because  962441 is not in library., (in subr pool)
1
0                          case completed.  date,  2/16/1996
0 * normal termination *
```

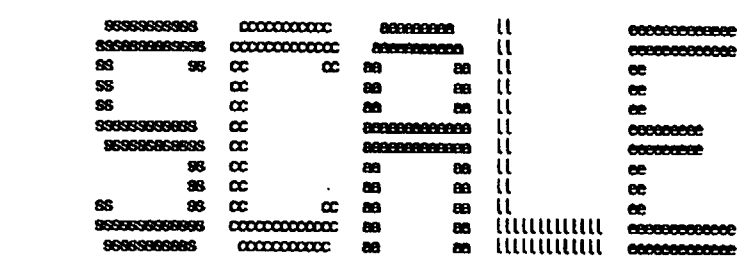


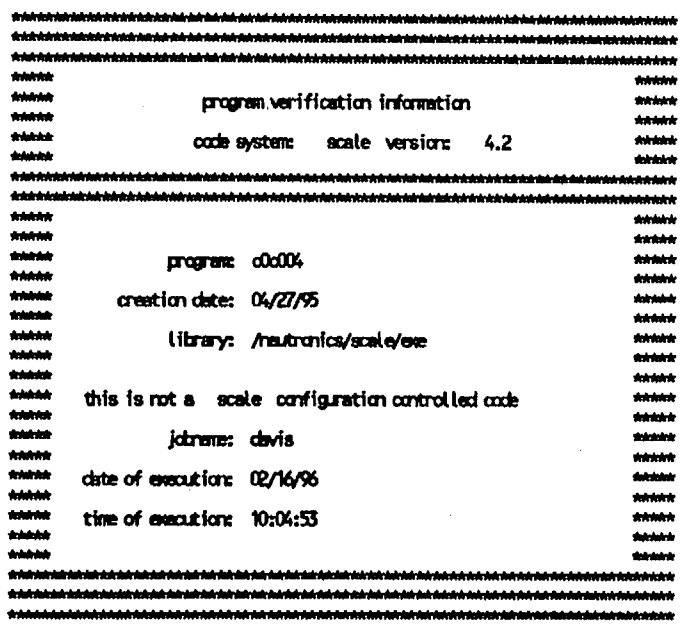













```
1
0      -1q array has     1 entries.
0       0q array has     1 entries.
0       0q array has     1 entries.
0       0q array has     1 entries.
```

```
0       0q array has       1 entries.
0        dbl. prec. machine word applied has, at least, a 16 significant figure accuracy.
0            short-lived split test fraction, qm =    9.1188E-04
0            half-norm of matrix used, amn =    7.0000E+00
0            4-place-accuracy-retention ratio, ratio4 =    6.4516E-13
0       1q array has      20 entries.
0       3q array has       1 entries.
0       3q array has       1 entries.
0       3q array has       1 entries.
0       4q array has       1 entries.
0      54q array has      12 entries.
1library information...

         cross-section data taken from position number  1 of library on unit 15.

         pass  7
         pass  1
         pass  0
         *scale-system control module sas2 library*
         used a time-dependent neutron spectrum, for each of the above passes
           pass 0 applies start-up fuel densities
           pass n applies mid time densities of nth library interval
         first library updated was...
         pass  1
         pass  0
         *scale-system control module sas2 library*
         used a time-dependent neutron spectrum, for each of the above passes
           pass 0 applies start-up fuel densities
           pass n applies mid time densities of nth library interval
         first library updated was...
         ************************************************************************
         *                                                                      *
         *          prelim lwr origen-s binary working library--id = 1143       *
         *            made from modified card-image origen-s libraries of scale 4.2 *
         *        data from the light element, actinide, and fission product libraries *
         *          decay data, including gamma and total energy, are from endf/b-vi *
         *                                                                      *
         *        neutron flux spectrum factors and cross sections were produced from *
         *        the 'presas2' case updating all nuclides on the scale 'burnup' library *
         *                                                                      *
         *                    fission product yields are from endf/b-v          *
         *                                                                      *
         *                photon libraries use an 18-energy-group structure     *
         *                the photon data are from the master photon data base, *
         *                produced to include bremsstrahlung from ua2 matrix    *
         *                                                                      *
         *          see information above this box (if present) for later updates *
         *                                                                      *
         ************************************************************************
         *                                                                      *
0        ************************************************************************
0                 .other identification and sizes of library.
0                  data set name:  ft15f001
0               2/16/1996    date library was produced
0                    1697    total number of nuclides in library
                      689    number of light-element nuclides
                      129    number of actinide nuclides
                      879    number of fission product nuclides
0                    7255    number of nonzero off-diagonal matrix elements
0        ************************************************************************
```

1

sas2h: babcock wilcox 15x15, 3.00w/o, 20gwd/mtu burn high temp actinides page 1
power= 8.466E-05mw, burnup=2.0318E-03mwd, flux= 1.62E+13n/cm**2-sec
0 nuclide concentrations, gram atoms
basis = converted to atoms/(barn-cm)

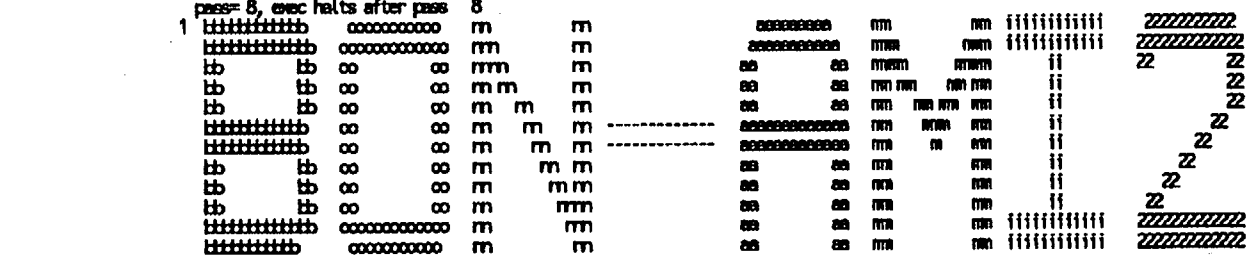
	charge	1000.1 d	1040.1 d	1080.1 d	1120.1 d	1120.2 d	1160.2 d	1200.2 d
he 4	6.33E-08	7.46E-08	8.72E-08	1.01E-07	1.17E-07	1.17E-07	1.34E-07	1.54E-07
u230	1.33E-20	1.51E-20	1.69E-20	1.89E-20	2.09E-20	2.09E-20	2.31E-20	2.55E-20
u231	2.58E-19	2.94E-19	3.27E-19	3.62E-19	3.99E-19	3.98E-19	4.40E-19	4.83E-19
u232	3.37E-12	3.78E-12	4.18E-12	4.63E-12	5.10E-12	5.10E-12	5.61E-12	6.15E-12
u233	4.10E-11	4.22E-11	4.32E-11	4.42E-11	4.52E-11	4.52E-11	4.61E-11	4.70E-11
u234	4.37E-06	4.33E-06	4.28E-06	4.24E-06	4.19E-06	4.19E-06	4.15E-06	4.11E-06
u235	3.83E-04	3.74E-04	3.64E-04	3.55E-04	3.47E-04	3.47E-04	3.38E-04	3.29E-04
u236	5.84E-05	6.00E-05	6.16E-05	6.31E-05	6.45E-05	6.45E-05	6.59E-05	6.73E-05
u237	7.61E-08	7.84E-08	8.01E-08	8.18E-08	8.34E-08	8.30E-08	8.50E-08	8.66E-08
u238	2.18E-02	2.18E-02	2.18E-02	2.18E-02	2.18E-02	2.18E-02	2.17E-02	2.17E-02
u239	1.19E-09	6.19E-09	6.21E-09	6.22E-09	6.23E-09	9.22E-10	6.24E-09	6.26E-09
u240	.00E+00	7.72E-32	1.16E-31	1.72E-31	2.50E-31	2.50E-31	3.60E-31	5.10E-31
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	8.52E-14	9.34E-14	1.02E-13	1.10E-13	1.19E-13	1.19E-13	1.28E-13	1.38E-13
np236m	8.66E-14	9.67E-14	1.02E-13	1.08E-13	1.14E-13	1.10E-13	1.20E-13	1.26E-13
np236	8.79E-12	9.78E-12	1.08E-11	1.19E-11	1.30E-11	1.30E-11	1.42E-11	1.55E-11
np237	4.21E-06	4.45E-06	4.70E-06	4.95E-06	5.20E-06	5.20E-06	5.46E-06	5.71E-06
np238	5.32E-09	5.75E-09	6.08E-09	6.42E-09	6.76E-09	6.66E-09	7.11E-09	7.46E-09
np239	8.77E-07	8.94E-07	8.96E-07	8.98E-07	9.00E-07	8.95E-07	9.01E-07	9.03E-07
np240m	.00E+00	6.59E-34	9.91E-34	1.47E-33	2.14E-33	2.14E-33	3.07E-33	4.35E-33
np240	8.77E-12	1.68E-11	1.68E-11	1.69E-11	1.70E-11	8.24E-12	1.71E-11	1.72E-11
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	9.84E-12	1.09E-11	1.19E-11	1.30E-11	1.42E-11	1.42E-11	1.54E-11	1.66E-11
pu237	3.41E-13	3.65E-13	3.89E-13	4.12E-13	4.35E-13	4.35E-13	4.59E-13	4.84E-13
pu238	6.64E-07	7.35E-07	8.10E-07	8.90E-07	9.74E-07	9.74E-07	1.06E-06	1.14E-06
pu239	1.13E-04	1.15E-04	1.17E-04	1.19E-04	1.21E-04	1.21E-04	1.23E-04	1.24E-04
pu240	2.35E-05	2.47E-05	2.59E-05	2.70E-05	2.81E-05	2.81E-05	2.92E-05	3.03E-05
pu241	1.25E-05	1.37E-05	1.46E-05	1.54E-05	1.63E-05	1.63E-05	1.72E-05	1.81E-05
pu242	1.62E-06	1.81E-06	2.00E-06	2.21E-06	2.43E-06	2.44E-06	2.67E-06	2.91E-06
pu243	1.97E-10	2.52E-10	2.80E-10	3.10E-10	3.42E-10	2.94E-10	3.75E-10	4.11E-10
pu244	2.51E-21	3.84E-21	5.78E-21	8.56E-21	1.25E-20	1.25E-20	1.79E-20	2.54E-20
pu245	1.70E-27	2.77E-27	4.17E-27	6.19E-27	9.05E-27	8.42E-27	1.30E-26	1.85E-26
pu246	7.11E-30	1.10E-29	1.67E-29	2.51E-29	3.69E-29	3.68E-29	5.35E-29	7.66E-29
am239	6.83E-18	8.13E-18	8.98E-18	9.83E-18	1.07E-17	1.01E-17	1.17E-17	1.26E-17
am240	3.08E-15	3.52E-15	3.88E-15	4.26E-15	4.66E-15	4.58E-15	5.06E-15	5.48E-15
am241	4.25E-07	4.68E-07	5.15E-07	5.63E-07	6.13E-07	6.13E-07	6.65E-07	7.18E-07
am242m	9.56E-09	1.07E-08	1.20E-08	1.33E-08	1.47E-08	1.47E-08	1.62E-08	1.77E-08
am242	4.63E-10	5.32E-10	5.86E-10	6.43E-10	7.02E-10	6.70E-10	7.63E-10	8.26E-10
am243	1.66E-07	1.94E-07	2.25E-07	2.60E-07	2.97E-07	2.98E-07	3.39E-07	3.84E-07
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	5.56E-11	6.99E-11	8.13E-11	9.40E-11	1.08E-10	1.00E-10	1.23E-10	1.40E-10
am245	1.52E-25	2.31E-25	3.46E-25	5.09E-25	7.36E-25	7.36E-25	1.05E-24	1.47E-24
am246	.00E+00	2.75E-32	4.18E-32	6.26E-32	9.22E-32	9.21E-32	1.34E-31	1.92E-31
cm241	8.64E-18	1.05E-17	1.25E-17	1.47E-17	1.71E-17	1.71E-17	1.98E-17	2.28E-17
cm242	5.40E-08	6.13E-08	6.90E-08	7.73E-08	8.61E-08	8.61E-08	9.53E-08	1.05E-07
cm243	9.35E-10	1.11E-09	1.30E-09	1.51E-09	1.74E-09	1.74E-09	2.00E-09	2.27E-09
cm244	1.76E-08	2.16E-08	2.63E-08	3.17E-08	3.79E-08	3.79E-08	4.50E-08	5.30E-08
cm245	4.05E-10	5.22E-10	6.58E-10	8.21E-10	1.01E-09	1.01E-09	1.24E-09	1.51E-09
cm246	1.90E-11	2.53E-11	3.34E-11	4.36E-11	5.63E-11	5.63E-11	7.19E-11	9.10E-11
cm247	1.49E-13	2.09E-13	2.88E-13	3.91E-13	5.24E-13	5.24E-13	6.94E-13	9.10E-13

1

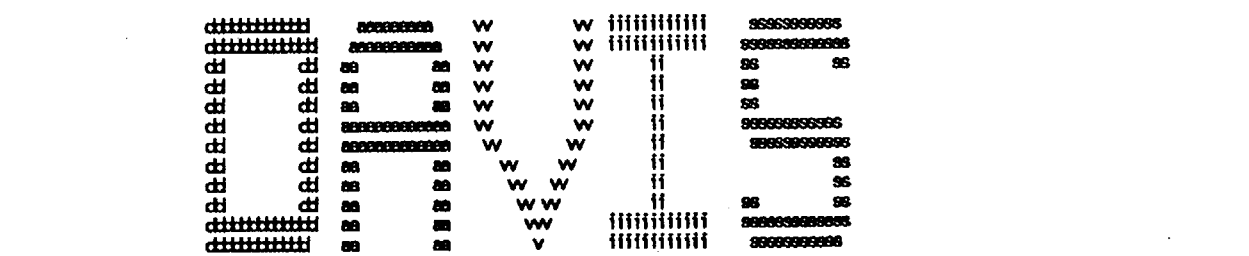
sas2h: babcock wilcox 15x15, 3.00w/o, 20gwd/mtu burn high temp actinides page 2
power= 8.466E-05mw, burnup=2.0318E-03mwd, flux= 1.62E+13n/cm**2-sec
0 nuclide concentrations, gram atoms

```
                                                basis = converted to atoms/(barn-cm)
            charge  1000.1 d  1040.1 d  1080.1 d  1120.1 d  1120.2 d  1160.2 d  1200.2 d
    cm248  5.32E-15 7.82E-15  1.13E-14  1.60E-14  2.25E-14  2.25E-14  3.11E-14  4.24E-14
    cm249  2.02E-20 5.47E-20  7.92E-20  1.13E-19  1.59E-19  7.88E-20  2.20E-19  3.01E-19
    cm250  6.68E-24 1.03E-23  1.56E-23  2.33E-23  3.41E-23  3.41E-23  4.92E-23  7.02E-23
    cm251   .00E+00 2.47E-31  3.76E-31  5.61E-31  8.25E-31  5.72E-32  1.19E-30  1.71E-30
   totals  2.24E-02 2.24E-02  2.24E-02  2.24E-02  2.23E-02  2.23E-02  2.23E-02  2.23E-02
0   flux            1.61E+13  1.61E+13  1.62E+13  1.62E+13   .00E+00  1.63E+13  1.63E+13
0  .results on logical unit no. 71, position 1, for time step 7, subcase 1. (run position 1, case position 1)
   title: ses2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0  .results on logical unit no. 71, position 2, for time step 5, subcase 1. (run position 1, case position 1)
   title: ses2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0  .results on logical unit no. 71, position 3, for time step 4, subcase 1. (run position 1, case position 1)
   title: ses2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0    .terminated logical unit no. 71 with zero flag record.
1  * normal termination of execution *
0                                table of contents for material tables
0                                  case or subcase printed     page

                                                      1             1
0rdbet          33
          15          4          1         27          6          0          0          0          0          0
           0          0          0          0          0          0         -1       1698        690        130
         880       7935          0          5         99          2         16         96         18         18
          18          0         71
0       56q array has       2 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       57q array has       3 entries.
0        1q array has      20 entries.
0        1q array has      10 entries.
     l90   97376
     l116  60826
     l32   33663 nuclide (library) storage size
     l44   33734
     l103  75953
0       58q array has       4 entries.
0       60q array has       7 entries.
0       58q array has       7 entries.
0       66q array has       1 entries.
0       73q array has    1697 entries.
0       74q array has    1697 entries.
0       75q array has    1697 entries.
     l140  66991
     used   101044 in size   200000
0jqpt           12
           0          0          0          0          0          0          0          0          0          0
           0          0
0therm          4
  5.125936E-01 4.497346E-01 3.489525E+00 1.000000E-31
0nn             5
        7935         20          6         18       1697
0mm            19
           7          7          0          0          1          1          0          0          0          0
          21        100       1697          4          3         74          4          1          0
0tconst         5
```

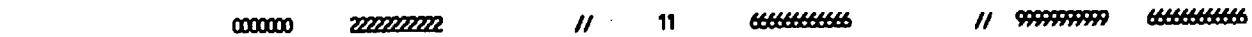
```
  8.640000E+04 9.601346E+02  .000000E+00  .000000E+00 1.000000E-08
0mzero          4
          0          689          129          879
0pow            3
   .000000E+00  .000000E+00  .000000E+00
0 lirp          9
          6            0           51           26            2         3000         1000         1697           94
 n-gamma, fission and total nev/fission =              7.4172E+00   1.9683E+02   2.0425E+02
 start of interval flux =          1.60782E+13
 n-gamma, fission and total nev/fission =              7.4945E+00   1.9691E+02   2.0440E+02
 start of interval flux =          1.61169E+13
 n-gamma, fission and total nev/fission =              7.5869E+00   1.9698E+02   2.0457E+02
 start of interval flux =          1.61552E+13
 n-gamma, fission and total nev/fission =              7.6825E+00   1.9706E+02   2.0473E+02
 start of interval flux =          1.61953E+13
 start of interval flux =           .00000E+00
 n-gamma, fission and total nev/fission =              7.7959E+00   1.9712E+02   2.0492E+02
 start of interval flux =          1.62348E+13
 n-gamma, fission and total nev/fission =              7.8675E+00   1.9719E+02   2.0506E+02
 start of interval flux =          1.62804E+13
0 case or subcase    1  ses2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0       56q array has      20 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has      20 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has      20 entries.
0       56q array has      20 entries.
0requested parm=halt8,skipcellwt,skipshipdata
  pass= 8, exec halts after pass   8
```

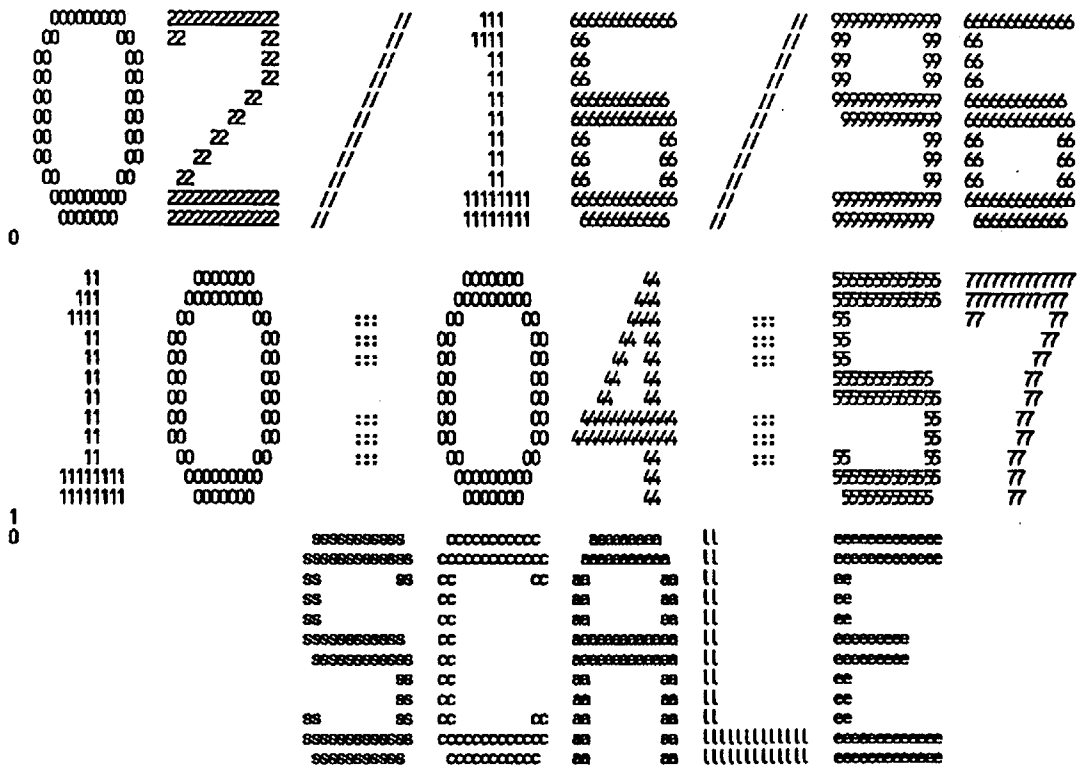


```
0
```



```
0
```




0
1
0
program verification information
code system: scale version: 4.2
program: c0c00B
creation date: 04/27/95
library: /nutronics/scale/exe

```
                    *****                                                   *****
                    *****                                                   *****
                    *****   this is not a  scale  configuration controlled code   *****
                    *****                                                   *****
                    *****            jobname:  davis                        *****
                    *****                                                   *****
                    *****   date of execution:  02/16/96                    *****
                    *****                                                   *****
                    *****   time of execution:  10:04:57                    *****
                    *****                                                   *****
                    *****                                                   *****
                    ********************************************************************
                    ********************************************************************
                    ********************************************************************

1
0      -1q array has      1 entries.
0       0q array has      4 entries.
0       1q array has      6 entries.
0       2q array has      2 entries.
1logical assignments
0master library   12
 working library   0
 scratch file     18
 new library       1
0p r o b l e m   d e s c r i p t i o n
0igr--geometry (0/1/2/3--inf med/slab/cyl/sphere                    2
0izm--number of zones or material regions                           4
0ms--mixing table length                                           66
0ibl--shielded cross section edit option (0/1--no/yes)              0
0ibr--bondarenko factor edit option (0/1--no/yes)                   0
0isscpt--dancoff factor option                                      0
0convergence criterion    1.00000E-03
0geometry correction factor for wigner rational approximation  1.350E+00
0       3q array has     66 entries.
0       4q array has     66 entries.
0       5q array has     66 entries.
0       6q array has      4 entries.
0       7q array has      4 entries.
0       8q array has      4 entries.
0       9q array has      4 entries.
0      10q array has     66 entries.
0      11q array has      4 entries.
0m i x i n g   t a b l e
0entry  mixture  isotope  number density  new identifier
    1        1    92235    3.29451E-04           92235
    2        1    92234    4.10648E-06           92234
    3        1    92236    6.72906E-05           92236
    4        1    92238    2.17324E-02           92238
    5        1     8016    4.55359E-02            8016
    6        3     8016    2.09710E-02               6
    7        1    36083    1.81372E-06           36083
    8        1    36085    8.71779E-07           36085
    9        1    38090    2.00600E-05           38090
   10        1    39089    1.64607E-05           39089
   11        1    42095    2.30516E-05           42095
   12        1    40093    1.64590E-05           40093
   13        1    40094    2.61240E-05           40094
   14        1    40095    1.98652E-05           40095
   15        1    41094    1.43208E-11           41094
   16        1    43099    2.55495E-05           43099
```

17	1	45103	1.43117E-05	45103
18	1	45105	2.51927E-08	45105
19	1	44101	2.36781E-05	44101
20	1	44106	3.50872E-06	44106
21	1	46105	1.03319E-05	46105
22	1	46108	3.17250E-06	46108
23	1	47109	2.13200E-06	47109
24	1	51124	4.69872E-10	51124
25	1	54131	1.14853E-05	54131
26	1	54132	2.33195E-05	54132
27	1	54135	6.64007E-09	54135
28	1	54136	4.51578E-05	54136
29	1	55134	1.63057E-06	55134
30	1	55135	1.43530E-05	55135
31	1	55137	2.77063E-05	55137
32	1	56136	3.51878E-07	56136
33	1	57139	2.73886E-05	57139
34	1	59141	2.40560E-05	59141
35	1	59143	3.60052E-07	59143
36	1	58144	6.94065E-06	58144
37	1	60143	2.05000E-05	60143
38	1	60145	1.54707E-05	60145
39	1	61147	4.51200E-06	61147
40	1	61148	1.36887E-08	61148
41	1	60147	1.28677E-07	60147
42	1	62147	2.20336E-06	62147
43	1	62149	9.06667E-08	62149
44	1	62150	5.84210E-06	62150
45	1	62151	4.61651E-07	62151
46	1	62152	2.70673E-06	62152
47	1	64155	3.60027E-09	64155
48	1	63153	1.87279E-06	63153
49	1	63154	4.84438E-07	63154
50	1	63155	2.11219E-07	63155
51	2	40802	4.25156E-02	40802
52	3	1001	4.19420E-02	1001
53	3	5010	3.81515E-06	5010
54	3	5011	1.54884E-05	5011
55	1	55133	2.80248E-05	55133
56	1	95237	5.71129E-06	95237
57	1	94238	1.15608E-06	94238
58	1	94239	1.24276E-04	94239
59	1	94240	3.02952E-05	94240
60	1	94241	1.81183E-05	94241
61	1	94242	2.91035E-06	94242
62	1	95241	7.18857E-07	95241
63	1	95243	3.83515E-07	95243
64	1	96244	5.30179E-08	96244
65	1	999	1.00000E-20	999
66	4	999	1.00000E-20	66

0geometry and material description

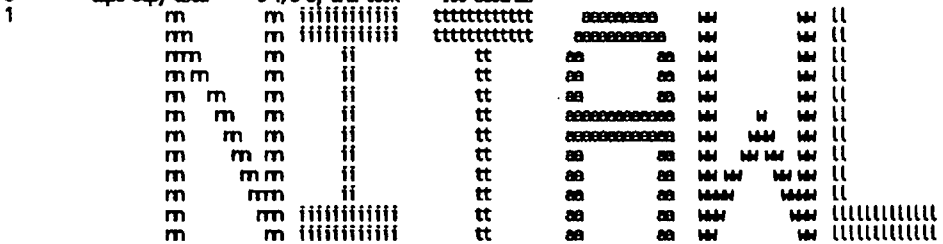
0zone	mixture	outer dimension	temperature	extra xs	type (0/1--fuel/mod)
1	1	4.68122E-01	9.75000E+02	9.05864E-01	0
2	4	4.78790E-01	2.93000E+02	5.49010E-01	0
3	2	5.46100E-01	6.50000E+02	.00000E+00	0
4	3	8.13966E-01	6.07600E+02	.00000E+00	0

7711 locations of 200000 available are required to make a new master containing the self-shielded values
0no nuclides in your problem have bondarenko factor data**bonami will copy from logical 12 to logical 1
0copy 999 1/v cross sectio from log 12 to log 18 bondarenko trigger 0
0copy 999 1/v cross sectio from log 18 to log 1 bondarenko trigger 0

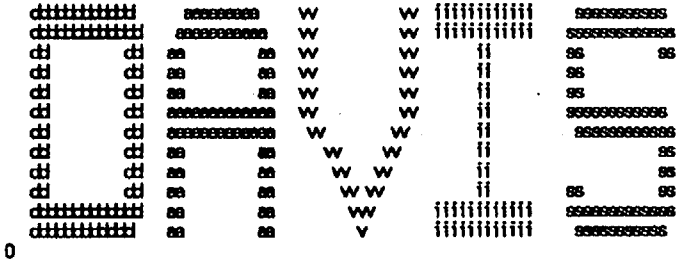
```
0copy     999 1/v cross sectio from lag 18 to lag  1   bondarenko trigger 0
0copy    1001  hydrogen        from lag 12 to lag  1   bondarenko trigger 0
0copy    5010 b-10 1273 218ngp from lag 12 to lag  1   bondarenko trigger 0
0copy    5011  boron-11        from lag 12 to lag  1   bondarenko trigger 0
0copy    8016  oxygen-16       from lag 12 to lag 18   bondarenko trigger 0
0copy    8016  oxygen-16       from lag 18 to lag  1   bondarenko trigger 0
0copy    8016  oxygen-16       from lag 18 to lag  1   bondarenko trigger 0
0copy   36083  kr-83           from lag 12 to lag  1   bondarenko trigger 0
0copy   36085  kr-85           from lag 12 to lag  1   bondarenko trigger 0
0copy   38090  sr-90           from lag 12 to lag  1   bondarenko trigger 0
0copy   39089   y-89           from lag 12 to lag  1   bondarenko trigger 0
0copy   40093  zr-93           from lag 12 to lag  1   bondarenko trigger 0
0copy   40094  zr-94           from lag 12 to lag  1   bondarenko trigger 0
0copy   40095  zr-95           from lag 12 to lag  1   bondarenko trigger 0
0copy   40302  zircalloy       from lag 12 to lag  1   bondarenko trigger 0
0copy   41094  nb-94           from lag 12 to lag  1   bondarenko trigger 0
0copy   42095  mo-95           from lag 12 to lag  1   bondarenko trigger 0
0copy   43099  tc-99           from lag 12 to lag  1   bondarenko trigger 0
0copy   44101  ru-101          from lag 12 to lag  1   bondarenko trigger 0
0copy   44106  ru-106          from lag 12 to lag  1   bondarenko trigger 0
0copy   45103  rh-103          from lag 12 to lag  1   bondarenko trigger 0
0copy   45105  rh-105          from lag 12 to lag  1   bondarenko trigger 0
0copy   46105  pd-105          from lag 12 to lag  1   bondarenko trigger 0
0copy   46108  pd-108          from lag 12 to lag  1   bondarenko trigger 0
0copy   47109  silver-109      from lag 12 to lag  1   bondarenko trigger 0
0copy   51124  sb-124          from lag 12 to lag  1   bondarenko trigger 0
0copy   54131  xe-131          from lag 12 to lag  1   bondarenko trigger 0
0copy   54132  xe-132          from lag 12 to lag  1   bondarenko trigger 0
0copy   54135  xenon-135       from lag 12 to lag  1   bondarenko trigger 0
0copy   54136  xe-136          from lag 12 to lag  1   bondarenko trigger 0
0copy   55133  cesium-133      from lag 12 to lag  1   bondarenko trigger 0
0copy   55134  cs-134          from lag 12 to lag  1   bondarenko trigger 0
0copy   55135  cs-135          from lag 12 to lag  1   bondarenko trigger 0
0copy   55137  cs-137          from lag 12 to lag  1   bondarenko trigger 0
0copy   56136  ba-136          from lag 12 to lag  1   bondarenko trigger 0
0copy   57139  la-139          from lag 12 to lag  1   bondarenko trigger 0
0copy   58144  ce-144          from lag 12 to lag  1   bondarenko trigger 0
0copy   59141  pr-141          from lag 12 to lag  1   bondarenko trigger 0
0copy   59143  pr-143          from lag 12 to lag  1   bondarenko trigger 0
0copy   60143  nd-143          from lag 12 to lag  1   bondarenko trigger 0
0copy   60145  nd-145          from lag 12 to lag  1   bondarenko trigger 0
0copy   60147  nd-147          from lag 12 to lag  1   bondarenko trigger 0
0copy   61147  pm-147          from lag 12 to lag  1   bondarenko trigger 0
0copy   61148  pm-148          from lag 12 to lag  1   bondarenko trigger 0
0copy   62147  sm-147          from lag 12 to lag  1   bondarenko trigger 0
0copy   62149  sm-149          from lag 12 to lag  1   bondarenko trigger 0
0copy   62150  sm-150          from lag 12 to lag  1   bondarenko trigger 0
0copy   62151  sm-151          from lag 12 to lag  1   bondarenko trigger 0
0copy   62152  sm-152          from lag 12 to lag  1   bondarenko trigger 0
0copy   63153  eu-153          from lag 12 to lag  1   bondarenko trigger 0
0copy   63154  eu-154          from lag 12 to lag  1   bondarenko trigger 0
0copy   63155  eu-155          from lag 12 to lag  1   bondarenko trigger 0
0copy   64155  gd-155          from lag 12 to lag  1   bondarenko trigger 0
0copy   92234 u-234 1043 sigp= from lag 12 to lag  1   bondarenko trigger 0
0copy   92235  uranium-235     from lag 12 to lag  1   bondarenko trigger 0
0copy   92236 u-236 1163 sigp= from lag 12 to lag  1   bondarenko trigger 0
0copy   92238  uranium-238     from lag 12 to lag  1   bondarenko trigger 0
0copy   93237  neptunium-237   from lag 12 to lag  1   bondarenko trigger 0
0copy   94238 pu-238 1050 sigp from lag 12 to lag  1   bondarenko trigger 0
0copy   94239  plutonium-239   from lag 12 to lag  1   bondarenko trigger 0
```

```
0copy    94240  plutonium-240   from lag 12 to lag  1   bondarenko trigger 0
0copy    94241  plutonium-241   from lag 12 to lag  1   bondarenko trigger 0
0copy    94242  plutonium-242   from lag 12 to lag  1   bondarenko trigger 0
0copy    95241  am-241 1056 sigp from lag 12 to lag  1   bondarenko trigger 0
0copy    95243  am-243 1057 218  from lag 12 to lag  1   bondarenko trigger 0
0copy    96244  curium-244      from lag 12 to lag  1   bondarenko trigger 0
1     scale 4.2 - 27 group neutron burnup library
       based on endf-b version 4 data with endf-b version 5 fission products
         compiled for nrc     1/27/89
            last updated      9/16/93
               l.m.petrie  -  ornl
        tape id                          4321        number of nuclides          66
        number of neutron groups           27        number of gamma groups       0
        first thermal group                15        logical unit                 1
                                table of contents
      1/v cross sections normalized to 1.0 at 0.0253 ev                          id    999
      1/v cross sections normalized to 1.0 at 0.0253 ev                          id     66
       hydrogen       endf/b-iv mat 1269/thrml002   updated 10/13/89            id   1001
      b-10 1273 218ngp 042575 p-3 293k
       boron-11       endf/b-iv mat 1160            updated 10/13/89            id   5010
       oxygen-16      endf/b-iv mat 1276            updated 10/13/89            id   5011
       oxygen-16      endf/b-iv mat 1276            updated 10/13/89            id   8016
       kr-83          mt=102,103,103,105,106,107    updated 10/13/89            id      6
       kr-85            mt=  102                                                id  36083
       sr-90          mt=102                        updated 10/13/89            id  36085
        y-89          mt=102                        updated 10/13/89            id  38090
       zr-93            mt=  102                                                id  39089
       zr-94          mt=102                        updated 10/13/89            id  40093
       zr-95          mt=102                        updated 10/13/89            id  40094
       zircalloy      endf/b-iv mat 1284            updated 10/13/89            id  40095
       nb-94          mt=102                        updated 10/13/89            id  40302
       mo-95          mt=102                        updated 10/13/89            id  41094
       tc-99          mt=102                        updated 10/13/89            id  42095
       ru-101         mt=102                        updated 10/13/89            id  43099
       ru-106         mt=102                        updated 10/13/89            id  44101
       rh-103         mt=102                        updated 10/13/89            id  44106
       rh-105           mt=  102                                                id  45103
       pd-105         mt=102                        updated 10/13/89            id  45105
       pd-108         mt=102                        updated 10/13/89            id  46105
       silver-109     endf/b-iv mat 1139            updated 10/13/89            id  46108
       sb-124         mt=102                        updated 10/13/89            id  47109
       xe-131         mt=102,103,104,105,106        updated 10/13/89            id  51124
       xe-132         mt=102,103,104,105,106        updated 10/13/89            id  54131
       xenon-135      endf/b-iv mat 1234            updated 10/13/89            id  54132
       xe-136           mt=  102, 103, 104, 105, 107                            id  54135
       cesium-133     endf/b-iv mat 1141            updated 10/13/89            id  54136
       cs-134         mt=102                        updated 10/13/89            id  55133
       cs-135           mt=  102                                                id  55134
       cs-137         mt=102                        updated 10/13/89            id  55135
       ba-136         mt=102                        updated 10/13/89            id  55137
       la-139         mt=102                        updated 10/13/89            id  56136
       ce-144           mt=  102                                                id  57139
       pr-141         mt=102,103,104,105,106,107    updated 10/13/89            id  58144
       pr-143         mt=102                        updated 10/13/89            id  59141
       nd-143         mt=102                        updated 10/13/89            id  59143
       nd-145         mt=102                        updated 10/13/89            id  60143
       nd-147         mt=102                        updated 10/13/89            id  60145
       pm-147         mt=102                        updated 10/13/89            id  60147
       pm-148           mt=  102                                                id  61147
       sm-147         endf/b-v fission product      updated 10/13/89            id  61148
                                                                                id  62147
```

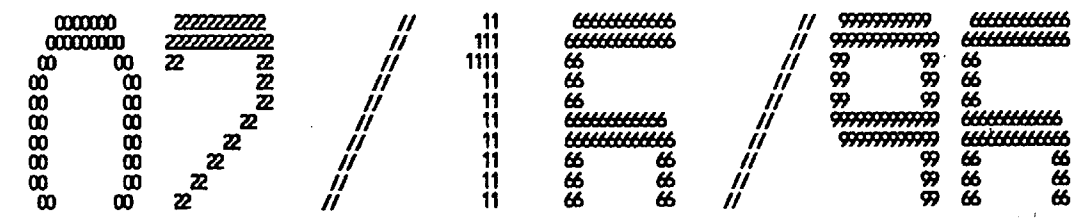
```
        sm-149      mt=102,103,107                  updated 10/13/89              id    62149
        sm-150      mt=102                          updated 10/13/89              id    62150
        sm-151      mt=102,103,104,105,106,107      updated 10/13/89              id    62151
        sm-152      mt=102,103,104,105,106,107      updated 10/13/89              id    62152
        eu-153      mt=102,103,104,105,106,107      updated 10/13/89              id    63153
        eu-154      mt=102,103,104,105,106,107      updated 10/13/89              id    63154
        eu-155      mt=102,103,104,105,106,107      updated 10/13/89              id    63155
        gd-155      mt=102                          updated 10/13/89              id    64155
       u-234 1043 sigp=5+4 newklacs p-3 295k f-1/e-m(1.+5)                       id    92234
        uranium-235  endf/b-iv mat 1261             updated 10/13/89              id    92235
       u-236 1163 sigp=5+4 newklacs p-3 295k f-1/e-m(1.+5)                       id    92236
        uranium-238  endf/b-iv mat 1262             updated 10/13/89              id    92238
        neptunium-237  endf/b-iv mat 1263           updated 10/13/89              id    93237
       pu-238 1050 sigp=5+4 newklacs p-3 295k f-1/e-m(1.+5)                      id    94238
        plutonium-239  endf/b-iv mat 1264           updated 10/13/89              id    94239
        plutonium-240  endf/b-iv mat 1265           updated 10/13/89              id    94240
        plutonium-241  endf/b-iv mat 1266           updated 10/13/89              id    94241
        plutonium-242  endf/b-iv mat 1161           updated 10/13/89              id    94242
       am-241 1056 sigp=5+4 newklacs 218hgp p-3 295k                             id    95241
       am-243 1057 218 gp wt f-1/e-m 090376 p3 295k                              id    95243
        curium-244  endf/b-iv mat 1162              updated 10/13/89              id    96244
0       tape copy used      0 i/o's, and took     .00 seconds
1
```

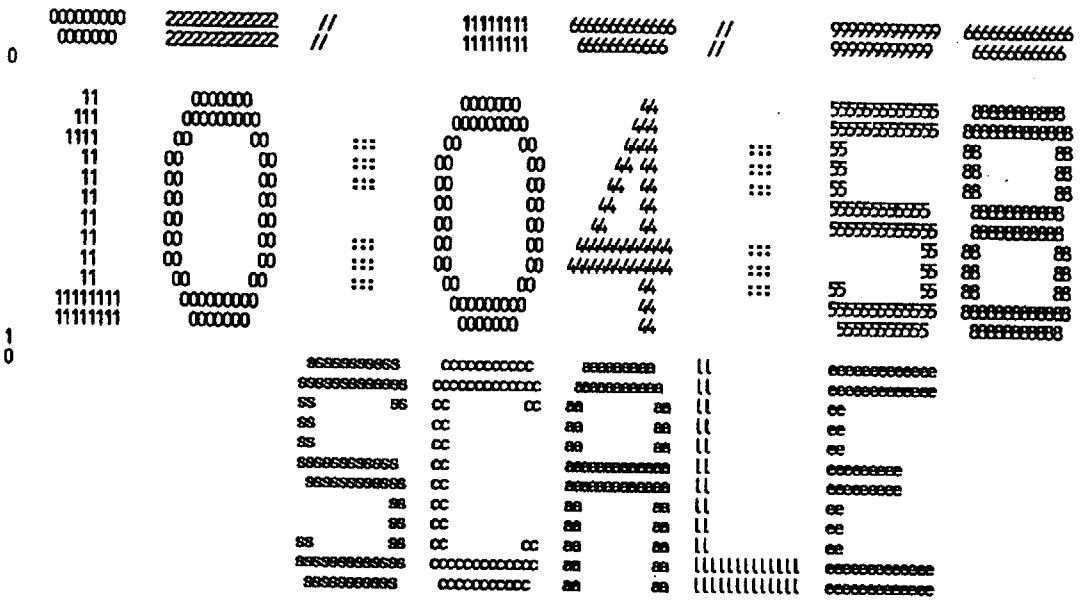


```
0
```



```
0
```





program verification information

code system: scale version: 4.2

program: c0c002

creation date: 04/27/95

library: /neutronics/scale/exe

this is not a scale configuration controlled code

jobname: davis

date of execution: 02/16/96

time of execution: 10:04:58

```
                    *****                                                                *****
                    *****                                                                *****
                    ************************************************************************
                    ************************************************************************
                    ************************************************************************
1
0       -1q array has       1 entries.
0        0q array has       9 entries.
0        1q array has      12 entries.
0select 65 nuclides from the master  library on logical  1
        0 nuclides from the working library on logical  2
        0 nuclides from the working library on logical  3
          to create the new working library on logical  4

       61 resonance calculations have been requested
        0 output option for arpx formatted cross section data.
0the storage allocated for this case is 200000 words
0        2q array has      65 entries.
0        3q array has     975 entries.
0        4q array has      65 entries.
0 general information concerning cross section library
    tape identification number                4321
    number of nuclides on tape                  66
    number of neutron energy groups             27
    first thermal neutron energy group          15
    number of gamma energy groups                0
0   direct access unit number  9 requires 117 blocks of length  1484 words
- xsdrn tape   4321
                      scale 4.2 - 27 group neutron burnup library
                        based on endf-b version 4 data with endf-b version 5 fission products
                           compiled for nrc      1/27/89
                             last updated       9/16/93
                                l.m.petrie   -   ornl
0 nuclides from xsdrn tape
     1    1/v cross sections normalized to 1.0 at 0.0253 ev                                  999
     2    hydrogen        endf/b-iv mat 1269/thrml002   updated 10/13/89                    1001
     3    b-10 1273 218grp 0.2375 p-3 293k                                                  5010
     4    boron-11        endf/b-iv mat 1160            updated 10/13/89                    5011
     5    oxygen-16       endf/b-iv mat 1276            updated 10/13/89                    8016
     6    oxygen-16       endf/b-iv mat 1276            updated 10/13/89                       6
     7    kr-83           mt=102,103,105,105,106,107    updated 10/13/89                   36083
     8    kr-85             mt=  102                                                       36085
     9    sr-90           mt=102                        updated 10/13/89                   38090
    10     y-89           mt=102                        updated 10/13/89                   39089
    11    zr-93             mt=  102                                                       40093
    12    zr-94           mt=102                        updated 10/13/89                   40094
    13    zr-95           mt=102                        updated 10/13/89                   40095
    14    zircalloy       endf/b-iv mat 1284            updated 10/13/89                   40802
    15    nb-94           mt=102                        updated 10/13/89                   41094
    16    mo-95           mt=102                        updated 10/13/89                   42095
    17    tc-99           mt=102                        updated 10/13/89                   43099
    18    ru-101          mt=102                        updated 10/13/89                   44101
    19    ru-106          mt=102                        updated 10/13/89                   44106
    20    rh-103          mt=102                        updated 10/13/89                   45103
    21    rh-105            mt=  102                                                       45105
    22    pd-105          mt=102                        updated 10/13/89                   46105
    23    pd-108          mt=102                        updated 10/13/89                   46108
    24    silver-109      endf/b-iv mat 1139            updated 10/13/89                   47109
    25    sb-124          mt=102                        updated 10/13/89                   51124
    26    xe-131          mt=102,103,104,105,106        updated 10/13/89                   54131
```

```
    27    xe-132          mt=102,103,104,105,106          updated 10/13/89              54132
    28    xenon-135       endf/b-iv mat 1294              updated 10/13/89              54135
    29    xe-136             mt=  102, 103, 104, 105, 107                               54136
    30    cesium-133      endf/b-iv mat 1141              updated 10/13/89              55133
    31    cs-134          mt=102                          updated 10/13/89              55134
    32    cs-135             mt=  102                                                   55135
    33    cs-137          mt=102                          updated 10/13/89              55137
    34    ba-136          mt=102                          updated 10/13/89              56136
    35    la-139          mt=102                          updated 10/13/89              57139
    36    ce-144             mt=  102                                                   58144
    37    pr-141          mt=102,103,104,105,106,107      updated 10/13/89              59141
    38    pr-143          mt=102                          updated 10/13/89              59143
    39    nd-143          mt=102                          updated 10/13/89              60143
    40    nd-145          mt=102                          updated 10/13/89              60145
    41    nd-147          mt=102                          updated 10/13/89              60147
    42    pm-147          mt=102                          updated 10/13/89              61147
    43    pm-148             mt=  102                                                   61148
    44    sm-147          endf/b-v fission product        updated 10/13/89              62147
    45    sm-149          mt=102,103,107                  updated 10/13/89              62149
    46    sm-150          mt=102                          updated 10/13/89              62150
    47    sm-151          mt=102,103,104,105,106,107      updated 10/13/89              62151
    48    sm-152          mt=102,103,104,105,106,107      updated 10/13/89              62152
    49    eu-153          mt=102,103,104,105,106,107      updated 10/13/89              63153
    50    eu-154          mt=102,103,104,105,106,107      updated 10/13/89              63154
    51    eu-155          mt=102,103,104,105,106,107      updated 10/13/89              63155
    52    gd-155          mt=102                          updated 10/13/89              64155
    53    u-234 1043 sigo=5+4 newclacs p-3 293k f-1/e-m(1.+5)                           92234
    54     uranium-235    endf/b-iv mat 1261              updated 10/13/89              92235
    55    u-236 1163 sigo=5+4 newclacs p-3 293k f-1/e-m(1.+5)                           92236
    56     uranium-238    endf/b-iv mat 1262              updated 10/13/89              92238
    57     neptunium-237  endf/b-iv mat 1263              updated 10/13/89              93237
    58    pu-238 1050 sigo=5+4 newclacs p-3 293k f-1/e-m(1.+5)                          94238
    59     plutonium-239  endf/b-iv mat 1264              updated 10/13/89              94239
    60     plutonium-240  endf/b-iv mat 1265              updated 10/13/89              94240
    61     plutonium-241  endf/b-iv mat 1266              updated 10/13/89              94241
    62     plutonium-242  endf/b-iv mat 1161              updated 10/13/89              94242
    63    am-241 1056 sigo=5+4 newclacs 218ngp p-3 293k                                 95241
    64    am-243 1057 218 gp wt f-1/e-m 090576 p3 293k                                  95243
    65     curium-244     endf/b-iv mat 1162              updated 10/13/89              96244
01/v cross sections normalized to 1.0 at 0.0253 ev                          999     temperature=  975.00
0 hydrogen        endf/b-iv mat 1269/thnm1002    updated 10/13/89           1001    temperature=  607.60
                        thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0b-10 1273 218ngp 042375 p-3 293k                                           5010    temperature=  607.60
                        thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0 boron-11        endf/b-iv mat 1160             updated 10/13/89           5011    temperature=  607.60
                        thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0 oxygen-16       endf/b-iv mat 1276             updated 10/13/89           8016    temperature=  975.00
0 oxygen-16       endf/b-iv mat 1276             updated 10/13/89              6    temperature=  607.60
0 kr-83           mt=102,103,103,105,106,107     updated 10/13/89          36083    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   82.202          temperature(kelvin)      =  975.000
0potential scatter sigma  =    7.004          lumped nuclear density   = 1.81372E-06
0spin factor (g)          =  4988.190         lump dimension (e-bar)   = 4.68122E-01
0inner radius             =  .0000000E+00     dancoff correction (c)   = 3.42692E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1   =   15.995             sigma(per absorber atom)= 9.41486E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2   =  237.953             sigma(per absorber atom)= 1.05040E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
```

```
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs         res fiss        res scat
  11      -2.726823E-03     .000000E+00   -3.444124E-03
  12       2.164301E-02     .000000E+00    9.884226E-03
  13      -5.916534E-01     .000000E+00   -1.766241E-01
  14       4.783685E-05     .000000E+00   -1.724147E-05
0excess resonance integrals
0                 resolved
0absorption       1.44590E+02
 fission          .00000E+00
- elapsed time    .00 min.
0 kr-85            mt= 102                                          36085    temperature=  975.00
0 sr-90          mt=102                    updated 10/13/89        38090    temperature=  975.00
0 y-89           mt=102                    updated 10/13/89        39089    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   88.142          temperature(kelvin)      =  975.000
0potential scatter sigma  =    3.644          lumped nuclear density   = 1.646075E-05
0spin factor (g)          =   78.664          lump dimension (a-bar)   = 4.681220E-01
0inner radius             = .0000000E+00      dancoff correction (c)   = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =   15.995          sigma(per absorber atom)= 1.037374E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  257.933          sigma(per absorber atom)= 1.157386E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs         res fiss        res scat
   9      -4.946415E-06     .000000E+00   -4.070307E-04
  10      -1.010821E-04     .000000E+00   -2.851098E-04
0excess resonance integrals
0                 resolved
0absorption       1.46353E-01
 fission          .00000E+00
- elapsed time    .00 min.
0 zr-93            mt= 102                                          40093    temperature=  975.00
0 zr-94          mt=102                    updated 10/13/89        40094    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   93.100          temperature(kelvin)      =  975.000
0potential scatter sigma  =    3.779          lumped nuclear density   = 2.612402E-05
0spin factor (g)          =  180.853          lump dimension (a-bar)   = 4.681220E-01
0inner radius             = .0000000E+00      dancoff correction (c)   = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =   15.995          sigma(per absorber atom)= 6.536601E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  257.933          sigma(per absorber atom)= 7.292597E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs         res fiss        res scat
   8      -1.715812E-06     .000000E+00   -1.608045E-03
   9      -5.114553E-05     .000000E+00   -4.521406E-03
0excess resonance integrals
0                 resolved
0absorption       3.43462E-02
 fission          .00000E+00
- elapsed time    .00 min.
0 zr-95          mt=102                    updated 10/13/89        40095    temperature=  975.00
0 zircalloy      endf/b-iv mat 1284        updated 10/13/89        40302    temperature=  650.00
0resonance data for this nuclide
0mass number (a)          =   90.436          temperature(kelvin)      =  650.000
```

```
0potential scatter sigma =    6.385          lumped nuclear density   = 4.2515602E-02
0spin factor (g)         =    1.079          lump dimension (a-bar)   = 5.4610002E-01
0inner radius            = 4.7878999E-01     dancoff correction (c)   = 5.0864637E-01
0the absorber will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
   8    -1.780596E-03    .000000E+00   -1.286907E+00
   9    -5.895373E-02    .000000E+00   -2.695297E+00
  10    -6.959985E-02    .000000E+00   -1.601321E+00
  11    -1.883957E-01    .000000E+00   -7.920912E-01
0excess resonance integrals
0                resolved
0absorption     2.28639E-01
 fission         .00000E+00
- elapsed time    .02 min.
0 rb-94       mt=102                    updated 10/13/89          41094    temperature=   975.00
0resonance data for this nuclide
0mass number (a)         =   93.101          temperature(kelvin)      =  975.000
0potential scatter sigma =    3.779          lumped nuclear density   = 1.4320781E-11
0spin factor (g)         = 43808.801          lump dimension (a-bar)   = 4.6812201E-01
0inner radius            = .0000000E+00       dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1     =   15.995          sigma(per absorber atom)= 1.1929910E+10
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2     =  237.983          sigma(per absorber atom)= 1.3308366E+10
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  13     1.043053E-02    .000000E+00    9.253246E-04
  14     9.836727E-03    .000000E+00   -4.064859E-04
0excess resonance integrals
0                resolved
0absorption     9.15001E+01
 fission         .00000E+00
- elapsed time    .02 min.
0 mo-95       mt=102                    updated 10/13/89          42095    temperature=   975.00
0resonance data for this nuclide
0mass number (a)         =   94.091          temperature(kelvin)      =  975.000
0potential scatter sigma =    3.806          lumped nuclear density   = 2.3051618E-05
0spin factor (g)         =  607.724          lump dimension (a-bar)   = 4.6812201E-01
0inner radius            = .0000000E+00       dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1     =   15.995          sigma(per absorber atom)= 7.4077100E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2     =  237.983          sigma(per absorber atom)= 8.2646943E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  10    -4.875015E-03    .000000E+00   -2.926810E-02
  11    -9.137521E-03    .000000E+00   -1.501381E-02
  12    -6.205746E+00    .000000E+00   -7.139883E+00
  13     1.560822E-04    .000000E+00   -1.885280E-05
0excess resonance integrals
0                resolved
0absorption     9.55450E+01
 fission         .00000E+00
- elapsed time    .03 min.
```

```
0 tc-99        mt=102                    updated 10/13/89          43099    temperature=  975.00
0resonance data for this nuclide
0mass number (a)        =   98.150          temperature(kelvin)     =  975.000
0potential scatter sigma =    6.000         lumped nuclear density  = 2.554956E-05
0spin factor (g)        = 4527.940          lump dimension (a-bar)  = 4.681220IE-01
0inner radius           = .0000000E+00      dancoff correction (c)  = 3.426926IE-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =  15.995           sigma(per absorber atom)= 6.683496E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    = 237.953           sigma(per absorber atom)= 7.456698E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  11     -3.297395E-02    .000000E+00  -1.552925E-02
  12     -8.767703E-03    .000000E+00  -3.101468E-04
  13     -5.338085E-01    .000000E+00  -2.808339E-02
  14     -1.126903E+01    .000000E+00  -3.591854E-01
  15      1.069416E-02    .000000E+00  -5.378884E-04
  16      4.835891E-03    .000000E+00  -2.801828E-04
  17      2.074195E-04    .000000E+00  -1.191841E-05
0excess resonance integrals
0                resolved
0absorption     3.19695E+02
 fission         .0000E+00
- elapsed time    .03 min.
0 ru-101       mt=102                    updated 10/13/89          44101    temperature=  975.00
0resonance data for this nuclide
0mass number (a)        =  100.089          temperature(kelvin)     =  975.000
0potential scatter sigma =    3.965         lumped nuclear density  = 2.367612E-05
0spin factor (g)        = 8785.290          lump dimension (a-bar)  = 4.681220IE-01
0inner radius           = .0000000E+00      dancoff correction (c)  = 3.426926IE-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =  15.995           sigma(per absorber atom)= 7.212316E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    = 237.953           sigma(per absorber atom)= 8.046696E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  11     -3.694152E-02    .000000E+00  -3.706604E-03
  12     -2.101600E-01    .000000E+00  -5.001156E-02
  13     -6.353251E-01    .000000E+00  -1.710828E-02
  14      2.367621E-04    .000000E+00  -4.135463E-05
0excess resonance integrals
0                resolved
0absorption     7.89550E+01
 fission         .0000E+00
- elapsed time    .03 min.
0 ru-106       mt=102                    updated 10/13/89          44106    temperature=  975.00
0 rh-103       mt=102                    updated 10/13/89          45103    temperature=  975.00
0resonance data for this nuclide
0mass number (a)        =  102.021          temperature(kelvin)     =  975.000
0potential scatter sigma =    5.408         lumped nuclear density  = 1.431172E-05
0spin factor (g)        =     .500          lump dimension (a-bar)  = 4.681220IE-01
0inner radius           = .0000000E+00      dancoff correction (c)  = 3.426926IE-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =  15.995           sigma(per absorber atom)= 1.195145E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    = 237.953           sigma(per absorber atom)= 1.331178E+04
```

```
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  9      1.204389E-03    .000000E+00    1.788869E-03
 10     -5.018506E-03    .000000E+00   -6.849820E-03
 11     -2.882715E-02    .000000E+00   -2.528439E-02
 12     -4.875087E-04    .000000E+00   -2.801735E-05
 13       .000000E+00    .000000E+00     .000000E+00
 14       .000000E+00    .000000E+00     .000000E+00
 15      2.265639E-01    .000000E+00    3.170446E-03
 16      2.830610E+01    .000000E+00   -8.509585E-02
 17     -1.880581E+02    .000000E+00   -1.769714E-01
 18      8.646072E+01    .000000E+00    2.602341E-01
 19      1.139143E+01    .000000E+00   -1.224588E-03
 20      1.079305E+00    .000000E+00   -2.404856E-03
 21      2.165706E-01    .000000E+00    1.925355E-03
 22      2.583927E-01    .000000E+00    2.928545E-03
 23     -9.878527E-02    .000000E+00    1.798742E-03
0excess resonance integrals
0              resolved
0absorption   1.13329E+03
 fission       .00000E+00
- elapsed time    .07 min.
0 rh-105       mt=  102                                          45105    temperature=  975.00
0 pd-105      mt=102                updated 10/13/89            46105    temperature=  975.00
0resonance data for this nuclide
0mass number (a)        =   104.004        temperature(kelvin)     =   975.000
0potential scatter sigma =     4.059       lumped nuclear density  = 1.0331927E-05
0spin factor (g)        = 15210.000        lump dimension (a-bar)  = 4.6812201E-01
0inner radius           =  .0000000E+00    dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995        sigma(per absorber atom)= 1.6527381E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   257.933        sigma(per absorber atom)= 1.8439402E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
 12     -6.809954E-02    .000000E+00   -2.334454E-03
 13     -7.958243E-02    .000000E+00   -1.860648E-03
 14      7.754399E-04    .000000E+00   -8.104906E-05
0excess resonance integrals
0              resolved
0absorption   6.11507E+01
 fission       .00000E+00
- elapsed time    .07 min.
0 pd-108      mt=102                updated 10/13/89            46108    temperature=  975.00
0resonance data for this nuclide
0mass number (a)        =   106.977        temperature(kelvin)     =   975.000
0potential scatter sigma =     4.146       lumped nuclear density  = 3.1726992E-06
0spin factor (g)        = 21175.100        lump dimension (a-bar)  = 4.6812201E-01
0inner radius           =  .0000000E+00    dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995        sigma(per absorber atom)= 5.3824973E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   257.933        sigma(per absorber atom)= 6.0051887E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
```

```
0group      res abs        res fiss       res scat
  11      1.169765E-04    .000000E+00   3.530660E-04
  12     -2.857494E+00    .000000E+00  -2.108978E+00
  13      6.680658E-03    .000000E+00   1.885995E-03
  14      8.560859E-02    .000000E+00  -3.210485E-05
  15     -1.841547E-01    .000000E+00   8.083373E-05
  16      2.946591E-04    .000000E+00  -9.255674E-06
0excess resonance integrals
0                resolved
0absorption      2.10895E+02
 fission          .00000E+00
- elapsed time    .07 min.
0 silver-109    endf/b-iv mat 1139          updated 10/13/89          47109    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   107.969          temperature(kelvin)     =  975.000
0potential scatter sigma  =     4.988          lumped nuclear density  = 2.132001E-06
0spin factor (g)          =  1441.870          lump dimension (a-bar)  = 4.681220E-01
0inner radius             =  .0000000E+00      dancoff correction (c)  = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995            sigma(per absorber atom)= 8.009360E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   237.933            sigma(per absorber atom)= 8.935948E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  10     -2.564913E-04    .000000E+00  -2.992681E-04
  11     -9.993934E-03    .000000E+00  -7.288188E-03
  12     -7.463377E-01    .000000E+00  -3.687714E-02
  13      7.669948E-01    .000000E+00   3.380718E-02
  14     -2.031872E+01    .000000E+00  -1.884823E+00
0excess resonance integrals
0                resolved
0absorption      1.37614E+03
 fission          .00000E+00
- elapsed time    .08 min.
0 sb-124        mt=102                      updated 10/13/89          51124    temperature=  975.00
0 xe-131        mt=102,103,104,105,106      updated 10/13/89          54131    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   129.781          temperature(kelvin)     =  975.000
0potential scatter sigma  =     4.301          lumped nuclear density  = 1.148529E-05
0spin factor (g)          =   266.825          lump dimension (a-bar)  = 4.681220E-01
0inner radius             =  .0000000E+00      dancoff correction (c)  = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995            sigma(per absorber atom)= 1.486768E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   237.933            sigma(per absorber atom)= 1.658769E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
   9     -3.839524E-06    .000000E+00  -3.538854E-05
  10     -2.589499E-04    .000000E+00  -2.257703E-04
  11     -3.124803E-03    .000000E+00  -2.320908E-03
  12     -5.929664E-02    .000000E+00  -5.519651E-03
  13     -8.836618E+01    .000000E+00  -2.070617E+02
  14      1.039511E-02    .000000E+00   1.456956E-02
0excess resonance integrals
0                resolved
0absorption      7.37500E+02
```

```
 fission          .00000E+00
- elapsed time    .08 min.
0 xe-132        mt=102,103,104,105,106        updated 10/13/89              54132    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   130.771          temperature(kelvin)       =   975.000
0potential scatter sigma  =     4.301          lumped nuclear density    = 2.3319530E-05
0spin factor (g)          =   675.899          lump dimension (a-bar)    = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)    = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 7.3226045E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.933          sigma(per absorber atom)= 8.1697432E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs         res fiss        res scat
   9      -3.613185E-05     .000000E+00   -1.677534E-04
  10      -1.091632E-02     .000000E+00   -1.389544E-01
  11       3.338928E-08     .000000E+00   -9.226723E-07
0excess resonance integrals
0                resolved
0absorption     9.65781E-01
 fission          .00000E+00
- elapsed time    .08 min.
0 xenon-135     endf/b-iv mat 1294          updated 10/13/89              54135    temperature=  975.00
0 xe-136          mt=  102,  103,  104,  105,  107                        54136    temperature=  975.00
0 cesium-133    endf/b-iv mat 1141          updated 10/13/89              55133    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   131.764          temperature(kelvin)       =   975.000
0potential scatter sigma  =     7.100          lumped nuclear density    = 2.8024819E-05
0spin factor (g)          =   374.437          lump dimension (a-bar)    = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)    = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 6.0931592E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   238.051          sigma(per absorber atom)= 6.5357119E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs         res fiss        res scat
   9      -7.629979E-05     .000000E+00   -5.370493E-04
  10      -3.880106E-03     .000000E+00   -7.411718E-03
  11      -1.434303E-01     .000000E+00   -2.506073E-01
  12      -2.228179E-01     .000000E+00   -3.098573E-02
  13      -3.706751E-01     .000000E+00   -2.016849E-02
  14      -1.585101E+01     .000000E+00   -6.955894E-01
  15       5.617684E-03     .000000E+00   -4.040337E-04
  16       2.777807E-03     .000000E+00   -2.215017E-04
  17       2.352259E-03     .000000E+00   -1.830746E-04
  18       2.215079E-03     .000000E+00   -1.679863E-04
  19       1.317512E-03     .000000E+00   -9.681352E-05
0excess resonance integrals
0                resolved
0absorption     3.46055E+02
 fission          .00000E+00
- elapsed time    .10 min.
0 cs-134        mt=102                        updated 10/13/89              55134    temperature=  975.00
0 cs-135          mt=  102                                                  55135    temperature=  975.00
0 cs-137        mt=102                        updated 10/13/89              55137    temperature=  975.00
0 ba-136        mt=102                        updated 10/13/89              56136    temperature=  975.00
```

```
0resonance data for this nuclide
0mass number (a)          =   134.737          temperature(kelvin)      =   975.000
0potential scatter sigma  =     4.835          lumped nuclear density   = 3.5187762E-07
0spin factor (g)          =  1247.690          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 4.8528150E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.933          sigma(per absorber atom)= 5.4142288E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss         res scat
  10      8.530733E-07     .000000E+00      3.484196E-07
  11     -4.364408E-05     .000000E+00     -3.643748E-05
0excess resonance integrals
0                resolved
0absorption      1.38465E+00
 fission          .00000E+00
- elapsed time    .12 min.
0 la-139       mt=102                  updated 10/13/89          57139    temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   137.713          temperature(kelvin)      =   975.000
0potential scatter sigma  =     4.906          lumped nuclear density   = 2.7388562E-05
0spin factor (g)          =   145.855          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 6.2347080E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.933          sigma(per absorber atom)= 6.9559902E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss         res scat
   9     -3.695308E-05     .000000E+00     -3.095295E-03
  10     -5.133480E-04     .000000E+00     -2.743127E-02
  11      .000000E+00      .000000E+00      .000000E+00
  12     -9.349354E-02     .000000E+00     -5.643091E-02
0excess resonance integrals
0                resolved
0absorption      8.03619E+00
 fission          .00000E+00
- elapsed time    .12 min.
0 ce-144         mt=  102                                                 58144    temperature=   975.00
0 pr-141       mt=102,103,104,105,106,107    updated 10/13/89            59141    temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   139.697          temperature(kelvin)      =   975.000
0potential scatter sigma  =     4.953          lumped nuclear density   = 2.4059988E-05
0spin factor (g)          =  1026.500          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 7.0984277E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.933          sigma(per absorber atom)= 7.9196323E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss         res scat
  10     -9.366466E-03     .000000E+00     -3.182227E-01
  11     -1.521154E-01     .000000E+00     -2.022333E+00
```

```
  12      -3.555179E-03     .000000E+00   -3.483960E-04
0excess resonance integrals
0                resolved
0absorption       1.20251E+01
 fission           .00000E+00
- elapsed time     .12 min.
0 pr-143          mt=152                    updated 10/13/89          59143    temperature=  975.00
0 nd-143          mt=102                    updated 10/13/89          60143    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   141.682          temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.000          lumped nuclear density   = 2.049998E-05
0spin factor (g)          =  1964.860          lump dimension (a-bar)   = 4.681220IE-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.426986IE-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 8.329742E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   257.953          sigma(per absorber atom)= 9.293595E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  10      -2.012659E-04     .000000E+00   -1.244567E-04
  11      -6.714201E-01     .000000E+00   -5.472325E+00
  12      -3.134185E-01     .000000E+00   -1.541217E-01
0excess resonance integrals
0                resolved
0absorption       5.05055E+01
 fission           .00000E+00
- elapsed time     .12 min.
0 nd-145          mt=102                    updated 10/13/89          60145    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   143.668          temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.047          lumped nuclear density   = 1.547073E-05
0spin factor (g)          =  1007.250          lump dimension (a-bar)   = 4.681220IE-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.426986IE-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 1.103759E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   257.953          sigma(per absorber atom)= 1.231451E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  10      -6.324348E-03     .000000E+00   -9.915684E-02
  11      -9.467898E-02     .000000E+00   -2.868854E-01
  12      -2.236582E+00     .000000E+00   -1.408134E+01
  13       9.550272E-05     .000000E+00    2.048740E-04
  14      -2.098093E+00     .000000E+00   -5.512056E-02
  15       5.892251E-03     .000000E+00   -4.599468E-04
  16       1.326648E-03     .000000E+00   -1.451208E-04
  17       9.642470E-04     .000000E+00   -1.063907E-04
  18       8.539751E-04     .000000E+00   -9.313959E-05
  19       7.634095E-04     .000000E+00   -8.089885E-05
  20       2.859469E-05     .000000E+00   -2.920642E-06
0excess resonance integrals
0                resolved
0absorption       2.04663E+02
 fission           .00000E+00
- elapsed time     .13 min.
0 nd-147          mt=102                    updated 10/13/89          60147    temperature=  975.00
```

```
0 pm-147        mt=102                  updated 10/13/89            61147     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   145.653          temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.093          lumped nuclear density   = 4.5120155E-06
0spin factor (g)          = 21589.500          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995            sigma(per absorber atom)= 3.7845547E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   237.933            sigma(per absorber atom)= 4.2225832E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs         res fiss        res scat
  12      -2.273065E-01     .000000E+00   -7.274823E-02
  13      -5.826789E-02     .000000E+00   -3.273885E-03
  14      -1.005808E+02     .000000E+00   -4.320737E+01
  15       4.125411E-02     .000000E+00    6.973337E-03
  16       1.697908E-02     .000000E+00    1.746665E-03
  17       1.369737E-02     .000000E+00    1.150451E-03
  18       1.253792E-02     .000000E+00    9.648321E-04
  19       6.998683E-04     .000000E+00    5.069563E-05
0excess resonance integrals
0              resolved
0absorption    1.9919OE+03
 fission       .00000E+00
- elapsed time  .13 min.
0 pm-148        mt=  102                                            61148     temperature=  975.00
0 sm-147        endf/b-v fission product    updated 10/13/89        62147     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   145.653          temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.093          lumped nuclear density   = 2.2033623E-06
0spin factor (g)          =      .000          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995            sigma(per absorber atom)= 7.7499602E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   237.933            sigma(per absorber atom)= 8.6465391E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs         res fiss        res scat
  11       2.531995E-01     .000000E+00    1.026770E+00
  12       6.925951E-01     .000000E+00   -1.801583E+00
  13      -5.105210E+00     .000000E+00   -3.361143E+00
  14      -6.485435E-01     .000000E+00   -9.227741E-03
  15       3.108576E-01     .000000E+00   -1.869360E-03
  16       7.287601E-03     .000000E+00   -3.739630E-04
  17       4.281461E-03     .000000E+00   -2.401664E-04
  18       3.510383E-03     .000000E+00   -1.997177E-04
  19       2.910569E-03     .000000E+00   -1.649473E-04
  20       8.434785E-04     .000000E+00   -4.626470E-05
0excess resonance integrals
0              resolved
0absorption    7.19832E+02
 fission       .00000E+00
- elapsed time  .15 min.
                          thermal scattering matrix number  3 at a temperature of   900.05 was selected.
0 sm-149        mt=102,103,107              updated 10/13/89            62149     temperature=  975.00
0resonance data for this nuclide
```

```
0mass number (a)          =   147.638          temperature(kelvin)      =   975.000
0potential scatter sigma  =     3.260          lumped nuclear density   = 9.066570E-08
0spin factor (g)          = 10407.900          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 1.8833989E+06
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.933          sigma(per absorber atom)= 2.1012860E+06
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  11      8.546572E-03     .000000E+00    3.071753E-02
  12     -5.606520E-02     .000000E+00   -1.834105E-01
  13      2.252520E-02     .000000E+00    2.740474E-03
  14     -1.121898E-03     .000000E+00   -8.399253E-03
0excess resonance integrals
0                resolved
0absorption     8.04326E+02
 fission         .00000E+00
- elapsed time    .15 min.
0 sm-150        mt=102                    updated 10/13/89          62150    temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   148.629          temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.162          lumped nuclear density   = 5.8421019E-06
0spin factor (g)          =  4376.420          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 2.9229152E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.933          sigma(per absorber atom)= 3.2610619E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  10     -1.916888E-03     .000000E+00   -1.862840E-02
  11     -4.404323E-02     .000000E+00   -4.970627E-01
  12     -1.437634E-01     .000000E+00   -4.344102E-02
  13     -9.971263E+00     .000000E+00   -7.865757E+00
  14      1.064415E-04     .000000E+00   -6.365839E-05
0excess resonance integrals
0                resolved
0absorption     2.83489E+02
 fission         .00000E+00
- elapsed time    .15 min.
0 sm-151        mt=102,103,104,105,106,107    updated 10/13/89          62151    temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   149.623          temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.185          lumped nuclear density   = 4.6165064E-07
0spin factor (g)          = 75574.703          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00      dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995          sigma(per absorber atom)= 3.6988944E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   237.933          sigma(per absorber atom)= 4.1268128E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs         res fiss        res scat
  14     -2.664968E-01     .000000E+00   -2.407252E-02
```

```
  15      1.482324E+01     .000000E+00   7.495161E-02
  16     -2.186584E+01     .000000E+00  -6.215366E-02
  17      1.734203E+02     .000000E+00   8.254912E-01
  18     -3.208668E+02     .000000E+00  -1.786959E+00
  19      6.252787E+01     .000000E+00   3.867234E-01
  20      1.141006E+00     .000000E+00  -1.381543E-04
  21     -7.117630E-02     .000000E+00   1.244101E-02
  22      6.952575E-02     .000000E+00   3.838917E-03
  23     -1.091929E-02     .000000E+00   3.374082E-04
0excess resonance integrals
0                resolved
0absorption      2.06581E+03
 fission          .00000E+00
- elapsed time    .17 min.
0 sm-152       mt=102,103,104,105,106,107    updated 10/13/89          62152    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =  150.615          temperature(kelvin)     =  975.000
0potential scatter sigma  =    5.208          lumped nuclear density  = 2.706728E-06
0spin factor (g)          =  863.594          lump dimension (a-bar)  = 4.681220E-01
0inner radius             = .0000000E+00      dancoff correction (c)  = 3.426986E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1   =   15.995             sigma(per absorber atom)= 6.308712E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2   =  237.933             sigma(per absorber atom)= 7.088563E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs        res fiss       res scat
   9     2.402534E-06     .000000E+00   1.158422E-04
  10    -2.209689E-03     .000000E+00  -3.404345E-02
  11    -3.158748E-02     .000000E+00  -1.201679E-01
  12    -2.107241E-01     .000000E+00  -6.678880E-01
  13     4.146078E-02     .000000E+00   1.007926E-01
  14    -1.800018E+02     .000000E+00  -3.473057E+02
0excess resonance integrals
0                resolved
0absorption      2.67894E+03
 fission          .00000E+00
- elapsed time    .17 min.
0 eu-153       mt=102,103,104,105,106,107    updated 10/13/89          63153    temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =  151.607          temperature(kelvin)     =  975.000
0potential scatter sigma  =    9.731          lumped nuclear density  = 1.872789E-06
0spin factor (g)          = 12265.900          lump dimension (a-bar)  = 4.681220E-01
0inner radius             = .0000000E+00      dancoff correction (c)  = 3.426986E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1   =   15.995             sigma(per absorber atom)= 9.117911E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2   =  237.933             sigma(per absorber atom)= 1.017274E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs        res fiss       res scat
  12    -3.151911E-01     .000000E+00  -6.169670E-02
  13    -2.597048E-01     .000000E+00  -1.150879E-02
  14    -1.181352E+00     .000000E+00  -6.071259E-03
  15    -4.179145E-02     .000000E+00  -6.054394E-02
  16    -3.307578E+00     .000000E+00   8.152518E-03
  17     1.506569E-01     .000000E+00  -3.437564E-03
  18     7.726792E-02     .000000E+00  -2.231180E-03
```

```
  19      5.055416E-02     .000000E+00   -1.541084E-03
  20     -1.253808E-01     .000000E+00   -1.274912E-03
0excess resonance integrals
0                 resolved
0absorption      1.3523BE+03
 fission          .0000E+00
-  elapsed time    .18 min.
0 eu-154        mt=102,103,104,105,106,107     updated 10/13/89            63154     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   152.601             temperature(kelvin)      =   975.000
0potential scatter sigma  =     9.731             lumped nuclear density   = 4.8443843E-07
0spin factor (g)          =  19135.801            lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00         dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995             sigma(per absorber atom)= 3.5248997E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   257.953             sigma(per absorber atom)= 3.9526891E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss        res scat
  12     -4.021110E-01     .000000E+00   -6.263666E-02
  13     -3.529810E-01     .000000E+00   -2.641435E-02
  14      2.707021E-01     .000000E+00    1.353824E-02
  15      2.154105E-02     .000000E+00    2.040740E-02
  16      7.004529E+00     .000000E+00    9.140816E-02
  17     -1.450002E+02     .000000E+00   -1.900830E+00
  18      1.130468E+02     .000000E+00    1.856437E+00
  19     -1.014953E+02     .000000E+00    1.187526E+00
0excess resonance integrals
0                 resolved
0absorption      2.1352BE+03
 fission          .0000E+00
-  elapsed time    .18 min.
0 eu-155        mt=102,103,104,105,106,107     updated 10/13/89            63155     temperature=   975.00
0 gd-155        mt=102                         updated 10/13/89            64155     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   153.592             temperature(kelvin)      =   975.000
0potential scatter sigma  =     5.277             lumped nuclear density   = 3.6002734E-09
0spin factor (g)          =  12700.100            lump dimension (a-bar)   = 4.6812201E-01
0inner radius             =  .0000000E+00         dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995             sigma(per absorber atom)= 4.7429644E+07
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   257.953             sigma(per absorber atom)= 5.2916698E+07
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs          res fiss        res scat
  12     -1.439572E+00     .000000E+00   -1.839546E-01
  13      1.540814E+00     .000000E+00    1.986648E-01
  14      2.186907E-01     .000000E+00    9.800664E-03
  15     -3.396920E-01     .000000E+00   -2.257280E-04
  16      1.477357E+00     .000000E+00   -4.148862E-03
  17      1.568659E-01     .000000E+00   -1.479108E-03
  18      9.605182E-02     .000000E+00   -1.078052E-03
  19      6.295395E-02     .000000E+00   -8.026944E-04
  20      1.670401E-02     .000000E+00    1.626967E-04
  21       .000000E+00     .000000E+00     .000000E+00
  22       .000000E+00     .000000E+00     .000000E+00
```

```
  23       .000000E+00     .000000E+00     .000000E+00
  24       .000000E+00     .000000E+00     .000000E+00
  25      -2.128025E+03    .000000E+00    -1.622201E+00
  26      -5.205858E+03    .000000E+00     1.961556E+00
  27      -1.660053E+03    .000000E+00     7.392990E-01
0excess resonance integrals
0                 resolved
0absorption       3.96998E+04
 fission           .00000E+00
- elapsed time     .20 min.
0u-234 1043 sigo=5+4 newdacs p-3 293k f-1/e-m(1.+5)                    92234     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =  232.029              temperature(kelvin)     =  975.000
0potential scatter sigma  =   10.021              lumped nuclear density  = 4.1064836E-06
0spin factor (g)          = 6948.450              lump dimension (a-bar)  = 4.6812201E-01
0inner radius             = .0000000E+00          dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =  15.995               sigma(per absorber atom)= 4.1582949E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  257.935              sigma(per absorber atom)= 4.6579598E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs         res fiss        res scat
  11      -1.961208E-02    .000000E+00    -5.722908E-02
  12      -1.601150E-01    .000000E+00    -6.698953E-02
  13       7.760650E-04    .000000E+00    -6.473847E-04
  14      -1.579266E+01    .000000E+00    -2.585926E+00
0excess resonance integrals
0                 resolved
0absorption       5.85330E+02
 fission           .00000E+00
- elapsed time     .20 min.
0 uranium-235    endf/b-iv mat 1261          updated 10/13/89          92235     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =  233.025              temperature(kelvin)     =  975.000
0potential scatter sigma  =   11.500              lumped nuclear density  = 3.2945091E-04
0spin factor (g)          = 15171.100             lump dimension (a-bar)  = 4.6812201E-01
0inner radius             = .0000000E+00          dancoff correction (c)  = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =  15.995               sigma(per absorber atom)= 5.1831604E+02
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  238.049              sigma(per absorber atom)= 5.5629993E+02
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs         res fiss        res scat
  12      -1.406618E+00    -8.762659E-01    -3.259534E-02
  13      -5.052756E+00    -2.519020E+00    -1.097110E-01
  14      -4.070009E+00    -2.511537E+00    -2.790143E-02
0excess resonance integrals
0                 resolved
0absorption       2.15877E+02
 fission          1.28379E+02
- elapsed time     .22 min.
0u-236 1163 sigo=5+4 newdacs p-3 293k f-1/e-m(1.+5)                    92236     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =  234.017              temperature(kelvin)     =  975.000
0potential scatter sigma  =   10.995              lumped nuclear density  = 6.7290581E-05
0spin factor (g)          = 6328.490              lump dimension (a-bar)  = 4.6812201E-01
```

```
0inner radius          = .0000000E+00        dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1   =   15.995            sigma(per absorber atom)= 2.5376465E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2   =  237.934            sigma(per absorber atom)= 2.8307280E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  11     -3.205253E-01    .000000E+00   -8.085267E-01
  12     -1.740610E+00    .000000E+00   -1.175568E+00
  13     -7.067173E-02    .000000E+00   -3.588744E-03
  14     -5.391120E+01    .000000E+00   -4.716531E+00
0excess resonance integrals
0                resolved
0absorption     2.6404E+02
 fission         .0000E+00
- elapsed time    .22 min.
0 uranium-238   endf/b-iv mat 1262          updated 10/13/89          92238    temperature=  975.00
0resonance data for this nuclide
0mass number (a)       =  236.006            temperature(kelvin)      =  975.000
0potential scatter sigma =  10.599           lumped nuclear density   = 2.1732399E-02
0spin factor (g)       =  656.527            lump dimension (a-bar)   = 4.6812201E-01
0inner radius          = .0000000E+00        dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1   =   15.995            sigma(per absorber atom)= 7.8573788E+00
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2   =  235.041            sigma(per absorber atom)= 3.3831647E-01
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
   9     -3.922767E-02    .000000E+00   -4.031110E-01
  10     -1.023260E+00   -1.739109E-05  -6.468191E+00
  11     -9.700805E+00    .000000E+00   -2.688294E+01
  12     -4.308446E+01    .000000E+00   -4.997749E+01
  13     -5.400053E+01    .000000E+00   -1.768741E+01
  14     -1.044746E+02    .000000E+00   -6.058397E+00
0excess resonance integrals
0                resolved
0absorption     1.8086TE+01
 fission        5.0416GE-04
- elapsed time    .25 min.
0 neptunium-237  endf/b-iv mat 1253          updated 10/13/89          93237    temperature=  975.00
0resonance data for this nuclide
0mass number (a)       =  235.012            temperature(kelvin)      =  975.000
0potential scatter sigma =  10.500           lumped nuclear density   = 5.7112925E-06
0spin factor (g)       = 10100.800           lump dimension (a-bar)   = 4.6812201E-01
0inner radius          = .0000000E+00        dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1   =   15.995            sigma(per absorber atom)= 2.9898605E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2   =  238.051            sigma(per absorber atom)= 3.2070178E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  11     -6.415946E-02   -2.341952E-06  -7.461254E-03
  12      2.260366E-03   -1.367187E-04   4.616411E-03
  13     -1.053958E-01    8.240857E-05  -4.853573E-03
```

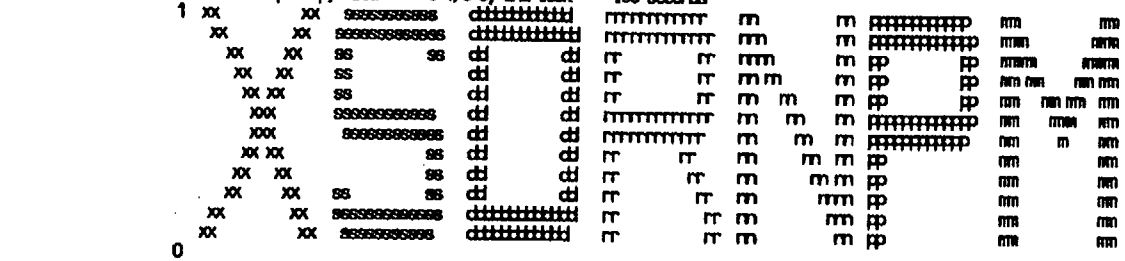
```
  14      -1.720739E-01   -2.041332E-05   -2.414718E-03
0excess resonance integrals
0                 resolved
0absorption       2.92790E+02
 fission          1.38600E-01
- elapsed time    .27 min.
0pu-238 1050 sigo=5+4 newklacs p-3 295k f-1/e-m(1.+5)                    9423B     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   236.167              temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.890              lumped nuclear density  = 1.156030E-06
0spin factor (g)          = 13130.600              lump dimension (a-bar)  = 4.681220lE-01
0inner radius             =  .0000000E+00          dancoff correction (c)  = 3.426986lE-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =   15.995               sigma(per absorber atom)= 1.477120lE+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  238.051               sigma(per absorber atom)= 1.584405BE+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  11      -7.587170E-03    -1.185391E-03    -7.182622E-03
  12      -5.238791E-03    -5.998517E-04    -2.438190E-03
  13       3.668334E-01     7.361796E-02    -1.347240E-02
  14      -3.832955E-01    -7.007144E-02     8.539291E-03
0excess resonance integrals
0                 resolved
0absorption       8.24762E+01
 fission          9.08013E+00
- elapsed time    .27 min.
0 plutonium-239  endf/b-iv mat 1264          updated 10/13/89            9423g     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   236.999              temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.200              lumped nuclear density  = 1.242759BE-04
0spin factor (g)          =  6435.710              lump dimension (a-bar)  = 4.681220lE-01
0inner radius             =  .0000000E+00          dancoff correction (c)  = 3.426986lE-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =   15.995               sigma(per absorber atom)= 1.374036lE+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =  238.051               sigma(per absorber atom)= 1.473833BE+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  11      -2.583350E-01    -1.041815E-01    -7.897274E-02
  12      -2.277330E+00    -8.551598E-01    -2.991308E-01
  13      -7.430213E+00    -4.370307E+00    -1.138121E-01
  14      -2.367054E+00    -1.260185E+00    -2.088675E-02
0excess resonance integrals
0                 resolved
0absorption       3.04900E+02
 fission          1.71368E+02
- elapsed time    .28 min.
0 plutonium-240  endf/b-iv mat 1265          updated 10/13/89            9424g     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   237.992              temperature(kelvin)     =   975.000
0potential scatter sigma  =    10.599              lumped nuclear density  = 3.029515BE-05
0spin factor (g)          =   669.244              lump dimension (a-bar)  = 4.681220lE-01
0inner radius             =  .0000000E+00          dancoff correction (c)  = 3.426986lE-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =   15.995               sigma(per absorber atom)= 5.636906lE+03
```

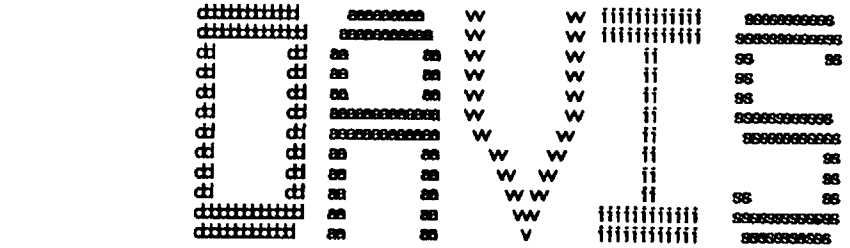
```
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   238.051              sigma(per absorber atom)= 6.046521E+03
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs        res fiss       res scat
  9      -7.751980E-05  -2.527774E-06  -3.998371E-04
 10      -7.247898E-03  -4.475657E-04  -3.306840E-02
 11      -2.280458E-01  -1.319958E-03  -3.029641E-01
 12      -3.118856E+00  -1.702781E-02  -2.983013E+00
 13      -3.913366E-01  -2.399544E-03  -2.851979E-02
 14       .000000E+00    .000000E+00    .000000E+00
 15       1.719924E-02   3.282550E-06   3.363419E-03
 16       2.579595E+00   4.925270E-04   3.156881E-01
 17       3.784549E+02   7.222978E-02   3.331969E+01
 18      -9.504828E+03  -1.814088E+00  -7.485503E+02
 19       4.425319E+02   8.448916E-02   3.632728E+01
 20      -9.435818E+01  -1.800868E-02   1.798456E+00
0excess resonance integrals
0              resolved
0absorption   3.82386E+03
 fission      1.73142E+00
- elapsed time    .30 min.
0 plutonium-241  endf/b-iv mat 1266          updated 10/13/89          9241     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   238.978          temperature(kelvin)      =   975.000
0potential scatter sigma  =    10.959          lumped nuclear density   = 1.811828E-05
0spin factor (g)          = 16402.100          lump dimension (a-bar)   = 4.681220E-01
0inner radius             =  .000000E+00       dancoff correction (c)   = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995              sigma(per absorber atom)= 9.424717E+03
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   238.051              sigma(per absorber atom)= 1.010936E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs        res fiss       res scat
 12      -1.407894E-02  -1.332271E-02   5.022025E-04
 13      -1.183183E+00  -9.034095E-01  -3.408006E-02
 14      -1.202047E+00  -8.511612E-01  -3.674328E-03
 15       1.777249E-02   1.592212E-02  -4.605964E-04
0excess resonance integrals
0              resolved
0absorption   5.06252E+02
 fission      4.24597E+02
- elapsed time    .32 min.
0 plutonium-242  endf/b-iv mat 1161          updated 10/13/89          9242     temperature=   975.00
0resonance data for this nuclide
0mass number (a)          =   240.145          temperature(kelvin)      =   975.000
0potential scatter sigma  =    10.694          lumped nuclear density   = 2.910348E-06
0spin factor (g)          =  6606.710          lump dimension (a-bar)   = 4.681220E-01
0inner radius             =  .000000E+00       dancoff correction (c)   = 3.426926E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1    =    15.995              sigma(per absorber atom)= 5.857328E+04
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2    =   238.051              sigma(per absorber atom)= 6.258479E+04
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group       res abs        res fiss       res scat
```

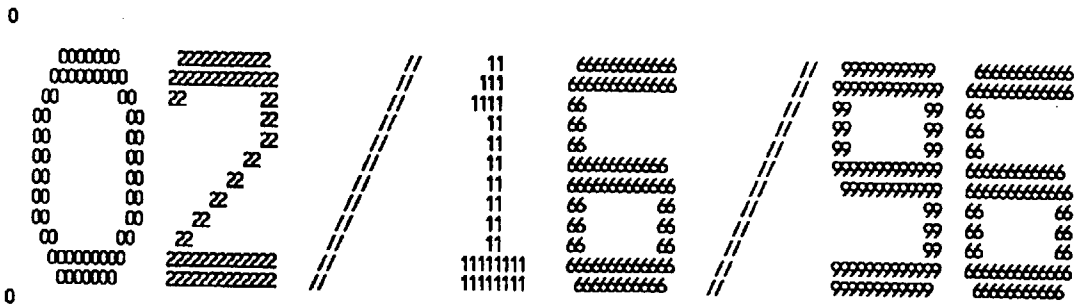
```
  11    -7.952340E-03     .000000E+00   -2.154490E-02
  12    -1.688367E-01     .000000E+00   -3.208174E-01
  13    -4.553379E-04     .000000E+00   -8.138200E-07
  14     8.100781E-02     .000000E+00    1.510768E-02
  15    -5.724017E+01     .000000E+00   -4.603442E+00
  16     4.024002E-02     .000000E+00   -3.439860E-03
  17     1.550333E-02     .000000E+00   -1.848019E-03
  18     1.112551E-02     .000000E+00   -1.430582E-03
0excess resonance integrals
0                resolved
0absorption       1.07474E+03
 fission          .00000E+00
- elapsed time     .32 min.
0am-241 1056 sigp-5+4 newklacs 218ngp p-3 295k                          95241     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   238.950          temperature(kelvin)      =  975.000
0potential scatter sigma  =     9.511          lumped nuclear density   = 7.1835694E-07
0spin factor (g)          = 82058.203          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             = .0000000E+00       dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995             sigma(per absorber atom)= 2.3770869E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   238.051             sigma(per absorber atom)= 2.5497373E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  13      4.803471E-01     1.205702E-02     4.248833E-03
  14     -4.984113E-01    -1.156366E-02    -5.801683E-03
0excess resonance integrals
0                resolved
0absorption       1.95389E+02
 fission          1.07544E+00
- elapsed time     .32 min.
0am-243 1057 218 gp wt f-1/e-m 090376 p3 295k                           95243     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   240.940          temperature(kelvin)      =  975.000
0potential scatter sigma  =     9.511          lumped nuclear density   = 3.8851467E-07
0spin factor (g)          = 82052.602          lump dimension (a-bar)   = 4.6812201E-01
0inner radius             = .0000000E+00       dancoff correction (c)   = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1      =    15.995             sigma(per absorber atom)= 4.4524958E+05
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2      =   238.051             sigma(per absorber atom)= 4.7758854E+05
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group        res abs          res fiss         res scat
  13     -1.088286E-02     .000000E+00    3.156997E-04
  14      1.681003E-03     .000000E+00   -7.329966E-05
0excess resonance integrals
0                resolved
0absorption       1.60121E+02
 fission          .00000E+00
- elapsed time     .32 min.
0 curium-244     endf/b-iv mat 1162          updated 10/13/89           95244     temperature=  975.00
0resonance data for this nuclide
0mass number (a)          =   242.133          temperature(kelvin)      =  975.000
0potential scatter sigma  =    10.320          lumped nuclear density   = 5.3017951E-08
0spin factor (g)          =  5251.150          lump dimension (a-bar)   = 4.6812201E-01
```

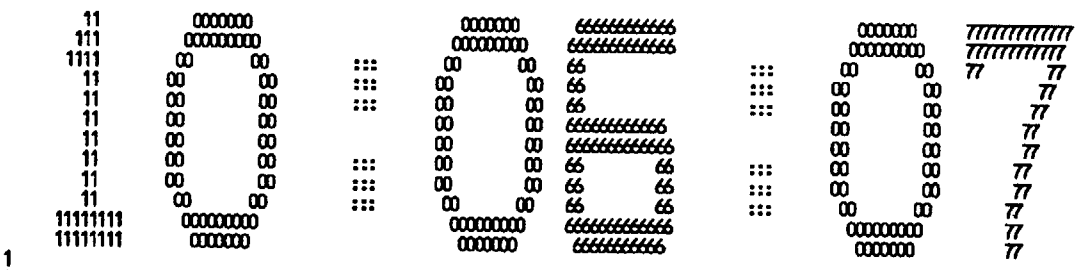
```
0inner radius          =  .0000000E+00        dancoff correction (c)    = 3.4269261E-01
0the absorber will be treated by the nordheim integral method.
0mass of moderator-1   =   15.995             sigma(per absorber atom)= 3.2207913E+06
0moderator-1 will be treated by the nordheim integral method.
0mass of moderator-2   =  238.051             sigma(per absorber atom)= 3.4547208E+06
0moderator-2 will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs        res fiss       res scat
  11     9.779739E-05   2.721715E-06   8.773984E-05
  12     1.568525E-04   1.130188E-05   -4.530439E-05
  13     1.849926E-03   9.752654E-05   6.787102E-04
  14     -1.728596E-01  -1.034203E-02  -5.648884E-02
0excess resonance integrals
0              resolved
0absorption    6.13582E+02
 fission       3.54030E+01
-  elapsed time    .33 min.
-  elapsed time    .33 min.
1    this xsdrn working tape was created 02/16/96 at 10:04:59
     the title of the parent case is as follows
     scale 4.2 - 27 group neutron bump library
       based on endf-b version 4 data with endf-b version 5 fission products
         compiled for nrc    1/27/89
        tape id                          4321      number of nuclides          65
        number of neutron groups           27      number of gamma groups       0
        first thermal group                15      logical unit                 4
                                table of contents
      1/v cross sections normalized to 1.0 at 0.0253 ev                      id    999
       hydrogen      endf/b-iv mat 1269/thrm1002   updated 10/13/89          id   1001
      b-10 1273 218ngp 042375 p-3 293k                                       id   5010
       boron-11      endf/b-iv mat 1160            updated 10/13/89          id   5011
       oxygen-16     endf/b-iv mat 1276            updated 10/13/89          id   8016
       oxygen-16     endf/b-iv mat 1276            updated 10/13/89          id      6
       kr-83         mt=102,103,103,105,106,107    updated 10/13/89          id  36083
       kr-85           mt=  102                                              id  36085
       sr-90         mt=102                        updated 10/13/89          id  38090
        y-89         mt=102                        updated 10/13/89          id  39089
       zr-93           mt=  102                                              id  40093
       zr-94         mt=102                        updated 10/13/89          id  40094
       zr-95         mt=102                        updated 10/13/89          id  40095
       zircalloy     endf/b-iv mat 1284            updated 10/13/89          id  40802
       nb-94         mt=102                        updated 10/13/89          id  41094
       mo-95         mt=102                        updated 10/13/89          id  42095
       tc-99         mt=102                        updated 10/13/89          id  43099
       ru-101        mt=102                        updated 10/13/89          id  44101
       ru-106        mt=102                        updated 10/13/89          id  44106
       rh-103        mt=102                        updated 10/13/89          id  45103
       rh-105          mt=  102                                              id  45105
       pd-105        mt=102                        updated 10/13/89          id  46105
       pd-108        mt=102                        updated 10/13/89          id  46108
       silver-109    endf/b-iv mat 1139            updated 10/13/89          id  47109
       sb-124        mt=102                        updated 10/13/89          id  51124
       xe-131        mt=102,103,104,105,106        updated 10/13/89          id  54131
       xe-132        mt=102,103,104,105,106        updated 10/13/89          id  54132
       xenon-135     endf/b-iv mat 1294            updated 10/13/89          id  54135
       xe-136          mt=  102, 103, 104, 105, 107                          id  54136
       cesium-133    endf/b-iv mat 1141            updated 10/13/89          id  55133
       cs-134        mt=102                        updated 10/13/89          id  55134
       cs-135          mt=  102                                              id  55135
```

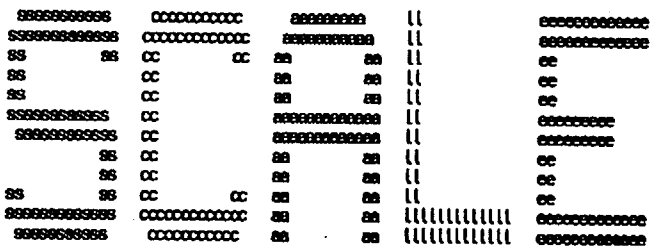
```
        cs-137      mt=102                          updated 10/13/89          id   55137
        ba-136      mt=102                          updated 10/13/89          id   56136
        la-139      mt=102                          updated 10/13/89          id   57139
        ce-144        mt=  102                                                id   58144
        pr-141      mt=102,103,104,105,106,107      updated 10/13/89          id   59141
        pr-143      mt=102                          updated 10/13/89          id   59143
        nd-143      mt=102                          updated 10/13/89          id   60143
        nd-145      mt=102                          updated 10/13/89          id   60145
        nd-147      mt=102                          updated 10/13/89          id   60147
        pm-147      mt=102                          updated 10/13/89          id   61147
        pm-148        mt=  102                                                id   61148
        sm-147      endf/b-v fission product        updated 10/13/89          id   62147
        sm-149      mt=102,103,107                  updated 10/13/89          id   62149
        sm-150      mt=102                          updated 10/13/89          id   62150
        sm-151      mt=102,103,104,105,106,107      updated 10/13/89          id   62151
        sm-152      mt=102,103,104,105,106,107      updated 10/13/89          id   62152
        eu-153      mt=102,103,104,105,106,107      updated 10/13/89          id   63153
        eu-154      mt=102,103,104,105,106,107      updated 10/13/89          id   63154
        eu-155      mt=102,103,104,105,106,107      updated 10/13/89          id   63155
        gd-155      mt=102                          updated 10/13/89          id   64155
       u-234 1043 sigp=5+4 newxlacs p-3 293k f-1/e-m(1.+5)                    id   92234
        uranium-235   endf/b-iv mat 1261            updated 10/13/89          id   92235
       u-236 1163 sigp=5+4 newxlacs p-3 293k f-1/e-m(1.+5)                    id   92236
        uranium-238   endf/b-iv mat 1262            updated 10/13/89          id   92238
        neptunium-237 endf/b-iv mat 1263            updated 10/13/89          id   93237
       pu-238 1050 sigp=5+4 newxlacs p-3 293k f-1/e-m(1.+5)                   id   94238
        plutonium-239 endf/b-iv mat 1264            updated 10/13/89          id   94239
        plutonium-240 endf/b-iv mat 1265            updated 10/13/89          id   94240
        plutonium-241 endf/b-iv mat 1266            updated 10/13/89          id   94241
        plutonium-242 endf/b-iv mat 1161            updated 10/13/89          id   94242
       am-241 1056 sigp=5+4 newxlacs 218grp p-3 293k                          id   95241
       am-243 1057 218 gp wt f-1/e-m 090376 p3 293k                           id   95243
        curium-244    endf/b-iv mat 1162            updated 10/13/89          id   96244
0        tape copy used       0 i/o's, and took     .00 seconds
```











program verification information

code system: scale version: 4.2

program: c0c001

```
                creation date:  04/27/95
                      library:  /neutronics/scale/exe

      this is not a   scale  configuration controlled code
                      jobname:  davis
      date of execution:  02/16/96
      time of execution:  10:06:07
```

```
1
                1200 d, sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0      -1q array has      1 entries.
0       1q array has     15 entries.
0       2q array has     10 entries.
0       3q array has     12 entries.
0       4q array has      9 entries.
0       5q array has     12 entries.
0direct access unit  9 requires    12 blocks of length  704 for cross section mixing.
1                1200 d, sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0general problem description data block
0                          general problem data

 igm  1/2/3 = plane/cylinder/sphere      2      isn  quadrature order              8
 izn  number of zones                    4      isct order of scattering           3
 im   number of special intervals       24      ievt 0/1/2/3/4/5/6=q/k/alpha/c/z/r/h  1
 ibl  0/1/2/3 = vacuum/refl/per/white    1      iim  inner iteration maximum      20
 ibr  right boundary condition           3      ion  outer iteration maximum      25
 mxx  number of mixtures                 3      iclc -1/0/n--flat res/sn/cpt        0
 ms   mixing table length               65      ith  0/1 = forward/adjoint         0
 igm  number of energy groups           27      iflu not used(always wgtd)          0
 nng  number of neutron groups          27      iprt -2/-1/0/n=mixture xsec print  -2
 ngg  number of gamma groups             0      idf  0/1/2/3=no/prt nd/pch n/both  53
 iftg number of first thermal group     15      ipbt -1/0/1=none/fine/all bal. prt  0
0                          special options

 ifg  0/1 = none/weighting calculation   1      ipn  0/1/2 diff. coef. param       0
 iqm  volumetric sources (0/n=no/yes)    0      idfm 0/1 = none/density factors 38* 1
 ipn  boundary sources (0/n=no/yes)      0      iaz  0/n = none/n activities by zone 0
 ifn  0/1/2 = input 33*/34*/use last    53      iai  0/1=none/activities by interval 0
 itmx maximum time (minutes)            10      ifct 0/1=no/yes upscatter scaling   0
 idt1 0/1/2/3=no/xsect/srce/flux--out    0      ipvt 0/1/2=no/k/alpha parametric srch 0
 isx  broad group fluxes                 0      isen outer iteration acceleration   0
 ibln activity data unit                 0      nbnd band rebaln parameter          0
 jtkl 0/1/2 buckling geometry            0
0                       weighting data (ifg=1)

 icon -1/0/1=cell/zone/region weight    -1      ihtf total xsect pan in brd gp tables 3
 igmf number of broad groups            27      ndsf pan g-g or file number         4
 itp  0/10/20/30/40 0/c/e/ac/a           0      nusf table length or mx order       4
 ipp  -2/-1/0/n=wgted xsect print       -2      nscm extra 1-d x-sect positions     0
 iap  -1/n anisn xsect print            -1
0                          floating point parameters
```

eps	overall convergence	1.00000E-04	dy	cyl/pla ht for buckling	.00000E+00
ptc	point convergence	1.00000E-04	dz	plane depth for buckling	.00000E+00
xnf	normalization factor	1.00000E+00	vsc	void streaming correction	.00000E+00
ev	eigenvalue guess	.00000E+00	pv	ipvt=1/2--k/alpha	1.00000E+00
evm	eigenvalue modifier	.00000E+00	eql	ev change eps for search	1.00000E-03
bf	buckling factor=1.420892	1.42089E+00	xnpn	new param mod for search	7.50000E-01

this case will require 2535 locations for mixing
this case has been allocated 200000 locations

1 1200 cl, sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp
0 13q array has 65 entries.
0 14q array has 65 entries.
0 15q array has 65 entries.
0 data block 2 (mixing table, etc.)

0

	nuclides on tape	cccc identification	mixing table mixture	component	atom density	extra xsect id's
1	999		1	92235	3.29451E-04	
2	1001		1	92234	4.10648E-06	
3	5010		1	92236	6.72905E-06	
4	5011		1	92238	2.17524E-02	
5	8016		1	8016	4.55359E-02	
6	6		3	6	2.09710E-02	
7	36083		1	36083	1.81372E-06	
8	36085		1	36085	8.71779E-07	
9	38090		1	38090	2.00600E-05	
10	39089		1	39089	1.64607E-05	
11	40093		1	42095	2.30516E-05	
12	40094		1	40093	1.64590E-05	
13	40095		1	40094	2.61240E-05	
14	40802		1	40095	1.92652E-06	
15	41094		1	41094	1.43208E-11	
16	42095		1	43099	2.55495E-05	
17	43099		1	45103	1.43117E-05	
18	44101		1	45105	2.51927E-08	
19	44106		1	44101	2.36761E-05	
20	45103		1	44106	3.50872E-06	
21	45105		1	46105	1.03319E-05	
22	46105		1	46108	3.17250E-06	
23	46108		1	47109	2.13200E-06	
24	47109		1	51124	4.69572E-10	
25	51124		1	54131	1.14853E-05	
26	54131		1	54132	2.33195E-05	
27	54132		1	54135	6.64007E-09	
28	54135		1	54136	4.51576E-05	
29	54136		1	55134	1.63057E-06	
30	55133		1	55135	1.43530E-05	
31	55134		1	55137	2.77058E-05	
32	55135		1	56136	3.51878E-07	
33	55137		1	57139	2.73986E-05	
34	56136		1	59141	2.40560E-05	
35	57139		1	59143	3.60082E-07	
36	58144		1	58144	6.94065E-06	
37	59141		1	60143	2.05000E-05	
38	59143		1	60145	1.54707E-05	
39	60143		1	61147	4.51202E-06	
40	60145		1	61148	1.36867E-08	
41	60147		1	60147	1.28677E-07	
42	61147		1	62147	2.20536E-06	
43	61148		1	62149	9.06657E-08	
44	62147		1	62150	5.84210E-06	

45	62149	1	62151	4.61651E-07
46	62150	1	62152	2.70673E-06
47	62151	1	64155	3.60027E-09
48	62152	1	63153	1.87279E-06
49	63153	1	63154	4.84438E-07
50	63154	1	63155	2.11219E-07
51	63155	2	40302	4.25156E-02
52	64155	3	1001	4.19420E-02
53	92234	3	5010	3.81515E-06
54	92235	3	5011	1.54884E-05
55	92236	1	56133	2.80248E-05
56	92238	1	95237	5.71129E-06
57	95237	1	94238	1.15603E-06
58	94238	1	94239	1.24278E-04
59	94239	1	94240	3.02952E-05
60	94240	1	94241	1.81188E-05
61	94241	1	94242	2.91035E-06
62	94242	1	95241	7.18357E-07
63	95241	1	95243	3.83515E-07
64	95243	1	96244	5.30179E-08
65	96244	1	999	1.00000E-20

- elapsed time .00 min.
0 21649 locations will be used
0 35q array has 25 entries.
0 36q array has 24 entries.
0 38q array has 24 entries.
0 39q array has 4 entries.
0 40q array has 4 entries.
0 47q array has 27 entries.
0 51q array has 27 entries.
1 1200 d, sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp

neutron group parameters

0 gp	energy boundaries	lethargy boundaries	weighted velocities	broad gp numbers	calc type	group band	right albedo	left albedo
1	2.00000E+07	-6.93147E-01	4.60581E+09	1	0	1	1.00000E+00	
2	6.43400E+06	4.40969E-01	2.88737E+09	2	0	2	1.00000E+00	
3	3.00000E+06	1.20397E+00	2.12201E+09	3	0	3	1.00000E+00	
4	1.85000E+06	1.68740E+00	1.75673E+09	4	0	4	1.00000E+00	
5	1.40000E+06	1.96611E+00	1.46535E+09	5	0	5	1.00000E+00	
6	9.00000E+05	2.40795E+00	1.06620E+09	6	0	6	1.00000E+00	
7	4.00000E+05	3.21888E+00	6.07557E+08	7	0	7	1.00000E+00	
8	1.00000E+05	4.60517E+00	2.72415E+08	8	0	8	1.00000E+00	
9	1.70000E+04	6.37713E+00	1.13526E+08	9	0	9	1.00000E+00	
10	3.00000E+03	8.11173E+00	4.82126E+07	10	0	10	1.00000E+00	
11	5.50000E+02	9.80818E+00	2.05946E+07	11	0	11	1.00000E+00	
12	1.00000E+02	1.15129E+01	1.01036E+07	12	0	12	1.00000E+00	
13	3.00000E+01	1.27169E+01	5.69395E+06	13	0	13	1.00000E+00	
14	1.00000E+01	1.38155E+01	3.20957E+06	14	0	14	1.00000E+00	
15	3.04999E+00	1.50330E+01	2.10601E+06	15	0	15	1.00000E+00	
16	1.77000E+00	1.55471E+01	1.70622E+06	16	0	16	1.00000E+00	
17	1.29999E+00	1.58557E+01	1.52545E+06	17	0	17	1.00000E+00	
18	1.12999E+00	1.59959E+01	1.42867E+06	18	0	18	1.00000E+00	
19	1.00000E+00	1.61181E+01	1.31002E+06	19	0	19	1.00000E+00	
20	8.00000E-01	1.63412E+01	9.05898E+05	20	0	20	1.00000E+00	
21	4.00000E-01	1.70844E+01	8.17974E+05	21	0	21	1.00000E+00	
22	3.25000E-01	1.72420E+01	6.90070E+05	22	0	22	1.00000E+00	
23	2.25000E-01	1.76098E+01	4.86253E+05	23	0	23	1.00000E+00	
24	9.99999E-02	1.84207E+01	3.57766E+05	24	0	24	1.00000E+00	
25	5.00000E-02	1.91139E+01	2.71895E+05	25	0	25	1.00000E+00	
26	3.00000E-02	1.96247E+01	1.87283E+05	26	0	26	1.00000E+00	

27	1.00000E-02	2.07233E+01	8.89201E+04	27	0	27	1.00000E+00
28	1.00000E-05	2.76510E+01					

1 1200 d, sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp

0

	mixture by zone	order p(l) by zone	activity table matl no.	reaction	quadrature constants weights	directions	refl direc	wt x cos
1	1	3			0	-2.79004E-01	3	0
2	1	3			5.06143E-02	-1.97286E-01	3	-9.98548E-03
3	2	3			5.06143E-02	1.97286E-01	2	9.98548E-03
4	3	3			0	-6.04419E-01	8	0
5					5.55953E-02	-5.58410E-01	8	-3.10450E-02
6					5.55953E-02	-2.31301E-01	7	-1.28593E-02
7					5.55953E-02	2.31301E-01	6	1.28593E-02
8					5.55953E-02	5.58410E-01	5	3.10450E-02
9					0	-8.50774E-01	15	0
10					5.22844E-02	-8.21784E-01	15	-4.29665E-02
11					5.22844E-02	-6.01588E-01	14	-3.14537E-02
12					5.22844E-02	-2.20196E-01	13	-1.15128E-02
13					5.22844E-02	2.20196E-01	12	1.15128E-02
14					5.22844E-02	6.01588E-01	11	3.14537E-02
15					5.22844E-02	8.21784E-01	10	4.29665E-02
16					0	-9.83032E-01	24	0
17					4.53365E-02	-9.64143E-01	24	-4.37099E-02
18					4.53365E-02	-8.17361E-01	23	-3.70655E-02
19					4.53365E-02	-5.46143E-01	22	-2.47597E-02
20					4.53365E-02	-1.91780E-01	21	-8.69444E-03
21					4.53365E-02	1.91780E-01	20	8.69444E-03
22					4.53365E-02	5.46143E-01	19	2.47597E-02
23					4.53365E-02	8.17361E-01	18	3.70655E-02
24					4.53365E-02	9.64143E-01	17	4.37099E-02

0constants for p(3) scattering

0angl	set 1	set 2	set 3	set 4	set 5
1	-2.79004E-01	8.83235E-01	6.74143E-02	-6.16919E-01	-1.71701E-02
2	-1.97286E-01	8.83235E-01	.00000E+00	-4.36228E-01	1.21411E-02
3	1.97286E-01	8.83235E-01	.00000E+00	4.36228E-01	-1.21411E-02
4	-6.04419E-01	4.52016E-01	3.16379E-01	-8.04435E-01	-1.74564E-01
5	-5.58410E-01	4.52016E-01	2.23714E-01	-7.43201E-01	-6.68028E-02
6	-2.31301E-01	4.52016E-01	-2.23713E-01	-3.07844E-01	1.61278E-01
7	2.31301E-01	4.52016E-01	-2.23713E-01	3.07844E-01	-1.61278E-01
8	5.58410E-01	4.52016E-01	2.23713E-01	7.43201E-01	6.68028E-02
9	-8.50774E-01	-8.57235E-02	6.26863E-01	-1.98456E-01	-4.86835E-01
10	-8.21784E-01	-8.57235E-02	5.42862E-01	-1.91694E-01	-3.44245E-01
11	-6.01588E-01	-8.57235E-02	.00000E+00	-1.40830E-01	3.44244E-01
12	-2.20196E-01	-8.57235E-02	-5.42862E-01	-5.13643E-02	3.44245E-01
13	2.20196E-01	-8.57235E-02	-5.42862E-01	5.13643E-02	-3.44245E-01
14	6.01588E-01	-8.57235E-02	.00000E+00	1.40830E-01	-3.44245E-01
15	8.21784E-01	-8.57235E-02	5.42862E-01	1.91694E-01	3.44245E-01
16	-9.83032E-01	-4.49528E-01	8.36885E-01	5.00708E-01	-7.51005E-01
17	-9.64143E-01	-4.49528E-01	7.73181E-01	4.91083E-01	-6.24438E-01
18	-8.17361E-01	-4.49528E-01	3.20862E-01	4.16320E-01	1.46514E-01
19	-5.46143E-01	-4.49528E-01	-3.20862E-01	2.78178E-01	7.36575E-01
20	-1.91780E-01	-4.49528E-01	-7.73181E-01	9.76824E-02	4.17256E-01
21	1.91780E-01	-4.49528E-01	-7.73181E-01	-9.76824E-02	-4.17256E-01
22	5.46143E-01	-4.49528E-01	-3.20862E-01	-2.78178E-01	-7.36575E-01
23	8.17361E-01	-4.49528E-01	3.20862E-01	-4.16320E-01	-1.46514E-01
24	9.64143E-01	-4.49528E-01	7.73181E-01	-4.91083E-01	6.24438E-01

1 int	radii	mid pts	zone no.	areas	volumes	dens fact	radius mod	spec(int)
1	0	1.29551E-02	1	0	2.10909E-05	1.00000E+00	0	
2	2.59102E-02	4.33406E-02	1	1.62798E-01	9.49318E-05	1.00000E+00	0	
3	6.07710E-02	8.75100E-02	1	3.81835E-01	2.94045E-02	1.00000E+00	0	
4	1.14249E-01	1.74155E-01	1	7.17848E-01	1.31104E-01	1.00000E+00	0	

5	2.34061E-01	2.93967E-01	1	1.47065E+00	2.21299E-01	1.00000E+00
6	3.53873E-01	3.80612E-01	1	2.22345E+00	1.27890E-01	1.00000E+00
7	4.07351E-01	4.24781E-01	1	2.55946E+00	9.30429E-02	1.00000E+00
8	4.42212E-01	4.55167E-01	1	2.77850E+00	7.41004E-02	1.00000E+00
9	4.68122E-01	4.68814E-01	2	2.94130E+00	4.09946E-03	0
10	4.69507E-01	4.71481E-01	2	2.95000E+00	1.16988E-02	0
11	4.73456E-01	4.75431E-01	2	2.97481E+00	1.17968E-02	0
12	4.77405E-01	4.78098E-01	2	2.99962E+00	4.16023E-03	0
13	4.78790E-01	4.83159E-01	3	3.00833E+00	2.65268E-02	1.00000E+00
14	4.87528E-01	4.99987E-01	3	3.06323E+00	7.82768E-02	1.00000E+00
15	5.12445E-01	5.24903E-01	3	3.21979E+00	8.21777E-02	1.00000E+00
16	5.37362E-01	5.41731E-01	3	3.37634E+00	2.97427E-02	1.00000E+00
17	5.46100E-01	5.53513E-01	4	3.43125E+00	5.15631E-02	1.00000E+00
18	5.60926E-01	5.70900E-01	4	3.52440E+00	7.15548E-02	1.00000E+00
19	5.80874E-01	5.96175E-01	4	3.64974E+00	1.14628E-01	1.00000E+00
20	6.11475E-01	6.45755E-01	4	3.84201E+00	2.78169E-01	1.00000E+00
21	6.80034E-01	7.14313E-01	4	4.27278E+00	3.07702E-01	1.00000E+00
22	7.48592E-01	7.63893E-01	4	4.70354E+00	1.46875E-01	1.00000E+00
23	7.79195E-01	7.89167E-01	4	4.89582E+00	9.89116E-02	1.00000E+00
24	7.99141E-01	8.06554E-01	4	5.02115E+00	7.51357E-02	1.00000E+00
25	8.13968E-01			5.11431E+00		

- elapsed time .00 min.

1 outer iter	inner iters	1 - balance	eigenvalue	1 - source ratio	1 - scatter ratio	1 - upscat ratio	search parameter	time (min)
1	101	1.11787E-05	9.98995E-01	6.49892E-05	1.00000E+00	2.52158E-03	.00000E+00	.0000
2	149	-8.33695E-06	9.98406E-01	2.43131E-04	7.98053E-04	2.45349E-04	.00000E+00	.0000
3	181	1.44078E-05	9.98092E-01	2.80463E-05	6.79948E-05	4.57289E-05	.00000E+00	.0000

grp to grp	inner iters	mfd int.	max. flux difference	msf int.	max. scale factor	coarse mesh
1	1	1	5.73095E-08	24	1.00000E+00	1
2	1	2	5.51458E-08	24	1.00000E+00	1
3	1	1	6.01701E-08	24	1.00000E+00	1
4	1	1	6.08779E-08	24	1.00000E+00	1
5	1	1	6.98865E-08	24	1.00000E+00	1
6	1	1	4.77424E-08	24	1.00000E+00	1
7	1	24	1.37317E-07	24	1.00000E+00	1
8	1	24	1.62673E-08	24	1.00000E+00	1
9	1	24	4.19811E-08	24	1.00000E+00	1
10	1	24	4.67403E-08	24	1.00000E+00	1
11	1	24	5.11897E-08	24	1.00000E+00	1
12	1	24	9.35846E-08	24	1.00000E+00	1
13	1	24	1.00540E-07	24	1.00000E+00	1
14	1	24	7.25213E-08	24	1.00000E+00	1
15	1	24	5.27113E-05	24	1.00003E+00	1
16	1	24	6.67454E-05	24	1.00002E+00	1
17	1	18	2.26954E-05	24	1.00005E+00	1
18	1	19	4.83348E-05	24	1.00004E+00	2
19	1	18	2.16966E-05	24	1.00006E+00	1
20	1	24	5.35083E-05	24	1.00004E+00	1
21	1	18	2.70142E-05	24	1.00006E+00	1
22	1	24	3.62316E-05	24	1.00002E+00	1
23	1	24	7.42566E-06	24	9.99995E-01	1
24	1	24	1.55458E-05	24	9.99990E-01	1
25	1	24	2.10491E-05	24	9.99994E-01	1
26	1	21	1.97174E-05	24	9.99988E-01	2
27	1	2	6.17690E-06	24	9.99994E-01	2

4	208	4.57026E-07	9.98225E-01	4.67757E-06	1.25755E-05	1.06706E-05	.00000E+00	.0000

final monitor

lambda 9.98227E-01 production/absorption 9.98230E-01 angular flux on 16

- elapsed time .00 min.

1 1200 d, sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp

0 int. zone number radius int. midpoint area volume prod density

1	1	.00000E+00	1.29551E-02	.00000E+00	2.10906E-03	2.89726E-03
2	1	2.59102E-02	4.33406E-02	1.62798E-01	9.49518E-03	1.30851E-02
3	1	6.07710E-02	8.75100E-02	3.81835E-01	2.94045E-02	4.04558E-02
4	1	1.14269E-01	1.74155E-01	7.17848E-01	1.31104E-01	1.82221E-01
5	1	2.34061E-01	2.99967E-01	1.47065E+00	2.21299E-01	3.15358E-01
6	1	3.53873E-01	3.80612E-01	2.22545E+00	1.27890E-01	1.87310E-01
7	1	4.07351E-01	4.24781E-01	2.55946E+00	9.30429E-02	1.39080E-01
8	1	4.42212E-01	4.55167E-01	2.77850E+00	7.41004E-02	1.12871E-01
9	2	4.68122E-01	4.68814E-01	2.94130E+00	4.07946E-03	.00000E+00
10	2	4.69507E-01	4.71481E-01	2.95000E+00	1.16988E-02	.00000E+00
11	2	4.73456E-01	4.75431E-01	2.97481E+00	1.17968E-02	.00000E+00
12	2	4.77405E-01	4.78098E-01	2.99962E+00	4.16023E-03	.00000E+00
13	3	4.78790E-01	4.85159E-01	3.00833E+00	2.65268E-02	.00000E+00
14	3	4.87528E-01	4.99987E-01	3.06329E+00	7.82768E-02	.00000E+00
15	3	5.12445E-01	5.24903E-01	3.21979E+00	8.21777E-02	.00000E+00
16	3	5.37362E-01	5.41731E-01	3.37634E+00	2.97427E-02	.00000E+00
17	4	5.46100E-01	5.53513E-01	3.43125E+00	5.15631E-02	.00000E+00
18	4	5.60926E-01	5.70900E-01	3.52440E+00	7.15548E-02	.00000E+00
19	4	5.80874E-01	5.96175E-01	3.68978E+00	1.14628E-01	.00000E+00
20	4	6.11475E-01	6.45755E-01	3.84201E+00	2.78169E-01	.00000E+00
21	4	6.80034E-01	7.14313E-01	4.27278E+00	3.07702E-01	.00000E+00
22	4	7.48592E-01	7.68893E-01	4.70354E+00	1.46875E-01	.00000E+00
23	4	7.79192E-01	7.89167E-01	4.86582E+00	9.89114E-02	.00000E+00
24	4	7.99141E-01	8.09554E-01	5.02115E+00	7.51357E-02	.00000E+00
25		8.13968E-01		5.11431E+00		

1 1200 d, sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp

0 total flux

0 int.

	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	1.83788E-01	1.34704E+00	1.69091E+00	1.04528E+00	1.57842E+00	3.03225E+00	2.90647E+00	2.08282E+00
2	1.83854E-01	1.34788E+00	1.69174E+00	1.04578E+00	1.57912E+00	3.03355E+00	2.90713E+00	2.08289E+00
3	1.83797E-01	1.34706E+00	1.69098E+00	1.04531E+00	1.57834E+00	3.03195E+00	2.90611E+00	2.08269E+00
4	1.83389E-01	1.34279E+00	1.68655E+00	1.04202E+00	1.57311E+00	3.02153E+00	2.89984E+00	2.08163E+00
5	1.82330E-01	1.33178E+00	1.67175E+00	1.03368E+00	1.55994E+00	2.99570E+00	2.88438E+00	2.07901E+00
6	1.81106E-01	1.31920E+00	1.65618E+00	1.02435E+00	1.54530E+00	2.96738E+00	2.86753E+00	2.07611E+00
7	1.80125E-01	1.30932E+00	1.64414E+00	1.01722E+00	1.53425E+00	2.94644E+00	2.85518E+00	2.07393E+00
8	1.79149E-01	1.29966E+00	1.63256E+00	1.01047E+00	1.52395E+00	2.92734E+00	2.84400E+00	2.07187E+00
9	1.78614E-01	1.29443E+00	1.62634E+00	1.00688E+00	1.51853E+00	2.91738E+00	2.83822E+00	2.07078E+00
10	1.78508E-01	1.29337E+00	1.62510E+00	1.00619E+00	1.51753E+00	2.91559E+00	2.83724E+00	2.07058E+00
11	1.78340E-01	1.29184E+00	1.62330E+00	1.00520E+00	1.51612E+00	2.91306E+00	2.83585E+00	2.07029E+00
12	1.78252E-01	1.29083E+00	1.62213E+00	1.00455E+00	1.51520E+00	2.91144E+00	2.83496E+00	2.07011E+00
13	1.78052E-01	1.28896E+00	1.61990E+00	1.00331E+00	1.51339E+00	2.90801E+00	2.83303E+00	2.06972E+00
14	1.77487E-01	1.28363E+00	1.61335E+00	9.99475E-01	1.50760E+00	2.89677E+00	2.82663E+00	2.06857E+00
15	1.76876E-01	1.27718E+00	1.60493E+00	9.94153E-01	1.49921E+00	2.88017E+00	2.81707E+00	2.06753E+00
16	1.76578E-01	1.27361E+00	1.59985E+00	9.90679E-01	1.49254E+00	2.86864E+00	2.81057E+00	2.06700E+00
17	1.76434E-01	1.27157E+00	1.59677E+00	9.88346E-01	1.48952E+00	2.86069E+00	2.80571E+00	2.06686E+00
18	1.76246E-01	1.26869E+00	1.59276E+00	9.85371E-01	1.48446E+00	2.85073E+00	2.79986E+00	2.06671E+00
19	1.76010E-01	1.26577E+00	1.58812E+00	9.82008E-01	1.47878E+00	2.83960E+00	2.79330E+00	2.06646E+00
20	1.75695E-01	1.26170E+00	1.58222E+00	9.77789E-01	1.47171E+00	2.82577E+00	2.78518E+00	2.06612E+00
21	1.75479E-01	1.25886E+00	1.57807E+00	9.74795E-01	1.46669E+00	2.81597E+00	2.77950E+00	2.06602E+00
22	1.75480E-01	1.25873E+00	1.57777E+00	9.74512E-01	1.46617E+00	2.81496E+00	2.77905E+00	2.06624E+00
23	1.75560E-01	1.25980E+00	1.57890E+00	9.75241E-01	1.46734E+00	2.81725E+00	2.78053E+00	2.06652E+00
24	1.75651E-01	1.26092E+00	1.58026E+00	9.76139E-01	1.46879E+00	2.82009E+00	2.78252E+00	2.06680E+00

0 int.

	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	1.58987E+00	1.45035E+00	1.31088E+00	7.97791E-01	6.69819E-01	5.76649E-01	3.64426E-01	1.98572E-01
2	1.58980E+00	1.45025E+00	1.31018E+00	7.97560E-01	6.69607E-01	5.76368E-01	3.64389E-01	1.98542E-01
3	1.58998E+00	1.45046E+00	1.31064E+00	7.98113E-01	6.70081E-01	5.77100E-01	3.64477E-01	1.98600E-01
4	1.59100E+00	1.45165E+00	1.31325E+00	8.01214E-01	6.72771E-01	5.81215E-01	3.64964E-01	1.98938E-01
5	1.59354E+00	1.45457E+00	1.31968E+00	8.08869E-01	6.79413E-01	5.91429E-01	3.66140E-01	1.99769E-01

6	1.59637E+00	1.45775E+00	1.32671E+00	8.17298E-01	6.85718E-01	6.02749E-01	3.67410E-01	2.00675E-01
7	1.59852E+00	1.46009E+00	1.33189E+00	8.23548E-01	6.92128E-01	6.11210E-01	3.68325E-01	2.01341E-01
8	1.60059E+00	1.46221E+00	1.33661E+00	8.29287E-01	6.97091E-01	6.19021E-01	3.69144E-01	2.01947E-01
9	1.60163E+00	1.46330E+00	1.33905E+00	8.32269E-01	6.99669E-01	6.23082E-01	3.69564E-01	2.02252E-01
10	1.60183E+00	1.46348E+00	1.33944E+00	8.32747E-01	7.00088E-01	6.23725E-01	3.69639E-01	2.02315E-01
11	1.60211E+00	1.46373E+00	1.34000E+00	8.33431E-01	7.00688E-01	6.24645E-01	3.69737E-01	2.02392E-01
12	1.60229E+00	1.46388E+00	1.34036E+00	8.33874E-01	7.01076E-01	6.25240E-01	3.69802E-01	2.02441E-01
13	1.60266E+00	1.46423E+00	1.34110E+00	8.34778E-01	7.01868E-01	6.26456E-01	3.69937E-01	2.02543E-01
14	1.60367E+00	1.46531E+00	1.34346E+00	8.37599E-01	7.04348E-01	6.30259E-01	3.70368E-01	2.02861E-01
15	1.60478E+00	1.46684E+00	1.34675E+00	8.41494E-01	7.07769E-01	6.35498E-01	3.70978E-01	2.03301E-01
16	1.60530E+00	1.46787E+00	1.34899E+00	8.44006E-01	7.09973E-01	6.38869E-01	3.71381E-01	2.03585E-01
17	1.60558E+00	1.46864E+00	1.35063E+00	8.45854E-01	7.11562E-01	6.41326E-01	3.71607E-01	2.03773E-01
18	1.60600E+00	1.46967E+00	1.35288E+00	8.48380E-01	7.13715E-01	6.44677E-01	3.71863E-01	2.04019E-01
19	1.60653E+00	1.47089E+00	1.35542E+00	8.51287E-01	7.16198E-01	6.48537E-01	3.72163E-01	2.04305E-01
20	1.60727E+00	1.47255E+00	1.35866E+00	8.54990E-01	7.19362E-01	6.53455E-01	3.72532E-01	2.04665E-01
21	1.60782E+00	1.47342E+00	1.36098E+00	8.57631E-01	7.21588E-01	6.56998E-01	3.72726E-01	2.04898E-01
22	1.60788E+00	1.47352E+00	1.36120E+00	8.57864E-01	7.21737E-01	6.57208E-01	3.72637E-01	2.04889E-01
23	1.60773E+00	1.47326E+00	1.36062E+00	8.57178E-01	7.21110E-01	6.56269E-01	3.72475E-01	2.04788E-01
24	1.60754E+00	1.47295E+00	1.35990E+00	8.56332E-01	7.20350E-01	6.55121E-01	3.72308E-01	2.04678E-01

0 int.	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	7.64320E-02	2.34091E-02	1.10648E-01	4.04673E-01	9.67836E-02	1.51708E-01	6.18488E-01	4.66905E-01
2	7.63974E-02	2.34339E-02	1.10591E-01	4.04565E-01	9.67183E-02	1.51603E-01	6.18095E-01	4.66687E-01
3	7.64755E-02	2.37291E-02	1.10728E-01	4.04784E-01	9.69350E-02	1.52291E-01	6.19124E-01	4.67464E-01
4	7.69180E-02	2.50190E-02	1.11490E-01	4.06065E-01	9.80879E-02	1.55648E-01	6.24811E-01	4.72275E-01
5	7.80191E-02	2.84204E-02	1.13359E-01	4.09140E-01	1.00978E-01	1.64143E-01	6.38920E-01	4.84224E-01
6	7.98408E-02	3.25784E-02	1.15402E-01	4.12519E-01	1.04219E-01	1.73864E-01	6.54551E-01	4.97501E-01
7	8.01553E-02	3.61208E-02	1.16900E-01	4.14997E-01	1.06881E-01	1.81413E-01	6.66226E-01	5.07454E-01
8	8.10014E-02	3.97955E-02	1.18255E-01	4.17252E-01	1.08984E-01	1.88618E-01	6.77004E-01	5.16688E-01
9	8.14424E-02	4.17918E-02	1.18953E-01	4.18420E-01	1.10187E-01	1.92414E-01	6.82603E-01	5.21488E-01
10	8.15133E-02	4.20092E-02	1.19063E-01	4.18614E-01	1.10367E-01	1.92953E-01	6.83461E-01	5.22211E-01
11	8.16146E-02	4.23210E-02	1.19222E-01	4.18889E-01	1.10625E-01	1.93677E-01	6.84684E-01	5.23239E-01
12	8.16802E-02	4.25237E-02	1.19324E-01	4.19068E-01	1.10791E-01	1.94158E-01	6.85473E-01	5.23901E-01
13	8.18142E-02	4.29348E-02	1.19534E-01	4.19433E-01	1.11131E-01	1.95138E-01	6.87087E-01	5.25254E-01
14	8.22528E-02	4.41991E-02	1.20201E-01	4.20575E-01	1.12192E-01	1.98178E-01	6.92105E-01	5.29426E-01
15	8.28073E-02	4.58904E-02	1.21134E-01	4.22146E-01	1.13643E-01	2.02291E-01	6.98914E-01	5.35005E-01
16	8.31757E-02	4.69454E-02	1.21745E-01	4.23153E-01	1.14570E-01	2.04888E-01	7.03206E-01	5.38457E-01
17	8.34478E-02	4.77335E-02	1.22185E-01	4.23842E-01	1.15282E-01	2.06906E-01	7.06733E-01	5.41617E-01
18	8.38213E-02	4.88290E-02	1.22780E-01	4.24781E-01	1.16284E-01	2.09784E-01	7.11982E-01	5.46600E-01
19	8.42518E-02	5.00861E-02	1.23466E-01	4.25873E-01	1.17444E-01	2.13130E-01	7.18246E-01	5.52619E-01
20	8.48003E-02	5.16798E-02	1.24339E-01	4.27269E-01	1.18951E-01	2.17434E-01	7.26569E-01	5.60751E-01
21	8.51914E-02	5.28138E-02	1.24953E-01	4.28221E-01	1.20002E-01	2.20543E-01	7.32841E-01	5.67098E-01
22	8.52267E-02	5.29215E-02	1.24994E-01	4.28229E-01	1.20111E-01	2.20872E-01	7.33757E-01	5.68804E-01
23	8.51267E-02	5.26404E-02	1.24821E-01	4.27902E-01	1.19849E-01	2.20122E-01	7.32480E-01	5.67296E-01
24	8.50034E-02	5.22905E-02	1.24611E-01	4.27523E-01	1.19521E-01	2.19178E-01	7.30801E-01	5.65862E-01

0 int.	grp. 25	grp. 26	grp. 27
1	1.95803E-01	1.20109E-01	1.60443E-02
2	1.95669E-01	1.20022E-01	1.60428E-02
3	1.96123E-01	1.20458E-01	1.61783E-02
4	1.98534E-01	1.22664E-01	1.67972E-02
5	2.04537E-01	1.28173E-01	1.83664E-02
6	2.11252E-01	1.34381E-01	2.01924E-02
7	2.16279E-01	1.39123E-01	2.16530E-02
8	2.20989E-01	1.43604E-01	2.30958E-02
9	2.23448E-01	1.45956E-01	2.38661E-02
10	2.23807E-01	1.46278E-01	2.39564E-02
11	2.24318E-01	1.46734E-01	2.40848E-02
12	2.24648E-01	1.47028E-01	2.41675E-02
13	2.25318E-01	1.47626E-01	2.43353E-02
14	2.27352E-01	1.49425E-01	2.48316E-02
15	2.30000E-01	1.51731E-01	2.54455E-02

16	2.31583E-01	1.53082E-01	2.57881E-02
17	2.33174E-01	1.54698E-01	2.65213E-02
18	2.35811E-01	1.57534E-01	2.72960E-02
19	2.39033E-01	1.60961E-01	2.84387E-02
20	2.43438E-01	1.65651E-01	2.99428E-02
21	2.46957E-01	1.69483E-01	3.11799E-02
22	2.47727E-01	1.70464E-01	3.15478E-02
23	2.47271E-01	1.70129E-01	3.15054E-02
24	2.46568E-01	1.69513E-01	3.13670E-02

- elapsed time .00 min.

1fine group summary for zone 1 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	2.33589E-02	.00000E+00	1.30809E-02	1.09077E-02	3.30003E-03	1.15058E-02	9.98841E-01
2	.00000E+00	1.95084E-01	2.41777E-03	1.68573E-01	6.72845E-02	1.36905E-02	1.16539E-01	1.00004E+00
3	.00000E+00	2.16057E-01	2.66656E-02	1.61736E-01	8.16111E-02	1.54936E-02	1.45627E-01	1.00000E+00
4	.00000E+00	1.23684E-01	3.92836E-02	1.05789E-01	6.79578E-02	7.36486E-03	8.78426E-02	1.00001E+00
5	.00000E+00	1.63760E-01	6.83491E-02	2.60142E-01	9.47464E-02	4.36292E-03	1.33002E-01	9.99992E-01
6	.00000E+00	1.76465E-01	1.35112E-01	6.53798E-01	5.43600E-02	6.80647E-03	2.50401E-01	1.00003E+00
7	.00000E+00	8.71164E-02	9.85425E-02	7.44150E-01	3.63364E-02	7.27131E-03	1.42050E-01	1.00001E+00
8	.00000E+00	1.34131E-02	4.25864E-02	6.30510E-01	2.15264E-02	1.35652E-02	2.09053E-02	1.00004E+00
9	.00000E+00	9.73270E-04	2.17502E-02	5.36035E-01	2.07341E-02	2.25980E-02	-2.06082E-02	9.99991E-01
10	.00000E+00	7.22868E-05	2.07561E-02	4.65791E-01	1.07478E-02	3.50686E-02	-2.49887E-02	1.00001E+00
11	.00000E+00	5.68659E-06	1.07488E-02	4.26688E-01	8.18658E-03	5.75793E-02	-5.50120E-02	1.00001E+00
12	.00000E+00	3.99500E-07	8.18663E-03	2.41694E-01	9.40173E-03	6.42909E-02	-6.55026E-02	9.99959E-01
13	.00000E+00	6.34369E-08	9.40174E-03	1.81043E-01	6.15307E-03	6.05272E-02	-5.72788E-02	1.00000E+00
14	.00000E+00	1.25715E-08	6.15308E-03	1.52074E-01	7.30064E-03	8.68506E-02	-8.79983E-02	1.00000E+00
15	.00000E+00	1.42072E-09	7.38625E-03	8.33912E-02	8.76155E-03	8.05705E-03	-9.53961E-03	1.00632E+00
16	.00000E+00	4.17172E-10	8.91006E-03	4.16468E-02	9.35774E-03	6.78972E-03	-7.31179E-03	1.00461E+00
17	.00000E+00	1.34350E-10	7.43423E-03	1.36579E-02	6.98405E-03	1.01912E-02	-9.71775E-03	1.00156E+00
18	.00000E+00	9.61905E-11	6.75251E-03	7.16929E-03	3.12093E-03	3.16056E-02	-2.80013E-02	1.00020E+00
19	.00000E+00	1.35992E-10	5.40004E-03	2.18239E-02	7.97073E-03	1.30210E-02	-1.56190E-02	1.00130E+00
20	.00000E+00	2.21139E-10	8.97591E-03	9.65570E-02	9.15287E-03	2.64602E-02	-2.67453E-02	1.00804E+00
21	.00000E+00	3.23675E-11	8.47705E-03	1.90448E-02	7.43011E-03	2.60782E-02	-2.50566E-02	1.00078E+00
22	.00000E+00	3.75537E-11	1.08786E-02	3.55168E-02	8.02540E-03	7.44615E-02	-7.16532E-02	1.00054E+00
23	.00000E+00	3.59066E-11	1.28780E-02	1.50450E-01	1.65811E-02	1.19930E-01	-1.23806E-01	1.00126E+00
24	.00000E+00	9.77301E-12	2.04524E-02	1.06694E-01	2.07018E-02	1.05716E-01	-1.06097E-01	1.00104E+00
25	.00000E+00	2.86090E-12	1.77658E-02	4.06994E-02	1.35049E-02	5.70012E-02	-5.27962E-02	1.00079E+00
26	.00000E+00	2.00608E-12	8.80172E-03	2.85425E-02	6.11118E-03	5.11556E-02	-4.85021E-02	1.00065E+00
27	.00000E+00	4.78059E-13	1.91637E-03	4.31134E-03	1.05471E-03	1.43858E-02	-1.35259E-02	1.00037E+00
28	.00000E+00	1.00000E+00	6.15961E-01	5.38849E+00	6.15961E-01	9.43622E-01	5.79055E-02	1.00050E+00

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r2n rate	fiss rate	flux*df**2	total flux
1	1.78643E-01	1.15058E-02	1.85726E-01	.00000E+00	2.32484E-03	2.69862E-03	.00000E+00	1.25126E-01
2	1.29471E+00	1.16536E-01	1.34641E+00	.00000E+00	1.68249E-05	1.19016E-02	.00000E+00	9.12852E-01
3	1.62667E+00	1.45627E-01	1.69009E+00	.00000E+00	.00000E+00	1.44679E-02	.00000E+00	1.14605E+00
4	1.00706E+00	8.76426E-02	1.04479E+00	.00000E+00	.00000E+00	6.22017E-03	.00000E+00	7.08760E-01
5	1.51879E+00	1.33002E-01	1.57771E+00	.00000E+00	.00000E+00	1.76645E-03	.00000E+00	1.06949E+00
6	2.91785E+00	2.50401E-01	3.03090E+00	.00000E+00	.00000E+00	1.42756E-03	.00000E+00	2.05399E+00
7	2.83849E+00	1.42050E-01	2.90573E+00	.00000E+00	.00000E+00	1.31395E-03	.00000E+00	1.98080E+00
8	2.07083E+00	2.09053E-02	2.08273E+00	.00000E+00	.00000E+00	1.29080E-03	.00000E+00	1.43040E+00
9	1.60158E+00	-2.06082E-02	1.58997E+00	.00000E+00	.00000E+00	1.68148E-03	.00000E+00	1.09792E+00
10	1.46525E+00	-2.49887E-02	1.45046E+00	.00000E+00	.00000E+00	3.58150E-03	.00000E+00	1.00252E+00
11	1.33894E+00	-5.50120E-02	1.31053E+00	.00000E+00	.00000E+00	7.79913E-03	.00000E+00	9.10596E-01
12	8.32142E-01	-6.55026E-02	7.98086E-01	.00000E+00	.00000E+00	1.03512E-02	.00000E+00	5.59866E-01
13	6.99558E-01	-5.72788E-02	6.70082E-01	.00000E+00	.00000E+00	1.25294E-02	.00000E+00	4.69906E-01
14	6.22912E-01	-8.79983E-02	5.77028E-01	.00000E+00	.00000E+00	7.72675E-03	.00000E+00	4.10563E-01
15	3.69541E-01	-9.53961E-03	3.64468E-01	.00000E+00	.00000E+00	1.69057E-03	.00000E+00	2.52432E-01
16	2.02246E-01	-7.31179E-03	1.98607E-01	.00000E+00	.00000E+00	1.21258E-03	.00000E+00	1.37790E-01
17	8.14204E-02	-9.71775E-03	7.64719E-02	.00000E+00	.00000E+00	1.25659E-03	.00000E+00	5.40790E-02
18	4.17338E-02	-2.80013E-02	2.34500E-02	.00000E+00	.00000E+00	7.33272E-04	.00000E+00	2.10149E-02
19	1.18918E-01	-1.56190E-02	1.10714E-01	.00000E+00	.00000E+00	2.00413E-03	.00000E+00	7.86402E-02

20	4.18359E-01	-2.67453E-02	4.04792E-01	.00000E+00	.00000E+00	1.39996E-02	.00000E+00	2.82661E-01
21	1.10135E-01	-2.50669E-02	9.68741E-02	.00000E+00	.00000E+00	1.54127E-02	.00000E+00	7.05084E-02
22	1.92276E-01	-7.16532E-02	1.51921E-01	.00000E+00	.00000E+00	4.42529E-02	.00000E+00	1.16069E-01
23	6.82388E-01	-1.23805E-01	6.19014E-01	.00000E+00	.00000E+00	7.05656E-02	.00000E+00	4.44549E-01
24	5.21309E-01	-1.06097E-01	4.67341E-01	.00000E+00	.00000E+00	6.12958E-02	.00000E+00	3.37362E-01
25	2.23567E-01	-5.27962E-02	1.96003E-01	.00000E+00	.00000E+00	3.45226E-02	.00000E+00	1.42843E-01
26	1.45875E-01	-4.85021E-02	1.20267E-01	.00000E+00	.00000E+00	3.16494E-02	.00000E+00	9.01527E-02
27	2.38426E-02	-1.35299E-02	1.60728E-02	.00000E+00	.00000E+00	8.98464E-03	.00000E+00	1.32570E-02
28	2.31429E+01	5.79064E-02	2.31043E+01	.00000E+00	2.34167E-03	3.72332E-01	.00000E+00	1.59195E+01

1fine group summary for zone 2 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-1.86265E-09	1.00000E+00
2	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-1.49012E-08	1.00000E+00
3	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-1.49012E-08	1.00000E+00
4	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	7.45058E-09	1.00000E+00
5	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	7.45058E-08	9.99999E-01
6	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.00000E+00
7	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.19209E-07	9.99999E-01
8	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	2.79397E-08	9.99999E-01
9	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	5.21541E-08	9.99997E-01
10	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	6.89179E-08	9.99997E-01
11	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-7.45058E-09	1.00000E+00
12	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.00000E+00
13	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-1.86265E-08	1.00000E+00
14	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-3.72529E-08	1.00000E+00
15	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	2.04891E-08	9.99998E-01
16	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.86265E-09	1.00000E+00
17	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.86265E-09	1.00000E+00
18	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.86265E-09	1.00000E+00
19	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	3.72529E-09	1.00000E+00
20	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-1.86265E-08	1.00000E+00
21	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	7.45058E-09	1.00000E+00
22	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-7.45058E-09	1.00000E+00
23	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	2.23517E-08	1.00000E+00
24	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	-1.49012E-08	1.00000E+00
25	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	3.72529E-09	1.00000E+00
26	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	1.49012E-08	1.00000E+00
27	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	9.31323E-10	1.00000E+00
28	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	2.95229E-07	1.00001E+00

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r3n rate	fiss rate	flux*dif**2	total flux
1	1.78205E-01	1.19058E-02	1.78643E-01	1.19058E-02	.00000E+00	.00000E+00	.00000E+00	5.66224E-03
2	1.29058E+00	1.16535E-01	1.29471E+00	1.16535E-01	.00000E+00	.00000E+00	.00000E+00	4.10212E-02
3	1.62183E+00	1.45627E-01	1.62667E+00	1.45627E-01	.00000E+00	.00000E+00	.00000E+00	5.15445E-02
4	1.00435E+00	8.78426E-02	1.00706E+00	8.78426E-02	.00000E+00	.00000E+00	.00000E+00	3.19159E-02
5	1.51498E+00	1.33002E-01	1.51859E+00	1.33002E-01	.00000E+00	.00000E+00	.00000E+00	4.81369E-02
6	2.91103E+00	2.50401E-01	2.91786E+00	2.50401E-01	.00000E+00	.00000E+00	.00000E+00	9.24872E-02
7	2.83474E+00	1.42050E-01	2.83869E+00	1.42050E-01	.00000E+00	.00000E+00	.00000E+00	9.00185E-02
8	2.07006E+00	2.09053E-02	2.07083E+00	2.09053E-02	.00000E+00	.00000E+00	.00000E+00	6.57058E-02
9	1.60234E+00	-2.06081E-02	1.60158E+00	-2.06082E-02	.00000E+00	.00000E+00	.00000E+00	5.08988E-02
10	1.46394E+00	-2.49886E-02	1.46325E+00	-2.49887E-02	.00000E+00	.00000E+00	.00000E+00	4.64478E-02
11	1.34045E+00	-5.50120E-02	1.33894E+00	-5.50120E-02	.00000E+00	.00000E+00	.00000E+00	4.25163E-02
12	8.33984E-01	-6.55026E-02	8.32142E-01	-6.55026E-02	.00000E+00	.00000E+00	.00000E+00	2.64382E-02
13	7.01173E-01	-5.72788E-02	6.99558E-01	-5.72788E-02	.00000E+00	.00000E+00	.00000E+00	2.22269E-02
14	6.25389E-01	-8.79984E-02	6.22912E-01	-8.79983E-02	.00000E+00	.00000E+00	.00000E+00	1.98086E-02
15	3.69814E-01	-9.53959E-03	3.69541E-01	-9.53961E-03	.00000E+00	.00000E+00	.00000E+00	1.17321E-02
16	2.02453E-01	-7.31179E-03	2.02246E-01	-7.31179E-03	.00000E+00	.00000E+00	.00000E+00	6.42178E-03
17	8.16284E-02	-9.71775E-03	8.14204E-02	-9.71775E-03	.00000E+00	.00000E+00	.00000E+00	2.58844E-03
18	4.25739E-02	-2.80013E-02	4.17338E-02	-2.80013E-02	.00000E+00	.00000E+00	.00000E+00	1.33810E-03
19	1.19344E-01	-1.56190E-02	1.18918E-01	-1.56190E-02	.00000E+00	.00000E+00	.00000E+00	3.78101E-03
20	4.19102E-01	-2.67453E-02	4.18359E-01	-2.67453E-02	.00000E+00	.00000E+00	.00000E+00	1.32892E-02

21	1.10826E-01	-2.50569E-02	1.10135E-01	-2.50569E-02	.00000E+00	.00000E+00	.00000E+00	3.50659E-03
22	1.94278E-01	-7.16532E-02	1.90278E-01	-7.16532E-02	.00000E+00	.00000E+00	.00000E+00	6.13453E-03
23	6.85683E-01	-1.23805E-01	6.82388E-01	-1.23805E-01	.00000E+00	.00000E+00	.00000E+00	2.17091E-02
24	5.24079E-01	-1.06097E-01	5.21309E-01	-1.06097E-01	.00000E+00	.00000E+00	.00000E+00	1.65887E-02
25	2.24735E-01	-5.27962E-02	2.23367E-01	-5.27962E-02	.00000E+00	.00000E+00	.00000E+00	7.11064E-03
26	1.47106E-01	-4.85021E-02	1.45875E-01	-4.85021E-02	.00000E+00	.00000E+00	.00000E+00	4.64936E-03
27	2.41886E-02	-1.35299E-02	2.38426E-02	-1.35299E-02	.00000E+00	.00000E+00	.00000E+00	7.62287E-04
28	2.31390E+01	5.79058E-02	2.31429E+01	5.79064E-02	.00000E+00	.00000E+00	.00000E+00	7.34381E-01

1fine group summary for zone 3 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	3.92766E-03	2.94428E-03	1.50882E-05	-2.85434E-03	1.00001E+00
2	.00000E+00	.00000E+00	5.14212E-04	2.62972E-02	1.88695E-02	5.22437E-05	-1.84078E-02	1.00000E+00
3	.00000E+00	.00000E+00	2.69852E-03	5.04487E-02	1.59513E-02	1.37981E-04	-1.33897E-02	9.99998E-01
4	.00000E+00	.00000E+00	5.19575E-03	4.22522E-02	5.47074E-03	1.03724E-04	-3.80322E-04	9.99996E-01
5	.00000E+00	.00000E+00	1.11840E-02	8.17850E-02	5.17228E-03	1.52164E-04	5.85908E-03	1.00000E+00
6	.00000E+00	.00000E+00	1.86328E-02	2.35164E-01	3.21300E-03	3.20227E-04	1.50996E-02	1.00000E+00
7	.00000E+00	.00000E+00	1.23767E-02	2.35290E-01	1.18269E-03	3.44904E-04	1.08495E-02	9.99999E-01
8	.00000E+00	.00000E+00	2.16903E-03	1.58719E-01	7.64257E-03	2.95174E-04	-5.76928E-03	1.00002E+00
9	.00000E+00	.00000E+00	7.67613E-03	1.05369E-01	8.78370E-04	1.11110E-03	5.68689E-03	9.99990E-01
10	.00000E+00	.00000E+00	8.79557E-04	8.58097E-02	8.51381E-04	8.37989E-04	-8.09861E-04	1.00000E+00
11	.00000E+00	.00000E+00	8.51443E-04	7.73469E-02	8.73519E-04	1.34209E-03	-1.36416E-03	1.00000E+00
12	.00000E+00	.00000E+00	8.73525E-04	4.69588E-02	8.73277E-04	4.17908E-05	-4.15519E-05	1.00000E+00
13	.00000E+00	.00000E+00	8.73278E-04	3.94928E-02	8.05625E-04	5.99614E-05	7.74115E-06	9.99999E-01
14	.00000E+00	.00000E+00	8.05626E-04	3.54901E-02	6.68816E-04	9.45295E-05	4.25193E-05	1.00000E+00
15	.00000E+00	.00000E+00	7.11807E-04	2.03544E-02	8.33088E-04	8.17407E-05	-2.05708E-04	1.00007E+00
16	.00000E+00	.00000E+00	9.26294E-04	1.05770E-02	9.24964E-04	5.03123E-05	-4.94584E-05	1.00006E+00
17	.00000E+00	.00000E+00	9.70918E-04	3.78339E-03	9.31292E-04	2.28563E-05	1.67396E-05	1.00000E+00
18	.00000E+00	.00000E+00	9.73865E-04	1.94598E-03	6.28349E-04	1.33260E-05	3.32095E-04	1.00000E+00
19	.00000E+00	.00000E+00	6.85313E-04	6.00804E-03	8.86432E-04	3.89239E-05	-2.40121E-04	1.00000E+00
20	.00000E+00	.00000E+00	1.05628E-03	2.30911E-02	9.81685E-04	1.71684E-04	-9.77423E-05	1.00008E+00
21	.00000E+00	.00000E+00	1.19553E-03	5.20955E-03	1.24399E-03	5.73756E-05	-1.05906E-04	1.00000E+00
22	.00000E+00	.00000E+00	1.57133E-03	1.00930E-02	1.34889E-03	1.17601E-04	1.04651E-04	1.00000E+00
23	.00000E+00	.00000E+00	2.04398E-03	3.70180E-02	2.71774E-03	5.60603E-04	-1.23431E-03	1.00000E+00
24	.00000E+00	.00000E+00	3.37802E-03	2.67407E-02	3.66976E-03	6.22915E-04	-9.14447E-04	9.99998E-01
25	.00000E+00	.00000E+00	3.31770E-03	1.03898E-02	2.67419E-03	3.53384E-04	2.90211E-04	9.99998E-01
26	.00000E+00	.00000E+00	1.39170E-03	7.59799E-03	1.00409E-03	3.31774E-04	5.57713E-05	1.00000E+00
27	.00000E+00	.00000E+00	2.91152E-04	1.43516E-03	7.39444E-07	1.04989E-04	1.85450E-04	1.00000E+00
28	.00000E+00	.00000E+00	8.32426E-02	1.38867E+00	8.32426E-02	7.43662E-03	-7.33284E-03	1.00001E+00

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r2n rate	fiss rate	flux*db**2	total flux
1	1.76518E-01	8.65149E-03	1.78205E-01	1.15058E-02	1.05194E-04	.00000E+00	.00000E+00	3.84029E-02
2	1.27280E+00	9.81278E-02	1.29058E+00	1.16535E-01	.00000E+00	.00000E+00	.00000E+00	2.77507E-01
3	1.59866E+00	1.32237E-01	1.62183E+00	1.45627E-01	.00000E+00	.00000E+00	.00000E+00	3.48733E-01
4	9.89769E-01	8.72623E-02	1.00439E+00	8.76426E-02	.00000E+00	.00000E+00	.00000E+00	2.16013E-01
5	1.49195E+00	1.38861E-01	1.51498E+00	1.33002E-01	.00000E+00	.00000E+00	.00000E+00	3.25778E-01
6	2.86549E+00	2.65500E-01	2.91103E+00	2.50401E-01	.00000E+00	.00000E+00	.00000E+00	6.25897E-01
7	2.80853E+00	1.52899E-01	2.85474E+00	1.42050E-01	.00000E+00	.00000E+00	.00000E+00	6.11500E-01
8	2.06691E+00	1.51360E-02	2.07006E+00	2.09053E-02	.00000E+00	.00000E+00	.00000E+00	4.48215E-01
9	1.60540E+00	-1.49212E-02	1.60254E+00	-2.06081E-02	.00000E+00	.00000E+00	.00000E+00	3.47666E-01
10	1.46814E+00	-2.57984E-02	1.46394E+00	-2.49889E-02	.00000E+00	.00000E+00	.00000E+00	3.17741E-01
11	1.34956E+00	-5.63761E-02	1.34045E+00	-5.50120E-02	.00000E+00	.00000E+00	.00000E+00	2.91536E-01
12	8.44656E-01	-6.55441E-02	8.39984E-01	-6.55026E-02	.00000E+00	.00000E+00	.00000E+00	1.81964E-01
13	7.10643E-01	-5.72711E-02	7.01173E-01	-5.72788E-02	.00000E+00	.00000E+00	.00000E+00	1.53032E-01
14	6.39738E-01	-8.79560E-02	6.25389E-01	-8.79984E-02	.00000E+00	.00000E+00	.00000E+00	1.37178E-01
15	3.71482E-01	-9.74330E-03	3.69814E-01	-9.53959E-03	.00000E+00	.00000E+00	.00000E+00	8.03365E-02
16	2.03657E-01	-7.36125E-03	2.02453E-01	-7.31179E-03	.00000E+00	.00000E+00	.00000E+00	4.40141E-02
17	8.32672E-02	-9.70101E-03	8.16854E-02	-9.71775E-03	.00000E+00	.00000E+00	.00000E+00	1.78860E-02
18	4.72122E-02	-2.76698E-02	4.25738E-02	-2.80013E-02	.00000E+00	.00000E+00	.00000E+00	9.76614E-03
19	1.21898E-01	-1.58591E-02	1.19344E-01	-1.56190E-02	.00000E+00	.00000E+00	.00000E+00	2.61554E-02
20	4.23401E-01	-2.68431E-02	4.19100E-01	-2.67453E-02	.00000E+00	.00000E+00	.00000E+00	9.13242E-02
21	1.14803E-01	-2.51628E-02	1.10898E-01	-2.50569E-02	.00000E+00	.00000E+00	.00000E+00	2.44765E-02

22	2.05548E-01	-7.15485E-02	1.94278E-01	-7.14652E-02	.00000E+00	.00000E+00	.00000E+00	4.34067E-02
23	7.04306E-01	-1.25039E-01	6.85683E-01	-1.23805E-01	.00000E+00	.00000E+00	.00000E+00	1.50752E-01
24	5.39329E-01	-1.07011E-01	5.24075E-01	-1.06097E-01	.00000E+00	.00000E+00	.00000E+00	1.15356E-01
25	2.31970E-01	-5.25060E-02	2.24735E-01	-5.27962E-02	.00000E+00	.00000E+00	.00000E+00	4.95621E-02
26	1.53406E-01	-4.84468E-02	1.47106E-01	-4.85021E-02	.00000E+00	.00000E+00	.00000E+00	3.26346E-02
27	2.58662E-02	-1.33444E-02	2.41885E-02	-1.35259E-02	.00000E+00	.00000E+00	.00000E+00	5.44733E-03
28	2.31148E+01	5.05727E-02	2.31390E+01	5.79058E-02	1.05198E-04	.00000E+00	.00000E+00	5.01228E+00

1fine group summary for zone 4 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	6.20599E-03	8.21414E-03	4.37777E-04	-8.65148E-03	9.99950E-01
2	.00000E+00	.00000E+00	4.71311E-03	7.74201E-02	1.01755E-01	1.09022E-03	-9.81276E-02	9.99961E-01
3	.00000E+00	.00000E+00	4.89053E-02	6.95901E-02	1.80539E-01	5.45397E-06	-1.32257E-01	9.99977E-01
4	.00000E+00	.00000E+00	7.08152E-02	4.60072E-02	1.58076E-01	3.26178E-06	-8.72622E-02	9.99987E-01
5	.00000E+00	.00000E+00	1.30636E-01	1.48753E-01	2.69495E-01	3.78163E-06	-1.38851E-01	9.99991E-01
6	.00000E+00	.00000E+00	2.75911E-01	4.55531E-01	5.61401E-01	1.14830E-05	-2.65500E-01	9.99998E-01
7	.00000E+00	.00000E+00	5.53500E-01	7.95548E-01	7.06385E-01	2.53633E-05	-1.52899E-01	9.99988E-01
8	.00000E+00	.00000E+00	7.35977E-01	1.00175E+00	7.51152E-01	4.70509E-05	-1.51360E-02	9.99912E-01
9	.00000E+00	.00000E+00	7.41378E-01	9.17331E-01	7.26441E-01	9.60599E-05	1.49212E-02	9.99869E-01
10	.00000E+00	.00000E+00	7.23083E-01	8.67478E-01	6.97147E-01	2.11964E-04	2.57985E-02	9.99869E-01
11	.00000E+00	.00000E+00	7.01994E-01	8.08156E-01	6.45201E-01	4.58931E-04	5.63762E-02	9.99940E-01
12	.00000E+00	.00000E+00	5.61551E-01	4.21052E-01	4.95420E-01	5.99108E-04	6.55442E-02	9.99979E-01
13	.00000E+00	.00000E+00	4.91388E-01	3.37825E-01	4.33255E-01	8.97333E-04	5.72711E-02	9.99970E-01
14	.00000E+00	.00000E+00	4.70704E-01	3.19200E-01	3.81308E-01	1.44461E-03	8.79561E-02	9.99989E-01
15	.00000E+00	.00000E+00	2.49677E-01	1.27398E-01	2.38665E-01	1.28985E-03	9.74157E-03	1.00000E+00
16	.00000E+00	.00000E+00	1.65252E-01	5.32943E-02	1.57010E-01	8.62894E-04	7.35957E-03	9.99997E-01
17	.00000E+00	.00000E+00	8.46211E-02	1.43225E-02	7.45192E-02	4.00062E-04	9.70544E-03	9.99957E-01
18	.00000E+00	.00000E+00	7.44775E-02	8.51852E-03	4.65469E-02	2.60634E-04	2.76712E-02	9.99983E-01
19	.00000E+00	.00000E+00	1.19986E-01	3.11525E-02	1.05393E-01	6.82831E-04	1.58655E-02	9.99956E-01
20	.00000E+00	.00000E+00	2.90467E-01	2.30557E-01	2.60678E-01	2.94963E-03	2.68416E-02	9.99999E-01
21	.00000E+00	.00000E+00	1.34254E-01	4.15384E-02	1.08061E-01	1.02925E-03	2.51695E-02	9.99960E-01
22	.00000E+00	.00000E+00	2.51695E-01	1.14357E-01	1.77955E-01	2.17372E-03	7.15487E-02	9.99928E-01
23	.00000E+00	.00000E+00	5.87104E-01	6.88541E-01	4.52144E-01	9.92654E-03	1.25086E-01	9.99982E-01
24	.00000E+00	.00000E+00	5.95071E-01	6.17774E-01	4.76865E-01	1.11998E-02	1.07012E-01	9.99990E-01
25	.00000E+00	.00000E+00	3.84654E-01	2.53418E-01	3.26022E-01	6.42757E-03	5.25071E-02	9.99991E-01
26	.00000E+00	.00000E+00	3.04534E-01	2.70498E-01	2.49841E-01	6.24905E-03	4.84376E-02	1.00008E+00
27	.00000E+00	.00000E+00	1.01616E-01	5.65318E-02	8.61203E-02	2.15106E-03	1.33442E-02	1.00000E+00
28	.00000E+00	.00000E+00	8.85358E+00	8.77954E+00	8.85358E+00	5.09145E-02	-5.05678E-02	9.99961E-01

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r0n rate	fiss rate	flux*db**2	total flux
1	1.75698E-01	2.03183E-09	1.76518E-01	8.65146E-05	4.54265E-10	.00000E+00	.00000E+00	2.01089E-01
2	1.26115E+00	-1.47898E-08	1.27280E+00	9.81278E-02	.00000E+00	.00000E+00	.00000E+00	1.44398E+00
3	1.58097E+00	9.30396E-08	1.59866E+00	1.32257E-01	.00000E+00	.00000E+00	.00000E+00	1.81069E+00
4	9.76608E-01	9.58997E-08	9.89769E-01	8.78625E-02	.00000E+00	.00000E+00	.00000E+00	1.11891E+00
5	1.46956E+00	-1.75408E-08	1.49195E+00	1.38861E-01	.00000E+00	.00000E+00	.00000E+00	1.68406E+00
6	2.82158E+00	1.74066E-07	2.86549E+00	2.65500E-01	.00000E+00	.00000E+00	.00000E+00	3.23350E+00
7	2.78326E+00	9.98467E-09	2.80853E+00	1.52899E-01	.00000E+00	.00000E+00	.00000E+00	3.18746E+00
8	2.06693E+00	3.20919E-08	2.06491E+00	1.51360E-02	.00000E+00	.00000E+00	.00000E+00	2.36495E+00
9	1.60744E+00	3.34927E-09	1.60540E+00	-1.49212E-02	.00000E+00	.00000E+00	.00000E+00	1.83964E+00
10	1.47275E+00	3.21656E-08	1.46814E+00	-2.57984E-02	.00000E+00	.00000E+00	.00000E+00	1.68524E+00
11	1.35952E+00	4.98413E-08	1.34956E+00	-5.65761E-02	.00000E+00	.00000E+00	.00000E+00	1.55521E+00
12	8.55889E-01	4.67275E-08	8.44656E-01	-6.55441E-02	.00000E+00	.00000E+00	.00000E+00	9.78753E-01
13	7.19954E-01	5.61550E-09	7.10543E-01	-5.72711E-02	.00000E+00	.00000E+00	.00000E+00	8.23450E-01
14	6.54521E-01	5.24308E-08	6.39738E-01	-8.79560E-02	.00000E+00	.00000E+00	.00000E+00	7.48114E-01
15	3.72221E-01	-1.72885E-06	3.71482E-01	-9.74330E-03	.00000E+00	.00000E+00	.00000E+00	4.26290E-01
16	2.04622E-01	-1.68595E-06	2.05657E-01	-7.36125E-03	.00000E+00	.00000E+00	.00000E+00	2.34230E-01
17	8.49354E-02	4.43419E-06	8.32672E-02	-9.70101E-03	.00000E+00	.00000E+00	.00000E+00	9.70851E-02
18	5.21055E-02	1.97887E-06	4.72122E-02	-2.76692E-02	.00000E+00	.00000E+00	.00000E+00	5.92316E-02
19	1.24496E-01	6.41674E-06	1.21808E-01	-1.58591E-02	.00000E+00	.00000E+00	.00000E+00	1.42542E-01
20	4.27318E-01	-1.51288E-06	4.25401E-01	-2.68631E-02	.00000E+00	.00000E+00	.00000E+00	4.89027E-01
21	1.19543E-01	6.70112E-06	1.14803E-01	-2.51628E-02	.00000E+00	.00000E+00	.00000E+00	1.36211E-01
22	2.18680E-01	4.33475E-07	2.05548E-01	-7.15485E-02	.00000E+00	.00000E+00	.00000E+00	2.49137E-01

23	7.29984E-01	-3.22225E-06	7.04305E-01	-1.25039E-01	.00000E+00	.00000E+00	.00000E+00	8.32654E-01
24	5.65102E-01	9.46229E-07	5.39529E-01	-1.07011E-01	.00000E+00	.00000E+00	.00000E+00	6.42964E-01
25	2.46187E-01	1.11305E-06	2.31970E-01	-5.25060E-02	.00000E+00	.00000E+00	.00000E+00	2.79572E-01
26	1.69172E-01	-8.74975E-06	1.53406E-01	-4.84463E-02	.00000E+00	.00000E+00	.00000E+00	1.90529E-01
27	3.12850E-02	-2.91614E-07	2.58662E-02	-1.33444E-02	.00000E+00	.00000E+00	.00000E+00	3.46002E-02
28	2.31512E+01	5.21995E-06	2.31148E+01	5.05727E-02	4.54285E-10	.00000E+00	.00000E+00	2.64885E+01

1fine group summary for system

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	2.33589E-02	.00000E+00	2.32144E-02	2.20661E-02	3.75289E-03	2.03183E-09	9.98836E-01
2	.00000E+00	1.95084E-01	7.64510E-03	2.72990E-01	1.87909E-01	1.48330E-02	-1.47898E-08	1.00002E+00
3	.00000E+00	2.16067E-01	7.76674E-02	2.81575E-01	2.78102E-01	1.56370E-02	9.30896E-08	9.99986E-01
4	.00000E+00	1.23684E-01	1.15293E-01	1.94029E-01	2.31505E-01	7.47182E-03	9.58997E-08	1.00000E+00
5	.00000E+00	1.63760E-01	2.10169E-01	4.90681E-01	3.69414E-01	4.51906E-03	-1.75408E-08	9.99986E-01
6	.00000E+00	1.76468E-01	4.29656E-01	1.34449E+00	5.98974E-01	7.13818E-03	1.74066E-07	1.00001E+00
7	.00000E+00	8.71164E-02	6.64422E-01	1.77499E+00	7.43904E-01	7.64158E-03	9.98467E-09	9.99990E-01
8	.00000E+00	1.34131E-02	7.80752E-01	1.79078E+00	7.80301E-01	1.39074E-02	3.20919E-08	9.99920E-01
9	.00000E+00	9.73270E-04	7.70802E-01	1.55874E+00	7.48053E-01	2.38051E-02	3.34927E-09	9.99895E-01
10	.00000E+00	7.22868E-05	7.44718E-01	1.41708E+00	7.08744E-01	3.61188E-02	3.21656E-08	9.99900E-01
11	.00000E+00	5.68659E-06	7.13594E-01	1.31219E+00	6.54261E-01	5.93804E-02	4.98413E-08	9.99942E-01
12	.00000E+00	3.99500E-07	5.70611E-01	7.09685E-01	5.05695E-01	6.49518E-02	4.67275E-08	9.99974E-01
13	.00000E+00	6.34369E-08	5.01663E-01	5.58358E-01	4.40194E-01	6.14845E-02	5.61550E-09	9.99971E-01
14	.00000E+00	1.25715E-08	4.77663E-01	5.05764E-01	3.89278E-01	8.83898E-02	5.26305E-08	9.99985E-01
15	.00000E+00	1.42072E-09	2.57774E-01	2.31142E-01	2.48259E-01	9.40814E-03	-1.72885E-06	1.00042E+00
16	.00000E+00	4.17172E-10	1.75068E-01	1.06618E-01	1.67293E-01	7.70273E-03	-1.68595E-06	1.00042E+00
17	.00000E+00	1.34350E-10	9.30263E-02	3.17637E-02	8.25845E-02	1.06141E-02	4.43419E-06	1.00025E+00
18	.00000E+00	9.61905E-11	8.21837E-02	1.76338E-02	5.02962E-02	3.18795E-02	1.97887E-06	1.00007E+00
19	.00000E+00	1.35992E-10	1.26021E-01	5.89845E-02	1.12250E-01	1.37428E-02	6.41674E-06	1.00018E+00
20	.00000E+00	2.21138E-10	3.00499E-01	3.50205E-01	2.70610E-01	2.95815E-02	-1.51288E-06	1.00036E+00
21	.00000E+00	3.23675E-11	1.43927E-01	6.57911E-02	1.16735E-01	2.71648E-02	6.70112E-06	1.00014E+00
22	.00000E+00	3.75537E-11	2.64135E-01	1.59967E-01	1.87339E-01	7.67529E-02	4.33475E-07	1.00016E+00
23	.00000E+00	3.59055E-11	6.02026E-01	8.76009E-01	4.71445E-01	1.30417E-01	-3.22225E-06	1.00028E+00
24	.00000E+00	9.77301E-12	6.18501E-01	7.51209E-01	5.01257E-01	1.17538E-01	9.46259E-07	1.00020E+00
25	.00000E+00	2.86090E-12	4.06057E-01	3.06507E-01	3.42202E-01	6.37821E-02	1.11305E-06	1.00013E+00
26	.00000E+00	2.00508E-12	3.14728E-01	3.06639E-01	2.56956E-01	5.77364E-02	-8.74975E-06	1.00014E+00
27	.00000E+00	4.78059E-13	1.08823E-01	6.22783E-02	8.71758E-02	1.66419E-02	-2.91614E-07	1.00005E+00
28	.00000E+00	1.00000E+00	9.55279E+00	1.55567E+01	9.55278E+00	1.00197E+00	5.39736E-06	1.00004E+00

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	nsn rate	fiss rate	flux*adj**2	total flux
1	1.75688E-01	2.03183E-09	1.85728E-01	.00000E+00	2.43004E-05	2.69862E-03	.00000E+00	3.70280E-01
2	1.26115E+00	-1.47898E-08	1.34641E+00	.00000E+00	1.68264E-05	1.19016E-02	.00000E+00	2.67534E+00
3	1.58097E+00	9.30896E-08	1.69005E+00	.00000E+00	.00000E+00	1.44679E-02	.00000E+00	3.35701E+00
4	9.76608E-01	9.58997E-08	1.04479E+00	.00000E+00	.00000E+00	6.22017E-03	.00000E+00	2.07560E+00
5	1.46956E+00	-1.75408E-08	1.57771E+00	.00000E+00	.00000E+00	1.76645E-03	.00000E+00	3.12746E+00
6	2.82158E+00	1.74066E-07	3.03090E+00	.00000E+00	.00000E+00	1.42756E-03	.00000E+00	6.00588E+00
7	2.78326E+00	9.98467E-09	2.90573E+00	.00000E+00	.00000E+00	1.31975E-03	.00000E+00	5.86978E+00
8	2.06693E+00	3.20919E-08	2.08273E+00	.00000E+00	.00000E+00	1.25080E-03	.00000E+00	4.30928E+00
9	1.60744E+00	3.34927E-09	1.58997E+00	.00000E+00	.00000E+00	1.68168E-03	.00000E+00	3.33607E+00
10	1.47275E+00	3.21656E-08	1.45046E+00	.00000E+00	.00000E+00	3.58150E-03	.00000E+00	3.05175E+00
11	1.35952E+00	4.98413E-08	1.31063E+00	.00000E+00	.00000E+00	7.79913E-03	.00000E+00	2.79986E+00
12	8.55889E-01	4.67275E-08	7.98086E-01	.00000E+00	.00000E+00	1.08512E-02	.00000E+00	1.74652E+00
13	7.19954E-01	5.61550E-09	6.70082E-01	.00000E+00	.00000E+00	1.25294E-02	.00000E+00	1.46861E+00
14	6.54521E-01	5.26305E-08	5.77028E-01	.00000E+00	.00000E+00	7.72475E-03	.00000E+00	1.31566E+00
15	3.72221E-01	-1.72885E-06	3.64468E-01	.00000E+00	.00000E+00	1.69067E-03	.00000E+00	7.70792E-01
16	2.04622E-01	-1.68595E-06	1.98607E-01	.00000E+00	.00000E+00	1.21258E-03	.00000E+00	4.22462E-01
17	8.49354E-02	4.43419E-06	7.64719E-02	.00000E+00	.00000E+00	1.25535E-03	.00000E+00	1.71639E-01
18	5.21055E-02	1.97887E-06	2.34500E-02	.00000E+00	.00000E+00	7.33272E-04	.00000E+00	9.13507E-02
19	1.24488E-01	6.41674E-06	1.10714E-01	.00000E+00	.00000E+00	2.00413E-03	.00000E+00	2.50918E-01
20	4.27318E-01	-1.51288E-06	4.04792E-01	.00000E+00	.00000E+00	1.39996E-02	.00000E+00	8.76302E-01
21	1.19343E-01	6.70112E-06	9.68741E-02	.00000E+00	.00000E+00	1.54127E-02	.00000E+00	2.34708E-01
22	2.18680E-01	4.33475E-07	1.51921E-01	.00000E+00	.00000E+00	4.42529E-02	.00000E+00	4.14737E-01
23	7.29984E-01	-3.22225E-06	6.19016E-01	.00000E+00	.00000E+00	7.05666E-02	.00000E+00	1.44946E+00

24	5.65102E-01	9.46259E-07	4.67341E-01	.00000E+00	.00000E+00	6.12338E-02	.00000E+00	1.11227E+00
25	2.46187E-01	1.11305E-06	1.96038E-01	.00000E+00	.00000E+00	3.45226E-02	.00000E+00	4.78887E-01
26	1.69172E-01	-8.74975E-06	1.20267E-01	.00000E+00	.00000E+00	3.16494E-02	.00000E+00	3.17966E-01
27	3.12850E-02	-2.91616E-07	1.60728E-02	.00000E+00	.00000E+00	8.98464E-03	.00000E+00	5.40468E-02
28	2.31512E+01	5.21995E-06	2.31043E+01	.00000E+00	2.44686E-03	3.72332E-01	.00000E+00	4.81547E+01

- elapsed time .00 min.
Odirect access unit 9 requires 516 blocks of length 1456 for cross section weighting.
1 transport cross section weighting function

Ozone	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	2.45895E-03	2.51122E-02	3.15610E-02	1.90888E-02	2.90846E-02	5.55033E-02	3.15969E-02	4.66847E-03
2	3.86780E-03	3.91746E-02	4.89541E-02	2.94619E-02	4.47099E-02	8.41748E-02	4.77516E-02	7.02753E-03
3	3.14281E-03	3.34208E-02	4.32200E-02	2.71747E-02	4.22143E-02	8.00934E-02	4.57827E-02	5.62349E-03
4	1.08488E-03	1.22971E-02	1.65667E-02	1.09273E-02	1.73834E-02	3.32406E-02	1.92173E-02	2.02157E-03
5	1.79607E-03	1.91449E-02	2.47951E-02	1.55844E-02	2.42392E-02	4.62590E-02	2.65130E-02	3.34840E-03

Ozone	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	4.61272E-03	5.59994E-03	1.22953E-02	1.45827E-02	1.27543E-02	1.94613E-02	2.15574E-03	1.63486E-03
2	6.92764E-03	8.40018E-03	1.84928E-02	2.20194E-02	1.92549E-02	2.95815E-02	3.20888E-03	2.45795E-03
3	5.54296E-03	7.88691E-03	1.72994E-02	2.03592E-02	1.77966E-02	2.73365E-02	2.99527E-03	2.27942E-03
4	1.83450E-03	3.21098E-03	7.02675E-03	8.17550E-03	7.18124E-03	1.09888E-02	1.29434E-03	9.42618E-04
5	3.21719E-03	4.56712E-03	1.00138E-02	1.17744E-02	1.03139E-02	1.57767E-02	1.78652E-03	1.33387E-03

Ozone	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	2.14701E-03	5.47367E-03	3.51060E-03	5.99072E-03	5.46607E-03	1.53156E-02	2.75227E-02	2.35988E-02
2	3.26685E-03	9.41307E-03	5.25072E-03	8.99094E-03	8.42348E-03	2.40870E-02	4.16175E-02	3.56646E-02
3	3.01702E-03	8.64944E-03	4.85065E-03	8.32569E-03	7.80167E-03	2.22477E-02	3.86547E-02	3.31035E-02
4	1.20694E-03	3.41263E-03	1.99330E-03	3.42387E-03	3.13115E-03	8.90294E-03	1.58645E-02	1.35687E-02
5	1.73774E-03	4.73108E-03	2.86448E-03	4.86813E-03	4.47043E-03	1.26449E-02	2.24202E-02	1.91671E-02

Ozone	grp. 25	grp. 26	grp. 27	grp. 28
1	1.15586E-02	1.04798E-02	2.79811E-03	3.85460E-01
2	1.77478E-02	1.63040E-02	4.54813E-03	5.90777E-01
3	1.63609E-02	1.50615E-02	4.17603E-03	5.44456E-01
4	6.64134E-03	6.01781E-03	1.53064E-03	2.19088E-01
5	9.44909E-03	8.59192E-03	2.27131E-03	3.13661E-01

1 1200 d, sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp
Ocell averaged fluxes

Ozone	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	1.81752E-01	1.52597E+00	1.66469E+00	1.02951E+00	1.56349E+00	2.98353E+00	2.87721E+00	2.07774E+00
2	1.78421E-01	1.29861E+00	1.62420E+00	1.00569E+00	1.51683E+00	2.91434E+00	2.83665E+00	2.07044E+00
3	1.77197E-01	1.28046E+00	1.60711E+00	9.96720E-01	1.50319E+00	2.88799E+00	2.82156E+00	2.06814E+00
4	1.75804E-01	1.26160E+00	1.58203E+00	9.77605E-01	1.47139E+00	2.82516E+00	2.78493E+00	2.06625E+00
5	1.77898E-01	1.28533E+00	1.61283E+00	9.97192E-01	1.50255E+00	2.88544E+00	2.82005E+00	2.07083E+00

Ozone	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	1.59479E+00	1.45592E+00	1.32265E+00	8.12509E-01	6.82563E-01	5.96365E-01	3.66670E-01	2.00156E-01
2	1.60197E+00	1.46360E+00	1.33972E+00	8.33088E-01	7.00387E-01	6.24183E-01	3.69689E-01	2.02353E-01
3	1.60419E+00	1.46611E+00	1.34519E+00	8.39610E-01	7.06114E-01	6.32962E-01	3.70689E-01	2.03088E-01
4	1.60732E+00	1.47242E+00	1.35881E+00	8.55150E-01	7.19460E-01	6.53638E-01	3.72458E-01	2.04650E-01
5	1.60277E+00	1.46617E+00	1.34515E+00	8.39098E-01	7.05576E-01	6.32093E-01	3.70517E-01	2.02966E-01

Ozone	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	7.85529E-02	3.05252E-02	1.14229E-01	4.10580E-01	1.02617E-01	1.66582E-01	6.45731E-01	4.90086E-01
2	8.15637E-02	4.21646E-02	1.19142E-01	4.18751E-01	1.10495E-01	1.95304E-01	6.84069E-01	5.22722E-01
3	8.25288E-02	4.50625E-02	1.20685E-01	4.21385E-01	1.12989E-01	2.00286E-01	6.95596E-01	5.32270E-01
4	8.48246E-02	5.17515E-02	1.24366E-01	4.27270E-01	1.19010E-01	2.17674E-01	7.27327E-01	5.61766E-01
5	8.24615E-02	4.38882E-02	1.20550E-01	4.21007E-01	1.12760E-01	1.99255E-01	6.96375E-01	5.34375E-01

Ozone	grp. 25	grp. 26	grp. 27
1	2.07487E-01	1.30952E-01	1.92274E-02
2	2.24051E-01	1.46505E-01	2.40202E-02
3	2.28688E-01	1.50581E-01	2.51345E-02
4	2.44091E-01	1.66468E-01	3.02307E-02
5	2.30075E-01	1.52762E-01	2.59661E-02

Oflux disadvantage factors (zone average/cell average-flux)

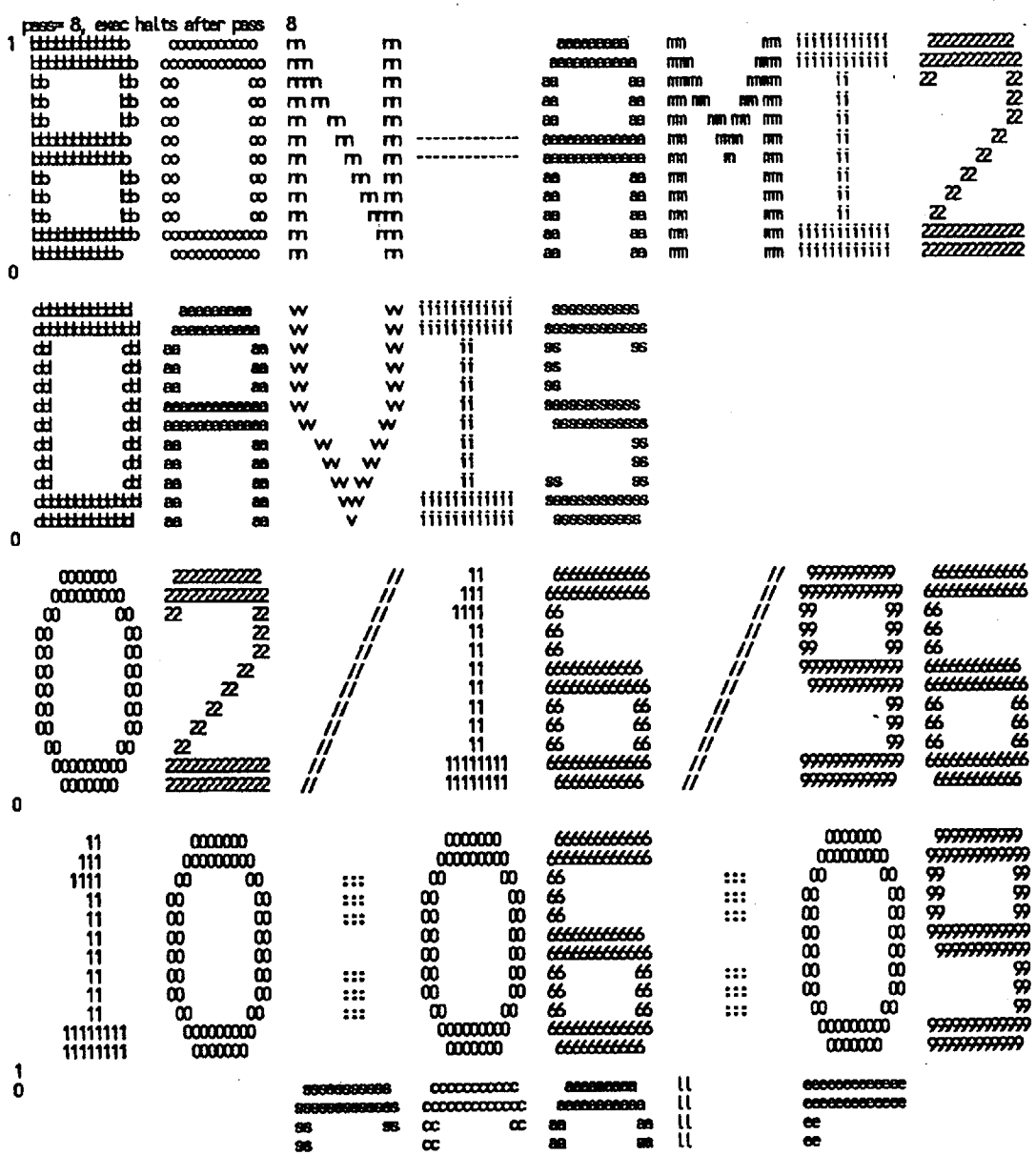
Ozone	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	1.02168E+00	1.03162E+00	1.03216E+00	1.03241E+00	1.03390E+00	1.03399E+00	1.02027E+00	1.00358E+00
2	1.00295E+00	1.00566E+00	1.00705E+00	1.00853E+00	1.00951E+00	1.01002E+00	1.00585E+00	1.00005E+00
3	9.95074E-01	9.96214E-01	9.97894E-01	9.99526E-01	1.00043E+00	1.00088E+00	1.00053E+00	9.98939E-01
4	9.87624E-01	9.81542E-01	9.80859E-01	9.80858E-01	9.79852E-01	9.79108E-01	9.87545E-01	9.98048E-01
5	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
Ozone	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	9.95022E-01	9.93010E-01	9.83259E-01	9.68520E-01	9.67385E-01	9.43477E-01	9.90153E-01	9.86154E-01
2	9.99498E-01	9.98247E-01	9.95959E-01	9.92854E-01	9.98646E-01	9.87487E-01	9.98296E-01	9.96582E-01
3	1.00089E+00	9.99957E-01	1.00008E+00	1.00062E+00	1.00078E+00	1.00137E+00	1.00100E+00	1.00060E+00
4	1.00384E+00	1.00426E+00	1.01015E+00	1.01914E+00	1.01968E+00	1.03409E+00	1.00578E+00	1.00830E+00
5	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
Ozone	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	9.52602E-01	6.95522E-01	9.47568E-01	9.75233E-01	9.08278E-01	8.46065E-01	9.27274E-01	9.17026E-01
2	9.89113E-01	9.60728E-01	9.88321E-01	9.94640E-01	9.79918E-01	9.70132E-01	9.82328E-01	9.78195E-01
3	1.00882E+00	1.02676E+00	1.00112E+00	1.00090E+00	1.00159E+00	1.00517E+00	9.98881E-01	9.96052E-01
4	1.02866E+00	1.17917E+00	1.03166E+00	1.01488E+00	1.03543E+00	1.09244E+00	1.04445E+00	1.05126E+00
5	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
Ozone	grp. 25	grp. 26	grp. 27					
1	9.01825E-01	8.57224E-01	7.40483E-01					
2	9.73852E-01	9.59056E-01	9.25062E-01					
3	9.98977E-01	9.85722E-01	9.67991E-01					
4	1.06092E+00	1.08972E+00	1.16424E+00					
5	1.00000E+00	1.00000E+00	1.00000E+00					

Ocell averaged currents

Ozone	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	2.45899E-03	2.51122E-02	3.15610E-02	1.90883E-02	2.90346E-02	5.59038E-02	3.15969E-02	4.66847E-03
2	3.86780E-03	3.91746E-02	4.89541E-02	2.96619E-02	4.47099E-02	8.41748E-02	4.77516E-02	7.02753E-03
3	3.14281E-03	3.34202E-02	4.32200E-02	2.71747E-02	4.22143E-02	8.00934E-02	4.57827E-02	5.62349E-03
4	1.08486E-03	1.22971E-02	1.65667E-02	1.09273E-02	1.73834E-02	3.32406E-02	1.92173E-02	2.02157E-03
5	1.79607E-03	1.91449E-02	2.47951E-02	1.55844E-02	2.42392E-02	4.62590E-02	2.65130E-02	3.34840E-03
Ozone	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	4.61272E-03	5.59994E-03	1.22953E-02	1.45827E-02	1.27543E-02	1.94613E-02	2.15574E-03	1.63486E-03
2	6.92764E-03	8.40018E-03	1.84988E-02	2.20194E-02	1.92549E-02	2.95815E-02	3.20688E-03	2.45795E-03
3	5.54298E-03	7.88697E-03	1.72994E-02	2.08592E-02	1.77966E-02	2.73365E-02	2.99527E-03	2.27942E-03
4	1.83450E-03	3.21098E-03	7.02679E-03	8.17550E-03	7.18124E-03	1.09888E-02	1.29434E-03	9.42618E-04
5	3.21719E-03	4.56712E-03	1.00138E-02	1.17744E-02	1.03139E-02	1.57767E-02	1.78652E-03	1.33387E-03
Ozone	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	2.14701E-03	5.47367E-03	3.51060E-03	5.99072E-03	5.46607E-03	1.53156E-02	2.75227E-02	2.33268E-02
2	3.26685E-03	9.41307E-03	5.25072E-03	8.99094E-03	8.42348E-03	2.40870E-02	4.16175E-02	3.56644E-02
3	3.01702E-03	8.64944E-03	4.89055E-03	8.32569E-03	7.80167E-03	2.22477E-02	3.86547E-02	3.31036E-02
4	1.20694E-03	3.41263E-03	1.99330E-03	3.42587E-03	3.13115E-03	8.90294E-03	1.58649E-02	1.35687E-02
5	1.75774E-03	4.73108E-03	2.84648E-03	4.86813E-03	4.47063E-03	1.26449E-02	2.24202E-02	1.91671E-02
Ozone	grp. 25	grp. 26	grp. 27					
1	1.15586E-02	1.04798E-02	2.79811E-03					
2	1.77478E-02	1.63040E-02	4.54813E-03					
3	1.63609E-02	1.50615E-02	4.17603E-03					
4	6.64134E-03	6.01781E-03	1.53064E-03					
5	9.44909E-03	8.59198E-03	2.27131E-03					

Ozone	volume	vol. fraction
1	6.88443E-01	3.30753E-01
2	3.17352E-02	1.52468E-02
3	2.16724E-01	1.04122E-01
4	1.14454E+00	5.49878E-01
5	2.08144E+00	1.00000E+00

- elapsed time .02 min.
Orequested parm=halt8,skipcellwt,skipshipdata


pass= 8, exec halts after pass 8

```
ss            cc            aa      aa  ll            ee
ssssssssss    cc            aaaaaaaaaa  ll            eeeeeeee
 ssssssssss   cc            aaaaaaaaaa  ll            eeeeeeee
       ss cc                aa      aa  ll            ee
       ss cc                aa      aa  ll            ee
ss     ss cc        cc      aa      aa  ll            ee
ssssssssss cccccccccccc     aa      aa  llllllllllll  eeeeeeeeeee
 ssssssssss  cccccccccc     aa      aa  llllllllllll  eeeeeeeeeee
```

```
*****************************************************************
*****************************************************************
*****************************************************************
******                                                     ******
******          program verification information           ******
******                                                     ******
******          code system:  scale  version:  4.2         ******
******                                                     ******
*****************************************************************
*****************************************************************
******                                                     ******
******                                                     ******
******          program:  c0c00B                           ******
******                                                     ******
******       creation date:  04/27/95                      ******
******                                                     ******
******          library:  /nautronics/scale/exe            ******
******                                                     ******
******                                                     ******
******  this is not a  scale  configuration controlled code******
******                                                     ******
******          jobname:  davis                            ******
******                                                     ******
******  date of execution:  02/16/96                       ******
******                                                     ******
******  time of execution:  10:06:09                       ******
******                                                     ******
*****************************************************************
*****************************************************************
*****************************************************************
```

```
1
0      -1q array has      1 entries.
0       0q array has      4 entries.
0       1q array has      6 entries.
0       2q array has      2 entries.
1logical assignments
0master library   12
 working library  17
 scratch file     18
 new library       1
0problem description
0igr--geometry (0/1/2/3--inf med/slab/cyl/sphere          2
0izm--number of zones or material regions                 4
0ms--mixing table length                                 70
0ibl--shielded cross section edit option (0/1--no/yes)    0
0ibr--bondarenko factor edit option (0/1--no/yes)         0
```

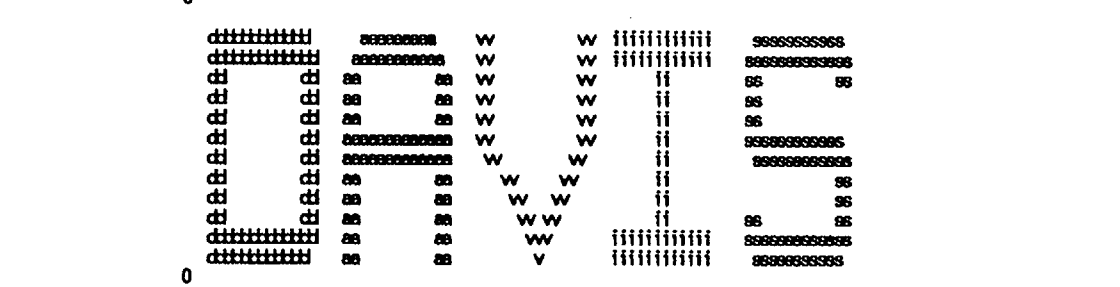
```
0isscpt--dancoff factor option                                  0
0convergence criterion    1.0000E-03
0geometry correction factor for wigner rational approximation  1.350E+00
0       3q array has     70 entries.
0       4q array has     70 entries.
0       5q array has     70 entries.
0       6q array has      4 entries.
0       7q array has      4 entries.
0       8q array has      4 entries.
0       9q array has      4 entries.
0      10q array has     70 entries.
0      11q array has      4 entries.
0m i x i n g   t a b l e
0entry  mixture  isotope  number density  new identifier
    1        3     8016     2.09710E-02             201
    2        3     1001     4.19420E-02             202
    3        3     5010     3.81515E-06             203
    4        3     5011     1.54884E-05             204
    5        2    40302     4.25156E-02             205
    6        1    92235     1.08967E-04          200006
    7        1    92234     1.35823E-06          200007
    8        1    92236     2.22568E-06          200008
    9        1    92238     7.18805E-03          200009
   10        1     8016     1.50611E-02          200010
   11        1     8016     1.15315E-02          200011
   12        1    36083     5.99894E-07          200012
   13        1    36085     2.88543E-07          200013
   14        1    38090     6.63490E-06          200014
   15        1    39089     5.44444E-06          200015
   16        1    42095     7.62439E-06          200016
   17        1    40093     5.44388E-06          200017
   18        1    40094     8.64059E-06          200018
   19        1    40095     6.37203E-07          200019
   20        1    41094     4.73664E-12          200020
   21        1    43099     8.45055E-06          200021
   22        1    45103     4.73364E-06          200022
   23        1    45105     8.33256E-09          200023
   24        1    44101     7.83094E-06          200024
   25        1    44106     1.16052E-06          200025
   26        1    46105     3.41731E-06          200026
   27        1    46108     1.04951E-06          200027
   28        1    47109     7.05166E-07          200028
   29        1    51124     1.55246E-10          200029
   30        1    54131     3.79879E-06          200030
   31        1    54132     7.71300E-06          200031
   32        1    54135     2.19622E-09          200032
   33        1    54136     1.49360E-05          200033
   34        1    55134     5.39316E-07          200034
   35        1    55135     4.74731E-06          200035
   36        1    55137     9.16895E-06          200036
   37        1    56136     1.16385E-07          200037
   38        1    57139     9.05884E-06          200038
   39        1    59141     7.95659E-06          200039
   40        1    59143     1.19082E-07          200040
   41        1    58144     2.29564E-06          200041
   42        1    60143     6.78043E-06          200042
   43        1    60145     5.11699E-06          200043
   44        1    61147     1.49234E-06          200044
   45        1    61148     4.52757E-09          200045
   46        1    60147     4.25602E-08          200046
```

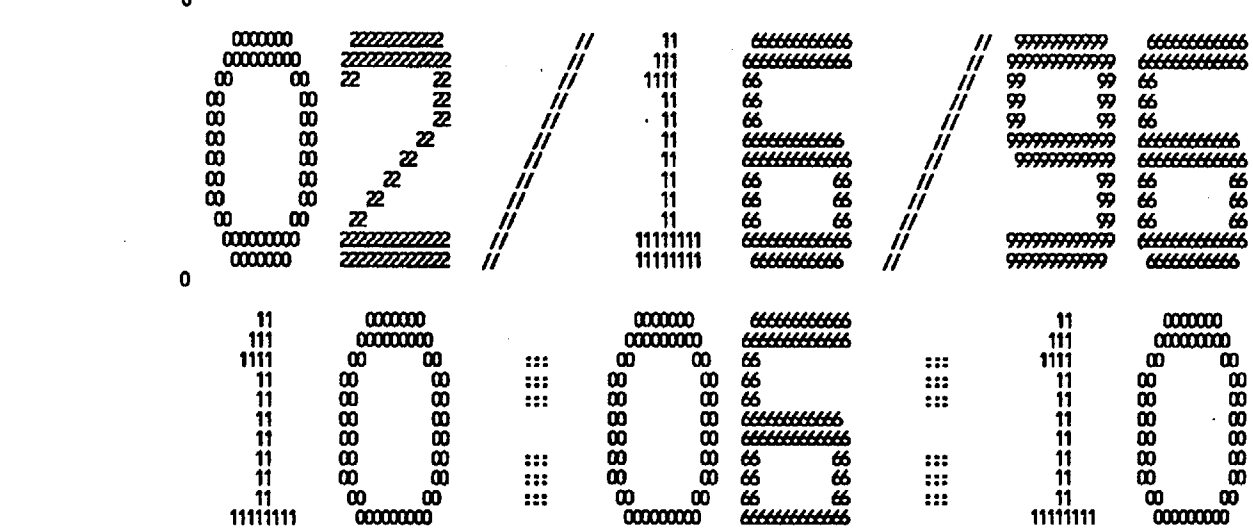
```
   47      1        62147   7.28768E-07          200047
   48      1        62149   2.99879E-08          200048
   49      1        62150   1.95229E-06          200049
   50      1        62151   1.52698E-07          200050
   51      1        62152   8.95258E-07          200051
   52      1        64155   1.19080E-09          200052
   53      1        63153   6.19432E-07          200053
   54      1        63154   1.60229E-07          200054
   55      1        63155   6.98613E-08          200055
   56      1        40302   4.42681E-05          200056
   57      1         1001   2.30630E-02          200057
   58      1         5010   2.09787E-06          200058
   59      1         5011   8.51673E-06          200059
   60      1        55133   9.26929E-06          200060
   61      1        95237   1.88908E-06          200061
   62      1        94238   3.82360E-07          200062
   63      1        94239   4.11046E-05          200063
   64      1        94240   1.00195E-05          200064
   65      1        94241   5.99267E-06          200065
   66      1        94242   9.62606E-07          200066
   67      1        95241   2.37599E-07          200067
   68      1        95243   1.26849E-07          200068
   69      1        96244   1.75358E-08          200069
   70      1          999   3.30753E-21          200070
Ogeometry and material description
Ozone   mixture   outer dimension   temperature      extra xs   type (0/1--fuel/mod)
    1         3      6.32460E-01   6.07600E+02   7.90564E-01             0
    2         2      6.73100E-01   6.50000E+02   1.23052E+01             0
    3         3      8.14000E-01   6.07600E+02   3.54852E+00             0
    4         1      2.96100E+00   9.75000E+02   2.32883E-01             0
     8067 locations of   200000 available are required to make a new master containing the self-shielded values
Ono nuclides in your problem have bondarenko factor data**bonami will copy from logical 12 to logical  1
Ocopy      999  1/v cross sectio from log 12 to log  1   bondarenko trigger 0
Ocopy     1001  hydrogen        from log 12 to log 18   bondarenko trigger 0
Ocopy     1001  hydrogen        from log 18 to log  1   bondarenko trigger 0
Ocopy     1001  hydrogen        from log 18 to log  1   bondarenko trigger 0
Ocopy     5010  b-10 1273 218grp from log 12 to log 18   bondarenko trigger 0
Ocopy     5010  b-10 1273 218grp from log 18 to log  1   bondarenko trigger 0
Ocopy     5010  b-10 1273 218grp from log 18 to log  1   bondarenko trigger 0
Ocopy     5011  boron-11        from log 12 to log 18   bondarenko trigger 0
Ocopy     5011  boron-11        from log 18 to log  1   bondarenko trigger 0
Ocopy     5011  boron-11        from log 18 to log  1   bondarenko trigger 0
Ocopy     8016  oxygen-16       from log 12 to log 18   bondarenko trigger 0
Ocopy     8016  oxygen-16       from log 18 to log  1   bondarenko trigger 0
Ocopy     8016  oxygen-16       from log 18 to log  1   bondarenko trigger 0
Ocopy     8016  oxygen-16       from log 18 to log  1   bondarenko trigger 0
Ocopy    36083  kr-83           from log 12 to log  1   bondarenko trigger 0
Ocopy    36085  kr-85           from log 12 to log  1   bondarenko trigger 0
Ocopy    38090  sr-90           from log 12 to log  1   bondarenko trigger 0
Ocopy    39089   y-89           from log 12 to log  1   bondarenko trigger 0
Ocopy    40093  zr-93           from log 12 to log  1   bondarenko trigger 0
Ocopy    40094  zr-94           from log 12 to log  1   bondarenko trigger 0
Ocopy    40095  zr-95           from log 12 to log  1   bondarenko trigger 0
Ocopy    40302  zircalloy       from log 12 to log 18   bondarenko trigger 0
Ocopy    40302  zircalloy       from log 18 to log  1   bondarenko trigger 0
Ocopy    40302  zircalloy       from log 18 to log  1   bondarenko trigger 0
Ocopy    41094  nb-94           from log 12 to log  1   bondarenko trigger 0
Ocopy    42095  mo-95           from log 12 to log  1   bondarenko trigger 0
Ocopy    43099  tc-99           from log 12 to log  1   bondarenko trigger 0
Ocopy    44101  ru-101          from log 12 to log  1   bondarenko trigger 0
```

```
0copy    44106  ru-106          from lag 12 to lag  1   bondarenko trigger 0
0copy    45103  rh-103          from lag 12 to lag  1   bondarenko trigger 0
0copy    45105  rh-105          from lag 12 to lag  1   bondarenko trigger 0
0copy    46105  pd-105          from lag 12 to lag  1   bondarenko trigger 0
0copy    46108  pd-108          from lag 12 to lag  1   bondarenko trigger 0
0copy    47109  silver-109      from lag 12 to lag  1   bondarenko trigger 0
0copy    51124  sb-124          from lag 12 to lag  1   bondarenko trigger 0
0copy    54131  xe-131          from lag 12 to lag  1   bondarenko trigger 0
0copy    54132  xe-132          from lag 12 to lag  1   bondarenko trigger 0
0copy    54135  xenon-135       from lag 12 to lag  1   bondarenko trigger 0
0copy    54136  xe-136          from lag 12 to lag  1   bondarenko trigger 0
0copy    55133  cesium-133      from lag 12 to lag  1   bondarenko trigger 0
0copy    55134  cs-134          from lag 12 to lag  1   bondarenko trigger 0
0copy    55135  cs-135          from lag 12 to lag  1   bondarenko trigger 0
0copy    55137  cs-137          from lag 12 to lag  1   bondarenko trigger 0
0copy    56136  ba-136          from lag 12 to lag  1   bondarenko trigger 0
0copy    57139  la-139          from lag 12 to lag  1   bondarenko trigger 0
0copy    58144  ce-144          from lag 12 to lag  1   bondarenko trigger 0
0copy    59141  pr-141          from lag 12 to lag  1   bondarenko trigger 0
0copy    59143  pr-143          from lag 12 to lag  1   bondarenko trigger 0
0copy    60143  nd-143          from lag 12 to lag  1   bondarenko trigger 0
0copy    60145  nd-145          from lag 12 to lag  1   bondarenko trigger 0
0copy    60147  nd-147          from lag 12 to lag  1   bondarenko trigger 0
0copy    61147  pm-147          from lag 12 to lag  1   bondarenko trigger 0
0copy    61148  pm-148          from lag 12 to lag  1   bondarenko trigger 0
0copy    62147  sm-147          from lag 12 to lag  1   bondarenko trigger 0
0copy    62149  sm-149          from lag 12 to lag  1   bondarenko trigger 0
0copy    62150  sm-150          from lag 12 to lag  1   bondarenko trigger 0
0copy    62151  sm-151          from lag 12 to lag  1   bondarenko trigger 0
0copy    62152  sm-152          from lag 12 to lag  1   bondarenko trigger 0
0copy    63153  eu-153          from lag 12 to lag  1   bondarenko trigger 0
0copy    63154  eu-154          from lag 12 to lag  1   bondarenko trigger 0
0copy    63155  eu-155          from lag 12 to lag  1   bondarenko trigger 0
0copy    64155  gd-155          from lag 12 to lag  1   bondarenko trigger 0
0copy    92234  u-234 1043 sigc from lag 12 to lag  1   bondarenko trigger 0
0copy    92235  uranium-235     from lag 12 to lag  1   bondarenko trigger 0
0copy    92236  u-236 1163 sigc from lag 12 to lag  1   bondarenko trigger 0
0copy    92238  uranium-238     from lag 12 to lag  1   bondarenko trigger 0
0copy    93237  neptunium-237   from lag 12 to lag  1   bondarenko trigger 0
0copy    94238  pu-238 1050 sigc from lag 12 to lag  1   bondarenko trigger 0
0copy    94239  plutonium-239   from lag 12 to lag  1   bondarenko trigger 0
0copy    94240  plutonium-240   from lag 12 to lag  1   bondarenko trigger 0
0copy    94241  plutonium-241   from lag 12 to lag  1   bondarenko trigger 0
0copy    94242  plutonium-242   from lag 12 to lag  1   bondarenko trigger 0
0copy    95241  am-241 1056 sigc from lag 12 to lag  1   bondarenko trigger 0
0copy    95243  am-243 1057 218 from lag 12 to lag  1   bondarenko trigger 0
0copy    96244  curium-244      from lag 12 to lag  1   bondarenko trigger 0
1     scale 4.2 - 27 group neutron burnup library
      based on endf-b version 4 data with endf-b version 5 fission products
        compiled for nrc     1/27/89
          last updated       9/16/93
            l.m.petrie  -  ornl
      tape id                          4321      number of nuclides          70
      number of neutron groups           27      number of gamma groups       0
      first thermal group                15      logical unit                 1
                              table of contents
     1/v cross sections normalized to 1.0 at 0.0253 ev                    id   20070
      hydrogen       endf/b-iv mat 1269/thrml002  updated 10/13/89        id     202
      hydrogen       endf/b-iv mat 1269/thrml002  updated 10/13/89        id   20057
     b-10 1273 218ngp 04295 p-3 293k                                      id     205
```

```
b-10 1273 218rngp 042375 p-3 293k                                    id   200058
 boron-11      endf/b-iv mat 1160          updated 10/13/89          id      204
 boron-11      endf/b-iv mat 1160          updated 10/13/89          id   200059
 oxygen-16     endf/b-iv mat 1276          updated 10/13/89          id      201
 oxygen-16     endf/b-iv mat 1276          updated 10/13/89          id   200010
 oxygen-16     endf/b-iv mat 1276          updated 10/13/89          id   200011
 kr-83         mt=102,103,105,106,107      updated 10/13/89          id   200012
 kr-85           mt=  102                                            id   200013
 sr-90         mt=102                      updated 10/13/89          id   200014
  y-89         mt=102                      updated 10/13/89          id   200015
 zr-93           mt=  102                                            id   200017
 zr-94         mt=102                      updated 10/13/89          id   200018
 zr-95         mt=102                      updated 10/13/89          id   200019
 zircalloy     endf/b-iv mat 1284          updated 10/13/89          id      205
 zircalloy     endf/b-iv mat 1284          updated 10/13/89          id   200056
 rb-94         mt=102                      updated 10/13/89          id   200020
 mo-95         mt=102                      updated 10/13/89          id   200016
 tc-99         mt=102                      updated 10/13/89          id   200021
 ru-101        mt=102                      updated 10/13/89          id   200024
 ru-106        mt=102                      updated 10/13/89          id   200025
 rh-103        mt=102                      updated 10/13/89          id   200022
 rh-105          mt=  102                                            id   200023
 pd-105        mt=102                      updated 10/13/89          id   200026
 pd-108        mt=102                      updated 10/13/89          id   200027
 silver-109    endf/b-iv mat 1139          updated 10/13/89          id   200028
 sb-124        mt=102                      updated 10/13/89          id   200029
 xe-131        mt=102,103,104,105,106      updated 10/13/89          id   200030
 xe-132        mt=102,103,104,105,106      updated 10/13/89          id   200031
 xenon-135     endf/b-iv mat 1294          updated 10/13/89          id   200032
 xe-136          mt=  102, 103, 104, 105, 107                        id   200033
 cesium-133    endf/b-iv mat 1141          updated 10/13/89          id   200060
 cs-134        mt=102                      updated 10/13/89          id   200034
 cs-135          mt=  102                                            id   200035
 cs-137        mt=102                      updated 10/13/89          id   200036
 ba-136        mt=102                      updated 10/13/89          id   200037
 la-139        mt=102                      updated 10/13/89          id   200038
 ce-144          mt=  102                                            id   200041
 pr-141        mt=102,103,104,105,106,107  updated 10/13/89          id   200039
 pr-143        mt=102                      updated 10/13/89          id   200040
 nd-143        mt=102                      updated 10/13/89          id   200042
 nd-145        mt=102                      updated 10/13/89          id   200043
 nd-147        mt=102                      updated 10/13/89          id   200046
 pm-147        mt=102                      updated 10/13/89          id   200044
 pm-148          mt=  102                                            id   200045
 sm-147        endf/b-v fission product    updated 10/13/89          id   200047
 sm-149        mt=102,103,107              updated 10/13/89          id   200048
 sm-150        mt=102                      updated 10/13/89          id   200049
 sm-151        mt=102,103,104,105,106,107  updated 10/13/89          id   200050
 sm-152        mt=102,103,104,105,106,107  updated 10/13/89          id   200051
 eu-153        mt=102,103,104,105,106,107  updated 10/13/89          id   200053
 eu-154        mt=102,103,104,105,106,107  updated 10/13/89          id   200054
 eu-155        mt=102,103,104,105,106,107  updated 10/13/89          id   200055
 gd-155        mt=102                      updated 10/13/89          id   200052
u-234 1043 sigo=5+4 newklacs p-3 293k f-1/e-m(1.+5)                  id   200007
 uranium-235   endf/b-iv mat 1261          updated 10/13/89          id   200006
u-236 1163 sigo=5+4 newklacs p-3 293k f-1/e-m(1.+5)                  id   200008
 uranium-238   endf/b-iv mat 1262          updated 10/13/89          id   200009
 neptunium-237 endf/b-iv mat 1263          updated 10/13/89          id   200061
pu-238 1050 sigo=5+4 newklacs p-3 293k f-1/e-m(1.+5)                 id   200062
 plutonium-239 endf/b-iv mat 1264          updated 10/13/89          id   200063
```

```
      plutonium-240  endf/b-iv mat 1265          updated 10/13/89          id  20064
      plutonium-241  endf/b-iv mat 1266          updated 10/13/89          id  20065
      plutonium-242  endf/b-iv mat 1161          updated 10/13/89          id  20066
     am-241 1056 sig=5+4 res+lacs 218ngp p-3 295k                          id  20067
     am-243 1057 218 gp wt f-1/e-m 090376 p3 295k                          id  20068
      curium-244     endf/b-iv mat 1162          updated 10/13/89          id  20069
0       tape copy used      0 i/o's, and took     .00 seconds
1
0
```





```
     11111111       0000000                    0000000      6666666666                    11111111       0000000
1
0
                     SSSSSSSSSS    CCCCCCCCCC     AAAAAAAA    LL            EEEEEEEEEEEE
                    SSSSSSSSSSS   CCCCCCCCCCCC   AAAAAAAAA   LL            EEEEEEEEEEEE
                    SS        SS  CC        CC  AA        AA  LL            EE
                    SS            CC            AA        AA  LL            EE
                    SS            CC            AA        AA  LL            EE
                    SSSSSSSSSS    CC            AAAAAAAAAAAA  LL            EEEEEEEE
                     SSSSSSSSSS   CC            AAAAAAAAAAAA  LL            EEEEEEEE
                              SS  CC            AA        AA  LL            EE
                              SS  CC            AA        AA  LL            EE
                    SS        SS  CC        CC  AA        AA  LL            EE
                    SSSSSSSSSSSS  CCCCCCCCCCCC  AA        AA  LLLLLLLLLLLL  EEEEEEEEEEEE
                     SSSSSSSSSS    CCCCCCCCCC   AA        AA  LLLLLLLLLLLL  EEEEEEEEEEEE
```

```
**************************************************************************
**************************************************************************
**************************************************************************
******                                                              ******
******                program verification information              ******
******                                                              ******
******                code system:   scale  version:   4.2          ******
******                                                              ******
**************************************************************************
**************************************************************************
******                                                              ******
******                                                              ******
******                     program:  c0c002                         ******
******                                                              ******
******                creation date:  04/27/95                      ******
******                                                              ******
******                     library:  /nautronics/scale/exe          ******
******                                                              ******
******                                                              ******
******                                                              ******
******           this is not a  scale  configuration controlled code******
******                                                              ******
******                     jobname:  davis                          ******
******                                                              ******
******           date of execution:  02/16/96                       ******
******                                                              ******
******           time of execution:  10:06:10                       ******
******                                                              ******
******                                                              ******
**************************************************************************
**************************************************************************
**************************************************************************
```

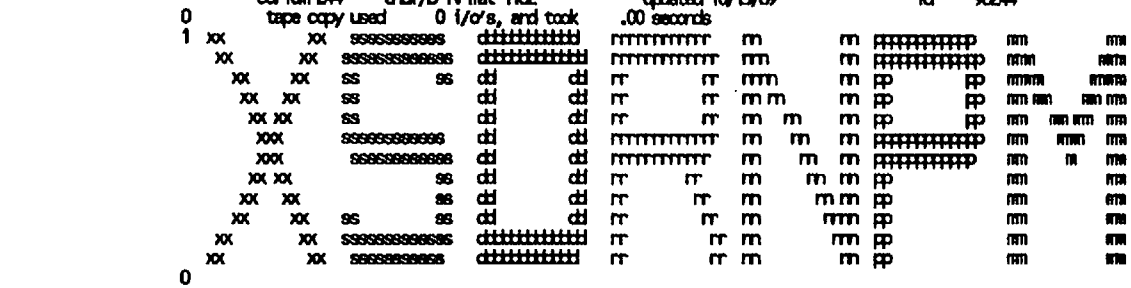
```
1
0      -1q array has      1 entries.
0       0q array has      4 entries.
0       1q array has     12 entries.
0select  5 nuclides from the master  library on logical  1
        65 nuclides from the working library on logical  3
         0 nuclides from the working library on logical  0
           to create the new working library on logical  4

         1 resonance calculations have been requested
```

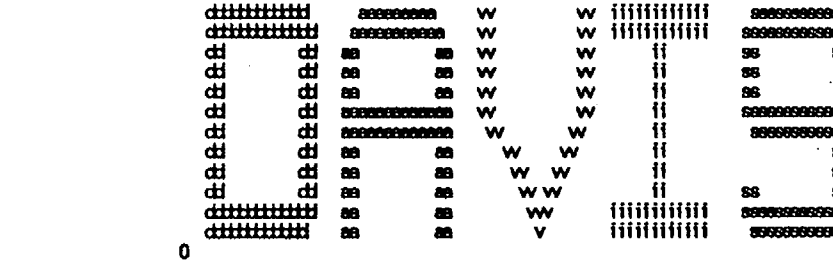
```
        0 output option for ampx formatted cross section data
0the storage allocated for this case is 200000 words
0       2q array has      70 entries.
0       3q array has      15 entries.
0       4q array has       5 entries.
0 general information concerning cross section library
    tape identification number                4349
    number of nuclides on tape                  65
    number of neutron energy groups             27
    first thermal neutron energy group          15
    number of gamma energy groups                0
0   direct access unit number  9 requires  72 blocks of length  1484 words
- xsdrn tape   4321
                        scale 4.2 - 27 group neutron burnup library
                           based on endf-b version 4 data with endf-b version 5 fission products
                              compiled for nrc      1/27/89
                                 last updated       9/16/93
                                    l.m.petrie   -   ornl
-  work tape   4349

 xsdrn weighted tape--parent case entitled-- 1200 d, sas2h: babcock wilcox 15x15,
  3.00wt%, 20gwd/mtu burn high temp


0 nuclides from xsdrn tape
    1     hydrogen        endf/b-iv mat 1269/thrm1002    updated 10/13/89          202
    2    b-10 1273 218ngp 042375 p-3 295k                                           205
    3     boron-11        endf/b-iv mat 1160             updated 10/13/89          204
    4     oxygen-16       endf/b-iv mat 1276             updated 10/13/89          201
    5     zircalloy       endf/b-iv mat 1284             updated 10/13/89          205
0 nuclides from  work tape
    6    1/v cross sections normalized to 1.0 at 0.0253 ev                          999
    7     hydrogen        endf/b-iv mat 1269/thrm1002    updated 10/13/89         1001
    8    b-10 1273 218ngp 042375 p-3 295k                                          5010
    9     boron-11        endf/b-iv mat 1160             updated 10/13/89         5011
   10     oxygen-16       endf/b-iv mat 1276             updated 10/13/89         8016
   11     oxygen-16   -   endf/b-iv mat 1276             updated 10/13/89            6
   12     kr-83           mt=102,103,103,105,106,107     updated 10/13/89        36083
   13     kr-85             mt=  102                                              36085
   14     sr-90           mt=102                         updated 10/13/89        38090
   15      y-89           mt=102                         updated 10/13/89        39089
   16     zr-93             mt=  102                                              40093
   17     zr-94           mt=102                         updated 10/13/89        40094
   18     zr-95           mt=102                         updated 10/13/89        40095
   19     zircalloy       endf/b-iv mat 1284             updated 10/13/89        40802
   20     rb-94           mt=102                         updated 10/13/89        41094
   21     mo-95           mt=102                         updated 10/13/89        42095
   22     tc-99           mt=102                         updated 10/13/89        43099
   23     ru-101          mt=102                         updated 10/13/89        44101
   24     ru-106          mt=102                         updated 10/13/89        44106
   25     rh-103          mt=102                         updated 10/13/89        45103
   26     rh-105            mt=  102                                              45105
   27     pd-105          mt=102                         updated 10/13/89        46105
   28     pd-108          mt=102                         updated 10/13/89        46108
   29     silver-109      endf/b-iv mat 1139             updated 10/13/89        47109
   30     sb-124          mt=102                         updated 10/13/89        51124
   31     xe-131          mt=102,103,104,105,106         updated 10/13/89        54131
   32     xe-132          mt=102,103,104,105,106         updated 10/13/89        54132
   33     xenon-135       endf/b-iv mat 1294             updated 10/13/89        54135
```

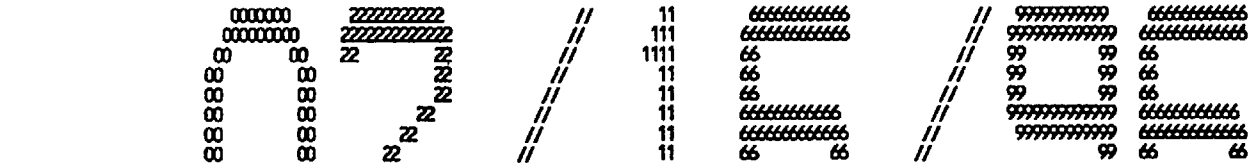
```
   34    xe-136          mt=  102, 103, 104, 105, 107                          54136
   35    cesium-133    endf/b-iv mat 1141            updated 10/13/89          55133
   36    cs-134        mt=102                        updated 10/13/89          55134
   37    cs-135          mt=  102                                              55135
   38    cs-137        mt=102                        updated 10/13/89          55137
   39    ba-136        mt=102                        updated 10/13/89          56136
   40    la-139        mt=102                        updated 10/13/89          57139
   41    ce-144          mt=  102                                              58144
   42    pr-141        mt=102,103,104,105,106,107    updated 10/13/89          59141
   43    pr-143        mt=102                        updated 10/13/89          59143
   44    nd-143        mt=102                        updated 10/13/89          60143
   45    nd-145        mt=102                        updated 10/13/89          60145
   46    nd-147        mt=102                        updated 10/13/89          60147
   47    pm-147        mt=102                        updated 10/13/89          61147
   48    pm-148          mt=  102                                              61148
   49    sm-147        endf/b-v fission product      updated 10/13/89          62147
   50    sm-149        mt=102,103,107                updated 10/13/89          62149
   51    sm-150        mt=102                        updated 10/13/89          62150
   52    sm-151        mt=102,103,104,105,106,107    updated 10/13/89          62151
   53    sm-152        mt=102,103,104,105,106,107    updated 10/13/89          62152
   54    eu-153        mt=102,103,104,105,106,107    updated 10/13/89          63153
   55    eu-154        mt=102,103,104,105,106,107    updated 10/13/89          63154
   56    eu-155        mt=102,103,104,105,106,107    updated 10/13/89          63155
   57    gd-155        mt=102                        updated 10/13/89          64155
   58   u-234 1043 sigz=5+4 newtacs p-3 293k f-1/e-m(1.+5)                       92234
   59    uranium-235   endf/b-iv mat 1261            updated 10/13/89          92235
   60   u-236 1163 sigz=5+4 newtacs p-3 293k f-1/e-m(1.+5)                       92236
   61    uranium-238   endf/b-iv mat 1262            updated 10/13/89          92238
   62    neptunium-237 endf/b-iv mat 1263            updated 10/13/89          93237
   63   pu-238 1050 sigz=5+4 newtacs p-3 293k f-1/e-m(1.+5)                       94238
   64    plutonium-239 endf/b-iv mat 1264            updated 10/13/89          94239
   65    plutonium-240 endf/b-iv mat 1265            updated 10/13/89          94240
   66    plutonium-241 endf/b-iv mat 1266            updated 10/13/89          94241
   67    plutonium-242 endf/b-iv mat 1161            updated 10/13/89          94242
   68   am-241 1056 sigz=5+4 newtacs 218rgp p-3 293k                             95241
   69   am-243 1057 218 gp wt f-1/e-m 090576 p3 293k                             95243
   70    curium-244    endf/b-iv mat 1162            updated 10/13/89          96244
0 hydrogen       endf/b-iv mat 1269/thrmh002   updated 10/13/89      202    temperature=  607.60
                          thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0b-10 1273 218rgp 042375 p-3 293k                                       203    temperature=  607.60
                          thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0 boron-11       endf/b-iv mat 1160            updated 10/13/89      204    temperature=  607.60
                          thermal scattering matrix number  2 at a temperature of   550.00 was selected.
0 oxygen-16      endf/b-iv mat 1276            updated 10/13/89      201    temperature=  607.60
0 zircalloy      endf/b-iv mat 1284            updated 10/13/89      205    temperature=  650.00
0resonance data for this nuclide
0mass number (a)          =   90.436          temperature(kelvin)      =  650.000
0potential scatter sigma  =    6.385          lumped nuclear density   = 4.251602E-02
0spin factor (g)          =    1.079          lump dimension (a-bar)   = 6.730999E-01
0inner radius             = 6.324600E-01      dancoff correction (c)   = 1.680390E-01
0the absorber will be treated by the nordheim integral method.
0this resonance material will be treated as a 2-dimensional object.
0volume fraction of lump in cell used to account for spatial self-shielding=1.00000
0group      res abs       res fiss      res scat
   8     -1.156752E-03   .000000E+00  -7.806083E-01
   9     -4.625978E-02   .000000E+00  -2.075270E+00
  10     -5.962250E-02   .000000E+00  -1.351984E+00
  11     -1.761672E-01   .000000E+00  -7.350731E-01
0excess resonance integrals
0                resolved
```

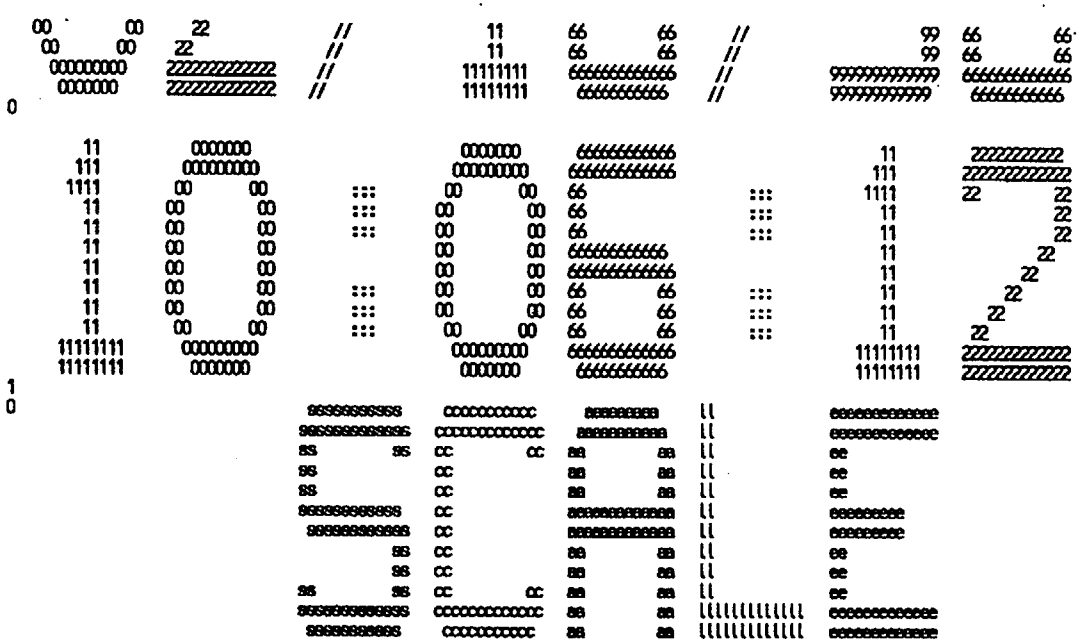
```
absorption      2.92402E-01
 fission         .00000E+00
-  elapsed time    .00 min.
-  elapsed time    .02 min.
1     this xsdrn working tape was created 02/16/96 at 10:06:11
      the title of the parent case is as follows
      xsdrn weighted tape--parent case entitled-- 1200 d, sas2h: babcock wilcox 15x15,
       3.00wt%, 20gwd/mtu burn high temp

        tape id                          8670        number of nuclides          70
        number of neutron groups           27        number of gamma groups       0
        first thermal group                15        logical unit                 4
                                  table of contents
       hydrogen       endf/b-iv mat 1269/thrmf1002   updated 10/13/89          id    202
      b-10 1273 218ngp 042375 p-3 293k                                          id    203
       boron-11       endf/b-iv mat 1160             updated 10/13/89          id    204
       oxygen-16      endf/b-iv mat 1276             updated 10/13/89          id    201
       zircalloy      endf/b-iv mat 1284             updated 10/13/89          id    205
      1/v cross sections normalized to 1.0 at 0.0253 ev                         id    999
       hydrogen       endf/b-iv mat 1269/thrmf1002   updated 10/13/89          id   1001
      b-10 1273 218ngp 042375 p-3 293k                                          id   5010
       boron-11       endf/b-iv mat 1160             updated 10/13/89          id   5011
       oxygen-16      endf/b-iv mat 1276             updated 10/13/89          id   8016
       oxygen-16      endf/b-iv mat 1276             updated 10/13/89          id      6
       kr-83          mt=102,103,103,105,106,107     updated 10/13/89          id  36083
       kr-85            mt=  102                                                id  36085
       sr-90          mt=102                         updated 10/13/89          id  38090
        y-89          mt=102                         updated 10/13/89          id  39089
       zr-93            mt=  102                                                id  40093
       zr-94          mt=102                         updated 10/13/89          id  40094
       zr-95          mt=102                         updated 10/13/89          id  40095
       zircalloy      endf/b-iv mat 1284             updated 10/13/89          id  40302
       rb-94          mt=102                         updated 10/13/89          id  41094
       mo-95          mt=102                         updated 10/13/89          id  42095
       tc-99          mt=102                         updated 10/13/89          id  43099
       ru-101         mt=102                         updated 10/13/89          id  44101
       ru-106         mt=102                         updated 10/13/89          id  44106
       rh-103         mt=102                         updated 10/13/89          id  45103
       rh-105           mt=  102                                                id  45105
       pd-105         mt=102                         updated 10/13/89          id  46105
       pd-108         mt=102                         updated 10/13/89          id  46108
       silver-109     endf/b-iv mat 1139             updated 10/13/89          id  47109
       sb-124         mt=102                         updated 10/13/89          id  51124
       xe-131         mt=102,103,104,105,106         updated 10/13/89          id  54131
       xe-132         mt=102,103,104,105,106         updated 10/13/89          id  54132
       xenon-135      endf/b-iv mat 1294             updated 10/13/89          id  54135
       xe-136           mt=  102,  103,  104,  105,  107                        id  54136
       cesium-133     endf/b-iv mat 1141             updated 10/13/89          id  55133
       cs-134         mt=102                         updated 10/13/89          id  55134
       cs-135           mt=  102                                                id  55135
       cs-137         mt=102                         updated 10/13/89          id  55137
       ba-136         mt=102                         updated 10/13/89          id  56136
       la-139         mt=102                         updated 10/13/89          id  57139
       ce-144           mt=  102                                                id  58144
       pr-141         mt=102,103,104,105,106,107     updated 10/13/89          id  59141
       pr-143         mt=102                         updated 10/13/89          id  59143
       nd-143         mt=102                         updated 10/13/89          id  60143
       nd-145         mt=102                         updated 10/13/89          id  60145
       nd-147         mt=102                         updated 10/13/89          id  60147
       pm-147         mt=102                         updated 10/13/89          id  61147
```

```
        pm-148          mt=  102                                                id    61148
        sm-147          endf/b-v fission product        updated 10/13/89         id    62147
        sm-149          mt=102,103,107                  updated 10/13/89         id    62149
        sm-150          mt=102                          updated 10/13/89         id    62150
        sm-151          mt=102,103,104,105,106,107      updated 10/13/89         id    62151
        sm-152          mt=102,103,104,105,106,107      updated 10/13/89         id    62152
        eu-153          mt=102,103,104,105,106,107      updated 10/13/89         id    63153
        eu-154          mt=102,103,104,105,106,107      updated 10/13/89         id    63154
        eu-155          mt=102,103,104,105,106,107      updated 10/13/89         id    63155
        gd-155          mt=102                          updated 10/13/89         id    64155
       u-234 1043 sigo=5+4 newxlacs p-3 293k f-1/e-m(1.+5)                      id    92234
        uranium-235     endf/b-iv mat 1261              updated 10/13/89         id    92235
       u-236 1163 sigo=5+4 newxlacs p-3 293k f-1/e-m(1.+5)                      id    92236
        uranium-238     endf/b-iv mat 1262              updated 10/13/89         id    92238
        neptunium-237   endf/b-iv mat 1263              updated 10/13/89         id    93237
       pu-238 1050 sigo=5+4 newxlacs p-3 293k f-1/e-m(1.+5)                     id    94238
        plutonium-239   endf/b-iv mat 1264              updated 10/13/89         id    94239
        plutonium-240   endf/b-iv mat 1265              updated 10/13/89         id    94240
        plutonium-241   endf/b-iv mat 1266              updated 10/13/89         id    94241
        plutonium-242   endf/b-iv mat 1161              updated 10/13/89         id    94242
       am-241 1056 sigo=5+4 newxlacs 218grp p-3 293k                            id    95241
       am-243 1057 218 gp wt f-1/e-m 090576 p3 293k                             id    95243
        curium-244      endf/b-iv mat 1162              updated 10/13/89         id    96244
0       tape copy used       0 i/o's, and took     .00 seconds
```









```
**********************************************************************
**********************************************************************
**********************************************************************
******                                                          ******
******                program verification information          ******
******                                                          ******
******                code system:  scale  version:  4.2        ******
**********************************************************************
**********************************************************************
******                                                          ******
******                                                          ******
******                                                          ******
******                   program:  c0c001                       ******
******                                                          ******
******              creation date:  04/27/95                    ******
******                                                          ******
******                   library:  /neutronics/scale/exe        ******
******                                                          ******
******                                                          ******
******          this is not a  scale  configuration controlled code ******
******                                                          ******
******                   jobname:  davis                        ******
******                                                          ******
******          date of execution:  02/16/96                    ******
******                                                          ******
```

```
                    ******                                                      ******
                    ******   time of execution:  10:06:12                       ******
                    ******                                                      ******
                    ******                                                      ******
                    ************************************************************************
                    ************************************************************************
                    ************************************************************************
1
                   1200 d, second part of ses2h pass to make library
0       -1q array has      1 entries.
0        0q array has     11 entries.
0        1q array has     15 entries.
0        2q array has     10 entries.
0        3q array has     12 entries.
0        4q array has      9 entries.
0        5q array has     12 entries.
0direct access unit  9 requires     12 blocks of length  704 for cross section mixing.
1                   1200 d, second part of ses2h pass to make library
0general problem description data block
0                              general problem data

 ige  1/2/3 = plane/cylinder/sphere      2      isn  quadrature order                 8
 iam  number of zones                    4      isct order of scattering              3
 im   number of special intervals       28      ievt 0/1/2/3/4/5/6=q/k/alpha/c/z/r/h  1
 ibl  0/1/2/3 = vacuum/refl/per/white    1      iim  inner iteration maximum        20
 ibr  right boundary condition           3      iom  outer iteration maximum        25
 mxx  number of mixtures                 3      iclc -1/0/n--flat res/sry/cpt         0
 ms   mixing table length               70      ith  0/1 = forward/adjoint           0
 igm  number of energy groups           27      iflu not used(always wgtd)            0
 nrg  number of neutron groups          27      iprt -2/-1/0/n=mixture xsec print    -2
 ngg  number of gamma groups             0      idl  0/1/2/3=no/prt rd/pch n/both   14
 ifg  number of first thermal group     15      ipbt -1/0/1=none/fine/all bal. prt    0
0                              special options

 ifg  0/1 = none/weighting calculation   1      ipn  0/1/2 diff. coef. param         0
 iqm  volumetric sources (0/n=no/yes)    0      idfm 0/1 = none/density factors 39*  0
 ipn  boundary sources (0/n=no/yes)      0      iaz  0/n = none/n activities by zone 0
 ifn  0/1/2 = input 33*/34*/use last    14      iai  0/1=none/activities by interval 0
 itmx maximum time (minutes)            10      ifct 0/1=no/yes upscatter scaling    0
 idt1 0/1/2/3=no/xsect/srce/flux--out    0      ipvt 0/1/2=no/k/alpha parametric srch 0
 isx  broad group fluxes                 0      isen outer iteration acceleration    0
 ibln activity data unit                 0      nbnd band rebaln parameter           0
 jbkl 0/1/2 buckling geometry            0
0                          weighting data (ifg=1)

 icon -1/0/1=cell/zone/region weight    -1      ihtf total xsect pen in brd gp tables 3
 igmf number of broad groups             3      ndsf pen g-g or file number           4
 itp  0/10/20/30/40 0/c/e/ac/a           0      nusf table length or max order        6
 ipp  -2/-1/0/n=wgted xsect print       -2      msm  extra 1-d x-sect positions      0
 iep  -1/n snisn xsect print            -1
0                          floating point parameters

 eps  overall convergence      1.00000E-04      dy   cyl/pla ht for buckling    .00000E+00
 ptc  point convergence        1.00000E-04      dz   plane depth for buckling 2.00000E+02
 xnf  normalization factor     1.00000E+00      vsc  void streaming correction  .00000E+00
 ev   eigenvalue guess          .00000E+00      pv   ipvt=1/2--k/alpha          1.00000E+00
 evm  eigenvalue modifier       .00000E+00      eql  ev change eps for search   1.00000E-03
 bf   buckling factor=1.420892 1.42089E+00      xnps new param mod for search   7.50000E-01
     this case will require       2611 locations for mixing
     this case has been allocated 200000 locations
```

1 1200 d, second part of sas2h pass to make library
0 13q array has 70 entries.
0 14q array has 70 entries.
0 15q array has 70 entries.
0 data block 2 (mixing table, etc.)

	nuclides on tape	cccc identification	mixing table mixture	mixing table component	atom density	extra xsect id's
1	202		3	201	2.09710E-02	
2	203		3	202	4.19420E-02	
3	204		3	203	3.81515E-06	
4	201		3	204	1.54884E-05	
5	205		2	205	4.25156E-02	
6	999		1	92235	1.08967E-04	
7	1001		1	92234	1.35829E-06	
8	5010		1	92236	2.22568E-05	
9	5011		1	92238	7.18806E-03	
10	8016		1	8016	1.50611E-02	
11	6		1	6	1.15315E-02	
12	36083		1	36083	5.99894E-07	
13	36085		1	36085	2.88943E-07	
14	38090		1	38090	6.63490E-06	
15	39089		1	39089	5.44444E-06	
16	40093		1	42095	7.62439E-06	
17	40094		1	40093	5.44388E-06	
18	40095		1	40094	8.64059E-06	
19	40302		1	40095	6.37208E-07	
20	41094		1	41094	4.73664E-12	
21	42095		1	43099	8.45055E-06	
22	43099		1	45103	4.73364E-06	
23	44101		1	45105	8.33256E-09	
24	44106		1	44101	7.83094E-06	
25	45103		1	44106	1.16052E-06	
26	45105		1	46105	3.41731E-06	
27	46105		1	46108	1.04951E-06	
28	46108		1	47109	7.05166E-07	
29	47109		1	51124	1.55246E-10	
30	51124		1	54131	3.79879E-06	
31	54131		1	54132	7.71300E-06	
32	54132		1	54135	2.19622E-09	
33	54135		1	54136	1.49560E-05	
34	54136		1	55134	5.39516E-07	
35	55133		1	55135	4.74731E-06	
36	55134		1	55137	9.16393E-06	
37	55135		1	56136	1.16385E-07	
38	55137		1	57139	9.05884E-06	
39	56136		1	59141	7.95659E-06	
40	57139		1	59143	1.19082E-07	
41	58144		1	58144	2.29564E-06	
42	59141		1	60143	6.78043E-06	
43	59143		1	60145	5.11699E-06	
44	60143		1	61147	1.49236E-06	
45	60145		1	61148	4.52757E-09	
46	60147		1	60147	4.25608E-08	
47	61147		1	62147	7.28768E-07	
48	61148		1	62149	2.99879E-08	
49	62147		1	62150	1.98229E-06	
50	62149		1	62151	1.52698E-07	
51	62150		1	62152	8.95258E-07	
52	62151		1	64155	1.19080E-09	
53	62152		1	63153	6.19432E-07	

54	63153	1	63154	1.60229E-07
55	63154	1	63155	6.98613E-08
56	63155	1	40302	4.42681E-03
57	64155	1	1001	2.30630E-02
58	92234	1	5010	2.09787E-06
59	92235	1	5011	8.51673E-06
60	92236	1	55133	9.26929E-06
61	92238	1	95237	1.88908E-06
62	95237	1	94238	3.82360E-07
63	94238	1	94239	4.11046E-05
64	94239	1	94240	1.00195E-05
65	94240	1	94241	5.99267E-06
66	94241	1	94242	9.62606E-07
67	94242	1	95241	2.37599E-07
68	95241	1	95243	1.26849E-07
69	95243	1	96244	1.75358E-08
70	96244	1	999	3.30753E-21

- elapsed time .00 min.
0 24259 locations will be used
0 35q array has 29 entries.
0 36q array has 28 entries.
0 39q array has 4 entries.
0 40q array has 4 entries.
0 47q array has 27 entries.
0 51q array has 27 entries.
1 1200 d, second part of ses2h pass to make library

neutron group parameters

0 gp	energy boundaries	lethargy boundaries	weighted velocities	broad gp numbers	calc type	group band	right albedo	left albedo
1	2.00000E+07	-6.93147E-01	4.60581E+09	1	0	1	1.00000E+00	
2	6.43400E+06	4.40989E-01	2.88737E+09	1	0	2	1.00000E+00	
3	3.00000E+06	1.20397E+00	2.12201E+09	1	0	3	1.00000E+00	
4	1.85000E+06	1.68740E+00	1.75673E+09	1	0	4	1.00000E+00	
5	1.40000E+06	1.96611E+00	1.46535E+09	1	0	5	1.00000E+00	
6	9.00000E+05	2.40795E+00	1.06620E+09	2	0	6	1.00000E+00	
7	4.00000E+05	3.21888E+00	6.07557E+08	2	0	7	1.00000E+00	
8	1.00000E+05	4.60517E+00	2.72615E+08	2	0	8	1.00000E+00	
9	1.70000E+04	6.37713E+00	1.13526E+08	2	0	9	1.00000E+00	
10	3.00000E+03	8.11173E+00	4.82126E+07	2	0	10	1.00000E+00	
11	5.50000E+02	9.80818E+00	2.05946E+07	2	0	11	1.00000E+00	
12	1.00000E+02	1.15129E+01	1.01056E+07	2	0	12	1.00000E+00	
13	3.00000E+01	1.27169E+01	5.69595E+06	2	0	13	1.00000E+00	
14	1.00000E+01	1.38155E+01	3.20957E+06	2	0	14	1.00000E+00	
15	3.04999E+00	1.50030E+01	2.10601E+06	2	0	15	1.00000E+00	
16	1.77000E+00	1.55471E+01	1.70522E+06	2	0	16	1.00000E+00	
17	1.29999E+00	1.58657E+01	1.52545E+06	2	0	17	1.00000E+00	
18	1.12999E+00	1.59959E+01	1.42867E+06	2	0	18	1.00000E+00	
19	1.00000E+00	1.61181E+01	1.31002E+06	2	0	19	1.00000E+00	
20	8.00000E-01	1.63412E+01	9.05898E+05	2	0	20	1.00000E+00	
21	4.00000E-01	1.70844E+01	8.17974E+05	3	0	21	1.00000E+00	
22	3.25000E-01	1.72620E+01	6.90070E+05	3	0	22	1.00000E+00	
23	2.25000E-01	1.76098E+01	4.86953E+05	3	0	23	1.00000E+00	
24	9.99999E-02	1.84207E+01	3.57766E+05	3	0	24	1.00000E+00	
25	5.00000E-02	1.91138E+01	2.71895E+05	3	0	25	1.00000E+00	
26	3.00000E-02	1.96247E+01	1.87283E+05	3	0	26	1.00000E+00	
27	1.00000E-02	2.07233E+01	8.85201E+04	3	0	27	1.00000E+00	
28	1.00000E-05	2.76310E+01						

1 1200 d, second part of ses2h pass to make library

0	mixture by zone	order p(l) by zone	activity table matl no.	reaction	weights	quadrature constants directions	refl direc	wt x cos

1	3	3	0	-2.79004E-01	3	0
2	2	3	5.06143E-02	-1.97286E-01	3	-9.98548E-03
3	3	3	5.06143E-02	1.97286E-01	2	9.98548E-03
4	1	3	0	-6.04419E-01	8	0
5			5.55953E-02	-5.58410E-01	8	-3.10450E-02
6			5.55953E-02	-2.31301E-01	7	-1.28598E-02
7			5.55953E-02	2.31301E-01	6	1.28598E-02
8			5.55953E-02	5.58410E-01	5	3.10450E-02
9			0	-8.50774E-01	15	0
10			5.22844E-02	-8.21784E-01	15	-4.29666E-02
11			5.22844E-02	-6.01588E-01	14	-3.14637E-02
12			5.22844E-02	-2.20196E-01	13	-1.15128E-02
13			5.22844E-02	2.20196E-01	12	1.15128E-02
14			5.22844E-02	6.01588E-01	11	3.14637E-02
15			5.22844E-02	8.21784E-01	10	4.29666E-02
16			0	-9.83032E-01	24	0
17			4.53355E-02	-9.64143E-01	24	-4.37099E-02
18			4.53355E-02	-8.17361E-01	23	-3.70656E-02
19			4.53355E-02	-5.46143E-01	22	-2.47597E-02
20			4.53355E-02	-1.91780E-01	21	-8.69444E-03
21			4.53355E-02	1.91780E-01	20	8.69444E-03
22			4.53355E-02	5.46143E-01	19	2.47597E-02
23			4.53355E-02	8.17361E-01	18	3.70656E-02
24			4.53355E-02	9.64143E-01	17	4.37099E-02

0constants for p(3) scattering

0arg1	set 1	set 2	set 3	set 4	set 5
1	-2.79004E-01	8.83236E-01	6.74143E-02	-6.16919E-01	-1.71701E-02
2	-1.97286E-01	8.83236E-01	.00000E+00	-4.36228E-01	1.21411E-02
3	1.97286E-01	8.83236E-01	.00000E+00	4.36228E-01	-1.21411E-02
4	-6.04419E-01	4.52016E-01	3.16379E-01	-8.04435E-01	-1.76564E-01
5	-5.58410E-01	4.52016E-01	2.25714E-01	-7.43201E-01	-6.68028E-02
6	-2.31301E-01	4.52016E-01	-2.25713E-01	-3.07844E-01	1.61278E-01
7	2.31301E-01	4.52016E-01	-2.25713E-01	3.07844E-01	-1.61278E-01
8	5.58410E-01	4.52016E-01	2.25713E-01	7.43201E-01	6.68028E-02
9	-8.50774E-01	-8.57235E-02	6.26843E-01	-1.98456E-01	-4.86855E-01
10	-8.21784E-01	-8.57235E-02	5.42862E-01	-1.91694E-01	-3.44245E-01
11	-6.01588E-01	-8.57235E-02	.00000E+00	-1.40330E-01	3.44244E-01
12	-2.20196E-01	-8.57235E-02	-5.42862E-01	-5.13643E-02	3.44245E-01
13	2.20196E-01	-8.57235E-02	-5.42862E-01	5.13643E-02	-3.44245E-01
14	6.01588E-01	-8.57235E-02	.00000E+00	1.40330E-01	-3.44245E-01
15	8.21784E-01	-8.57235E-02	5.42862E-01	1.91694E-01	3.44245E-01
16	-9.83032E-01	-4.49528E-01	8.36885E-01	5.00708E-01	-7.51006E-01
17	-9.64143E-01	-4.49528E-01	7.73181E-01	4.91083E-01	-6.24638E-01
18	-8.17361E-01	-4.49528E-01	3.20262E-01	4.16520E-01	1.46514E-01
19	-5.46143E-01	-4.49528E-01	-3.20262E-01	2.78176E-01	7.36575E-01
20	-1.91780E-01	-4.49528E-01	-7.73181E-01	9.76824E-02	4.17236E-01
21	1.91780E-01	-4.49528E-01	-7.73181E-01	-9.76824E-02	-4.17236E-01
22	5.46143E-01	-4.49528E-01	-3.20262E-01	-2.78176E-01	-7.36575E-01
23	8.17361E-01	-4.49528E-01	3.20262E-01	-4.16520E-01	-1.46514E-01
24	9.64143E-01	-4.49528E-01	7.73181E-01	-4.91083E-01	6.24638E-01

1 int	radii	mid pts	zone no.	areas	volumes	dens fact	radius mod	spec(int)
1	0	1.97644E-02	1	0	4.90881E-03		0	
2	3.95287E-02	5.92931E-02	1	2.48366E-01	1.47264E-02		0	
3	7.90575E-02	1.18586E-01	1	4.96733E-01	5.89057E-02		0	
4	1.58115E-01	1.97644E-01	1	9.93466E-01	9.81762E-02		0	
5	2.37172E-01	2.76701E-01	1	1.49020E+00	1.37447E-01			
6	3.16230E-01	3.55759E-01	1	1.98698E+00	1.76717E-01			
7	3.95288E-01	4.34816E-01	1	2.48366E+00	2.15988E-01			
8	4.74345E-01	5.13874E-01	1	2.98040E+00	2.55258E-01			
9	5.53403E-01	5.73167E-01	1	3.47713E+00	1.42355E-01			

10	5.92931E-01	6.12696E-01	1	3.72550E+00	1.52173E-01
11	6.32460E-01	6.42620E-01	2	3.97385E+00	8.20460E-02
12	6.52780E-01	6.62940E-01	2	4.10154E+00	8.46405E-02
13	6.73100E-01	6.96583E-01	3	4.22921E+00	2.05562E-01
14	7.20067E-01	7.43550E-01	3	4.52431E+00	2.19422E-01
15	7.67033E-01	7.90517E-01	3	4.81941E+00	2.33283E-01
16	8.14000E-01	8.62795E-01	4	5.11451E+00	5.29051E-01
17	9.11591E-01	9.60886E-01	4	5.72769E+00	5.88691E-01
18	1.00918E+00	1.10577E+00	4	6.34088E+00	1.35731E+00
19	1.20436E+00	1.30195E+00	4	7.56726E+00	1.59667E+00
20	1.39955E+00	1.49714E+00	4	8.79360E+00	1.83603E+00
21	1.59473E+00	1.69232E+00	4	1.00200E+01	2.07540E+00
22	1.78991E+00	1.88750E+00	4	1.12463E+01	2.31478E+00
23	1.98509E+00	2.08268E+00	4	1.24727E+01	2.55412E+00
24	2.18027E+00	2.27786E+00	4	1.36991E+01	2.79349E+00
25	2.37545E+00	2.47305E+00	4	1.49254E+01	3.03286E+00
26	2.57064E+00	2.66823E+00	4	1.61518E+01	3.27221E+00
27	2.76582E+00	2.81461E+00	4	1.73781E+01	1.72587E+00
28	2.86341E+00	2.91220E+00	4	1.79913E+01	1.78571E+00
29	2.96100E+00			1.86045E+01	

- elapsed time .00 min.

outer iter	inner iters	1 - balance	eigenvalue	1 - source ratio	1 - scatter ratio	1 - upscat ratio	search parameter	time (min)
1	125	8.00497E-06	1.00276E+00	-3.08108E-03	1.00000E+00	-8.34411E-04	.00000E+00	.0000
2	178	-1.07835E-06	1.00317E+00	-4.80255E-05	-2.79825E-04	-2.92346E-04	.00000E+00	.0000
3	219	6.02662E-06	1.00306E+00	-2.19952E-05	-1.05387E-04	-7.97182E-05	.00000E+00	.0000

grp	to grp	inner iters	mfd int.	max. flux difference	msf int.	max. scale factor	coarse mesh
1	1	1	17	8.28958E-07	28	1.00000E+00	1
2	2	1	17	9.68108E-07	28	1.00000E+00	1
3	3	1	17	8.26446E-07	28	1.00000E+00	1
4	4	1	17	7.39969E-07	28	1.00000E+00	1
5	5	1	17	4.78886E-07	28	1.00000E+00	1
6	6	1	28	1.74231E-07	28	1.00000E+00	1
7	7	1	24	4.55098E-06	28	9.99996E-01	2
8	8	1	28	4.53025E-07	28	1.00000E+00	2
9	9	1	27	1.50841E-05	28	1.00001E+00	3
10	10	1	26	4.82669E-06	28	9.99996E-01	3
11	11	1	26	6.85737E-06	28	9.99995E-01	3
12	12	1	25	4.01992E-06	28	9.99997E-01	3
13	13	1	26	5.41574E-06	28	1.00000E+00	3
14	14	1	28	2.00883E-06	28	9.99999E-01	3
15	15	1	2	7.39044E-05	28	9.99918E-01	2
16	16	1	2	8.80606E-05	28	9.99928E-01	2
17	17	2	26	6.60470E-05	28	1.00007E+00	3
18	18	2	28	3.57894E-05	28	1.00001E+00	3
19	19	2	25	3.91572E-05	28	1.00004E+00	3
20	20	1	2	7.77912E-05	28	9.99861E-01	3
21	21	2	28	3.98852E-05	28	1.00001E+00	3
22	22	1	1	8.78960E-05	28	9.99985E-01	3
23	23	1	1	2.32102E-05	14	9.99990E-01	4
24	24	1	28	3.36975E-05	28	1.00008E+00	4
25	25	1	23	2.30561E-05	28	1.00004E+00	5
26	26	1	28	2.92714E-05	28	1.00001E+00	6
27	27	1	28	2.22264E-05	28	1.00001E+00	8

4	250	-2.66281E-06	1.00318E+00	-7.01149E-06	-2.88134E-05	-1.87275E-05	.00000E+00	.0167

final monitor
lambda 1.00316E+00 production/absorption 1.01629E+00 angular flux on 16

- elapsed time .02 min.

1 1200 d, second part of sas2h pass to make library

0 int. zone number radius int. midpoint area volume prod density

1	1	.00000E+00	1.97644E-02	.00000E+00	4.90881E-05	.00000E+00
2	1	3.95287E-02	5.92931E-02	2.48366E-01	1.47264E-02	.00000E+00
3	1	7.90575E-02	1.18580E-01	4.96733E-01	5.89057E-02	.00000E+00
4	1	1.58115E-01	1.97644E-01	9.93466E-01	9.81762E-02	.00000E+00
5	1	2.37172E-01	2.76701E-01	1.49020E+00	1.37447E-01	.00000E+00
6	1	3.16230E-01	3.55759E-01	1.98693E+00	1.76717E-01	.00000E+00
7	1	3.95288E-01	4.34816E-01	2.48366E+00	2.15988E-01	.00000E+00
8	1	4.74345E-01	5.13874E-01	2.98040E+00	2.55258E-01	.00000E+00
9	1	5.53403E-01	5.73167E-01	3.47713E+00	1.42365E-01	.00000E+00
10	1	5.92931E-01	6.12698E-01	3.72550E+00	1.52173E-01	.00000E+00
11	2	6.32460E-01	6.42620E-01	3.97386E+00	8.20460E-02	.00000E+00
12	2	6.52780E-01	6.62940E-01	4.10154E+00	8.46405E-02	.00000E+00
13	3	6.73100E-01	6.96883E-01	4.22921E+00	2.05562E-01	.00000E+00
14	3	7.20067E-01	7.43550E-01	4.52431E+00	2.19422E-01	.00000E+00
15	3	7.67033E-01	7.90517E-01	4.81941E+00	2.33283E-01	.00000E+00
16	4	8.14000E-01	8.62795E-01	5.11451E+00	5.29051E-01	2.29262E-02
17	4	9.11591E-01	9.60388E-01	5.72789E+00	5.88891E-01	2.49412E-02
18	4	1.00918E+00	1.10677E+00	6.34088E+00	1.35731E+00	5.62798E-02
19	4	1.20436E+00	1.30195E+00	7.56724E+00	1.59667E+00	6.48191E-02
20	4	1.39955E+00	1.49714E+00	8.79360E+00	1.83603E+00	7.34425E-02
21	4	1.59473E+00	1.69232E+00	1.00200E+01	2.07540E+00	8.21141E-02
22	4	1.78991E+00	1.88750E+00	1.12463E+01	2.31478E+00	9.08579E-02
23	4	1.98509E+00	2.08268E+00	1.24727E+01	2.55412E+00	9.96221E-02
24	4	2.18027E+00	2.27786E+00	1.36991E+01	2.79349E+00	1.08481E-01
25	4	2.37545E+00	2.47305E+00	1.49254E+01	3.03285E+00	1.17432E-01
26	4	2.57064E+00	2.66823E+00	1.61518E+01	3.27221E+00	1.26507E-01
27	4	2.76582E+00	2.81461E+00	1.73781E+01	1.72587E+00	6.67052E-02
28	4	2.86341E+00	2.91220E+00	1.79913E+01	1.78571E+00	6.90526E-02
29		2.96100E+00		1.86045E+01		

1 1200 d, second part of sas2h pass to make library

0 total flux

0 int. grp. 1 grp. 2 grp. 3 grp. 4 grp. 5 grp. 6 grp. 7 grp. 8

1	1.31613E-02	9.13913E-02	1.12872E-01	6.91366E-02	1.02836E-01	1.92842E-01	1.95131E-01	1.47062E-01
2	1.31560E-02	9.13397E-02	1.12808E-01	6.90984E-02	1.02784E-01	1.92755E-01	1.95092E-01	1.47057E-01
3	1.31567E-02	9.13529E-02	1.12829E-01	6.91164E-02	1.02818E-01	1.92825E-01	1.95145E-01	1.47068E-01
4	1.31636E-02	9.14341E-02	1.12942E-01	6.91948E-02	1.02948E-01	1.93067E-01	1.95301E-01	1.47097E-01
5	1.31761E-02	9.15770E-02	1.13138E-01	6.93275E-02	1.03164E-01	1.93466E-01	1.95548E-01	1.47140E-01
6	1.31951E-02	9.17735E-02	1.13408E-01	6.95112E-02	1.03461E-01	1.94014E-01	1.95887E-01	1.47197E-01
7	1.32144E-02	9.20250E-02	1.13755E-01	6.97459E-02	1.03849E-01	1.94729E-01	1.96327E-01	1.47267E-01
8	1.32406E-02	9.23391E-02	1.14195E-01	7.00568E-02	1.04354E-01	1.95664E-01	1.96903E-01	1.47350E-01
9	1.32624E-02	9.26154E-02	1.14590E-01	7.03389E-02	1.04821E-01	1.96531E-01	1.97438E-01	1.47420E-01
10	1.32774E-02	9.28520E-02	1.14919E-01	7.05872E-02	1.05242E-01	1.97316E-01	1.97924E-01	1.47469E-01
11	1.32899E-02	9.30115E-02	1.15195E-01	7.07957E-02	1.05596E-01	1.97991E-01	1.98341E-01	1.47513E-01
12	1.33034E-02	9.31451E-02	1.15369E-01	7.09042E-02	1.05788E-01	1.98328E-01	1.98543E-01	1.47557E-01
13	1.33319E-02	9.33886E-02	1.15640E-01	7.10417E-02	1.05954E-01	1.98665E-01	1.98734E-01	1.47626E-01
14	1.33738E-02	9.37665E-02	1.16095E-01	7.12970E-02	1.06328E-01	1.99323E-01	1.99112E-01	1.47718E-01
15	1.34231E-02	9.42757E-02	1.16721E-01	7.16857E-02	1.06924E-01	2.00394E-01	1.99739E-01	1.47819E-01
16	1.34997E-02	9.50750E-02	1.17741E-01	7.23290E-02	1.07958E-01	2.02231E-01	1.98829E-01	1.47990E-01
17	1.35752E-02	9.58701E-02	1.18758E-01	7.29772E-02	1.08967E-01	2.04121E-01	1.99968E-01	1.48187E-01
18	1.36351E-02	9.65135E-02	1.19598E-01	7.35125E-02	1.09830E-01	2.05753E-01	2.00988E-01	1.48391E-01
19	1.36872E-02	9.70841E-02	1.20340E-01	7.39959E-02	1.10619E-01	2.07276E-01	2.01946E-01	1.48608E-01
20	1.37177E-02	9.74264E-02	1.20797E-01	7.42939E-02	1.11112E-01	2.08256E-01	2.02582E-01	1.48758E-01
21	1.37368E-02	9.76460E-02	1.21095E-01	7.44897E-02	1.11439E-01	2.08925E-01	2.03025E-01	1.48874E-01
22	1.37488E-02	9.77890E-02	1.21293E-01	7.46208E-02	1.11660E-01	2.09387E-01	2.03338E-01	1.48961E-01
23	1.37568E-02	9.78808E-02	1.21422E-01	7.47060E-02	1.11806E-01	2.09708E-01	2.03566E-01	1.49029E-01
24	1.37609E-02	9.79354E-02	1.21500E-01	7.47588E-02	1.11897E-01	2.09908E-01	2.03695E-01	1.49065E-01
25	1.37628E-02	9.79608E-02	1.21537E-01	7.47832E-02	1.11941E-01	2.10006E-01	2.03768E-01	1.49086E-01
26	1.37624E-02	9.79570E-02	1.21536E-01	7.47819E-02	1.11940E-01	2.10014E-01	2.03774E-01	1.49086E-01
27	1.37608E-02	9.79367E-02	1.21508E-01	7.47644E-02	1.11912E-01	2.09959E-01	2.03737E-01	1.49073E-01

28	1.37580E-02	9.79069E-02	1.21469E-01	7.47380E-02	1.11868E-01	2.09869E-01	2.03674E-01	1.49053E-01
0 int.	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	1.16023E-01	1.07284E-01	1.01096E-01	6.55511E-02	5.59238E-02	5.30857E-02	2.88673E-02	1.59289E-02
2	1.16023E-01	1.07286E-01	1.01101E-01	6.55560E-02	5.59287E-02	5.30909E-02	2.88697E-02	1.59300E-02
3	1.16022E-01	1.07277E-01	1.01080E-01	6.55321E-02	5.59059E-02	5.30569E-02	2.88628E-02	1.59260E-02
4	1.16018E-01	1.07256E-01	1.01031E-01	6.54745E-02	5.58511E-02	5.29750E-02	2.88458E-02	1.59162E-02
5	1.16011E-01	1.07224E-01	1.00956E-01	6.53867E-02	5.57678E-02	5.28503E-02	2.88204E-02	1.59014E-02
6	1.16002E-01	1.07180E-01	1.00855E-01	6.52673E-02	5.56551E-02	5.26812E-02	2.87870E-02	1.58818E-02
7	1.15991E-01	1.07122E-01	1.00721E-01	6.51109E-02	5.55081E-02	5.24599E-02	2.87447E-02	1.58566E-02
8	1.15978E-01	1.07044E-01	1.00543E-01	6.49046E-02	5.53155E-02	5.21690E-02	2.86913E-02	1.58242E-02
9	1.15969E-01	1.06971E-01	1.00378E-01	6.47121E-02	5.51366E-02	5.18980E-02	2.86432E-02	1.57946E-02
10	1.15970E-01	1.06902E-01	1.00221E-01	6.45370E-02	5.49747E-02	5.16517E-02	2.86012E-02	1.57680E-02
11	1.15976E-01	1.06848E-01	1.00095E-01	6.43995E-02	5.48463E-02	5.14575E-02	2.85664E-02	1.57459E-02
12	1.15977E-01	1.06829E-01	1.00054E-01	6.43459E-02	5.47957E-02	5.13798E-02	2.85544E-02	1.57355E-02
13	1.15927E-01	1.06808E-01	9.99914E-02	6.42635E-02	5.47180E-02	5.12637E-02	2.85273E-02	1.57241E-02
14	1.15857E-01	1.06741E-01	9.98494E-02	6.40849E-02	5.45579E-02	5.10150E-02	2.84984E-02	1.57022E-02
15	1.15783E-01	1.06638E-01	9.96166E-02	6.38038E-02	5.43076E-02	5.06243E-02	2.84548E-02	1.56680E-02
16	1.15680E-01	1.06468E-01	9.92308E-02	6.33408E-02	5.38857E-02	4.99760E-02	2.83756E-02	1.56097E-02
17	1.15587E-01	1.06301E-01	9.88452E-02	6.28779E-02	5.34745E-02	4.93243E-02	2.82820E-02	1.55471E-02
18	1.15521E-01	1.06159E-01	9.85156E-02	6.24828E-02	5.31081E-02	4.87672E-02	2.81823E-02	1.54857E-02
19	1.15470E-01	1.06028E-01	9.82080E-02	6.21150E-02	5.27614E-02	4.82481E-02	2.80772E-02	1.54258E-02
20	1.15446E-01	1.05945E-01	9.80093E-02	6.18778E-02	5.25333E-02	4.79124E-02	2.79984E-02	1.53821E-02
21	1.15434E-01	1.05889E-01	9.78711E-02	6.17126E-02	5.23724E-02	4.76788E-02	2.79387E-02	1.53498E-02
22	1.15429E-01	1.05849E-01	9.77727E-02	6.15952E-02	5.22568E-02	4.75119E-02	2.78953E-02	1.53256E-02
23	1.15426E-01	1.05821E-01	9.77025E-02	6.15118E-02	5.21736E-02	4.73933E-02	2.78659E-02	1.53079E-02
24	1.15424E-01	1.05802E-01	9.76553E-02	6.14550E-02	5.21171E-02	4.73126E-02	2.78370E-02	1.52959E-02
25	1.15421E-01	1.05791E-01	9.76269E-02	6.14211E-02	5.20836E-02	4.72646E-02	2.78242E-02	1.52891E-02
26	1.15419E-01	1.05787E-01	9.76178E-02	6.14101E-02	5.20737E-02	4.72497E-02	2.78221E-02	1.52879E-02
27	1.15416E-01	1.05789E-01	9.76230E-02	6.14168E-02	5.20817E-02	4.72599E-02	2.78278E-02	1.52907E-02
28	1.15416E-01	1.05794E-01	9.76384E-02	6.14353E-02	5.21013E-02	4.72870E-02	2.78381E-02	1.52960E-02
0 int.	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	6.88639E-03	5.06897E-03	1.05301E-02	3.45541E-02	1.06307E-02	2.16097E-02	7.33210E-02	6.03480E-02
2	6.88723E-03	5.07066E-03	1.05316E-02	3.45569E-02	1.06319E-02	2.16116E-02	7.33163E-02	6.03340E-02
3	6.88350E-03	5.06136E-03	1.05247E-02	3.45419E-02	1.06204E-02	2.15755E-02	7.32005E-02	6.02128E-02
4	6.87450E-03	5.03878E-03	1.05081E-02	3.45066E-02	1.05940E-02	2.14934E-02	7.29474E-02	5.99522E-02
5	6.86076E-03	5.00445E-03	1.02830E-02	3.44536E-02	1.05541E-02	2.13700E-02	7.25713E-02	5.95665E-02
6	6.84211E-03	4.95714E-03	1.02490E-02	3.43825E-02	1.05001E-02	2.12052E-02	7.20703E-02	5.90530E-02
7	6.81767E-03	4.89439E-03	1.02048E-02	3.42920E-02	1.04296E-02	2.09858E-02	7.14319E-02	5.84006E-02
8	6.78545E-03	4.81055E-03	1.01471E-02	3.41752E-02	1.03369E-02	2.07018E-02	7.06250E-02	5.75820E-02
9	6.75534E-03	4.73147E-03	1.00957E-02	3.40683E-02	1.02509E-02	2.04385E-02	6.98993E-02	5.68518E-02
10	6.72789E-03	4.65878E-03	1.00454E-02	3.39730E-02	1.01716E-02	2.02004E-02	6.92682E-02	5.62250E-02
11	6.70622E-03	4.60319E-03	1.00068E-02	3.38962E-02	1.01111E-02	2.00211E-02	6.88086E-02	5.57884E-02
12	6.69766E-03	4.58349E-03	9.99091E-03	3.38630E-02	1.00869E-02	1.99612E-02	6.86664E-02	5.56771E-02
13	6.68479E-03	4.54684E-03	9.99551E-03	3.38215E-02	1.00551E-02	1.98511E-02	6.83980E-02	5.54012E-02
14	6.65692E-03	4.46438E-03	9.98434E-03	3.37376E-02	9.97584E-03	1.96015E-02	6.77860E-02	5.47732E-02
15	6.61282E-03	4.33388E-03	9.85361E-03	3.36089E-02	9.85020E-03	1.92128E-02	6.68990E-02	5.38771E-02
16	6.54006E-03	4.09281E-03	9.73561E-03	3.33954E-02	9.64370E-03	1.85685E-02	6.55310E-02	5.25478E-02
17	6.46757E-03	3.86727E-03	9.61591E-03	3.31691E-02	9.43901E-03	1.79525E-02	6.41383E-02	5.12183E-02
18	6.40607E-03	3.69618E-03	9.50407E-03	3.29520E-02	9.26664E-03	1.74007E-02	6.28091E-02	4.99852E-02
19	6.34892E-03	3.55278E-03	9.39875E-03	3.27340E-02	9.10672E-03	1.69161E-02	6.14735E-02	4.86469E-02
20	6.31196E-03	3.47233E-03	9.32831E-03	3.25802E-02	9.00357E-03	1.66076E-02	6.05225E-02	4.77222E-02
21	6.28619E-03	3.42148E-03	9.27833E-03	3.24664E-02	8.93143E-03	1.63953E-02	5.98103E-02	4.70277E-02
22	6.26779E-03	3.38796E-03	9.24220E-03	3.23814E-02	8.87965E-03	1.62401E-02	5.92713E-02	4.65018E-02
23	6.25469E-03	3.36541E-03	9.21625E-03	3.23190E-02	8.84243E-03	1.61300E-02	5.88665E-02	4.61070E-02
24	6.24579E-03	3.35053E-03	9.19846E-03	3.22757E-02	8.81670E-03	1.60533E-02	5.85748E-02	4.58203E-02
25	6.24053E-03	3.34139E-03	9.18778E-03	3.22499E-02	8.80062E-03	1.60045E-02	5.83821E-02	4.56277E-02
26	6.23895E-03	3.33737E-03	9.18461E-03	3.22411E-02	8.79414E-03	1.59825E-02	5.82878E-02	4.55247E-02
27	6.24049E-03	3.33747E-03	9.18670E-03	3.22474E-02	8.79539E-03	1.59825E-02	5.82784E-02	4.55016E-02
28	6.24350E-03	3.34055E-03	9.19048E-03	3.22625E-02	8.80190E-03	1.59983E-02	5.83274E-02	4.55341E-02
0 int.	grp. 25	grp. 26	grp. 27					

1	2.73358E-02	1.97348E-02	3.74869E-03
2	2.73254E-02	1.97234E-02	3.74592E-03
3	2.72609E-02	1.96669E-02	3.73435E-03
4	2.71234E-02	1.95477E-02	3.70980E-03
5	2.69204E-02	1.93700E-02	3.67270E-03
6	2.66494E-02	1.91311E-02	3.62194E-03
7	2.63053E-02	1.88253E-02	3.55558E-03
8	2.58754E-02	1.84401E-02	3.47009E-03
9	2.54946E-02	1.80971E-02	3.39286E-03
10	2.51721E-02	1.78047E-02	3.32660E-03
11	2.49566E-02	1.76165E-02	3.28653E-03
12	2.49102E-02	1.75879E-02	3.28184E-03
13	2.47570E-02	1.74473E-02	3.24605E-03
14	2.44083E-02	1.71140E-02	3.15512E-03
15	2.39238E-02	1.66443E-02	3.02025E-03
16	2.32237E-02	1.59751E-02	2.82572E-03
17	2.25352E-02	1.53421E-02	2.65440E-03
18	2.18768E-02	1.47682E-02	2.52580E-03
19	2.12153E-02	1.42094E-02	2.40957E-03
20	2.07461E-02	1.38304E-02	2.33815E-03
21	2.03974E-02	1.35583E-02	2.28999E-03
22	2.01360E-02	1.33604E-02	2.25651E-03
23	1.99414E-02	1.32164E-02	2.23271E-03
24	1.98005E-02	1.31139E-02	2.21612E-03
25	1.97052E-02	1.30450E-02	2.20510E-03
26	1.96519E-02	1.30053E-02	2.19875E-03
27	1.96366E-02	1.29913E-02	2.19655E-03
28	1.96467E-02	1.29943E-02	2.19625E-03

- elapsed time .02 min.

1fine group summary for zone 1 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	5.12634E-04	6.78513E-04	5.64972E-05	-7.34974E-04	9.99950E-01
2	.00000E+00	.00000E+00	3.89318E-04	6.20419E-03	8.15427E-03	1.77259E-04	-7.94192E-03	9.99961E-01
3	.00000E+00	.00000E+00	3.87393E-03	5.48043E-03	1.42642E-02	9.30813E-05	-1.04880E-02	9.99977E-01
4	.00000E+00	.00000E+00	5.61194E-03	3.60754E-03	1.23952E-02	4.20998E-05	-6.82516E-03	9.99987E-01
5	.00000E+00	.00000E+00	1.02980E-02	1.15403E-02	2.09074E-02	4.97317E-05	-1.06885E-02	9.99990E-01
6	.00000E+00	.00000E+00	2.15495E-02	3.45127E-02	4.10186E-02	8.43286E-05	-1.95534E-02	9.99998E-01
7	.00000E+00	.00000E+00	4.22775E-02	6.09915E-02	5.41559E-02	6.12428E-05	-1.19891E-02	9.99990E-01
8	.00000E+00	.00000E+00	5.63876E-02	7.83945E-02	5.87817E-02	3.64252E-05	-2.42535E-03	9.99912E-01
9	.00000E+00	.00000E+00	5.78207E-02	7.28830E-02	5.75582E-02	2.93045E-05	2.39825E-04	9.99885E-01
10	.00000E+00	.00000E+00	5.71334E-02	6.92801E-02	5.56769E-02	3.61195E-05	1.42638E-03	9.99896E-01
11	.00000E+00	.00000E+00	5.59526E-02	6.57431E-02	5.24867E-02	5.52823E-05	3.41398E-03	9.99940E-01
12	.00000E+00	.00000E+00	4.55042E-02	3.51725E-02	4.13848E-02	6.05815E-05	4.05977E-03	9.99978E-01
13	.00000E+00	.00000E+00	4.06506E-02	2.86935E-02	3.66698E-02	8.47043E-05	3.89740E-03	9.99969E-01
14	.00000E+00	.00000E+00	3.95170E-02	2.80911E-02	3.35570E-02	1.35568E-04	5.82497E-03	9.99988E-01
15	.00000E+00	.00000E+00	2.16231E-02	1.07912E-02	2.02163E-02	1.11967E-04	1.29488E-03	9.99998E-01
16	.00000E+00	.00000E+00	1.41666E-02	4.53187E-03	1.33513E-02	7.55767E-05	7.39685E-04	1.00000E+00
17	.00000E+00	.00000E+00	7.25527E-03	1.26248E-03	6.56866E-03	3.61401E-05	6.50624E-04	9.99980E-01
18	.00000E+00	.00000E+00	6.41259E-03	8.80709E-04	4.81237E-03	2.75577E-05	1.57250E-03	9.99994E-01
19	.00000E+00	.00000E+00	1.05371E-02	2.80299E-03	9.30287E-03	6.27786E-05	1.17162E-03	9.99986E-01
20	.00000E+00	.00000E+00	2.56905E-02	2.03021E-02	2.23543E-02	2.64782E-04	2.47121E-03	1.00001E+00
21	.00000E+00	.00000E+00	1.21985E-02	3.98846E-03	1.03759E-02	1.00125E-04	1.72275E-03	9.99981E-01
22	.00000E+00	.00000E+00	2.40127E-02	1.20675E-02	1.87796E-02	2.31784E-04	5.00151E-03	9.99991E-01
23	.00000E+00	.00000E+00	6.18254E-02	7.40863E-02	4.86505E-02	1.07547E-03	1.21000E-02	9.99992E-01
24	.00000E+00	.00000E+00	6.58698E-02	7.03337E-02	5.42912E-02	1.27958E-03	1.02790E-02	9.99992E-01
25	.00000E+00	.00000E+00	4.38895E-02	2.98590E-02	3.84652E-02	7.59907E-04	4.66466E-03	9.99994E-01
26	.00000E+00	.00000E+00	3.50840E-02	3.34582E-02	3.09031E-02	7.73774E-04	3.40752E-03	9.99994E-01
27	.00000E+00	.00000E+00	1.19145E-02	7.26039E-03	1.10650E-02	2.76473E-04	5.73019E-04	9.99999E-01
28	.00000E+00	.00000E+00	7.77425E-01	7.72478E-01	7.77425E-01	6.07808E-03	-6.05021E-03	9.99965E-01

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	n2n rate	fiss rate	flux*db**2	total flux

1	1.32845E-02	-7.34774E-04	1.31657E-02	.00000E+00	3.75257E-11	.00000E+00	2.03355E-05	1.66106E-02
2	9.29464E-02	-7.94192E-03	9.14349E-02	.00000E+00	.00000E+00	.00000E+00	8.99265E-05	1.15714E-01
3	1.15100E-01	-1.04830E-02	1.12928E-01	.00000E+00	.00000E+00	.00000E+00	9.26504E-05	1.43060E-01
4	7.07274E-02	-6.82516E-03	6.91706E-02	.00000E+00	.00000E+00	.00000E+00	4.18456E-05	8.77364E-02
5	1.05483E-01	-1.06589E-02	1.02885E-01	.00000E+00	.00000E+00	.00000E+00	4.94384E-05	1.30649E-01
6	1.97855E-01	-1.95534E-02	1.92925E-01	.00000E+00	.00000E+00	.00000E+00	8.34586E-05	2.44082E-01
7	1.96203E-01	-1.98991E-02	1.98174E-01	.00000E+00	.00000E+00	.00000E+00	5.92983E-05	2.44371E-01
8	1.47493E-01	-2.42535E-03	1.47069E-01	.00000E+00	.00000E+00	.00000E+00	3.27431E-05	1.85075E-01
9	1.15973E-01	2.39825E-04	1.16022E-01	.00000E+00	.00000E+00	.00000E+00	2.16949E-05	1.45761E-01
10	1.06853E-01	1.42638E-03	1.07281E-01	.00000E+00	.00000E+00	.00000E+00	1.91913E-05	1.34590E-01
11	1.00132E-01	3.41398E-03	1.01089E-01	.00000E+00	.00000E+00	.00000E+00	1.79485E-05	1.26514E-01
12	6.44365E-02	4.05977E-03	6.55422E-02	.00000E+00	.00000E+00	.00000E+00	1.05351E-05	8.17599E-02
13	5.48821E-02	3.89740E-03	5.59150E-02	.00000E+00	.00000E+00	.00000E+00	8.75239E-06	6.96883E-02
14	5.15106E-02	5.82491E-03	5.30708E-02	.00000E+00	.00000E+00	.00000E+00	8.43566E-06	6.58376E-02
15	2.85788E-02	1.29488E-03	2.88649E-02	.00000E+00	.00000E+00	.00000E+00	4.44573E-06	3.61095E-02
16	1.57533E-02	7.39689E-04	1.59275E-02	.00000E+00	.00000E+00	.00000E+00	2.21776E-06	1.99177E-02
17	6.71188E-03	6.50624E-04	6.88469E-03	.00000E+00	.00000E+00	.00000E+00	8.75906E-07	8.55776E-03
18	4.61683E-03	1.57250E-03	5.06558E-03	.00000E+00	.00000E+00	.00000E+00	6.11462E-07	6.12381E-03
19	1.00173E-02	1.17162E-03	1.08272E-02	.00000E+00	.00000E+00	.00000E+00	1.34008E-06	1.28073E-02
20	3.39206E-02	2.47121E-03	3.45506E-02	.00000E+00	.00000E+00	.00000E+00	5.04726E-06	4.30622E-02
21	1.01259E-02	1.72275E-03	1.05271E-02	.00000E+00	.00000E+00	.00000E+00	1.19923E-06	1.30789E-02
22	2.00643E-02	5.00151E-03	2.16013E-02	.00000E+00	.00000E+00	.00000E+00	2.40335E-06	2.62900E-02
23	6.89102E-02	1.21000E-02	7.33008E-02	.00000E+00	.00000E+00	.00000E+00	7.35782E-06	8.95713E-02
24	5.58696E-02	1.02796E-02	6.05340E-02	.00000E+00	.00000E+00	.00000E+00	4.48697E-06	7.32015E-02
25	2.49709E-02	4.66466E-03	2.73313E-02	.00000E+00	.00000E+00	.00000E+00	1.56085E-06	3.29612E-02
26	1.76401E-02	3.40752E-03	1.97334E-02	.00000E+00	.00000E+00	.00000E+00	8.24149E-07	2.35667E-02
27	3.28934E-03	5.73019E-04	3.74889E-03	.00000E+00	.00000E+00	.00000E+00	9.71280E-08	4.46556E-03
28	1.73329E+00	-6.05016E-03	1.73997E+00	.00000E+00	3.75257E-11	.00000E+00	5.88752E-04	2.18205E+00

1fine group summary for zone 2 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	2.26681E-04	1.69926E-04	2.54915E-06	-1.66415E-04	1.00001E+00
2	.00000E+00	.00000E+00	2.96772E-05	1.47025E-03	1.05497E-03	1.41609E-05	-1.03947E-03	1.00000E+00
3	.00000E+00	.00000E+00	1.52059E-04	2.77987E-03	8.78965E-04	2.03420E-05	-7.47189E-04	9.99995E-01
4	.00000E+00	.00000E+00	2.89087E-04	2.31001E-03	2.99092E-04	1.31270E-05	-2.31168E-05	9.99997E-01
5	.00000E+00	.00000E+00	6.21348E-04	4.42235E-03	2.79680E-04	1.68860E-05	3.26773E-04	1.00000E+00
6	.00000E+00	.00000E+00	1.02825E-03	1.24105E-02	1.69562E-04	2.70798E-05	8.31595E-04	1.00000E+00
7	.00000E+00	.00000E+00	6.75439E-04	1.25992E-02	6.33305E-05	2.66257E-05	5.85295E-04	9.99999E-01
8	.00000E+00	.00000E+00	1.17756E-04	9.21348E-03	4.43644E-04	2.21254E-05	-3.48044E-04	1.00001E+00
9	.00000E+00	.00000E+00	4.45495E-04	6.36588E-03	5.30664E-05	7.67849E-05	3.15659E-04	9.99978E-01
10	.00000E+00	.00000E+00	5.31318E-05	4.99632E-03	4.95722E-05	5.94397E-05	-5.58845E-05	1.00000E+00
11	.00000E+00	.00000E+00	4.95755E-05	4.46568E-03	5.04333E-05	9.03401E-05	-9.10966E-05	1.00000E+00
12	.00000E+00	.00000E+00	5.04336E-05	2.76787E-03	5.14952E-05	5.68657E-06	-6.75488E-06	1.00000E+00
13	.00000E+00	.00000E+00	5.14953E-05	2.35816E-03	4.81048E-05	6.31862E-06	-2.92578E-06	1.00000E+00
14	.00000E+00	.00000E+00	4.81048E-05	2.21738E-03	4.17867E-05	8.46807E-06	-2.14996E-06	1.00000E+00
15	.00000E+00	.00000E+00	4.43495E-05	1.20592E-03	4.98544E-05	6.24518E-06	-1.11695E-05	9.99940E-01
16	.00000E+00	.00000E+00	5.51789E-05	6.36471E-04	5.51388E-05	3.77227E-06	-3.68326E-06	9.99939E-01
17	.00000E+00	.00000E+00	5.95582E-05	2.36301E-04	5.81661E-05	1.75654E-06	-3.61819E-07	9.99986E-01
18	.00000E+00	.00000E+00	6.09980E-05	1.52556E-04	4.92598E-05	1.27010E-06	1.04690E-05	9.99998E-01
19	.00000E+00	.00000E+00	5.13053E-05	3.82839E-04	5.64845E-05	2.97074E-06	-8.14872E-06	9.99997E-01
20	.00000E+00	.00000E+00	6.88780E-05	1.42789E-03	6.07046E-05	1.22760E-05	-3.99747E-06	9.99959E-01
21	.00000E+00	.00000E+00	7.92644E-05	3.58223E-04	8.55664E-05	4.44045E-06	-1.07377E-05	9.99997E-01
22	.00000E+00	.00000E+00	1.12663E-04	7.74799E-04	1.08549E-04	1.00041E-05	-8.30274E-07	9.99988E-01
23	.00000E+00	.00000E+00	1.60877E-04	2.81343E-03	2.06853E-04	4.59520E-05	-9.16002E-05	9.99997E-01
24	.00000E+00	.00000E+00	2.66929E-04	2.15347E-03	2.95531E-04	5.28600E-05	-8.14330E-05	9.99999E-01
25	.00000E+00	.00000E+00	2.75853E-04	8.71228E-04	2.24243E-04	3.08516E-05	1.87564E-05	1.00000E+00
26	.00000E+00	.00000E+00	1.16681E-04	6.83098E-04	9.02729E-05	3.06566E-05	-4.25688E-06	1.00000E+00
27	.00000E+00	.00000E+00	2.61757E-05	1.44269E-04	7.43328E-08	1.07085E-05	1.53984E-05	9.99999E-01
28	.00000E+00	.00000E+00	4.98853E-03	8.04442E-02	4.98853E-03	6.05781E-04	-5.97326E-04	9.99971E-01

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r0n rate	fiss rate	flux*adj**2	total flux
1	1.33116E-02	-9.01386E-04	1.32845E-02	-7.34774E-04	6.07125E-06	.00000E+00	1.67858E-06	2.21639E-03

2	9.32136E-02	-8.98139E-03	9.29464E-02	-7.94192E-03	.00000E+00	.00000E+00	1.12400E-05	1.55151E-02
3	1.15448E-01	-1.12302E-02	1.15100E-01	-1.04830E-02	.00000E+00	.00000E+00	1.27388E-05	1.92162E-02
4	7.09442E-02	-6.84828E-03	7.07274E-02	-6.82514E-03	.00000E+00	.00000E+00	7.45623E-06	1.18099E-02
5	1.05821E-01	-1.03341E-02	1.05483E-01	-1.06589E-02	.00000E+00	.00000E+00	8.64728E-06	1.76158E-02
6	1.98438E-01	-1.87218E-02	1.97866E-01	-1.95534E-02	.00000E+00	.00000E+00	1.01802E-05	3.30310E-02
7	1.96608E-01	-1.13538E-02	1.96203E-01	-1.19391E-02	.00000E+00	.00000E+00	8.35682E-06	3.27445E-02
8	1.47581E-01	-2.77340E-03	1.47473E-01	-2.42535E-03	.00000E+00	.00000E+00	5.27783E-06	2.45922E-02
9	1.15964E-01	5.55484E-04	1.15973E-01	2.39825E-04	.00000E+00	.00000E+00	4.58828E-06	1.93313E-02
10	1.06824E-01	1.37050E-03	1.06863E-01	1.42638E-03	.00000E+00	.00000E+00	4.91853E-06	1.78085E-02
11	1.00041E-01	3.32288E-03	1.00132E-01	3.41398E-03	.00000E+00	.00000E+00	4.77610E-06	1.66813E-02
12	6.43292E-02	4.05302E-03	6.44366E-02	4.09977E-03	.00000E+00	.00000E+00	3.22225E-06	1.07300E-02
13	5.47769E-02	3.89447E-03	5.48821E-02	3.89774E-03	.00000E+00	.00000E+00	2.75826E-06	9.13768E-03
14	5.13553E-02	5.82276E-03	5.15106E-02	5.82491E-03	.00000E+00	.00000E+00	2.56199E-06	8.57069E-03
15	2.85386E-02	1.28371E-03	2.85785E-02	1.29488E-03	.00000E+00	.00000E+00	1.40254E-06	4.75964E-03
16	1.57324E-02	7.36006E-04	1.57533E-02	7.39689E-04	.00000E+00	.00000E+00	7.73072E-07	2.62375E-03
17	6.69474E-03	6.50252E-04	6.71186E-03	6.50624E-04	.00000E+00	.00000E+00	3.28592E-07	1.11711E-03
18	4.57743E-03	1.58297E-03	4.61683E-03	1.57250E-03	.00000E+00	.00000E+00	2.25407E-07	7.65622E-04
19	9.98557E-03	1.16348E-03	1.00173E-02	1.17162E-03	.00000E+00	.00000E+00	4.90463E-07	1.66665E-03
20	3.38541E-02	2.46722E-03	3.39206E-02	2.47121E-03	.00000E+00	.00000E+00	1.65954E-06	5.64725E-03
21	1.00836E-02	1.71201E-03	1.01259E-02	1.72275E-03	.00000E+00	.00000E+00	4.98586E-07	1.68359E-03
22	1.99445E-02	5.00068E-03	2.00643E-02	5.00151E-03	.00000E+00	.00000E+00	9.76332E-07	3.33217E-03
23	6.86258E-02	1.20084E-02	6.89102E-02	1.21000E-02	.00000E+00	.00000E+00	3.34519E-06	1.14674E-02
24	5.56471E-02	1.01981E-02	5.58698E-02	1.02796E-02	.00000E+00	.00000E+00	2.69283E-06	9.28975E-03
25	2.48983E-02	4.68541E-03	2.49909E-02	4.66466E-03	.00000E+00	.00000E+00	1.19888E-06	4.15599E-03
26	1.75830E-02	3.40807E-03	1.76401E-02	3.40732E-03	.00000E+00	.00000E+00	8.37464E-07	2.93401E-03
27	3.28395E-03	5.88417E-04	3.28284E-03	5.73019E-04	.00000E+00	.00000E+00	1.51513E-07	5.47592E-04
28	1.73410E+00	-6.64754E-03	1.73329E+00	-6.05016E-03	6.07125E-06	.00000E+00	1.02960E-04	2.88981E-01

1fine group summary for zone 3 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	.00000E+00	.00000E+00	2.71782E-04	3.59727E-04	2.99531E-05	-3.89661E-04	9.99985E-01
2	.00000E+00	.00000E+00	2.05404E-04	3.31172E-03	4.35264E-03	9.46367E-05	-4.24070E-03	9.99987E-01
3	.00000E+00	.00000E+00	2.06748E-03	2.98067E-03	7.62504E-03	4.97575E-05	-5.60713E-03	9.99990E-01
4	.00000E+00	.00000E+00	2.99889E-03	1.95131E-03	6.68580E-03	2.25883E-05	-3.65957E-03	9.99994E-01
5	.00000E+00	.00000E+00	5.50818E-03	6.18790E-03	1.12108E-02	2.66663E-05	-5.72899E-03	9.99995E-01
6	.00000E+00	.00000E+00	1.15427E-02	1.85005E-02	2.19879E-02	4.52042E-05	-1.04904E-02	9.99995E-01
7	.00000E+00	.00000E+00	2.26572E-02	3.24014E-02	2.87701E-02	3.25350E-05	-6.14510E-03	9.99992E-01
8	.00000E+00	.00000E+00	3.00076E-02	4.11900E-02	3.08651E-02	1.91386E-05	-8.98900E-04	9.99919E-01
9	.00000E+00	.00000E+00	3.04426E-02	3.80277E-02	3.01144E-02	1.53521E-05	3.16313E-04	9.99888E-01
10	.00000E+00	.00000E+00	2.99251E-02	3.61624E-02	2.90619E-02	1.88534E-05	8.47524E-04	9.99900E-01
11	.00000E+00	.00000E+00	2.92365E-02	3.41418E-02	2.72575E-02	2.87092E-05	1.94002E-03	9.99946E-01
12	.00000E+00	.00000E+00	2.36570E-02	1.81352E-02	2.13383E-02	3.12562E-05	2.28797E-03	9.99982E-01
13	.00000E+00	.00000E+00	2.10148E-02	1.47232E-02	1.88815E-02	4.36148E-05	2.09057E-03	9.99974E-01
14	.00000E+00	.00000E+00	2.05764E-02	1.43112E-02	1.70958E-02	6.90660E-05	3.21178E-03	9.99991E-01
15	.00000E+00	.00000E+00	1.10610E-02	5.60497E-03	1.05004E-02	5.81558E-05	5.02442E-04	1.00000E+00
16	.00000E+00	.00000E+00	7.29684E-03	2.35101E-03	6.92625E-03	3.92071E-05	3.31318E-04	1.00000E+00
17	.00000E+00	.00000E+00	3.74089E-03	6.45786E-04	3.35999E-03	1.84864E-05	3.62488E-04	9.99983E-01
18	.00000E+00	.00000E+00	3.30274E-03	4.20702E-04	2.29880E-03	1.31639E-05	9.90793E-04	9.99997E-01
19	.00000E+00	.00000E+00	5.37951E-03	1.42818E-03	4.74001E-03	3.19870E-05	6.07600E-04	9.99988E-01
20	.00000E+00	.00000E+00	1.31138E-02	1.04643E-02	1.18313E-02	1.36477E-04	1.14594E-03	1.00001E+00
21	.00000E+00	.00000E+00	6.21557E-03	1.99869E-03	5.19927E-03	5.01215E-05	9.66288E-04	9.99985E-01
22	.00000E+00	.00000E+00	1.21350E-02	5.90458E-03	9.18880E-03	1.13411E-04	2.85278E-03	9.99998E-01
23	.00000E+00	.00000E+00	3.05736E-02	3.68392E-02	2.41913E-02	5.34778E-04	5.84755E-03	1.00000E+00
24	.00000E+00	.00000E+00	3.25455E-02	3.45689E-02	2.66817E-02	6.28858E-04	5.08530E-03	9.99992E-01
25	.00000E+00	.00000E+00	2.14304E-02	1.45370E-02	1.87019E-02	3.69468E-04	2.35918E-03	9.99998E-01
26	.00000E+00	.00000E+00	1.70620E-02	1.59867E-02	1.47187E-02	3.68539E-04	1.97464E-03	1.00000E+00
27	.00000E+00	.00000E+00	5.76661E-03	3.37250E-03	5.13766E-03	1.28370E-04	5.00589E-04	1.00000E+00
28	.00000E+00	.00000E+00	3.99052E-01	3.96259E-01	3.99052E-01	3.01826E-03	-3.00434E-03	9.99966E-01

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r0n rate	fiss rate	flux*adj**2	total flux
1	1.34508E-02	-1.29105E-03	1.33114E-02	-9.01389E-04	1.98939E-11	.00000E+00	1.07812E-05	8.80639E-03
2	9.45620E-02	-1.32221E-02	9.32136E-02	-8.98139E-03	.00000E+00	.00000E+00	4.80016E-05	6.17666E-02

3	1.17086E-01	-1.68573E-02	1.15448E-01	-1.12302E-02	.00000E+00	.00000E+00	4.95270E-05	7.64740E-02
4	7.19126E-02	-1.05076E-02	7.09442E-02	-6.84838E-03	.00000E+00	.00000E+00	2.24022E-05	4.69701E-02
5	1.07280E-01	-1.60631E-02	1.05821E-01	-1.03341E-02	.00000E+00	.00000E+00	2.65090E-05	7.00543E-02
6	2.01085E-01	-2.92121E-02	1.98438E-01	-1.87218E-02	.00000E+00	.00000E+00	4.47378E-05	1.31322E-01
7	1.98115E-01	-1.74486E-02	1.96608E-01	-1.13538E-02	.00000E+00	.00000E+00	3.15020E-05	1.29821E-01
8	1.47874E-01	-3.66730E-03	1.47581E-01	-2.77340E-03	.00000E+00	.00000E+00	1.72039E-05	9.72422E-02
9	1.15741E-01	8.71797E-04	1.15964E-01	5.55484E-04	.00000E+00	.00000E+00	1.13508E-05	7.62619E-02
10	1.06576E-01	2.21802E-03	1.06824E-01	1.37060E-03	.00000E+00	.00000E+00	1.00173E-05	7.02524E-02
11	9.94764E-02	5.26291E-03	1.00041E-01	3.32288E-03	.00000E+00	.00000E+00	9.32104E-06	6.57023E-02
12	6.36356E-02	6.34059E-03	6.43292E-02	4.05302E-03	.00000E+00	.00000E+00	5.43196E-06	4.21560E-02
13	5.41594E-02	5.98484E-03	5.47769E-02	3.89447E-03	.00000E+00	.00000E+00	4.50666E-06	3.58881E-02
14	5.03908E-02	9.03455E-03	5.13553E-02	5.82276E-03	.00000E+00	.00000E+00	4.29760E-06	3.35414E-02
15	2.84310E-02	1.78615E-03	2.85389E-02	1.28571E-03	.00000E+00	.00000E+00	2.30912E-06	1.87553E-02
16	1.56483E-02	1.06752E-03	1.57324E-02	7.36006E-04	.00000E+00	.00000E+00	1.15051E-06	1.03528E-02
17	6.58612E-03	1.01275E-03	6.69474E-03	6.50262E-04	.00000E+00	.00000E+00	4.48043E-07	4.37746E-03
18	4.25496E-03	2.57376E-03	4.57743E-03	1.58297E-03	.00000E+00	.00000E+00	2.98083E-07	2.92526E-03
19	9.81114E-03	1.77107E-03	9.98557E-03	1.16348E-03	.00000E+00	.00000E+00	6.88800E-07	6.52561E-03
20	3.35353E-02	3.61313E-03	3.38541E-02	2.46722E-03	.00000E+00	.00000E+00	2.60151E-06	2.21955E-02
21	9.77459E-03	2.67830E-03	1.00856E-02	1.71201E-03	.00000E+00	.00000E+00	6.00920E-07	6.55372E-03
22	1.89810E-02	7.83346E-03	1.99445E-02	5.00068E-03	.00000E+00	.00000E+00	1.17995E-06	1.28636E-02
23	6.63828E-02	1.78659E-02	6.86258E-02	1.20084E-02	.00000E+00	.00000E+00	3.67357E-06	4.45390E-02
24	5.33583E-02	1.52334E-02	5.56471E-02	1.01981E-02	.00000E+00	.00000E+00	2.20515E-06	3.59753E-02
25	2.36448E-02	7.04260E-03	2.48983E-02	4.68341E-03	.00000E+00	.00000E+00	7.59881E-07	1.60258E-02
26	1.63712E-02	5.37770E-03	1.75830E-02	3.40807E-03	.00000E+00	.00000E+00	3.92531E-07	1.12245E-02
27	2.98822E-03	1.08900E-03	3.28395E-03	5.88417E-04	.00000E+00	.00000E+00	4.50979E-08	2.06414E-03
28	1.73101E+00	-9.65183E-03	1.73410E+00	-6.64754E-03	1.98685E-11	.00000E+00	3.11926E-04	1.14062E+00

1fine group summary for zone 4 by group including sum for all groups in line 28

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	2.36542E-02	.00000E+00	2.19234E-02	2.08388E-02	3.84762E-03	1.29105E-03	9.98903E-01
2	.00000E+00	1.99973E-01	7.21990E-03	2.53086E-01	1.74591E-01	1.53910E-02	1.32221E-02	1.00002E+00
3	.00000E+00	2.16224E-01	7.22109E-02	2.58592E-01	2.55402E-01	1.61990E-02	1.68574E-02	9.99987E-01
4	.00000E+00	1.23574E-01	1.06181E-01	1.77291E-01	2.11534E-01	7.71395E-03	1.05077E-02	1.00000E+00
5	.00000E+00	1.63447E-01	1.92918E-01	4.45198E-01	3.35172E-01	5.13346E-03	1.60552E-02	9.99990E-01
6	.00000E+00	1.75940E-01	3.98088E-01	1.19124E+00	5.30699E-01	8.05661E-03	2.92123E-02	1.00001E+00
7	.00000E+00	8.67841E-02	5.94088E-01	1.56574E+00	6.55371E-01	7.95952E-03	1.74943E-02	9.99996E-01
8	.00000E+00	1.33562E-02	6.89761E-01	1.57566E+00	6.86569E-01	1.29858E-02	3.66608E-03	9.99922E-01
9	.00000E+00	9.69036E-04	6.78647E-01	1.37341E+00	6.59114E-01	2.14457E-02	-8.62380E-04	9.99880E-01
10	.00000E+00	7.19709E-05	6.56094E-01	1.25186E+00	6.26113E-01	3.23367E-02	-2.22100E-03	9.99905E-01
11	.00000E+00	5.66212E-06	6.30081E-01	1.16759E+00	5.82162E-01	5.32241E-02	-5.26709E-03	9.99949E-01
12	.00000E+00	3.97753E-07	5.09991E-01	6.38162E-01	4.54730E-01	5.86155E-02	-6.34265E-03	9.99978E-01
13	.00000E+00	6.31594E-08	4.49400E-01	5.06634E-01	3.99416E-01	5.99826E-02	-5.98324E-03	9.99967E-01
14	.00000E+00	1.25168E-08	4.31452E-01	4.67141E-01	3.58841E-01	8.16502E-02	-9.03492E-03	9.99990E-01
15	.00000E+00	1.41450E-09	2.36019E-01	2.13149E-01	2.28984E-01	8.78531E-03	-1.79545E-03	1.00040E+00
16	.00000E+00	4.15347E-10	1.60834E-01	9.76436E-02	1.54662E-01	7.17729E-03	-1.07294E-03	1.00042E+00
17	.00000E+00	1.33762E-10	8.56851E-02	2.99366E-02	7.67639E-02	9.90787E-03	-1.00928E-03	1.00025E+00
18	.00000E+00	9.57698E-11	7.58718E-02	1.68306E-02	4.80052E-02	3.04344E-02	-2.57336E-03	1.00007E+00
19	.00000E+00	1.35398E-10	1.16745E-01	5.54589E-02	1.05540E-01	1.29515E-02	-1.76842E-03	1.00019E+00
20	.00000E+00	2.20171E-10	2.79622E-01	3.29955E-01	2.55151E-01	2.79898E-02	-3.62822E-03	1.00039E+00
21	.00000E+00	3.22259E-11	1.36533E-01	6.36260E-02	1.12895E-01	2.62950E-02	-2.67702E-03	1.00016E+00
22	.00000E+00	3.73894E-11	2.57241E-01	1.60511E-01	1.87978E-01	7.70540E-02	-7.83945E-03	1.00019E+00
23	.00000E+00	3.57484E-11	6.11482E-01	9.15499E-01	4.92698E-01	1.36451E-01	-1.78595E-02	1.00031E+00
24	.00000E+00	9.73027E-12	6.46601E-01	8.03187E-01	5.35919E-01	1.25768E-01	-1.52525E-02	1.00022E+00
25	.00000E+00	2.84838E-12	4.30028E-01	3.27752E-01	3.68325E-01	6.86843E-02	-7.05787E-03	1.00013E+00
26	.00000E+00	1.99730E-12	3.33961E-01	3.30600E-01	2.77056E-01	6.22645E-02	-5.37779E-03	1.00012E+00
27	.00000E+00	4.75968E-13	1.10502E-01	6.69367E-02	9.36965E-02	1.78884E-02	-1.08698E-03	1.00005E+00
28	.00000E+00	1.00000E+00	8.88815E+00	1.43025E+01	8.88815E+00	9.92146E-01	9.62244E-03	1.00005E+00

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	n2n rate	fiss rate	flux*db**2	total flux
1	1.37564E-02	2.68880E-09	1.34508E-02	-1.29105E-05	2.29489E-03	2.54853E-03	3.08452E-04	3.49686E-01
2	9.78884E-02	4.62509E-08	9.45620E-02	-1.32221E-02	1.56325E-05	1.10581E-02	1.60928E-03	2.48573E+00
3	1.21444E-01	5.63894E-08	1.17086E-01	-1.68573E-02	.00000E+00	1.32870E-02	1.88836E-03	3.08300E+00

4	7.47215E-02	4.07060E-08	7.19126E-02	-1.05076E-02	.00000E+00	5.68358E-05	8.86693E-04	1.89654E+00
5	1.11840E-01	1.13271E-07	1.07280E-01	-1.60631E-02	.00000E+00	1.60271E-05	1.03525E-03	2.83757E+00
6	2.09812E-01	1.71846E-07	2.01055E-01	-2.92121E-02	.00000E+00	1.26484E-05	1.75209E-03	5.32128E+00
7	2.08636E-01	-4.58645E-06	1.98115E-01	-1.74986E-02	.00000E+00	1.15758E-05	1.22718E-03	5.17121E+00
8	1.49040E-01	-3.20650E-07	1.47874E-01	-3.66730E-05	.00000E+00	1.13574E-05	6.99004E-04	3.79163E+00
9	1.15413E-01	9.41713E-06	1.15741E-01	8.71797E-04	.00000E+00	1.48174E-05	4.71953E-04	2.93943E+00
10	1.05799E-01	-2.97725E-06	1.06576E-01	2.21802E-05	.00000E+00	3.16392E-05	4.29193E-04	2.69595E+00
11	9.76494E-02	-4.18098E-06	9.94764E-02	5.26291E-05	.00000E+00	6.95966E-05	3.87460E-04	2.49132E+00
12	6.14479E-02	-1.66196E-06	6.36356E-02	6.34099E-05	.00000E+00	9.30799E-05	2.27664E-04	1.57050E+00
13	5.21141E-02	1.60048E-06	5.41584E-02	5.98484E-05	.00000E+00	1.13687E-02	1.93820E-04	1.33257E+00
14	4.73053E-02	-3.76107E-07	5.08908E-02	9.03455E-05	.00000E+00	7.12078E-05	1.71585E-04	1.21279E+00
15	2.78461E-02	-9.29524E-06	2.84310E-02	1.78615E-05	.00000E+00	1.55906E-05	1.09558E-04	7.10790E-01
16	1.53000E-02	-5.61701E-06	1.56483E-02	1.06732E-05	.00000E+00	1.12102E-05	5.61468E-05	3.90564E-01
17	6.24486E-03	2.81560E-06	6.58612E-03	1.01275E-05	.00000E+00	1.16970E-05	1.99596E-05	1.59929E-01
18	3.34268E-03	4.09092E-07	4.25496E-03	2.57376E-05	.00000E+00	6.99870E-06	7.02970E-06	8.71896E-02
19	9.19575E-03	2.65518E-06	9.81114E-03	1.77107E-05	.00000E+00	1.88434E-05	3.02256E-05	2.35980E-01
20	3.22761E-02	-1.50844E-05	3.35353E-02	3.61313E-05	.00000E+00	1.31901E-02	1.18810E-04	8.25631E-01
21	8.80620E-03	1.27856E-06	9.77459E-03	2.67830E-05	.00000E+00	1.49055E-02	2.42019E-05	2.26979E-01
22	1.60104E-02	-5.98316E-06	1.89810E-02	7.83346E-05	.00000E+00	4.44033E-02	4.01212E-05	4.16148E-01
23	5.83634E-02	-3.58308E-06	6.63826E-02	1.78559E-02	.00000E+00	7.37467E-02	1.55643E-04	1.51481E+00
24	4.55588E-02	9.12368E-07	5.33883E-02	1.52334E-02	.00000E+00	6.55348E-02	9.64147E-05	1.18923E+00
25	1.96549E-02	4.73046E-06	2.36448E-02	7.04280E-05	.00000E+00	3.71580E-02	3.32758E-05	5.15445E-01
26	1.29978E-02	-8.85606E-08	1.65712E-02	5.37770E-05	.00000E+00	3.41225E-02	1.65107E-05	3.42812E-01
27	2.19635E-03	7.05898E-08	2.95822E-03	1.08900E-03	.00000E+00	9.65668E-05	1.70463E-06	5.80895E-02
28	1.71966E+00	-2.94197E-05	1.73101E+00	-9.65185E-03	2.31051E-05	3.76272E-01	1.19208E-02	4.38527E+01

1fine group summary for system

0 grp.	fix source	fiss source	in scatter	slf scatter	out scatter	absorption	leakage	balance
1	.00000E+00	2.36542E-02	.00000E+00	2.29545E-02	2.20470E-02	3.93662E-05	2.68881E-09	9.98906E-01
2	.00000E+00	1.99973E-01	7.84530E-05	2.64072E-01	1.88153E-01	1.56771E-02	4.62509E-08	1.00002E+00
3	.00000E+00	2.16224E-01	7.85043E-02	2.69785E-01	2.78170E-01	1.63622E-02	5.63894E-08	9.99986E-01
4	.00000E+00	1.23574E-01	1.15081E-01	1.85140E-01	2.30864E-01	7.79172E-05	4.07060E-08	9.99993E-01
5	.00000E+00	1.63447E-01	2.09346E-01	4.67349E-01	3.69570E-01	5.22675E-05	1.13271E-07	9.99989E-01
6	.00000E+00	1.75940E-01	4.26155E-01	1.25666E+00	5.98875E-01	8.21322E-05	1.71846E-07	1.00001E+00
7	.00000E+00	8.67841E-02	6.59668E-01	1.66973E+00	7.38361E-01	8.07992E-05	-4.58645E-06	9.99995E-01
8	.00000E+00	1.33662E-02	7.76274E-01	1.70446E+00	7.76679E-01	1.30136E-02	-3.20650E-07	9.99921E-01
9	.00000E+00	9.69036E-04	7.67356E-01	1.69049E+00	7.46839E-01	2.15681E-02	9.41713E-06	9.99880E-01
10	.00000E+00	7.19703E-05	7.43206E-01	1.36230E+00	7.10902E-01	3.26511E-02	-2.97725E-06	9.99903E-01
11	.00000E+00	5.66212E-06	7.15307E-01	1.27194E+00	6.61956E-01	5.33983E-02	-4.18098E-06	9.99947E-01
12	.00000E+00	3.97753E-07	5.76208E-01	6.94237E-01	5.17505E-01	5.87130E-02	-1.66196E-06	9.99978E-01
13	.00000E+00	6.31594E-08	5.11117E-01	5.52309E-01	4.55015E-01	5.61172E-02	1.60048E-06	9.99967E-01
14	.00000E+00	1.25165E-08	4.91389E-01	5.11761E-01	4.09535E-01	8.18633E-02	-3.76107E-07	9.99990E-01
15	.00000E+00	1.41450E-09	2.68747E-01	2.30751E-01	2.59700E-01	8.96168E-05	-9.29524E-06	1.00036E+00
16	.00000E+00	4.15347E-10	1.82353E-01	1.05163E-01	1.74994E-01	7.29584E-05	-5.61701E-06	1.00037E+00
17	.00000E+00	1.33762E-10	9.67408E-02	3.17412E-02	8.67507E-02	9.96625E-05	2.81560E-06	1.00022E+00
18	.00000E+00	9.57698E-11	8.56479E-02	1.82845E-02	5.51656E-02	3.04784E-02	4.09092E-07	1.00006E+00
19	.00000E+00	1.35398E-10	1.32713E-01	6.00729E-02	1.19640E-01	1.30495E-02	2.65518E-06	1.00016E+00
20	.00000E+00	2.20171E-10	3.18495E-01	3.62149E-01	2.89997E-01	2.84033E-02	-1.50844E-05	1.00034E+00
21	.00000E+00	3.22259E-11	1.55026E-01	6.99713E-02	1.28564E-01	2.64496E-02	1.27856E-06	1.00014E+00
22	.00000E+00	3.73894E-11	2.98501E-01	1.79258E-01	2.16048E-01	7.74092E-02	-5.98316E-06	1.00017E+00
23	.00000E+00	3.57484E-11	7.04042E-01	1.02924E+00	5.65744E-01	1.38108E-01	-3.58308E-06	1.00027E+00
24	.00000E+00	9.73027E-12	7.45053E-01	9.10240E-01	6.17187E-01	1.27729E-01	9.12368E-07	1.00020E+00
25	.00000E+00	2.84838E-12	4.95622E-01	3.73060E-01	4.25716E-01	6.98446E-02	4.73046E-06	1.00011E+00
26	.00000E+00	1.99730E-12	3.86224E-01	3.80677E-01	3.22748E-01	6.34375E-02	-8.85606E-08	1.00010E+00
27	.00000E+00	4.75968E-13	1.28209E-01	7.77169E-02	1.09899E-01	1.83059E-02	7.05898E-08	1.00004E+00
28	.00000E+00	1.00000E+00	1.00996E+01	1.55515E+01	1.00998E+01	1.00185E+00	-2.94321E-05	1.00005E+00

0 grp.	rt bdy flux	rt leakage	lft bdy flux	lft leakage	r2n rate	fiss rate	flux*adj**2	total flux
1	1.37564E-02	2.68880E-09	1.31657E-02	.00000E+00	2.30095E-05	2.54853E-05	3.36247E-04	3.77319E-01
2	9.78884E-02	4.62500E-08	9.14349E-02	.00000E+00	1.56325E-05	1.10681E-02	1.75845E-03	2.67873E+00
3	1.21444E-01	5.63894E-08	1.12908E-01	.00000E+00	.00000E+00	1.32870E-02	1.99528E-03	3.32175E+00
4	7.47215E-02	4.07060E-08	6.91706E-02	.00000E+00	.00000E+00	5.68858E-05	9.58397E-04	2.04306E+00

5	1.11840E-01	1.13271E-07	1.02885E-01	.00000E+00	.00000E+00	1.60271E-03	1.11788E-03	3.05589E+00
6	2.09812E-01	1.71846E-07	1.92925E-01	.00000E+00	.00000E+00	1.26484E-03	1.87047E-03	5.73052E+00
7	2.03634E-01	-4.58645E-06	1.93117E-01	.00000E+00	.00000E+00	1.15758E-03	1.32634E-03	5.57814E+00
8	1.49040E-01	-3.20550E-07	1.47069E-01	.00000E+00	.00000E+00	1.13574E-03	7.54229E-04	4.09854E+00
9	1.15413E-01	9.41713E-06	1.16022E-01	.00000E+00	.00000E+00	1.48174E-03	5.09567E-04	3.18078E+00
10	1.05799E-01	-2.97725E-06	1.07281E-01	.00000E+00	.00000E+00	3.16392E-03	4.63320E-04	2.91860E+00
11	9.76494E-02	-4.18098E-06	1.01089E-01	.00000E+00	.00000E+00	6.93966E-03	4.19500E-04	2.70022E+00
12	6.14479E-02	-1.66196E-06	6.35422E-02	.00000E+00	.00000E+00	9.30799E-03	2.46854E-04	1.70515E+00
13	5.21141E-02	1.60048E-06	5.59150E-02	.00000E+00	.00000E+00	1.13687E-02	2.09817E-04	1.44729E+00
14	4.73053E-02	-3.76107E-07	5.30708E-02	.00000E+00	.00000E+00	7.12076E-03	1.86880E-04	1.32074E+00
15	2.78661E-02	-9.29524E-06	2.88645E-02	.00000E+00	.00000E+00	1.55906E-03	1.17715E-04	7.7044E-01
16	1.53000E-02	-5.61701E-06	1.59275E-02	.00000E+00	.00000E+00	1.12102E-03	6.02882E-05	4.23438E-01
17	6.24486E-03	2.81560E-06	6.88465E-03	.00000E+00	.00000E+00	1.16970E-03	2.16125E-05	1.73981E-01
18	3.34268E-03	4.09092E-07	5.06558E-03	.00000E+00	.00000E+00	6.99870E-04	8.15865E-06	9.70043E-02
19	9.19575E-03	2.65518E-06	1.05272E-02	.00000E+00	.00000E+00	1.88434E-03	3.27390E-05	2.56920E-01
20	3.22761E-02	-1.50844E-05	3.45506E-02	.00000E+00	.00000E+00	1.31901E-02	1.28118E-04	8.96536E-01
21	8.80620E-03	1.27856E-06	1.05271E-02	.00000E+00	.00000E+00	1.49055E-02	2.64959E-05	2.48295E-01
22	1.60104E-02	-5.98314E-06	2.16013E-02	.00000E+00	.00000E+00	4.44033E-02	4.46788E-05	4.58634E-01
23	5.83634E-02	-3.58908E-06	7.33008E-02	.00000E+00	.00000E+00	7.37467E-02	1.70049E-04	1.66037E+00
24	4.35585E-02	9.12568E-07	6.08340E-02	.00000E+00	.00000E+00	6.55348E-02	1.05803E-04	1.30770E+00
25	1.96549E-02	4.73046E-06	2.73313E-02	.00000E+00	.00000E+00	3.71580E-02	3.67944E-05	5.68588E-01
26	1.25978E-02	-8.85605E-08	1.97334E-02	.00000E+00	.00000E+00	3.41225E-02	1.85649E-05	3.80537E-01
27	2.19635E-03	7.05898E-08	3.74889E-03	.00000E+00	.00000E+00	9.65668E-03	1.99836E-06	6.51468E-02
28	1.71966E+00	-2.94197E-05	1.73997E+00	.00000E+00	2.31659E-03	3.76272E-01	1.29043E-02	4.74644E+01

- elapsed time .02 min.
0direct access unit 9 requires 556 blocks of length 216 for cross section weighting.
1 transport cross section weighting function

0zone	grp. 1	grp. 2	grp. 3	grp. 4	grp. 5	grp. 6	grp. 7	grp. 8
1	1.17813E-03	5.10618E-05	5.31911E-03	2.51551E-03	3.18495E-03	5.52315E-03	3.71522E-03	1.74474E-03
2	7.17753E-04	5.04228E-05	5.81787E-03	3.45209E-03	4.30139E-03	6.14684E-03	4.32892E-03	2.14997E-03
3	1.20789E-03	5.53410E-05	5.90345E-03	2.92089E-03	3.86175E-03	6.77226E-03	4.37252E-03	1.82536E-03
4	8.29392E-04	4.34569E-05	4.96053E-03	2.39522E-03	2.85104E-03	4.80134E-03	3.32731E-03	1.80051E-03
5	8.53673E-04	4.41300E-05	5.00471E-03	2.41967E-03	2.88072E-03	4.88860E-03	3.37605E-03	1.80067E-03

0zone	grp. 9	grp. 10	grp. 11	grp. 12	grp. 13	grp. 14	grp. 15	grp. 16
1	1.11407E-03	1.01463E-03	1.09279E-03	8.75769E-04	8.02605E-04	1.07075E-03	3.27183E-04	1.73544E-04
2	1.79255E-03	1.95561E-03	2.04409E-03	1.60541E-03	1.43427E-03	1.74001E-03	6.33522E-04	3.52567E-04
3	1.12226E-03	1.05255E-03	1.29000E-03	1.22412E-03	1.13843E-03	1.63197E-03	3.99080E-04	2.22891E-04
4	1.19720E-03	1.09504E-03	1.08093E-03	6.78184E-04	6.02020E-04	6.45895E-04	3.11402E-04	1.61499E-04
5	1.19522E-03	1.09649E-03	1.04607E-03	7.05857E-04	6.29027E-04	6.95465E-04	3.16166E-04	1.64672E-04

0zone	grp. 17	grp. 18	grp. 19	grp. 20	grp. 21	grp. 22	grp. 23	grp. 24
1	1.17950E-04	2.55100E-04	2.09827E-04	5.05261E-04	2.92204E-04	8.35234E-04	2.10019E-03	1.76126E-03
2	2.04480E-04	3.94776E-04	3.43641E-04	8.86648E-04	4.61447E-04	1.27828E-03	3.21924E-03	2.71167E-03
3	1.81742E-04	4.40078E-04	3.19116E-04	6.96578E-04	4.69257E-04	1.36531E-03	3.20162E-03	2.71694E-03
4	7.39436E-05	8.25546E-05	1.24815E-04	3.84528E-04	1.39479E-04	3.43500E-04	1.08898E-03	8.07407E-04
5	7.98174E-05	1.00861E-04	1.34662E-04	4.00439E-04	1.56278E-04	3.96011E-04	1.15228E-03	9.08085E-04

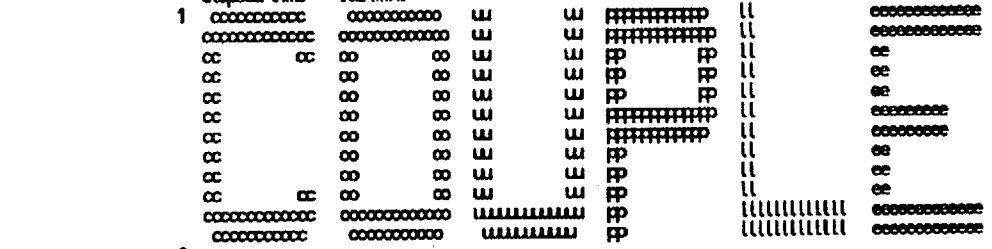
0zone	grp. 25	grp. 26	grp. 27	grp. 28
1	7.89621E-04	5.55908E-04	8.46702E-05	4.22635E-02
2	1.23294E-03	8.92954E-04	1.53520E-04	5.52948E-02
3	1.24981E-03	9.31120E-04	1.73817E-04	5.22244E-02
4	3.35566E-04	2.03516E-04	2.53228E-05	3.45729E-02
5	3.83561E-04	2.41154E-04	3.23551E-05	3.54711E-02

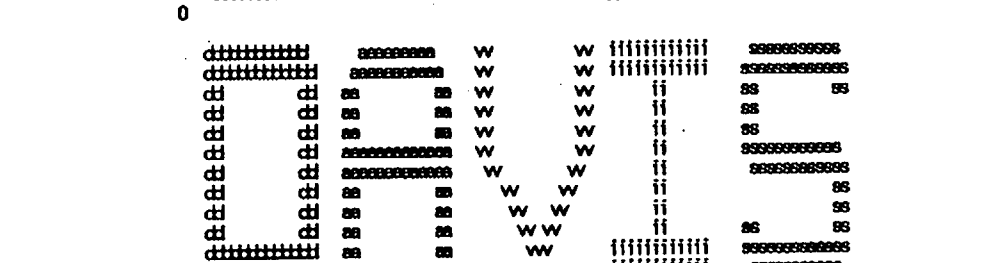
1broad group parameters

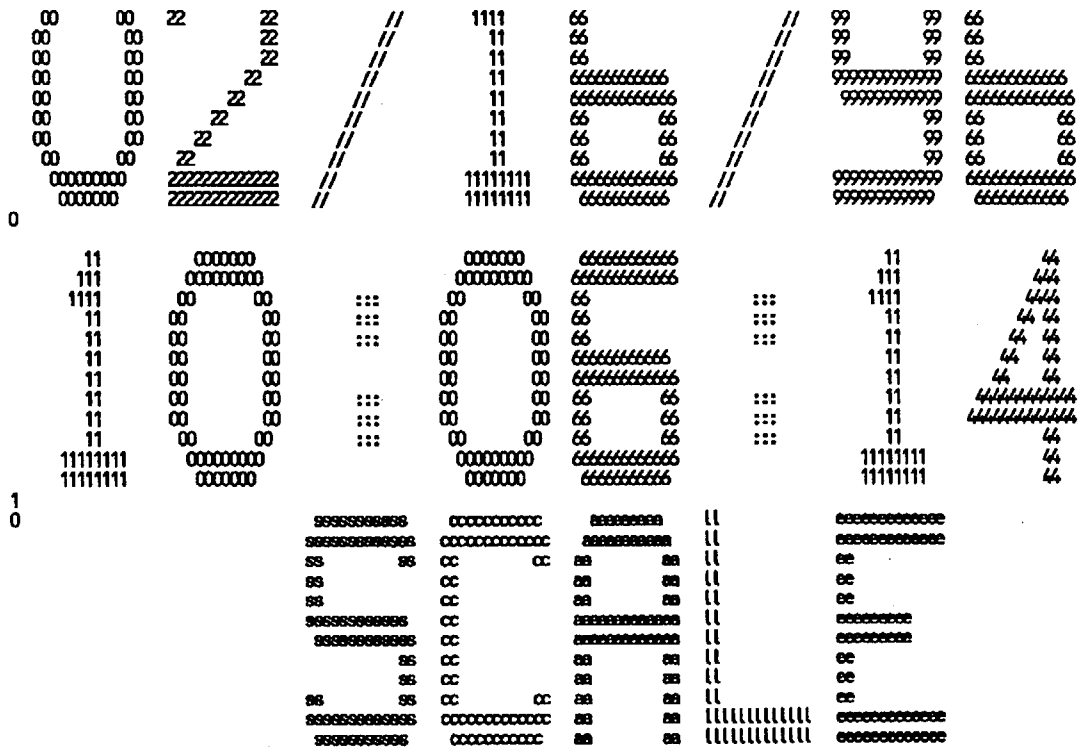
grp	upper energy	mid energy	velocity	fiss spec
1	2.0000E+07	2.6656E+06	1.9708E+09	7.2287E-01
2	9.0000E+05	1.5177E+05	1.0210E+07	2.7713E-01
3	4.0000E-01	1.2448E-01	3.6380E+05	1.2042E-10
4	1.0000E-05			

1 1200 d, second part of sas2h pass to make library
0cell averaged fluxes

```
Ozone   grp. 1      grp. 2      grp. 3
    1  3.92924E-01  1.13410E+00  2.09577E-01
    2  3.98192E-01  1.13511E+00  2.00379E-01
    3  4.01162E-01  1.13526E+00  1.96343E-01
    4  4.18364E-01  1.13645E+00  1.67444E-01
    5  4.16670E-01  1.13631E+00  1.70247E-01
Oflux disadvantage factors (zone average/cell average-flux)

Ozone   grp. 1      grp. 2      grp. 3
    1  9.43011E-01  9.98057E-01  1.22985E+00
    2  9.55654E-01  9.98946E-01  1.17899E+00
    3  9.62782E-01  9.99076E-01  1.15329E+00
    4  1.00407E+00  1.00013E+00  9.85535E-01
    5  1.00000E+00  1.00000E+00  1.00000E+00
Ocell averaged currents

Ozone   grp. 1      grp. 2      grp. 3
    1  1.73039E-02  1.85406E-02  6.41907E-03
    2  1.95314E-02  2.60133E-02  9.95008E-03
    3  1.94281E-02  2.26887E-02  1.01079E-02
    4  1.53620E-02  1.63172E-02  2.89577E-03
    5  1.55718E-02  1.66296E-02  3.26972E-03
Ozone       volume      vol. fraction

    1    1.25665E+00     4.56234E-02
    2    1.66687E-01     6.05165E-03
    3    6.58266E-01     2.38987E-02
    4    2.54624E+01     9.24426E-01
    5    2.75440E+01     1.00000E+00
-  elapsed time    .02 min.
```







program verification information

code system: scale version: 4.2

program: c0c005

creation date: 04/27/95

library: /nautronics/scale/exe

```
                    *****                                                                *****
                    *****   this is not a   scale  configuration controlled code        *****
                    *****                                                                *****
                    *****            jobname:  davis                                     *****
                    *****                                                                *****
                    *****   date of execution:  02/16/96                                 *****
                    *****                                                                *****
                    *****   time of execution:  10:06:14                                 *****
                    *****                                                                *****
                    *****                                                                *****
                    ********************************************************************************
                    ********************************************************************************
                    ********************************************************************************
1
0       -1q array has      1 entries.
0        0q array has      1 entries.
0        0q array has      1 entries.
0        1q array has      1 entries.
0        1q array has      1 entries.
0        1q array has      1 entries.
0        1q array has      1 entries.
0        1q array has      1 entries.
0        2q array has      1 entries.
0         * core allocated to array-data (by -1$$ or default) was   200000 words. *
1          * broad 3-group flux weighting factors *
0
0                 therm =    .5134
0                 res   =    .4563
0                 fast  =   3.5488
0 user requested (see jadd) that only the nuclide transitions presently included in
0 origen library be updated.
1cross sections, available from ampx (normalized to thermal flux), barns

                    10010 to  10020  2.86488E-01
                    10010 tot-cap    2.86488E-01
                    50100 to  40100  2.54618E-02
                    50100 to  10010  2.54618E-02
                    50100 to  40090  3.93698E-03
                    50100 to  10020  3.93698E-03
                    50100 to  30070  3.29413E+03
                    50100 to  20040  3.29433E+03
                    50100 to  10030  9.56625E-02
                    50100 tot-cap    3.29426E+03
                    50110 to  50100  1.13713E-05
                    50110 to  50120  4.36372E-03
                    50110 to  40110  1.45109E-06
                    50110 to  10010  1.45109E-06
                    50110 to  40090  1.29495E-05
                    50110 to  10030  1.29495E-05
                    50110 to  30080  1.69049E-04
                    50110 to  20040  1.69049E-04
                    50110 tot-cap    4.55854E-03
                    80160 to  80170  1.53057E-04
                    80160 to  70160  9.94968E-05
                    80160 to  10010  9.94968E-05
                    80160 to  70150  1.87650E-05
                    80160 to  10020  1.87650E-05
                    80160 to  60130  2.74917E-02
                    80160 to  20040  2.74917E-02
                    80160 to  80161  4.36358E-03
```

80160	tot-cap	2.77630E-02
360830	to 360820	2.25882E-02
360830	to 360810	2.38476E-09
360830	to 360840	1.56736E+02
360830	to 350830	9.19933E-04
360830	to 10010	9.19933E-04
360830	to 350820	7.46029E-06
360830	to 10020	7.46029E-06
360830	to 350810	2.60751E-06
360830	to 10030	2.60751E-06
360830	to 340810	4.22004E-08
360830	to 20080	4.22004E-08
360830	to 340800	4.95479E-05
360830	to 20040	4.95479E-05
360830	tot-cap	1.56780E+02
360850	to 360860	1.42215E+00
360850	tot-cap	1.42215E+00
380900	to 380910	6.37479E-01
380500	tot-cap	6.37479E-01
390890	to 390900	1.00373E+00
390890	tot-cap	1.00373E+00
400930	to 400940	1.39837E+01
400930	tot-cap	1.39837E+01
400940	to 400950	1.95314E-01
400940	tot-cap	1.95314E-01
400950	to 400960	2.31722E+00
400950	tot-cap	2.31722E+00
410940	to 410950	3.99847E+01
410940	tot-cap	3.99847E+01
420950	to 420960	3.88237E+01
420950	tot-cap	3.88237E+01
430990	to 430980	6.85361E-03
430990	to 431000	9.12749E+01
430990	tot-cap	9.12817E+01
441010	to 441020	2.93358E+01
441010	tot-cap	2.93358E+01
441060	to 441070	9.03144E-01
441060	tot-cap	9.03144E-01
451080	to 451020	2.48212E-03
451080	to 451040	3.48220E+02
451080	tot-cap	3.48222E+02
451050	to 451060	8.22852E+03
451050	tot-cap	8.22852E+03
461050	to 461060	3.50150E+01
461050	tot-cap	3.50150E+01
461080	to 461090	7.07706E+01
461080	tot-cap	7.07706E+01
471090	to 471080	5.77202E-03
471090	to 471100	3.78681E+02
471090	to 461090	3.25366E-04
471090	to 10010	3.25366E-04
471090	to 451060	2.70840E-04
471090	to 20040	2.70840E-04
471090	to 471091	6.66486E-01
471090	tot-cap	3.78697E+02
511240	to 511250	1.24499E+01
511240	tot-cap	1.24499E+01
541310	to 541300	6.99877E-02
541310	to 541290	1.46346E-05
541310	to 541320	2.57690E+02

541310	to 531310	4.17668E-05
541310	to 10010	4.17668E-05
541310	to 531300	5.86917E-07
541310	to 10020	5.86917E-07
541310	to 531290	6.01824E-07
541310	to 10030	6.01824E-07
541310	to 521280	1.99981E-05
541310	to 20040	1.99981E-05
541310	tot-cap	2.57760E+02
541320	to 541310	1.13062E-02
541320	to 541300	2.39796E-05
541320	to 541330	9.54927E-01
541320	to 531320	8.60085E-06
541320	to 10010	8.60085E-06
541320	to 531310	3.64400E-07
541320	to 10020	3.64400E-07
541320	to 531300	4.90665E-08
541320	to 10030	4.90665E-08
541320	to 521290	1.06259E-06
541320	to 20040	1.06259E-06
541320	tot-cap	9.66268E-01
541350	to 541360	1.48021E+06
541350	tot-cap	1.48021E+06
541360	to 541350	1.93400E-02
541360	to 541340	5.90690E-05
541360	to 541370	1.25298E-01
541360	to 531360	3.57113E-07
541360	to 10010	3.57113E-07
541360	to 531350	1.32956E-07
541360	to 10020	1.32956E-07
541360	to 531340	3.00573E-08
541360	to 10030	3.00573E-08
541360	to 521330	2.99573E-07
541360	to 20040	2.99573E-07
541360	tot-cap	1.44698E-01
551330	to 551320	9.05656E-05
551330	to 551340	1.08136E+02
551330	to 541330	9.72211E-04
551330	to 10010	9.72211E-04
551330	to 531300	1.54730E-05
551330	to 20040	1.54730E-05
551330	tot-cap	1.08145E+02
551340	to 551350	1.31399E+02
551340	tot-cap	1.31399E+02
551350	to 551360	2.21934E+01
551350	tot-cap	2.21934E+01
551370	to 551380	2.37729E-01
551370	tot-cap	2.37729E-01
561360	to 561370	9.33725E-01
561360	tot-cap	9.33725E-01
571390	to 571400	8.09313E+00
571390	tot-cap	8.09313E+00
581440	to 581450	1.27143E+00
581440	tot-cap	1.27143E+00
591410	to 591400	6.48971E-03
591410	to 591390	1.86465E-06
591410	to 571370	2.78096E-06
591410	to 20040	5.73846E-05
591410	to 581400	1.97727E-05
591410	to 10010	5.60874E-05

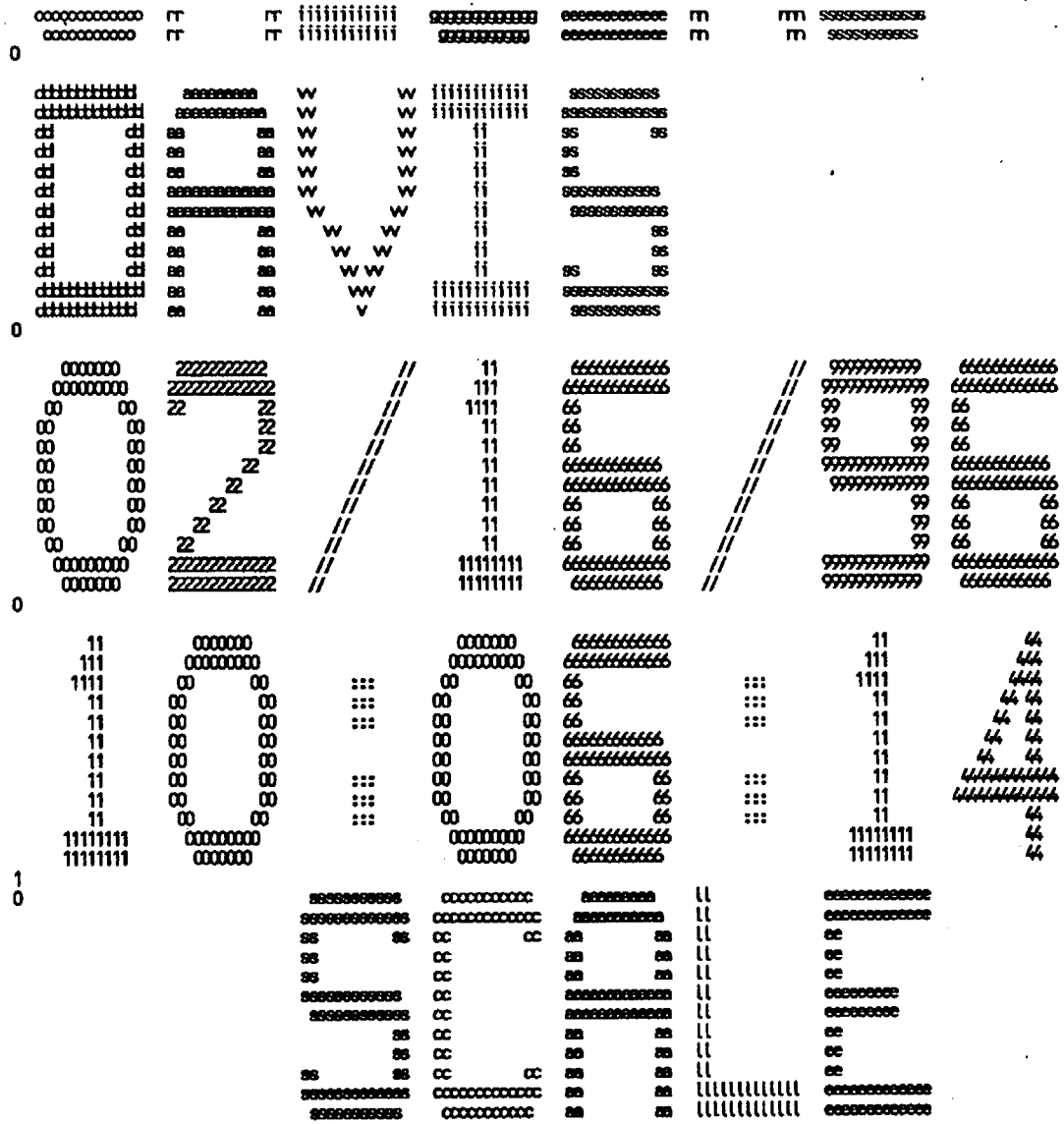
591410 to 591420 1.20857E+01
591410 to 581410 5.28492E-05
591410 to 10020 1.65345E-05
591410 to 581390 1.73401E-06
591410 to 10050 1.73401E-06
591410 to 571390 1.67463E-08
591410 to 20050 1.67463E-08
591410 to 571380 5.46036E-05
591410 tot-cap 1.20923E+01
591430 to 591440 1.00364E+02
591430 tot-cap 1.00364E+02
601430 to 601420 9.92510E-02
601430 to 601410 1.01344E-05
601430 to 581390 2.16519E-05
601430 to 20040 6.06348E-04
601430 to 591420 4.24225E-06
601430 to 10010 4.34810E-05
601430 to 601440 2.00818E+02
601430 to 591430 4.18828E-05
601430 to 10020 2.64399E-06
601430 to 591410 3.80998E-06
601430 to 10030 3.80998E-06
601430 to 581410 1.83054E-08
601430 to 20030 1.83054E-08
601430 to 581400 5.84696E-04
601430 tot-cap 2.00918E+02
601450 to 601440 1.27275E-01
601450 to 601430 1.25894E-04
601450 to 581410 9.09047E-06
601450 to 20040 2.26964E-04
601450 to 591440 2.43057E-06
601450 to 10010 1.57798E-05
601450 to 601460 8.02349E+01
601450 to 591450 1.48098E-05
601450 to 10020 1.46108E-06
601450 to 591430 2.30841E-06
601450 to 10030 2.30841E-06
601450 to 581430 4.68975E-09
601450 to 20030 4.68975E-09
601450 to 581420 2.17874E-04
601450 tot-cap 8.03625E+01
601470 to 601480 1.95601E+02
601470 tot-cap 1.95601E+02
611470 to 611460 3.48651E-02
611470 to 611450 1.08785E-04
611470 to 591430 9.62018E-06
611470 to 20040 8.85888E-05
611470 to 601460 1.33155E-05
611470 to 10010 3.02595E-05
611470 to 611480 5.95205E+02
611470 to 601470 2.69774E-05
611470 to 10020 1.00834E-05
611470 to 601450 3.78822E-06
611470 to 10030 3.78822E-06
611470 to 591450 5.69570E-09
611470 to 20030 5.69570E-09
611470 to 591440 7.95188E-05
611470 tot-cap 5.95240E+02
611480 to 611490 1.20952E+04
611480 tot-cap 1.20952E+04

621470 to 621460	9.09486E-02
621470 to 621450	8.18966E-03
621470 to 601430	7.01333E-05
621470 to 20040	1.33259E-03
621470 to 611460	1.65060E-04
621470 to 10010	2.34814E-04
621470 to 621480	2.40718E+02
621470 to 611470	2.06989E-04
621470 to 10020	1.37235E-04
621470 to 611450	1.47359E-04
621470 to 10030	1.47359E-04
621470 to 601450	6.78025E-06
621470 to 20030	6.78025E-06
621470 to 601440	1.26285E-03
621470 to 621471	1.74035E+00
621470 tot-cap	2.40819E+02
621490 to 621480	5.13940E-02
621490 to 621470	4.08219E-05
621490 to 621500	4.53374E+04
621490 to 611490	5.21771E-04
621490 to 10010	5.21771E-04
621490 to 601460	5.21771E-04
621490 to 20040	5.21771E-04
621490 tot-cap	4.53374E+04
621500 to 621510	1.36769E+02
621500 tot-cap	1.36769E+02
621510 to 621500	1.71089E-01
621510 to 621490	1.53607E-04
621510 to 601470	1.71465E-05
621510 to 20040	1.33173E-04
621510 to 611500	2.10336E-06
621510 to 10010	1.63148E-05
621510 to 621520	5.00646E+03
621510 to 611510	1.50297E-05
621510 to 10020	8.18289E-07
621510 to 611490	1.48719E-06
621510 to 10030	1.48719E-06
621510 to 601490	1.53209E-09
621510 to 20030	1.53209E-09
621510 to 601480	1.16028E-04
621510 tot-cap	5.00663E+03
621520 to 621510	2.05695E-02
621520 to 621500	1.38992E-04
621520 to 601480	3.10523E-06
621520 to 20040	1.28946E-05
621520 to 611510	8.90969E-07
621520 to 10010	2.62922E-06
621520 to 621530	7.36977E+02
621520 to 611520	2.33556E-06
621520 to 10020	5.97308E-07
621520 to 611500	1.55346E-07
621520 to 10030	1.55346E-07
621520 to 601500	4.70786E-10
621520 to 20030	4.70786E-10
621520 to 601490	9.78958E-06
621520 tot-cap	7.36997E+02
631530 to 631520	1.99783E-02
631530 to 631510	2.98538E-05
631530 to 611490	4.60126E-05
631530 to 20040	6.75243E-04

631530 to 621520 8.34917E-06
631530 to 10010 6.99057E-05
631530 to 631540 6.35374E+02
631530 to 621530 6.70570E-05
631530 to 10020 5.50050E-06
631530 to 621510 1.23327E-06
631530 to 10080 1.23327E-06
631530 to 611510 2.81953E-08
631530 to 20080 2.81953E-08
631530 to 611500 6.27230E-04
631530 tot-cap 6.35395E+02
631540 to 631530 3.19377E-02
631540 to 631520 1.14727E-05
631540 to 611500 1.11551E-10
631540 to 20040 8.10863E-04
631540 to 621530 2.51107E-06
631540 to 10010 1.32731E-03
631540 to 631550 1.08235E+03
631540 to 621540 1.32730E-03
631540 to 10020 2.50967E-06
631540 to 621520 4.25037E-06
631540 to 10080 4.25037E-06
631540 to 611520 1.80255E-08
631540 to 20080 1.80255E-08
631540 to 611510 8.10863E-04
631540 tot-cap 1.08238E+03
631550 to 631540 2.62221E-02
631550 to 631530 7.34276E-05
631550 to 611510 1.97547E-06
631550 to 20040 9.72207E-06
631550 to 621540 4.00387E-06
631550 to 10010 8.39166E-06
631550 to 631560 2.57630E+03
631550 to 621550 6.44349E-06
631550 to 10020 2.05572E-06
631550 to 621530 6.80514E-07
631550 to 10080 6.80514E-07
631550 to 611530 1.54241E-10
631550 to 20080 1.54241E-10
631550 to 611520 7.74689E-06
631550 tot-cap 2.57633E+03
641550 to 641560 1.72382E+04
641550 tot-cap 1.72382E+04
922340 to 922330 6.86982E-05
922340 fission 4.66762E+00
922340 nu-sigf 1.22751E+01
922340 to 922320 9.96083E-05
922340 to 922350 1.91754E+02
922340 to 922341 3.11810E+00
922340 tot-cap 1.96429E+02
922350 to 922340 3.12804E-02
922350 fission 3.65849E+02
922350 nu-sigf 8.86019E+02
922350 to 922330 3.00055E-05
922350 to 922360 8.77655E+01
922350 to 922351 8.86841E-02
922350 tot-cap 4.53648E+02
922360 to 922350 3.49963E-02
922360 fission 2.00610E+00
922360 nu-sigf 5.51004E+00

922360	to 922340	4.6638E-04
922360	to 922370	7.2008E+01
922360	to 922361	3.4111E+00
922360	tot-cap	7.4650E+01
922380	to 922370	6.9888E-02
922380	fission	1.0070E+00
922380	nu-sigf	2.8372E+00
922380	to 922360	4.5170E-04
922380	to 922390	8.8031E+00
922380	tot-cap	9.8806E+00
932370	to 932360	1.5983E-02
932370	fission	5.4122E+00
932370	nu-sigf	1.6306E+01
932370	to 932350	6.0958E-05
932370	to 932380	3.0647E+02
932370	to 932371	7.9953E-01
932370	tot-cap	3.1190E+02
942380	to 942370	2.5611E-05
942380	fission	2.3079E+01
942380	nu-sigf	6.5474E+01
942380	to 942360	1.4333E-05
942380	to 942390	2.6870E+02
942380	to 942381	3.1387E+00
942380	tot-cap	2.9178E+02
942390	to 942380	1.3544E-02
942390	fission	8.3132E+02
942390	nu-sigf	2.3904E+03
942390	to 942370	2.3076E-05
942390	to 942360	2.2875E-08
942390	to 942400	4.6370E+02
942390	tot-cap	1.2950E+03
942400	to 942390	6.3784E-05
942400	fission	6.0838E+00
942400	nu-sigf	1.9077E+01
942400	to 942380	6.2263E-05
942400	to 942410	1.2394E+03
942400	tot-cap	1.2655E+03
942410	to 942400	8.0073E-02
942410	fission	8.9881E+02
942410	nu-sigf	2.6574E+03
942410	to 942390	1.3318E-04
942410	to 942420	2.9261E+02
942410	tot-cap	1.1915E+03
942420	to 942410	2.6000E-02
942420	fission	4.6948E+00
942420	nu-sigf	1.4714E+01
942420	to 942400	3.1610E-04
942420	to 942430	3.3710E+02
942420	tot-cap	3.4182E+02
952410	fission	1.2710E+01
952410	nu-sigf	4.1136E+01
952410	to 952420	1.0115E+03
952410	tot-cap	1.0842E+03
952430	fission	3.6253E+00
952430	nu-sigf	1.2191E+01
952430	to 952440	4.2974E+02
952430	tot-cap	4.3336E+02
962440	to 962430	6.2488E-05
962440	fission	1.6005E+01
962440	nu-sigf	5.3652E+01

```
                  962440 to 962420  6.23160E-05
                  962440 to 962450  1.46352E+02
                  962440 to 962441  4.00245E+00
                  962440 tot-cap    1.62362E+02
Othe reaction  50100 to  30070 was not used, because  50100 is not in library., (in subr pool)
                                    in the search of library number 3
Othe reaction  50100 to  40090 was not used, because  50100 is not in library., (in subr pool)
                                    in the search of library number 3
Othe reaction  50110 to  40090 was not used, because  50110 is not in library., (in subr pool)
                                    in the search of library number 3
Othe reaction  50100 to  40100 was not used, because  50100 is not in library., (in subr pool)
                                    in the search of library number 3
Othe reaction  80160 to  80161 was not used, because  80161 is not in library., (in subr pool)
Othe reaction 621470 to 621471 was not used, because 621471 is not in library., (in subr pool)
Othe fission product transitions for  922340 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe reaction  922340 to 922341 was not used, because  922341 is not in library., (in subr pool)
Othe reaction  922350 to 922351 was not used, because  922351 is not in library., (in subr pool)
Othe fission product transitions for  922360 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe reaction  922360 to 922361 was not used, because  922361 is not in library., (in subr pool)
Othe fission product transitions for  952370 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe reaction  952370 to 952371 was not used, because  952371 is not in library., (in subr pool)
Othe fission product transitions for  942380 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe reaction  942380 to 942381 was not used, because  942381 is not in library., (in subr pool)
Othe fission product transitions for  942400 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe fission product transitions for  942420 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe fission product transitions for  952410 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe fission product transitions for  952430 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe fission product transitions for  962440 were not used.  library fissile nuclides are
   922330  922350  942410  922380  942390
Ouse substitute nuclide in block 8 data.  or, update with new fission yield data.
Othe reaction  962440 to 962441 was not used, because  962441 is not in library., (in subr pool)
1
0                              case completed.  date,   2/16/1996
0 * normal termination *
1   ccccccccccc     rrrrrrrrrrr     iiiiiiiiiiii     gggggggggg     eeeeeeeeeeee   mm         mm   999999999999
    ccccccccccccc   rrrrrrrrrrrr    iiiiiiiiiiii     gggggggggggg    eeeeeeeeeeee   mm         mm   999999999999
    cc        cc    rr        rr        ii          gg        gg     ee            mmm        mm   ss        ss
    cc        cc    rr        rr        ii          gg               ee            mm mm      mm   ss
    cc        cc    rr        rr        ii          gg               ee            mm  mm     mm   ss
    cc        cc    rrrrrrrrrrr         ii          gg   ggggggg     eeeeeeee      mm   mm    mm   999999999999
    cc        cc    rrrrrrrrrrr         ii          gg   ggggggg     eeeeeeee      mm    mm   mm   999999999999
    cc        cc    rr       rr         ii          gg        gg     ee            mm     mm  mm            ss
    cc        cc    rr        rr        ii          gg        gg     ee            mm      mmm mm            ss
    cc        cc    rr         rr       ii          gg        gg     ee            mm       mmm ss        ss
```



```
                program verification information
                code system:  scale  version:  4.2

                program:  c0c004
           creation date:  04/27/95
                 library:  /neutronics/scale/exe

        this is not a  scale  configuration controlled code

                 jobname:  davis
        date of execution:  02/16/96
        time of execution:  10:06:14

1
0      -1q array has      1 entries.
0       0q array has      1 entries.
0       0q array has      1 entries.
0       0q array has      1 entries.
0       0q array has      1 entries.
0        dbl. prec. machine word applied has, at least, a 16 significant figure accuracy.
0            short-lived split test fraction, qm =    9.1188E-04
0            half-norm of matrix used, anm =    7.0000E+00
0            4-place-accuracy-retention ratio, ratio4 =    6.4516E-13
0       1q array has     20 entries.
0       3q array has      1 entries.
0       3q array has      1 entries.
0       3q array has      1 entries.
0       3q array has      1 entries.
0       4q array has      1 entries.
0      54q array has     12 entries.
1library information...

         cross-section data taken from position number  1 of library on unit 33.

         pass   1
         pass   0
         *scale-system control module sas2 library*
         used a time-dependent neutron spectrum, for each of the above passes
           pass 0 applies start-up fuel densities
           pass n applies mid time densities of nth library interval
```

```
          first library updated was...
          pass   1
          pass   0
          *scale-system control module sas2 library*
          used a time-dependent neutron spectrum, for each of the above passes
            pass 0 applies start-up fuel densities
            pass n applies mid time densities of nth library interval
          first library updated was...
          ************************************************************************
          *                                                                      *
          *          prelim lwr origen-s binary working library--id = 1143       *
          *        made from modified card-image origen-s libraries of scale 4.2 *
          *      data from the light element, actinide, and fission product libraries *
          *        decay data, including gamma and total energy, are from endf/b-vi *
          *                                                                      *
          *      neutron flux spectrum factors and cross sections were produced from *
          *      the "presas2" case updating all nuclides on the scale "burnup" library *
          *                                                                      *
          *                  fission product yields are from endf/b-v            *
          *                                                                      *
          *              photon libraries use an 18-energy-group structure       *
          *              the photon data are from the master photon data base,   *
          *               produced to include bremsstrahlung from uo2 matrix     *
          *                                                                      *
          *        see information above this box (if present) for later updates *
          *                                                                      *
          ************************************************************************
          *                                                                      *
0         ************************************************************************
0                  .other identification and sizes of library.
0                   data set name:  ft33f001
0                 2/16/1996     date library was produced
0                    1697     total number of nuclides in library
                      669     number of light-element nuclides
                      129     number of actinide nuclides
                      879     number of fission product nuclides
0                    7985     number of nonzero off-diagonal matrix elements
0         ************************************************************************
1
     sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp                  light elements        page   1
0                                        nuclide concentrations, grams
                                         basis =single reactor assembly
               initial  1E-18 d
   total       .00E+00   .00E+00
1
     sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp                      actinides         page   2
0                                        nuclide concentrations, grams
                                         basis =single reactor assembly
               initial  1E-18 d
      u234   1.11E+02  1.11E+02
      u235   1.39E+04  1.39E+04
      u236   6.40E+01  6.40E+01
      u238   4.50E+05  4.50E+05
   total     4.64E+05  4.64E+05
1    sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp                                        page   3
        power=   7.25mw, burnup=   1160.mwd, flux= 1.69E+13n/cm**2-sec
0                                        basis =
0    (note, k-infinities, clad and moderator absorptions are correct, only, if correctly weighted cross sections are applied.)
0                  initial        40.0 d        80.0 d       120.0 d       160.0 d       160.0 d
     productions  3.258919E+04  3.290367E+04  3.325273E+04  3.354246E+04  3.378176E+04  3.378195E+04
```

	absorptions	2.444205E+04	2.533198E+04	2.567749E+04	2.599583E+04	2.629677E+04	2.630302E+04
	k infinity	1.333324E+00	1.298898E+00	1.295015E+00	1.290302E+00	1.284635E+00	1.284337E+00
0		initial	40.0 d	80.0 d	120.0 d	160.0 d	160.0 d
	actinide						
	absorptions	2.444205E+04	2.466998E+04	2.495103E+04	2.517635E+04	2.540672E+04	2.540682E+04
	non-actinide						
	abs. fracs.	.000000E+00	2.613515E-02	2.907044E-02	3.152382E-02	3.384656E-02	3.407222E-02
1							

ses2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp actinides page 4
power= 7.25mw, burnup= 1160.mwd, flux= 1.69E+13n/cm**2-sec

0 nuclide concentrations, gram atoms
basis = single reactor assembly

	charge	40.0 d	80.0 d	120.0 d	160.0 d	160.0 d
he 4	.00E+00	1.37E-06	5.40E-06	1.23E-05	2.22E-05	2.22E-05
th226	.00E+00	3.35E-21	1.00E-20	1.79E-20	2.67E-20	2.67E-20
th227	.00E+00	6.58E-18	4.57E-17	1.38E-16	2.97E-16	2.97E-16
th228	.00E+00	1.08E-12	4.34E-12	9.84E-12	1.78E-11	1.78E-11
th229	.00E+00	5.13E-14	2.07E-13	4.70E-13	8.44E-13	8.44E-13
th230	.00E+00	1.45E-07	2.85E-07	4.21E-07	5.52E-07	5.52E-07
th231	.00E+00	3.61E-10	4.72E-10	5.78E-10	6.80E-10	6.78E-10
th232	.00E+00	1.32E-09	3.51E-09	6.54E-09	1.04E-08	1.04E-08
th233	.00E+00	1.07E-15	2.82E-15	5.21E-15	8.23E-15	6.18E-15
th234	.00E+00	1.91E-08	2.51E-08	2.70E-08	2.76E-08	2.76E-08
pa231	.00E+00	7.55E-09	1.81E-08	3.14E-08	4.71E-08	4.71E-08
pa232	.00E+00	5.80E-12	1.38E-11	2.38E-11	3.55E-11	3.54E-11
pa233	.00E+00	5.98E-11	2.41E-10	4.92E-10	7.87E-10	7.87E-10
pa234m	.00E+00	6.43E-13	8.46E-13	9.10E-13	9.30E-13	9.30E-13
pa234	.00E+00	2.91E-13	3.93E-13	4.37E-13	4.64E-13	4.63E-13
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	.00E+00	3.25E-18	9.70E-18	1.73E-17	2.59E-17	2.58E-17
u231	.00E+00	1.47E-16	3.22E-16	5.05E-16	7.01E-16	7.01E-16
u232	.00E+00	2.03E-09	4.18E-09	6.52E-09	9.15E-09	9.15E-09
u233	.00E+00	2.08E-07	4.06E-07	5.94E-07	7.74E-07	7.74E-07
u234	4.78E-01	4.71E-01	4.67E-01	4.62E-01	4.58E-01	4.58E-01
u235	5.92E+01	5.77E+01	5.63E+01	5.49E+01	5.36E+01	5.36E+01
u236	2.71E-01	5.44E-01	8.07E-01	1.08E+00	1.31E+00	1.31E+00
u237	.00E+00	1.80E-03	2.07E-03	2.31E-03	2.53E-03	2.53E-03
u238	1.89E+03	1.89E+03	1.89E+03	1.89E+03	1.89E+03	1.89E+03
u239	.00E+00	4.74E-04	4.70E-04	4.67E-04	4.65E-04	3.54E-04
u240	.00E+00	.00E+00	1.14E-38	8.79E-37	1.92E-35	1.92E-35
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	.00E+00	5.53E-12	2.80E-11	6.92E-11	1.30E-10	1.30E-10
np236m	.00E+00	9.07E-11	2.21E-10	3.64E-10	5.20E-10	5.18E-10
np236	.00E+00	3.83E-10	1.98E-09	5.00E-09	9.58E-09	9.58E-09
np237	.00E+00	5.39E-08	1.32E-02	2.19E-02	3.14E-02	3.14E-02
np238	.00E+00	6.47E-06	1.58E-05	2.60E-05	3.71E-05	3.71E-05
np239	.00E+00	6.84E-02	6.79E-02	6.75E-02	6.71E-02	6.71E-02
np240m	.00E+00	.00E+00	9.72E-41	7.50E-39	1.64E-37	1.64E-37
np240	.00E+00	1.13E-06	1.11E-06	1.10E-06	1.09E-06	9.82E-07
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	.00E+00	5.02E-10	2.62E-09	6.57E-09	1.25E-08	1.25E-08
pu237	.00E+00	2.88E-10	9.86E-10	1.86E-09	2.81E-09	2.81E-09
pu238	.00E+00	3.19E-05	1.71E-04	4.34E-04	8.31E-04	8.31E-04
pu239	.00E+00	7.08E-01	1.42E+00	2.08E+00	2.66E+00	2.66E+00
pu240	.00E+00	1.08E-02	4.03E-02	8.48E-02	1.41E-01	1.41E-01
pu241	.00E+00	4.33E-04	3.18E-03	9.97E-03	2.20E-02	2.20E-02
pu242	.00E+00	1.97E-06	2.84E-05	1.34E-04	3.98E-04	3.98E-04
pu243	.00E+00	2.42E-10	3.47E-09	1.63E-08	4.75E-08	4.68E-08
pu244	.00E+00	3.31E-31	5.68E-28	4.38E-26	9.57E-25	9.57E-25
pu245	.00E+00	2.51E-37	4.25E-34	3.28E-32	7.14E-31	7.07E-31

```
     pu246    .00E+00  2.10E-40  6.08E-37  6.00E-35  1.53E-33  1.53E-33
     am239    .00E+00  8.52E-18  1.22E-16  5.69E-16  1.67E-15  1.68E-15
     am240    .00E+00  3.68E-15  5.22E-14  2.44E-13  7.16E-13  7.15E-13
1
     sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp                    actinides        page   5
     power=   7.25mw, burnup=   1160.mwd, flux= 1.69E+13n/cm**2-sec
0                                                    nuclide concentrations, gram atoms
                                                     basis = single reactor assembly
           charge    40.0 d    80.0 d   120.0 d   160.0 d   160.0 d
     am241   .00E+00 5.91E-07  8.50E-06  3.99E-05  1.18E-04  1.18E-04
     am242m  .00E+00 1.12E-09  3.08E-08  2.04E-07  7.73E-07  7.73E-07
     am242   .00E+00 7.01E-10  1.00E-08  4.68E-08  1.37E-07  1.36E-07
     am243   .00E+00 6.68E-09  1.90E-07  1.34E-06  5.31E-06  5.31E-06
     am244m  .00E+00  .00E+00   .00E+00   .00E+00   .00E+00   .00E+00
     am244   .00E+00 2.18E-12  6.14E-11  4.32E-10  1.70E-09  1.68E-09
     am245   .00E+00 2.30E-35  3.87E-32  2.93E-30  6.30E-29  6.30E-29
     am246   .00E+00  .00E+00  1.51E-39  1.50E-37  3.83E-36  3.83E-36
     cm241   .00E+00 3.37E-21  3.33E-19  4.68E-18  2.94E-17  2.94E-17
     cm242   .00E+00 4.75E-09  1.31E-07  9.06E-07  3.46E-06  3.46E-06
     cm243   .00E+00 3.13E-12  1.71E-10  1.75E-09  8.97E-09  8.97E-09
     cm244   .00E+00 2.43E-11  1.36E-09  1.45E-08  7.66E-08  7.67E-08
     cm245   .00E+00 2.50E-14  2.75E-12  4.31E-11  3.00E-10  3.00E-10
     cm246   .00E+00 4.53E-17  9.92E-15  2.32E-13  2.15E-12  2.15E-12
     cm247   .00E+00 1.35E-20  5.86E-18  2.03E-16  2.49E-15  2.49E-15
     cm248   .00E+00 1.73E-23  1.49E-20  7.66E-19  1.25E-17  1.25E-17
     cm249   .00E+00 1.04E-28  8.86E-26  4.53E-24  7.37E-23  6.67E-23
     cm250   .00E+00 8.14E-34  1.38E-30  1.05E-28  2.27E-27  2.27E-27
     cm251   .00E+00 2.04E-41  3.47E-38  2.63E-36  5.66E-35  3.87E-35
   totals   1.95E+03 1.95E+03  1.95E+03  1.95E+03  1.94E+03  1.94E+03
0    flux             1.71E+13  1.70E+13  1.69E+13  1.68E+13  1.68E-02
0       1q array has      20 entries.
0       3q array has       1 entries.
0       3q array has       1 entries.
0       3q array has       1 entries.
0       4q array has       1 entries.
0      54q array has      12 entries.
1library information...

          cross-section data taken from position number  2 of library on unit 33.

          pass   1
          pass   0
          *scale-system control module sas2 library*
          used a time-dependent neutron spectrum, for each of the above passes
            pass 0 applies start-up fuel densities
            pass n applies mid time densities of nth library interval
          first library updated was...
          pass   1
          pass   0
          *scale-system control module sas2 library*
          used a time-dependent neutron spectrum, for each of the above passes
            pass 0 applies start-up fuel densities
            pass n applies mid time densities of nth library interval
          first library updated was...
          ********************************************************************************
          *                                                                              *
          *            prelim lwr origen-s binary working library--id = 1143             *
          *          made from modified card-image origen-s libraries of scale 4.2       *
          *       data from the light element, actinide, and fission product libraries   *
          *         decay data, including gamma and total energy, are from endf/b-vi     *
```

```
      *                                                                     *
      *     neutron flux spectrum factors and cross sections were produced from   *
      *    the 'presas2' case updating all nuclides on the scale 'bumup' library  *
      *                                                                     *
      *                  fission product yields are from endf/b-v           *
      *                                                                     *
      *            photon libraries use an 18-energy-group structure        *
      *           the photon data are from the master photon data base,     *
      *            produced to include bremsstrahlung from u2 matrix        *
      *                                                                     *
      *       see information above this box (if present) for later updates *
      *                                                                     *
      ***********************************************************************
      *                                                                     *
0     ***********************************************************************
0              .other identification and sizes of library.
0               data set name:  ft33f001
0             2/16/1996    date library was produced
0                  1697    total number of nuclides in library
                    689    number of light-element nuclides
                    129    number of actinide nuclides
                    879    number of fission product nuclides
0                  7955    number of nonzero off-diagonal matrix elements
0     ***********************************************************************
1   sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp                          page   6
      power=   7.25mw, burnup=   2320.mwd, flux= 1.64e+13n/cm**2-sec
0                                    basis =
0   (note, k-infinities, clad and moderator absorptions are correct, only, if correctly weighted cross sections are applied.)
0                  initial       200.0 d       240.0 d       280.0 d       320.0 d       320.0 d
    productions 3.427559E+04  3.450159E+04  3.469840E+04  3.484916E+04  3.497630E+04  3.497669E+04
    absorptions 2.700098E+04  2.729746E+04  2.758252E+04  2.786215E+04  2.810795E+04  2.811999E+04
    k infinity  1.269420E+00  1.263911E+00  1.257777E+00  1.251220E+00  1.244356E+00  1.243837E+00
0                  initial       200.0 d       240.0 d       280.0 d       320.0 d       320.0 d
    actinide
    absorptions 2.609392E+04  2.632092E+04  2.653591E+04  2.673765E+04  2.692678E+04  2.692698E+04
    non-actinide
    abs. fracs. 3.359577E-02  3.577524E-02  3.795770E-02  4.001468E-02  4.202265E-02  4.242539E-02
1
    sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp                actinides   page   7
    power=   7.25mw, burnup=   2320.mwd, flux= 1.64e+13n/cm**2-sec
0                                    nuclide concentrations, gram atoms
                                     basis = single reactor assembly
          charge    200.0 d   240.0 d   280.0 d   320.0 d   320.0 d
    he  4 2.22E-05  3.60E-05  5.44E-05  7.89E-05  1.11E-04  1.11E-04
    th226 2.67E-20  3.88E-20  5.16E-20  6.63E-20  8.34E-20  8.33E-20
    th227 2.97E-16  5.39E-16  8.77E-16  1.32E-15  1.89E-15  1.89E-15
    th228 1.78E-11  2.84E-11  4.23E-11  5.98E-11  8.14E-11  8.14E-11
    th229 8.44E-13  1.34E-12  1.98E-12  2.77E-12  3.61E-12  3.61E-12
    th230 5.52E-07  6.79E-07  8.02E-07  9.21E-07  1.04E-06  1.04E-06
    th231 6.78E-10  8.06E-10  9.04E-10  1.00E-09  1.09E-09  1.09E-09
    th232 1.04E-08  1.50E-08  2.03E-08  2.64E-08  3.33E-08  3.33E-08
    th233 6.18E-15  1.23E-14  1.67E-14  2.17E-14  2.72E-14  1.53E-14
    th234 2.78E-08  2.78E-08  2.78E-08  2.78E-08  2.78E-08  2.78E-08
    pa231 4.71E-08  6.57E-08  8.66E-08  1.10E-07  1.35E-07  1.35E-07
    pa232 3.54E-11  5.07E-11  6.67E-11  8.43E-11  1.03E-10  1.03E-10
    pa233 7.87E-10  1.12E-09  1.49E-09  1.88E-09  2.31E-09  2.31E-09
    pa234m 9.30E-13  9.36E-13  9.38E-13  9.38E-13  9.38E-13  9.38E-13
    pa234  4.63E-13  4.88E-13  5.13E-13  5.38E-13  5.63E-13  5.60E-13
    pa235  .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00
    u230  2.58E-17  3.74E-17  5.00E-17  6.43E-17  8.08E-17  8.07E-17
```

u231	7.01E-16	9.83E-16	1.25E-15	1.56E-15	1.91E-15	1.91E-15
u232	9.15E-09	1.23E-08	1.60E-08	2.02E-08	2.52E-08	2.52E-08
u233	7.74E-07	9.59E-07	1.14E-06	1.30E-06	1.47E-06	1.47E-06
u234	4.58E-01	4.54E-01	4.49E-01	4.45E-01	4.41E-01	4.41E-01
u235	5.36E+01	5.23E+01	5.10E+01	4.98E+01	4.86E+01	4.86E+01
u236	1.31E+00	1.55E+00	1.78E+00	2.00E+00	2.22E+00	2.22E+00
u237	2.53E-03	2.87E-03	3.09E-03	3.30E-03	3.50E-03	3.50E-03
u238	1.89E+03	1.89E+03	1.88E+03	1.88E+03	1.88E+03	1.88E+03
u239	3.54E-04	4.81E-04	4.79E-04	4.78E-04	4.77E-04	2.76E-04
u240	1.92E-36	2.19E-34	1.60E-33	8.50E-33	3.57E-32	3.57E-32
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	1.30E-10	2.17E-10	3.28E-10	4.61E-10	6.18E-10	6.18E-10
np236m	5.18E-10	7.48E-10	9.48E-10	1.16E-09	1.39E-09	1.37E-09
np236	9.58E-09	1.63E-08	2.51E-08	3.60E-08	4.92E-08	4.92E-08
np237	3.14E-02	4.21E-02	5.35E-02	6.57E-02	7.85E-02	7.85E-02
np238	3.71E-05	5.08E-05	6.44E-05	7.88E-05	9.41E-05	9.37E-05
np239	6.71E-02	6.95E-02	6.92E-02	6.90E-02	6.88E-02	6.88E-02
np240m	1.64E-37	1.83E-36	1.37E-35	7.26E-35	3.05E-34	3.05E-34
np240	9.82E-07	1.17E-06	1.16E-06	1.15E-06	1.15E-06	9.34E-07
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	1.25E-08	2.12E-08	3.23E-08	4.60E-08	6.23E-08	6.23E-08
pu237	2.81E-09	3.95E-09	5.05E-09	6.10E-09	7.12E-09	7.12E-09
pu238	8.31E-04	1.35E-03	2.11E-03	3.00E-03	4.08E-03	4.08E-03
pu239	2.68E+00	3.26E+00	3.81E+00	4.31E+00	4.77E+00	4.77E+00
pu240	1.41E-01	2.06E-01	2.78E-01	3.57E-01	4.40E-01	4.40E-01
pu241	2.20E-02	3.86E-02	6.13E-02	9.03E-02	1.26E-01	1.26E-01
pu242	3.96E-04	8.88E-04	1.70E-03	2.92E-03	4.65E-03	4.65E-03
pu243	4.68E-08	1.12E-07	2.13E-07	3.66E-07	5.82E-07	5.58E-07
pu244	9.57E-25	1.09E-23	7.98E-23	4.23E-22	1.78E-21	1.78E-21
pu245	7.07E-31	8.01E-30	5.83E-29	3.05E-28	1.30E-27	1.27E-27
pu246	1.53E-33	1.91E-32	1.51E-31	8.53E-31	3.77E-30	3.77E-30
am239	1.65E-15	3.95E-15	7.51E-15	1.28E-14	2.03E-14	1.99E-14
am240	7.15E-13	1.70E-12	3.23E-12	5.53E-12	8.74E-12	8.71E-12

1

ses2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp actinides page 8
power= 7.25mw, burnup= 2520.mwd, flux= 1.64E+13n/cm**2-sec

0 nuclide concentrations, gram atoms
basis = single reactor assembly

	charge	200.0 d	240.0 d	280.0 d	320.0 d	320.0 d
am241	1.18E-04	2.65E-04	5.05E-04	8.64E-04	1.37E-03	1.37E-03
am242m	7.73E-07	2.10E-06	4.66E-06	9.01E-06	1.58E-05	1.58E-05
am242	1.36E-07	3.05E-07	5.80E-07	9.91E-07	1.57E-06	1.55E-06
am243	5.31E-06	1.56E-05	3.65E-05	7.37E-05	1.35E-04	1.35E-04
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	1.68E-09	5.17E-09	1.20E-08	2.42E-08	4.43E-08	4.33E-08
am245	6.30E-29	7.41E-28	5.34E-27	2.79E-26	1.16E-25	1.16E-25
am246	3.83E-36	4.77E-35	3.78E-34	2.13E-33	9.41E-33	9.41E-33
cm241	2.94E-17	1.27E-16	3.92E-16	9.85E-16	2.15E-15	2.15E-15
cm242	3.49E-06	9.65E-06	2.17E-05	4.28E-05	7.56E-05	7.56E-05
cm243	8.97E-09	3.20E-08	8.74E-08	2.00E-07	4.06E-07	4.06E-07
cm244	7.67E-08	2.87E-07	8.21E-07	1.98E-06	4.13E-06	4.13E-06
cm245	3.00E-10	1.42E-09	4.88E-09	1.36E-08	3.26E-08	3.26E-08
cm246	2.15E-12	1.23E-11	5.14E-11	1.69E-10	4.68E-10	4.68E-10
cm247	2.49E-15	1.83E-14	9.15E-14	3.53E-13	1.12E-12	1.12E-12
cm248	1.25E-17	1.17E-16	7.06E-16	3.19E-15	1.16E-14	1.16E-14
cm249	6.67E-23	7.20E-22	4.33E-21	1.95E-20	7.12E-20	5.83E-20
cm250	2.27E-27	2.66E-26	1.94E-25	1.02E-24	4.25E-24	4.25E-24
cm251	3.87E-35	6.50E-34	4.71E-33	2.48E-32	1.04E-31	4.85E-32
totals	1.94E+03	1.94E+03	1.94E+03	1.94E+03	1.94E+03	1.94E+03
0 flux		1.63E+13	1.64E+13	1.64E+13	1.64E+13	1.64E-02

```
0       1q array has     20 entries.
0       3q array has      1 entries.
0       3q array has      1 entries.
0       3q array has      1 entries.
0       4q array has      1 entries.
0       5q array has     12 entries.
1library information...

        cross-section data taken from position number  3 of library on unit 33.

        pass   1
        pass   0
        *scale-system control module sas2 library*
        used a time-dependent neutron spectrum, for each of the above passes
          pass 0 applies start-up fuel densities
          pass n applies mid time densities of nth library interval
        first library updated was...
        pass   1
        pass   0
        *scale-system control module sas2 library*
        used a time-dependent neutron spectrum, for each of the above passes
          pass 0 applies start-up fuel densities
          pass n applies mid time densities of nth library interval
        first library updated was...
        ************************************************************************
        *                                                                      *
        *          prelim lwr origen-s binary working library--id = 1143       *
        *        made from modified card-image origen-s libraries of scale 4.2 *
        *      data from the light element, actinide, and fission product libraries *
        *       decay data, including gamma and total energy, are from endf/b-vi *
        *                                                                      *
        *     neutron flux spectrum factors and cross sections were produced from *
        *    the "presas2" case updating all nuclides on the scale "burnup" library *
        *                                                                      *
        *                fission product yields are from endf/b-v              *
        *                                                                      *
        *            photon libraries use an 18-energy-group structure         *
        *           the photon data are from the master photon data base,      *
        *            produced to include bremsstrahlung from us2 matrix        *
        *                                                                      *
        *       see information above this box (if present) for later updates  *
        *                                                                      *
        ************************************************************************
        *
0       ************************************************************************
0               .other identification and sizes of library.
0                 data set name:  ft33f001
0               2/16/1996    date library was produced
0                   1697     total number of nuclides in library
                     689     number of light-element nuclides
                     129     number of actinide nuclides
                     879     number of fission product nuclides
0                   7585     number of nonzero off-diagonal matrix elements
0       ************************************************************************
1   sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp                                    page   9
      power=   7.25mw, burnup=   3480.mwd, flux= 1.62e+13n/cm**2-sec
0                                    basis =
0   (note, k-infinities, clad and moderator absorptions are correct, only, if correctly weighted cross sections are applied.)
0                initial        360.0 d        400.0 d        440.0 d        480.0 d        480.0 d
    productions  3.533429E+04   3.545952E+04   3.556331E+04   3.564604E+04   3.570724E+04   3.570789E+04
```

absorptions	2.863199E+04	2.887506E+04	2.911586E+04	2.934422E+04	2.956090E+04	2.957835E+04
k infinity	1.234084E+00	1.228033E+00	1.221441E+00	1.214721E+00	1.207921E+00	1.207227E+00
0	initial	360.0 d	400.0 d	440.0 d	480.0 d	480.0 d
actinide absorptions	2.742613E+04	2.760863E+04	2.778306E+04	2.794630E+04	2.809889E+04	2.809919E+04
non-actinide abs. fracs.	4.218566E-02	4.385889E-02	4.577571E-02	4.763854E-02	4.945773E-02	5.000957E-02

1

sas2h: babcock wilcox 15x15, 3.00wt%, 20gad/mtu burn high temp actinides page 10

power= 7.25mw, burnup= 3480.mwd, flux= 1.62E+13n/cm**2-sec

0 nuclide concentrations, gram atoms

basis = single reactor assembly

	charge	360.0 d	400.0 d	440.0 d	480.0 d	480.0 d
he 4	1.11E-04	1.54E-04	2.11E-04	2.85E-04	3.80E-04	3.80E-04
th226	8.33E-20	1.07E-19	1.32E-19	1.60E-19	1.93E-19	1.93E-19
th227	1.89E-15	2.59E-15	3.44E-15	4.44E-15	5.60E-15	5.61E-15
th228	8.14E-11	1.08E-10	1.40E-10	1.79E-10	2.26E-10	2.26E-10
th229	3.61E-12	4.67E-12	5.90E-12	7.33E-12	8.96E-12	8.96E-12
th230	1.04E-06	1.15E-06	1.25E-06	1.35E-06	1.45E-06	1.45E-06
th231	1.09E-09	1.22E-09	1.31E-09	1.39E-09	1.48E-09	1.46E-09
th232	3.33E-08	4.08E-08	4.85E-08	5.77E-08	6.72E-08	6.72E-08
th233	1.53E-14	3.44E-14	4.12E-14	4.85E-14	5.66E-14	2.39E-14
th234	2.78E-08	2.78E-08	2.78E-08	2.78E-08	2.78E-08	2.78E-08
pa231	1.35E-07	1.63E-07	1.93E-07	2.25E-07	2.58E-07	2.58E-07
pa232	1.03E-10	1.28E-10	1.51E-10	1.75E-10	2.01E-10	1.99E-10
pa233	2.31E-09	2.78E-09	3.23E-09	3.74E-09	4.26E-09	4.26E-09
pa234m	9.38E-13	9.38E-13	9.37E-13	9.37E-13	9.37E-13	9.36E-13
pa234	5.60E-13	5.99E-13	6.30E-13	6.63E-13	6.97E-13	6.84E-13
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	8.07E-17	1.04E-16	1.28E-16	1.56E-16	1.87E-16	1.87E-16
u231	1.91E-15	2.42E-15	2.90E-15	3.44E-15	4.03E-15	4.07E-15
u232	2.52E-08	3.10E-08	3.78E-08	4.56E-08	5.45E-08	5.45E-08
u233	1.47E-06	1.63E-06	1.75E-06	1.94E-06	2.08E-06	2.08E-06
u234	4.41E-01	4.36E-01	4.32E-01	4.28E-01	4.24E-01	4.24E-01
u235	4.86E+01	4.71E+01	4.63E+01	4.52E+01	4.41E+01	4.41E+01
u236	2.22E+00	2.44E+00	2.64E+00	2.84E+00	3.04E+00	3.04E+00
u237	3.50E-03	3.80E-03	4.00E-03	4.19E-03	4.38E-03	4.37E-03
u238	1.88E+03	1.88E+03	1.88E+03	1.88E+03	1.88E+03	1.88E+03
u239	2.76E-04	4.91E-04	4.90E-04	4.89E-04	4.89E-04	2.16E-04
u240	3.57E-32	1.28E-31	3.95E-31	1.11E-30	2.81E-30	2.81E-30
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	6.18E-10	8.11E-10	1.03E-09	1.27E-09	1.54E-09	1.54E-09
np236m	1.37E-09	1.72E-09	1.99E-09	2.27E-09	2.55E-09	2.52E-09
np236	4.92E-08	6.58E-08	8.50E-08	1.07E-07	1.32E-07	1.32E-07
np237	7.85E-02	9.22E-02	1.07E-01	1.22E-01	1.37E-01	1.37E-01
np238	9.37E-05	1.12E-04	1.30E-04	1.48E-04	1.67E-04	1.66E-04
np239	6.88E-02	7.08E-02	7.07E-02	7.06E-02	7.06E-02	7.05E-02
np240m	3.05E-34	1.09E-33	3.41E-33	9.49E-33	2.40E-32	2.40E-32
np240	9.34E-07	1.22E-06	1.21E-06	1.21E-06	1.21E-06	8.88E-07
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	6.23E-08	8.25E-08	1.06E-07	1.32E-07	1.62E-07	1.62E-07
pu237	7.12E-09	8.37E-09	9.53E-09	1.06E-08	1.17E-08	1.17E-08
pu238	4.08E-03	5.37E-03	6.88E-03	8.60E-03	1.06E-02	1.06E-02
pu239	4.77E+00	5.23E+00	5.66E+00	6.05E+00	6.42E+00	6.42E+00
pu240	4.40E-01	5.27E-01	6.18E-01	7.11E-01	8.04E-01	8.04E-01
pu241	1.26E-01	1.63E-01	2.06E-01	2.55E-01	3.09E-01	3.09E-01
pu242	4.65E-03	6.93E-03	9.80E-03	1.34E-02	1.78E-02	1.78E-02
pu243	5.58E-07	8.97E-07	1.27E-06	1.73E-06	2.30E-06	2.14E-06
pu244	1.78E-21	6.36E-21	1.99E-20	5.54E-20	1.40E-19	1.40E-19
pu245	1.27E-27	4.58E-27	1.43E-26	3.98E-26	1.01E-25	9.75E-26

```
    pu246  3.77E-30  1.38E-29  4.48E-29  1.29E-28  3.34E-28  3.33E-28
    am239  1.99E-14  3.14E-14  4.43E-14  6.01E-14  7.91E-14  7.70E-14
    am240  8.71E-12  1.36E-11  1.91E-11  2.59E-11  3.42E-11  3.40E-11
1
    sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp                    actinides      page  11
    power=   7.25mw, burnup=   3480.mwd, flux= 1.62E+13n/cm**2-sec
0                                                  nuclide concentrations, gram atoms
                                                   basis = single reactor assembly
          charge   360.0 d   400.0 d   440.0 d   480.0 d   480.0 d
    am241 1.37E-03 2.08E-03 2.87E-03 3.89E-03 5.12E-03 5.12E-03
    am242m 1.58E-05 2.55E-05 3.89E-05 5.64E-05 7.87E-05 7.87E-05
    am242  1.55E-06 2.31E-06 3.25E-06 4.42E-06 5.81E-06 5.70E-06
    am243  1.35E-04 2.31E-04 3.70E-04 5.62E-04 8.20E-04 8.20E-04
    am244m  .00E+00  .00E+00  .00E+00  .00E+00  .00E+00  .00E+00
    am244  4.33E-08 7.79E-08 1.25E-07 1.89E-07 2.78E-07 2.67E-07
    am245  1.16E-25 4.20E-25 1.31E-24 3.59E-24 8.98E-24 8.98E-24
    am246  9.41E-33 3.46E-32 1.12E-31 3.21E-31 8.34E-31 8.34E-31
    cm241  2.15E-15 4.40E-15 8.06E-15 1.37E-14 2.20E-14 2.20E-14
    cm242  7.56E-05 1.24E-04 1.91E-04 2.81E-04 3.98E-04 3.98E-04
    cm243  4.06E-07 7.61E-07 1.31E-06 2.13E-06 3.29E-06 3.29E-06
    cm244  4.13E-06 8.04E-06 1.45E-05 2.45E-05 3.92E-05 3.95E-05
    cm245  3.26E-08 7.17E-08 1.43E-07 2.66E-07 4.64E-07 4.64E-07
    cm246  4.68E-10 1.15E-09 2.56E-09 5.26E-09 1.01E-08 1.01E-08
    cm247  1.12E-12 3.16E-12 7.85E-12 1.78E-11 3.73E-11 3.73E-11
    cm248  1.16E-14 3.74E-14 1.05E-13 2.63E-13 6.06E-13 6.06E-13
    cm249  5.83E-20 2.37E-19 6.63E-19 1.66E-18 3.83E-18 2.84E-18
    cm250  4.25E-24 1.56E-23 4.89E-23 1.36E-22 3.44E-22 3.44E-22
    cm251  4.85E-32 3.74E-31 1.17E-30 3.28E-30 8.24E-30 2.62E-30
  totals   1.94E+03 1.94E+03 1.94E+03 1.94E+03 1.93E+03 1.93E+03
0   flux             1.62E+13 1.62E+13 1.62E+13 1.62E+13 1.61E-02
0      1q array has      20 entries.
0      3q array has       1 entries.
0      3q array has       1 entries.
0      3q array has       1 entries.
0      4q array has       1 entries.
0     54q array has      12 entries.
1library information...

        cross-section data taken from position number  4 of library on unit 33.

        pass  1
        pass  0
        *scale-system control module sas2 library*
        used a time-dependent neutron spectrum, for each of the above passes
          pass 0 applies start-up fuel densities
          pass n applies mid time densities of nth library interval
        first library updated was...
        pass  1
        pass  0
        *scale-system control module sas2 library*
        used a time-dependent neutron spectrum, for each of the above passes
          pass 0 applies start-up fuel densities
          pass n applies mid time densities of nth library interval
        first library updated was...
        ************************************************************************
        *                                                                      *
        *          prelim lwr origen-s binary working library--id = 1143       *
        *        made from modified card-image origen-s libraries of scale 4.2 *
        *      data from the light element, actinide, and fission product libraries *
        *        decay data, including gamma and total energy, are from endf/b-vi *
```

```
      *                                                                     *
      *     neutron flux spectrum factors and cross sections were produced from     *
      *    the 'presas2" case updating all nuclides on the scale 'bumup' library    *
      *                                                                     *
      *                  fission product yields are from endf/b-v           *
      *                                                                     *
      *            photon libraries use an 18-energy-group structure        *
      *           the photon data are from the master photon data base,     *
      *           produced to include bremsstrahlung from uo2 matrix        *
      *                                                                     *
      *       see information above this box (if present) for later updates *
      *                                                                     *
      ***********************************************************************
      *                                                                     *
      ***********************************************************************
0
0              .other identification and sizes of library.
0               data set name:  ft33f001
0             2/16/1996    date library was produced
0                1697    total number of nuclides in library
                  689    number of light-element nuclides
                  129    number of actinide nuclides
                  879    number of fission product nuclides
0                7985    number of nonzero off-diagonal matrix elements
0      ***********************************************************************
1   sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp                                  page  12
      power=  7.25mw, burnup=  4640.mwd, flux= 1.60E+13n/cm**2-sec
0                                          basis =
0   (note, k-infinities, clad and moderator absorptions are correct, only, if correctly weighted cross sections are applied.)
0                  initial       520.0 d       560.0 d       600.0 d       640.0 d       640.1 d
    productions  3.597086E+04  3.603198E+04  3.607921E+04  3.611125E+04  3.612969E+04  3.613048E+04
    absorptions  2.993967E+04  3.013748E+04  3.034138E+04  3.053502E+04  3.071900E+04  3.074160E+04
    k infinity   1.201445E+00  1.195587E+00  1.189109E+00  1.182618E+00  1.176139E+00  1.175298E+00
0                  initial       520.0 d       560.0 d       600.0 d       640.0 d       640.1 d
    actinide
    absorptions  2.844444E+04  2.859273E+04  2.873273E+04  2.886341E+04  2.898521E+04  2.898562E+04
    non-actinide
    abs. fracs.  4.994160E-02  5.125684E-02  5.301845E-02  5.474389E-02  5.644029E-02  5.712068E-02
1
    sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp                  actinides       page  13
    power=  7.25mw, burnup=  4640.mwd, flux= 1.60E+13n/cm**2-sec
0                                          nuclide concentrations, gram atoms
                                           basis = single reactor assembly
          charge   520.0 d   560.0 d   600.0 d   640.0 d   640.1 d
    he  4 3.80E-04 5.02E-04 6.56E-04 8.48E-04 1.08E-03 1.08E-03
    pb206 9.74E-18 1.41E-17 1.97E-17 2.70E-17 3.63E-17 3.63E-17
    pb207 2.44E-14 3.30E-14 4.37E-14 5.67E-14 7.24E-14 7.24E-14
    pb208 3.04E-11 4.02E-11 5.23E-11 6.71E-11 8.51E-11 8.51E-11
    pb209 1.95E-18 2.40E-18 2.96E-18 3.61E-18 4.37E-18 4.37E-18
    pb210 2.80E-15 3.55E-15 4.42E-15 5.42E-15 6.58E-15 6.58E-15
    pb211 6.96E-18 8.69E-18 1.07E-17 1.29E-17 1.54E-17 1.54E-17
    pb212 1.43E-13 1.77E-13 2.18E-13 2.65E-13 3.19E-13 3.19E-13
    pb214 2.99E-19 3.47E-19 3.98E-19 4.52E-19 5.09E-19 4.97E-19
    th226 1.95E-19 2.36E-19 2.82E-19 3.32E-19 3.88E-19 3.88E-19
    th227 5.61E-15 6.95E-15 8.47E-15 1.02E-14 1.21E-14 1.21E-14
    th228 2.26E-10 2.78E-10 3.42E-10 4.15E-10 5.01E-10 5.01E-10
    th229 8.98E-12 1.08E-11 1.30E-11 1.54E-11 1.82E-11 1.82E-11
    th230 1.45E-06 1.55E-06 1.64E-06 1.73E-06 1.81E-06 1.81E-06
    th231 1.46E-09 1.60E-09 1.68E-09 1.75E-09 1.83E-09 1.80E-09
    th232 6.72E-08 7.72E-08 8.79E-08 9.91E-08 1.11E-07 1.11E-07
    th233 2.39E-14 6.67E-14 7.59E-14 8.56E-14 9.59E-14 3.05E-14
```

th234	2.78E-08	2.77E-08	2.77E-08	2.77E-08	2.77E-08	2.77E-08
pa231	2.58E-07	2.94E-07	3.31E-07	3.70E-07	4.10E-07	4.10E-07
pa232	1.99E-10	2.33E-10	2.63E-10	2.94E-10	3.26E-10	3.22E-10
pa233	4.26E-09	4.80E-09	5.37E-09	5.98E-09	6.56E-09	6.56E-09
pa234m	9.36E-13	9.36E-13	9.36E-13	9.36E-13	9.35E-13	9.34E-13
pa234	6.84E-13	7.41E-13	7.75E-13	8.18E-13	8.59E-13	8.32E-13
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	1.87E-16	2.29E-16	2.73E-16	3.21E-16	3.76E-16	3.75E-16
u231	4.07E-15	4.96E-15	5.80E-15	6.75E-15	7.78E-15	7.74E-15
u232	5.45E-08	6.47E-08	7.65E-08	8.95E-08	1.04E-07	1.04E-07
u233	2.08E-06	2.23E-06	2.37E-06	2.50E-06	2.63E-06	2.63E-06
u234	4.24E-01	4.19E-01	4.15E-01	4.11E-01	4.07E-01	4.07E-01
u235	4.41E+01	4.30E+01	4.20E+01	4.10E+01	4.00E+01	4.00E+01
u236	3.04E+00	3.23E+00	3.41E+00	3.59E+00	3.77E+00	3.77E+00
u237	4.37E-03	4.63E-03	4.82E-03	4.99E-03	5.17E-03	5.15E-03
u238	1.88E+03	1.88E+03	1.88E+03	1.88E+03	1.88E+03	1.88E+03
u239	2.14E-04	5.01E-04	5.01E-04	5.01E-04	5.01E-04	1.69E-04
u240	2.81E-30	6.61E-30	1.46E-29	3.05E-29	6.04E-29	6.04E-29
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	1.54E-09	1.88E-09	2.20E-09	2.56E-09	2.96E-09	2.96E-09
np236m	2.52E-09	2.99E-09	3.32E-09	3.68E-09	4.00E-09	3.93E-09
np236	1.32E-07	1.61E-07	1.94E-07	2.30E-07	2.70E-07	2.70E-07
np237	1.37E-01	1.53E-01	1.70E-01	1.87E-01	2.05E-01	2.05E-01
np238	1.66E-04	1.88E-04	2.10E-04	2.32E-04	2.54E-04	2.51E-04
np239	7.05E-02	7.23E-02	7.23E-02	7.23E-02	7.23E-02	7.21E-02
np240m	2.40E-32	5.64E-32	1.25E-31	2.60E-31	5.15E-31	5.15E-31
np240	8.88E-07	1.27E-06	1.27E-06	1.27E-06	1.27E-06	8.43E-07
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	1.62E-07	1.98E-07	2.34E-07	2.78E-07	3.21E-07	3.21E-07
pu237	1.17E-08	1.31E-08	1.43E-08	1.55E-08	1.67E-08	1.67E-08
pu238	1.05E-02	1.28E-02	1.53E-02	1.80E-02	2.10E-02	2.10E-02
pu239	6.42E+00	6.79E+00	7.13E+00	7.44E+00	7.74E+00	7.74E+00
pu240	8.04E-01	9.03E-01	1.00E+00	1.10E+00	1.20E+00	1.20E+00

1

ses2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp actinides page 14

power= 7.25mw, burnup= 640.0wd, flux= 1.60E+13n/cm**2-sec

0 nuclide concentrations, gram atoms

basis = single reactor assembly

	charge	520.0 d	560.0 d	600.0 d	640.0 d	640.1 d
pu241	3.09E-01	3.62E-01	4.19E-01	4.82E-01	5.48E-01	5.48E-01
pu242	1.78E-02	2.29E-02	2.89E-02	3.57E-02	4.34E-02	4.34E-02
pu243	2.14E-06	3.04E-06	3.83E-06	4.73E-06	5.77E-06	5.29E-06
pu244	1.40E-19	3.29E-19	7.27E-19	1.52E-18	3.01E-18	3.01E-18
pu245	9.75E-26	2.35E-25	5.19E-25	1.08E-24	2.15E-24	2.06E-24
pu246	3.33E-28	7.98E-28	1.80E-27	3.82E-27	7.70E-27	7.69E-27
am239	7.70E-14	1.05E-13	1.31E-13	1.61E-13	1.95E-13	1.88E-13
am240	3.40E-11	4.53E-11	5.67E-11	6.96E-11	8.42E-11	8.35E-11
am241	5.12E-03	6.57E-03	8.21E-03	1.01E-02	1.22E-02	1.22E-02
am242m	7.87E-05	1.06E-04	1.39E-04	1.78E-04	2.23E-04	2.23E-04
am242	5.70E-06	7.41E-06	9.28E-06	1.14E-05	1.38E-05	1.34E-05
am243	8.20E-04	1.16E-03	1.60E-03	2.13E-03	2.79E-03	2.79E-03
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	2.67E-07	3.98E-07	5.47E-07	7.32E-07	9.58E-07	9.19E-07
am245	8.98E-24	2.12E-23	4.67E-23	9.68E-23	1.89E-22	1.89E-22
am246	8.34E-31	1.99E-30	4.49E-30	9.54E-30	1.92E-29	1.92E-29
cm241	2.20E-14	3.46E-14	5.15E-14	7.38E-14	1.02E-13	1.02E-13
cm242	3.98E-04	5.40E-04	7.15E-04	9.25E-04	1.17E-03	1.17E-03
cm243	3.29E-06	4.90E-06	7.04E-06	9.79E-06	1.32E-05	1.32E-05
cm244	3.93E-05	6.08E-05	9.09E-05	1.31E-04	1.85E-04	1.85E-04
cm245	4.64E-07	7.81E-07	1.26E-06	1.94E-06	2.91E-06	2.91E-06

```
    cm246  1.01E-08  1.84E-08  3.20E-08  5.33E-08  8.58E-08  8.58E-08
    cm247  3.73E-11  7.47E-11  1.41E-10  2.52E-10  4.34E-10  4.34E-10
    cm248  6.09E-13  1.32E-12  2.71E-12  5.25E-12  9.70E-12  9.70E-12
    cm249  2.84E-18  8.62E-18  1.78E-17  3.42E-17  6.33E-17  4.25E-17
    cm250  3.44E-22  8.20E-22  1.82E-21  3.81E-21  7.57E-21  7.57E-21
    cm251  2.62E-30  1.95E-29  4.34E-29  9.08E-29  1.81E-28  3.94E-29
   totals  1.93E+03  1.93E+03  1.93E+03  1.93E+03  1.93E+03  1.93E+03
0    flux           1.60E+13  1.60E+13  1.60E+13  1.61E+13  1.61E-02
0       1q array has     20 entries.
0       3q array has      1 entries.
0       3q array has      1 entries.
0       3q array has      1 entries.
0       4q array has      1 entries.
0      5+q array has     12 entries.
1library information...

        cross-section data taken from position number  5 of library on unit 33.

        pass   1
        pass   0
        *scale-system control module sas2 library*
        used a time-dependent neutron spectrum, for each of the above passes
          pass 0 applies start-up fuel densities
          pass n applies mid time densities of nth library interval
        first library updated was...
        pass   1
        pass   0
        *scale-system control module sas2 library*
        used a time-dependent neutron spectrum, for each of the above passes
          pass 0 applies start-up fuel densities
          pass n applies mid time densities of nth library interval
        first library updated was...
        ************************************************************************
        *                                                                      *
        *            prelim lwr origen-s binary working library--id = 1143     *
        *         made from modified card-image origen-s libraries of scale 4.2*
        *       data from the light element, actinide, and fission product libraries
        *         decay data, including gamma and total energy, are from endf/b-vi
        *                                                                      *
        *       neutron flux spectrum factors and cross sections were produced from
        *      the 'presas2' case updating all nuclides on the scale 'burnup' library
        *                                                                      *
        *                   fission product yields are from endf/b-v           *
        *                                                                      *
        *              photon libraries use an 18-energy-group structure       *
        *             the photon data are from the master photon data base,    *
        *              produced to include bremsstrahlung from uo2 matrix      *
        *                                                                      *
        *         see information above this box (if present) for later updates*
        *                                                                      *
        ************************************************************************
        *                                                                      *
        ************************************************************************
0
0               .other identification and sizes of library.
0                 data set name:  ft33f001
0               2/16/1996     date library was produced
0                   1697      total number of nuclides in library
                     689      number of light-element nuclides
                     129      number of actinide nuclides
                     879      number of fission product nuclides
```

0 7935 number of nonzero off-diagonal matrix elements
0 **********
1 sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp page 15
power= 7.25mw, burnup= 5800.mwd, flux= 1.60E+13n/cm**2-sec
0 basis =
0 (note, k-infinities, clad and moderator absorptions are correct, only, if correctly weighted cross sections are applied.)

0		initial	680.1 d	720.1 d	760.1 d	800.1 d	800.1 d
	productions	3.652766E+04	3.634378E+04	3.635084E+04	3.634718E+04	3.633988E+04	3.633488E+04
	absorptions	3.099263E+04	3.115259E+04	3.132613E+04	3.149116E+04	3.164824E+04	3.167582E+04
	k infinity	1.172139E+00	1.166637E+00	1.160400E+00	1.154208E+00	1.148054E+00	1.147085E+00
0		initial	680.1 d	720.1 d	760.1 d	800.1 d	800.1 d
	actinide absorptions	2.922108E+04	2.939338E+04	2.945092E+04	2.955483E+04	2.965138E+04	2.965189E+04
	non-actinide abs. fracs.	5.716181E-02	5.820584E-02	5.986065E-02	6.148809E-02	6.309545E-02	6.389511E-02

1 sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp actinides page 16
power= 7.25mw, burnup= 5800.mwd, flux= 1.60E+13n/cm**2-sec
0 nuclide concentrations, gram atoms
basis = single reactor assembly

	charge	680.1 d	720.1 d	760.1 d	800.1 d	800.1 d
he 4	1.08E-03	1.37E-03	1.72E-03	2.13E-03	2.61E-03	2.61E-03
pb206	3.63E-17	4.75E-17	6.21E-17	7.95E-17	1.00E-16	1.00E-16
pb207	7.24E-14	9.09E-14	1.13E-13	1.38E-13	1.67E-13	1.67E-13
pb208	8.51E-11	1.07E-10	1.32E-10	1.63E-10	1.99E-10	1.99E-10
pb209	4.37E-18	5.23E-18	6.24E-18	7.39E-18	8.69E-18	8.70E-18
pb210	6.58E-15	7.90E-15	9.39E-15	1.11E-14	1.30E-14	1.30E-14
pb211	1.54E-17	1.88E-17	2.12E-17	2.46E-17	2.83E-17	2.82E-17
pb212	3.19E-13	3.82E-13	4.53E-13	5.35E-13	6.27E-13	6.27E-13
pb214	4.97E-19	5.68E-19	6.30E-19	6.94E-19	7.61E-19	7.40E-19
th226	3.88E-19	4.60E-19	5.34E-19	6.15E-19	7.04E-19	7.03E-19
th227	1.21E-14	1.42E-14	1.66E-14	1.91E-14	2.19E-14	2.19E-14
th228	5.01E-10	5.99E-10	7.11E-10	8.39E-10	9.83E-10	9.83E-10
th229	1.82E-11	2.13E-11	2.48E-11	2.88E-11	3.33E-11	3.33E-11
th230	1.81E-06	1.85E-06	1.97E-06	2.04E-06	2.11E-06	2.11E-06
th231	1.80E-09	1.94E-09	2.01E-09	2.08E-09	2.14E-09	2.10E-09
th232	1.11E-07	1.23E-07	1.36E-07	1.49E-07	1.63E-07	1.63E-07
th233	3.05E-14	1.05E-13	1.20E-13	1.32E-13	1.45E-13	3.45E-14
th234	2.77E-08	2.77E-08	2.77E-08	2.77E-08	2.76E-08	2.76E-08
pa231	4.10E-07	4.52E-07	4.95E-07	5.39E-07	5.84E-07	5.84E-07
pa232	3.22E-10	3.65E-10	4.01E-10	4.37E-10	4.75E-10	4.67E-10
pa233	6.56E-09	7.18E-09	7.82E-09	8.47E-09	9.14E-09	9.14E-09
pa234m	9.34E-13	9.35E-13	9.35E-13	9.34E-13	9.34E-13	9.32E-13
pa234	8.32E-13	9.11E-13	9.56E-13	1.00E-12	1.05E-12	1.00E-12
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	3.75E-16	4.46E-16	5.18E-16	5.96E-16	6.82E-16	6.81E-16
u231	7.74E-15	9.19E-15	1.05E-14	1.20E-14	1.36E-14	1.35E-14
u232	1.04E-07	1.20E-07	1.38E-07	1.58E-07	1.80E-07	1.80E-07
u233	2.63E-06	2.75E-06	2.87E-06	2.99E-06	3.10E-06	3.10E-06
u234	4.07E-01	4.03E-01	3.99E-01	3.95E-01	3.91E-01	3.91E-01
u235	4.00E+01	3.90E+01	3.81E+01	3.71E+01	3.62E+01	3.62E+01
u236	3.77E+00	3.94E+00	4.10E+00	4.27E+00	4.42E+00	4.42E+00
u237	5.15E-03	5.35E-03	5.56E-03	5.72E-03	5.85E-03	5.85E-03
u238	1.88E+03	1.87E+03	1.87E+03	1.87E+03	1.87E+03	1.87E+03
u239	1.69E-04	5.11E-04	5.11E-04	5.12E-04	5.12E-04	1.31E-04
u240	6.04E-29	1.15E-28	2.10E-28	3.72E-28	6.39E-28	6.39E-28
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	2.96E-09	3.40E-09	3.86E-09	4.36E-09	4.87E-09	4.87E-09
np236m	3.95E-09	4.52E-09	4.91E-09	5.30E-09	5.70E-09	5.57E-09
np236	2.70E-07	3.15E-07	3.64E-07	4.17E-07	4.74E-07	4.74E-07

np237	2.05E-01	2.23E-01	2.42E-01	2.61E-01	2.80E-01	2.80E-01
np238	2.51E-04	2.79E-04	3.08E-04	3.27E-04	3.52E-04	3.49E-04
np239	7.21E-02	7.37E-02	7.38E-02	7.39E-02	7.39E-02	7.36E-02
np240m	5.15E-31	9.79E-31	1.79E-30	3.18E-30	5.45E-30	5.45E-30
np240	8.43E-07	1.33E-06	1.33E-06	1.33E-06	1.34E-06	7.97E-07
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	3.21E-07	3.72E-07	4.26E-07	4.84E-07	5.46E-07	5.46E-07
pu237	1.67E-08	1.82E-08	1.97E-08	2.11E-08	2.25E-08	2.24E-08
pu238	2.10E-02	2.44E-02	2.80E-02	3.20E-02	3.62E-02	3.62E-02
pu239	7.74E+00	8.03E+00	8.31E+00	8.56E+00	8.80E+00	8.80E+00
pu240	1.20E+00	1.30E+00	1.40E+00	1.50E+00	1.60E+00	1.60E+00

1

sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp actinides page 17
power= 7.25mw, burnup= 5800.mwd, flux= 1.60E+13n/cm**2-sec

0 nuclide concentrations, gram atoms
basis = single reactor assembly

	charge	680.1 d	720.1 d	760.1 d	800.1 d	800.1 d
pu241	5.48E-01	6.10E-01	6.77E-01	7.46E-01	8.20E-01	8.20E-01
pu242	4.34E-02	5.20E-02	6.15E-02	7.20E-02	8.35E-02	8.35E-02
pu243	5.29E-06	7.04E-06	8.34E-06	9.77E-06	1.13E-05	1.02E-05
pu244	3.01E-18	5.72E-18	1.05E-17	1.85E-17	3.18E-17	3.18E-17
pu245	2.06E-24	4.07E-24	7.47E-24	1.33E-23	2.28E-23	2.16E-23
pu246	7.69E-27	1.48E-26	2.76E-26	4.95E-26	8.61E-26	8.60E-26
am239	1.88E-13	2.38E-13	2.80E-13	3.25E-13	3.74E-13	3.58E-13
am240	8.35E-11	1.03E-10	1.21E-10	1.41E-10	1.62E-10	1.60E-10
am241	1.22E-02	1.45E-02	1.70E-02	1.97E-02	2.26E-02	2.26E-02
am242m	2.23E-04	2.75E-04	3.33E-04	3.97E-04	4.69E-04	4.69E-04
am242	1.34E-05	1.63E-05	1.92E-05	2.23E-05	2.56E-05	2.48E-05
am243	2.79E-03	3.59E-03	4.54E-03	5.66E-03	6.94E-03	6.95E-03
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	9.19E-07	1.25E-06	1.59E-06	1.98E-06	2.43E-06	2.31E-06
am245	1.89E-22	3.61E-22	6.57E-22	1.15E-21	1.96E-21	1.96E-21
am246	1.92E-29	3.70E-29	6.88E-29	1.24E-28	2.15E-28	2.15E-28
cm241	1.02E-13	1.41E-13	1.88E-13	2.45E-13	3.13E-13	3.13E-13
cm242	1.17E-03	1.46E-03	1.78E-03	2.15E-03	2.56E-03	2.56E-03
cm243	1.32E-05	1.76E-05	2.25E-05	2.92E-05	3.66E-05	3.66E-05
cm244	1.85E-04	2.55E-04	3.45E-04	4.57E-04	5.95E-04	5.96E-04
cm245	2.91E-06	4.26E-06	6.09E-06	8.50E-06	1.16E-05	1.16E-05
cm246	8.58E-08	1.34E-07	2.04E-07	3.02E-07	4.38E-07	4.38E-07
cm247	4.34E-10	7.26E-10	1.17E-09	1.85E-09	2.82E-09	2.82E-09
cm248	9.70E-12	1.74E-11	3.01E-11	5.02E-11	8.15E-11	8.15E-11
cm249	4.25E-17	1.16E-16	2.01E-16	3.36E-16	5.47E-16	3.32E-16
cm250	7.57E-21	1.45E-20	2.68E-20	4.78E-20	8.22E-20	8.22E-20
cm251	3.94E-29	3.46E-28	6.39E-28	1.14E-27	1.90E-27	2.93E-28
totals	1.93E+03	1.93E+03	1.93E+03	1.93E+03	1.92E+03	1.90E+03
0 flux		1.60E+13	1.60E+13	1.60E+13	1.61E+13	1.61E-02

0 1q array has 20 entries.
0 3q array has 1 entries.
0 3q array has 1 entries.
0 3q array has 1 entries.
0 4q array has 1 entries.
0 54q array has 12 entries.
1library information...

cross-section data taken from position number 6 of library on unit 33.

pass 1
pass 0
scale-system control module sas2 library
used a time-dependent neutron spectrum, for each of the above passes

```
          pass 0 applies start-up fuel densities
          pass n applies mid time densities of nth library interval
        first library updated was...
        pass   1
        pass   0
        *scale-system control module sas2 library*
        used a time-dependent neutron spectrum, for each of the above passes
          pass 0 applies start-up fuel densities
          pass n applies mid time densities of nth library interval
        first library updated was...
        ************************************************************************
        *                                                                      *
        *            prelim lwr origen-s binary working library--id = 1143     *
        *          made from modified card-image origen-s libraries of scale 4.2*
        *        data from the light element, actinide, and fission product libraries*
        *          decay data, including gamma and total energy, are from endf/b-vi*
        *                                                                      *
        *        neutron flux spectrum factors and cross sections were produced from*
        *       the "presas2" case updating all nuclides on the scale "burnup" library*
        *                                                                      *
        *                    fission product yields are from endf/b-v          *
        *                                                                      *
        *                photon libraries use an 18-energy-group structure     *
        *               the photon data are from the master photon data base,  *
        *                produced to include bremsstrahlung from uo2 matrix    *
        *                                                                      *
        *          see information above this box (if present) for later updates*
        *                                                                      *
        ************************************************************************
        *                                                                      *
0       ************************************************************************
0                .other identification and sizes of library.
0                 data set name:  ft33f001
0               2/16/1996    date library was produced
0                   1697    total number of nuclides in library
                     689    number of light-element nuclides
                     129    number of actinide nuclides
                     879    number of fission product nuclides
0                   7925    number of nonzero off-diagonal matrix elements
0       ************************************************************************
1   sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp                                  page   18
       power=   7.25mw, burnup=   6960.mwd, flux= 1.61E+13n/cm**2-sec
0                                    basis =
0   (note, k-infinities, clad and moderator absorptions are correct, only, if correctly weighted cross sections are applied.)
0                  initial       840.1 d       880.1 d       920.1 d       960.1 d       960.1 d
    productions 3.648544E+04  3.646848E+04  3.644588E+04  3.641576E+04  3.637889E+04  3.638007E+04
    absorptions 3.184782E+04  3.197600E+04  3.212463E+04  3.226626E+04  3.240135E+04  3.243368E+04
    k infinity  1.145618E+00  1.140495E+00  1.134515E+00  1.128602E+00  1.122757E+00  1.121678E+00
0                  initial       840.1 d       880.1 d       920.1 d       960.1 d       960.1 d
    actinide
    absorptions 2.980953E+04  2.990528E+04  2.999171E+04  3.007383E+04  3.014992E+04  3.015054E+04
    non-actinide
    abs. fracs. 6.400120E-02  6.482118E-02  6.639504E-02  6.794798E-02  6.948655E-02  7.089404E-02
1
    sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp                    actinides     page   19
    power=   7.25mw, burnup=   6960.mwd, flux= 1.61E+13n/cm**2-sec
0                                    nuclide concentrations, gram atoms
                                     basis = single reactor assembly
           charge   840.1 d   880.1 d   920.1 d   960.1 d   960.1 d
    he 4  2.61E-03 3.17E-03 3.82E-03 4.57E-03 5.42E-03 5.42E-03
```

pb206	1.00E-16	1.25E-16	1.55E-16	1.90E-16	2.31E-16	2.31E-16
pb207	1.67E-13	2.01E-13	2.39E-13	2.82E-13	3.30E-13	3.30E-13
pb208	1.99E-10	2.40E-10	2.89E-10	3.45E-10	4.10E-10	4.10E-10
pb209	8.70E-18	1.03E-17	1.18E-17	1.37E-17	1.58E-17	1.59E-17
pb210	1.30E-14	1.51E-14	1.74E-14	2.00E-14	2.29E-14	2.29E-14
pb211	2.82E-17	3.22E-17	3.66E-17	4.12E-17	4.61E-17	4.61E-17
pb212	6.27E-13	7.31E-13	8.47E-13	9.78E-13	1.12E-12	1.12E-12
pb214	7.40E-19	8.30E-19	9.01E-19	9.73E-19	1.05E-18	1.02E-18
th226	7.03E-19	8.15E-19	9.27E-19	1.05E-18	1.18E-18	1.18E-18
th227	2.19E-14	2.50E-14	2.82E-14	3.17E-14	3.55E-14	3.55E-14
th228	9.83E-10	1.15E-09	1.33E-09	1.53E-09	1.76E-09	1.76E-09
th229	3.33E-11	3.84E-11	4.42E-11	5.06E-11	5.78E-11	5.78E-11
th230	2.11E-06	2.18E-06	2.24E-06	2.30E-06	2.36E-06	2.36E-06
th231	2.10E-09	2.24E-09	2.31E-09	2.36E-09	2.42E-09	2.37E-09
th232	1.63E-07	1.78E-07	1.92E-07	2.08E-07	2.23E-07	2.23E-07
th233	3.45E-14	1.60E-13	1.74E-13	1.88E-13	2.03E-13	3.63E-14
th234	2.76E-08	2.76E-08	2.76E-08	2.76E-08	2.76E-08	2.76E-08
pa231	5.84E-07	6.31E-07	6.79E-07	7.27E-07	7.76E-07	7.76E-07
pa232	4.67E-10	5.20E-10	5.60E-10	6.01E-10	6.43E-10	6.30E-10
pa233	9.14E-09	9.82E-09	1.05E-08	1.12E-08	1.19E-08	1.19E-08
pa234m	9.32E-13	9.34E-13	9.33E-13	9.33E-13	9.33E-13	9.30E-13
pa234	1.00E-12	1.11E-12	1.14E-12	1.21E-12	1.26E-12	1.18E-12
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	6.81E-16	7.89E-16	8.98E-16	1.02E-15	1.14E-15	1.14E-15
u231	1.35E-14	1.57E-14	1.77E-14	1.99E-14	2.22E-14	2.21E-14
u232	1.80E-07	2.04E-07	2.30E-07	2.58E-07	2.89E-07	2.89E-07
u233	3.10E-06	3.21E-06	3.32E-06	3.42E-06	3.52E-06	3.52E-06
u234	3.91E-01	3.87E-01	3.83E-01	3.79E-01	3.75E-01	3.75E-01
u235	3.62E+01	3.53E+01	3.45E+01	3.36E+01	3.28E+01	3.28E+01
u236	4.42E+00	4.57E+00	4.72E+00	4.87E+00	5.01E+00	5.01E+00
u237	5.87E-03	6.08E-03	6.24E-03	6.39E-03	6.54E-03	6.52E-03
u238	1.87E+03	1.87E+03	1.87E+03	1.87E+03	1.87E+03	1.87E+03
u239	1.31E-04	5.21E-04	5.21E-04	5.22E-04	5.23E-04	1.02E-04
u240	6.39E-28	1.07E-27	1.74E-27	2.77E-27	4.32E-27	4.32E-27
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	4.87E-09	5.44E-09	6.04E-09	6.66E-09	7.30E-09	7.30E-09
np236m	5.57E-09	6.25E-09	6.73E-09	7.17E-09	7.62E-09	7.41E-09
np236	4.74E-07	5.37E-07	6.04E-07	6.78E-07	7.53E-07	7.53E-07
np237	2.80E-01	3.00E-01	3.20E-01	3.40E-01	3.61E-01	3.61E-01
np238	3.49E-04	3.81E-04	4.07E-04	4.34E-04	4.61E-04	4.55E-04
np239	7.36E-02	7.52E-02	7.53E-02	7.54E-02	7.55E-02	7.51E-02
np240m	5.45E-30	9.10E-30	1.48E-29	2.36E-29	3.69E-29	3.69E-29
np240	7.97E-07	1.38E-06	1.39E-06	1.39E-06	1.40E-06	7.51E-07
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	5.46E-07	6.15E-07	6.87E-07	7.63E-07	8.43E-07	8.43E-07
pu237	2.24E-08	2.42E-08	2.59E-08	2.78E-08	2.92E-08	2.92E-08
pu238	3.62E-02	4.09E-02	4.59E-02	5.12E-02	5.69E-02	5.69E-02
pu239	8.80E+00	9.04E+00	9.26E+00	9.47E+00	9.66E+00	9.66E+00
pu240	1.60E+00	1.71E+00	1.81E+00	1.91E+00	2.01E+00	2.01E+00

1

sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp actinides page 20

power= 7.25mw, burnup= 6960.mwd, flux= 1.61E+13n/cm**2-sec

0

nuclide concentrations, gram atoms
basis = single reactor assembly

	charge	840.1 d	880.1 d	920.1 d	960.1 d	980.1 d
pu241	8.20E-01	8.87E-01	9.57E-01	1.03E+00	1.11E+00	1.11E+00
pu242	8.35E-02	9.58E-02	1.09E-01	1.23E-01	1.39E-01	1.39E-01
pu243	1.02E-05	1.32E-05	1.50E-05	1.70E-05	1.92E-05	1.69E-05
pu244	3.18E-17	5.31E-17	8.66E-17	1.38E-16	2.15E-16	2.15E-16
pu245	2.16E-23	3.80E-23	6.20E-23	9.90E-23	1.55E-22	1.46E-22

```
     pu246  8.60E-26  1.45E-25  2.40E-25  3.87E-25  6.10E-25  6.09E-25
     am239  3.58E-13  4.36E-13  4.93E-13  5.53E-13  6.17E-13  5.85E-13
     am240  1.60E-10  1.89E-10  2.14E-10  2.40E-10  2.67E-10  2.64E-10
     am241  2.26E-02  2.58E-02  2.91E-02  3.26E-02  3.63E-02  3.63E-02
     am242m 4.69E-04  5.46E-04  6.30E-04  7.21E-04  8.18E-04  8.18E-04
     am242  2.48E-05  2.91E-05  3.29E-05  3.70E-05  4.12E-05  3.96E-05
     am243  6.95E-03  8.44E-03  1.01E-02  1.21E-02  1.42E-02  1.42E-02
     am244m  .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00
     am244  2.31E-06  2.99E-06  3.60E-06  4.29E-06  5.07E-06  4.76E-06
     am245  1.96E-21  3.27E-21  5.31E-21  8.40E-21  1.30E-20  1.30E-20
     am246  2.15E-28  3.63E-28  5.99E-28  9.66E-28  1.52E-27  1.52E-27
     cm241  3.13E-13  4.00E-13  4.99E-13  6.12E-13  7.40E-13  7.40E-13
     cm242  2.56E-03  3.01E-03  3.50E-03  4.04E-03  4.62E-03  4.62E-03
     cm243  3.66E-05  4.54E-05  5.55E-05  6.70E-05  8.01E-05  8.01E-05
     cm244  5.96E-04  7.66E-04  9.72E-04  1.22E-03  1.51E-03  1.51E-03
     cm245  1.16E-05  1.57E-05  2.08E-05  2.72E-05  3.50E-05  3.50E-05
     cm246  4.38E-07  6.24E-07  8.72E-07  1.20E-06  1.62E-06  1.62E-06
     cm247  2.82E-09  4.25E-09  6.25E-09  9.01E-09  1.28E-08  1.28E-08
     cm248  8.15E-11  1.30E-10  2.02E-10  3.09E-10  4.56E-10  4.56E-10
     cm249  3.32E-16  8.88E-16  1.38E-15  2.10E-15  3.14E-15  1.73E-15
     cm250  8.22E-20  1.35E-19  2.28E-19  3.65E-19  5.72E-19  5.72E-19
     cm251  2.93E-28  3.31E-27  5.44E-27  8.73E-27  1.37E-26  1.40E-27
   totals   1.92E+03  1.92E+03  1.92E+03  1.92E+03  1.92E+03  1.92E+03
0    flux             1.60E+13  1.61E+13  1.61E+13  1.61E+13  1.61E-02
0       1q array has      20 entries.
0       3q array has       1 entries.
0       3q array has       1 entries.
0       3q array has       1 entries.
0       4q array has       1 entries.
0      54q array has      12 entries.
1library information...

         cross-section data taken from position number  7 of library on unit 33.

         pass  1
         pass  0
         *scale-system control module sas2 library*
         used a time-dependent neutron spectrum, for each of the above passes
           pass 0 applies start-up fuel densities
           pass n applies mid time densities of nth library interval
         first library updated was...
         pass  1
         pass  0
         *scale-system control module sas2 library*
         used a time-dependent neutron spectrum, for each of the above passes
           pass 0 applies start-up fuel densities
           pass n applies mid time densities of nth library interval
         first library updated was...
         ********************************************************************************
         *                                                                              *
         *          prelim lwr origen-s binary working library--id = 1143               *
         *        made from modified card-image origen-s libraries of scale 4.2         *
         *      data from the light element, actinide, and fission product libraries    *
         *       decay data, including gamma and total energy, are from endf/b-vi       *
         *                                                                              *
         *      neutron flux spectrum factors and cross sections were produced from     *
         *     the "presas2" case updating all nuclides on the scale "burnup" library   *
         *                                                                              *
         *                 fission product yields are from endf/b-v                     *
         *                                                                              *
```

```
        *            photon libraries use an 18-energy-group structure          *
        *           the photon data are from the master photon data base,       *
        *            produced to include bremsstrahlung from uo2 matrix         *
        *                                                                       *
        *       see information above this box (if present) for later updates   *
        *                                                                       *
        *************************************************************************
        *                                                                       *
0       *************************************************************************
0               .other identification and sizes of library.
0                 data set name:  ft33f001
0              2/16/1996    date library was produced
0                  1697    total number of nuclides in library
                    689    number of light-element nuclides
                    129    number of actinide nuclides
                    879    number of fission product nuclides
0                  7955    number of nonzero off-diagonal matrix elements
0       *************************************************************************
1   ses2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp                                    page  21
      power=   7.25mw, burnup=   8120.mwd, flux= 1.62E+13n/cm**2-sec
0                                          basis =
0   (note, k-infinities, clad and moderator absorptions are correct, only, if correctly weighted cross sections are applied.)
0                    initial      1000.1 d     1040.1 d     1080.1 d     1120.1 d     1120.2 d
    productions  3.649635E+04  3.645476E+04  3.641009E+04  3.636088E+04  3.630584E+04  3.630727E+04
    absorptions  3.254830E+04  3.264978E+04  3.277802E+04  3.290054E+04  3.301784E+04  3.305464E+04
    k infinity   1.121298E+00  1.116539E+00  1.110808E+00  1.105157E+00  1.099589E+00  1.098402E+00
0                    initial      1000.1 d     1040.1 d     1080.1 d     1120.1 d     1120.2 d
    actinide
    absorptions  3.025247E+04  3.052627E+04  3.089594E+04  3.046046E+04  3.052005E+04  3.052078E+04
    non-actinide
    abs. fracs.  7.053602E-02  7.116461E-02  7.267308E-02  7.416544E-02  7.564402E-02  7.565670E-02
1
    ses2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp                    actinides       page  22
    power=   7.25mw, burnup=   8120.mwd, flux= 1.62E+13n/cm**2-sec
0                                          nuclide concentrations, gram atoms
                                           basis = single reactor assembly
          charge  1000.1 d  1040.1 d  1080.1 d  1120.1 d  1120.2 d
    he  4 5.42E-03 6.39E-03 7.47E-03 8.68E-03 1.00E-02 1.00E-02
    pb206 2.31E-16 2.78E-16 3.32E-16 3.95E-16 4.66E-16 4.67E-16
    pb207 3.30E-13 3.84E-13 4.44E-13 5.11E-13 5.84E-13 5.84E-13
    pb208 4.10E-10 4.84E-10 5.69E-10 6.66E-10 7.74E-10 7.74E-10
    pb209 1.59E-17 1.81E-17 2.08E-17 2.37E-17 2.69E-17 2.71E-17
    pb210 2.29E-14 2.60E-14 2.95E-14 3.33E-14 3.74E-14 3.74E-14
    pb211 4.61E-17 5.15E-17 5.71E-17 6.31E-17 6.95E-17 6.94E-17
    pb212 1.12E-12 1.28E-12 1.46E-12 1.65E-12 1.87E-12 1.87E-12
    pb214 1.02E-18 1.12E-18 1.20E-18 1.28E-18 1.36E-18 1.32E-18
    ra222 2.43E-20 2.74E-20 3.07E-20 3.42E-20 3.79E-20 3.80E-20
    ra223 2.11E-14 2.35E-14 2.60E-14 2.88E-14 3.17E-14 3.17E-14
    ra224 9.26E-12 1.06E-11 1.20E-11 1.37E-11 1.54E-11 1.54E-11
    ra225 1.72E-15 1.98E-15 2.26E-15 2.57E-15 2.92E-15 2.91E-15
    ra226 3.25E-11 3.53E-11 3.77E-11 4.02E-11 4.28E-11 4.28E-11
    ra228 9.78E-18 1.09E-17 1.21E-17 1.33E-17 1.47E-17 1.47E-17
    th226 1.18E-18 1.34E-18 1.50E-18 1.67E-18 1.85E-18 1.85E-18
    th227 3.55E-14 3.95E-14 4.38E-14 4.83E-14 5.31E-14 5.31E-14
    th228 1.76E-09 2.01E-09 2.29E-09 2.59E-09 2.93E-09 2.93E-09
    th229 5.78E-11 6.59E-11 7.50E-11 8.51E-11 9.63E-11 9.63E-11
    th230 2.36E-06 2.41E-06 2.46E-06 2.51E-06 2.56E-06 2.56E-06
    th231 2.37E-09 2.51E-09 2.56E-09 2.61E-09 2.66E-09 2.59E-09
    th232 2.23E-07 2.39E-07 2.56E-07 2.73E-07 2.90E-07 2.90E-07
    th233 3.63E-14 2.21E-13 2.36E-13 2.53E-13 2.69E-13 3.61E-14
```

th234	2.76E-08	2.76E-08	2.76E-08	2.75E-08	2.75E-08	2.75E-08
pa231	7.78E-07	8.27E-07	8.77E-07	9.29E-07	9.80E-07	9.80E-07
pa232	6.30E-10	6.95E-10	7.37E-10	7.82E-10	8.27E-10	8.09E-10
pa233	1.19E-08	1.27E-08	1.34E-08	1.42E-08	1.49E-08	1.49E-08
pa234m	9.30E-13	9.32E-13	9.32E-13	9.32E-13	9.31E-13	9.28E-13
pa234	1.18E-12	1.33E-12	1.38E-12	1.44E-12	1.50E-12	1.38E-12
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	1.14E-15	1.30E-15	1.45E-15	1.62E-15	1.79E-15	1.79E-15
u231	2.21E-14	2.52E-14	2.80E-14	3.10E-14	3.42E-14	3.39E-14
u232	2.89E-07	3.22E-07	3.58E-07	3.96E-07	4.37E-07	4.37E-07
u233	3.52E-06	3.61E-06	3.70E-06	3.79E-06	3.87E-06	3.87E-06
u234	3.75E-01	3.71E-01	3.67E-01	3.63E-01	3.59E-01	3.59E-01
u235	3.28E+01	3.20E+01	3.12E+01	3.04E+01	2.97E+01	2.97E+01
u236	5.01E+00	5.14E+00	5.27E+00	5.40E+00	5.53E+00	5.53E+00
u237	6.52E-03	6.71E-03	6.86E-03	7.00E-03	7.14E-03	7.11E-03
u238	1.87E+03	1.87E+03	1.87E+03	1.86E+03	1.86E+03	1.86E+03
u239	1.02E-04	5.30E-04	5.31E-04	5.32E-04	5.34E-04	7.90E-05
u240	4.32E-27	6.61E-27	9.94E-27	1.47E-26	2.14E-26	2.14E-26
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	7.30E-09	7.99E-09	8.71E-09	9.45E-09	1.02E-08	1.02E-08
np236m	7.41E-09	8.28E-09	8.76E-09	9.25E-09	9.74E-09	9.42E-09
np236	7.53E-07	8.36E-07	9.24E-07	1.02E-06	1.12E-06	1.12E-06
np237	3.61E-01	3.81E-01	4.03E-01	4.24E-01	4.46E-01	4.46E-01
np238	4.55E-04	4.92E-04	5.21E-04	5.50E-04	5.79E-04	5.70E-04
np239	7.51E-02	7.66E-02	7.67E-02	7.69E-02	7.70E-02	7.65E-02
np240m	3.69E-29	5.64E-29	8.48E-29	1.26E-28	1.83E-28	1.83E-28
np240	7.51E-07	1.44E-06	1.44E-06	1.45E-06	1.46E-06	7.09E-07

1

sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp actinides page 23

power= 7.25mw, burnup= 8120.mwd, flux= 1.62E+13n/cm**2-sec

0 nuclide concentrations, gram atoms

basis = single reactor assembly

	charge	1000.1 d	1040.1 d	1080.1 d	1120.1 d	1120.2 d
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	8.43E-07	9.30E-07	1.02E-06	1.11E-06	1.21E-06	1.21E-06
pu237	2.92E-08	3.13E-08	3.33E-08	3.53E-08	3.73E-08	3.73E-08
pu238	5.65E-02	6.29E-02	6.94E-02	7.62E-02	8.34E-02	8.34E-02
pu239	9.66E+00	9.85E+00	1.00E+01	1.02E+01	1.04E+01	1.04E+01
pu240	2.01E+00	2.11E+00	2.22E+00	2.31E+00	2.41E+00	2.41E+00
pu241	1.11E+00	1.17E+00	1.25E+00	1.32E+00	1.40E+00	1.40E+00
pu242	1.35E-01	1.55E-01	1.72E-01	1.90E-01	2.09E-01	2.09E-01
pu243	1.69E-05	2.16E-05	2.40E-05	2.66E-05	2.93E-05	2.52E-05
pu244	2.15E-16	3.25E-16	4.95E-16	7.33E-16	1.07E-15	1.07E-15
pu245	1.46E-22	2.37E-22	3.57E-22	5.30E-22	7.75E-22	7.21E-22
pu246	6.09E-25	9.42E-25	1.43E-24	2.15E-24	3.16E-24	3.15E-24
am239	5.85E-13	6.98E-13	7.68E-13	8.42E-13	9.19E-13	8.63E-13
am240	2.64E-10	3.02E-10	3.33E-10	3.65E-10	3.98E-10	3.92E-10
am241	3.63E-02	4.01E-02	4.41E-02	4.82E-02	5.25E-02	5.25E-02
am242m	8.18E-04	9.20E-04	1.03E-03	1.14E-03	1.26E-03	1.26E-03
am242	3.96E-05	4.56E-05	5.03E-05	5.51E-05	6.01E-05	5.74E-05
am243	1.42E-02	1.66E-02	1.93E-02	2.22E-02	2.55E-02	2.55E-02
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	4.78E-06	5.93E-06	6.97E-06	8.05E-06	9.24E-06	8.58E-06
am245	1.30E-20	1.98E-20	2.97E-20	4.36E-20	6.30E-20	6.30E-20
am246	1.52E-27	2.35E-27	3.58E-27	5.36E-27	7.90E-27	7.89E-27
cm241	7.40E-13	8.97E-13	1.07E-12	1.26E-12	1.47E-12	1.47E-12
cm242	4.62E-03	5.25E-03	5.91E-03	6.62E-03	7.37E-03	7.37E-03
cm243	8.01E-05	9.48E-05	1.11E-04	1.29E-04	1.49E-04	1.49E-04
cm244	1.51E-03	1.88E-03	2.29E-03	2.72E-03	3.25E-03	3.25E-03
cm245	3.50E-05	4.47E-05	5.64E-05	7.03E-05	8.69E-05	8.69E-05

```
    cm246   1.62E-06  2.17E-06  2.86E-06  3.74E-06  4.82E-06  4.82E-06
    cm247   1.28E-08  1.79E-08  2.46E-08  3.35E-08  4.49E-08  4.49E-08
    cm248   4.56E-10  6.70E-10  9.67E-10  1.37E-09  1.93E-09  1.93E-09
    cm249   1.73E-15  4.69E-15  6.78E-15  9.67E-15  1.36E-14  6.75E-15
    cm250   5.72E-19  8.83E-19  1.34E-18  1.99E-18  2.92E-18  2.92E-18
    cm251   1.40E-27  2.12E-26  3.22E-26  4.81E-26  7.06E-26  4.90E-27
  totals    1.92E+03  1.92E+03  1.92E+03  1.92E+03  1.91E+03  1.91E+03
0   flux              1.61E+13  1.61E+13  1.62E+13  1.62E+13  1.62E-02
0       1q array has      20 entries.
0       3q array has       1 entries.
0       3q array has       1 entries.
0       3q array has       1 entries.
0       4q array has       1 entries.
0      54q array has      12 entries.
1library information...

        cross-section data taken from position number  1 of library on unit 15.

        pass  8
        pass  1
        pass  0
        *scale-system control module sas2 library*
        used a time-dependent neutron spectrum, for each of the above passes
          pass 0 applies start-up fuel densities
          pass n applies mid time densities of nth library interval
        first library updated was...
        pass  1
        pass  0
        *scale-system control module sas2 library*
        used a time-dependent neutron spectrum, for each of the above passes
          pass 0 applies start-up fuel densities
          pass n applies mid time densities of nth library interval
        first library updated was...
        ************************************************************************
        *                                                                      *
        *          prelim lwr origen-s binary working library--id = 1143       *
        *        made from modified card-image origen-s libraries of scale 4.2 *
        *      data from the light element, actinide, and fission product libraries *
        *        decay data, including gamma and total energy, are from endf/b-vi *
        *                                                                      *
        *      neutron flux spectrum factors and cross sections were produced from *
        *     the 'presas2' case updating all nuclides on the scale 'burnup' library *
        *                                                                      *
        *                fission product yields are from endf/b-v              *
        *                                                                      *
        *             photon libraries use an 18-energy-group structure        *
        *            the photon data are from the master photon data base,     *
        *             produced to include bremsstrahlung from us2 matrix       *
        *                                                                      *
        *       see information above this box (if present) for later updates  *
        *                                                                      *
        ************************************************************************
        *
        ************************************************************************
0
0               .other identification and sizes of library.
0                 data set name:  ft15f001
0               2/16/1996     date library was produced
0                   1697      total number of nuclides in library
                     689      number of light-element nuclides
                     129      number of actinide nuclides
```

879 number of fission product nuclides
7935 number of nonzero off-diagonal matrix elements

sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp page 24
power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
basis =

(rate, k-infinities, clad and moderator absorptions are correct, only, if correctly weighted cross sections are applied.)

	initial	1160.2 d	1200.2 d	1240.2 d	1280.2 d
productions	3.639873E+04	3.633892E+04	3.627805E+04	3.621389E+04	3.614675E+04
absorptions	3.312836E+04	3.310725E+04	3.331886E+04	3.342576E+04	3.352825E+04
k infinity	1.098718E+00	1.094307E+00	1.088814E+00	1.083413E+00	1.078099E+00

	initial	1160.2 d	1200.2 d	1240.2 d	1280.2 d
actinide absorptions	3.058359E+04	3.064127E+04	3.069584E+04	3.074624E+04	3.079265E+04
non-actinide abs. fracs.	7.681549E-02	7.727140E-02	7.872462E-02	8.016524E-02	8.159089E-02

sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp actinides page 25
power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
nuclide concentrations, gram atoms
basis = single reactor assembly

	charge	1160.2 d	1200.2 d	1240.2 d	1280.2 d
he 4	1.00E-02	1.15E-02	1.31E-02	1.49E-02	1.69E-02
pb206	4.67E-16	5.48E-16	6.40E-16	7.44E-16	8.60E-16
pb207	5.84E-13	6.85E-13	7.53E-13	8.49E-13	9.54E-13
pb208	7.74E-10	8.97E-10	1.03E-09	1.19E-09	1.36E-09
pb209	2.71E-17	3.04E-17	3.43E-17	3.85E-17	4.32E-17
pb210	3.74E-14	4.19E-14	4.67E-14	5.20E-14	5.77E-14
pb211	6.94E-17	7.62E-17	8.32E-17	9.08E-17	9.84E-17
pb212	1.87E-12	2.10E-12	2.35E-12	2.63E-12	2.93E-12
pb214	1.32E-18	1.45E-18	1.53E-18	1.62E-18	1.70E-18
ra222	3.80E-20	4.23E-20	4.68E-20	5.14E-20	5.64E-20
ra223	3.17E-14	3.47E-14	3.80E-14	4.13E-14	4.49E-14
ra224	1.54E-11	1.73E-11	1.94E-11	2.17E-11	2.42E-11
ra225	2.91E-15	3.25E-15	3.71E-15	4.17E-15	4.67E-15
ra226	4.28E-11	4.54E-11	4.80E-11	5.07E-11	5.34E-11
ra228	1.47E-17	1.61E-17	1.76E-17	1.91E-17	2.08E-17
th226	1.85E-18	2.06E-18	2.28E-18	2.51E-18	2.75E-18
th227	5.31E-14	5.81E-14	6.34E-14	6.90E-14	7.48E-14
th228	2.93E-09	3.25E-09	3.69E-09	4.12E-09	4.59E-09
th229	9.63E-11	1.05E-10	1.23E-10	1.38E-10	1.55E-10
th230	2.56E-06	2.60E-06	2.64E-06	2.68E-06	2.71E-06
th231	2.59E-09	2.74E-09	2.78E-09	2.83E-09	2.87E-09
th232	2.90E-07	3.08E-07	3.26E-07	3.44E-07	3.63E-07
th233	3.61E-14	2.89E-13	3.07E-13	3.25E-13	3.44E-13
th234	2.75E-08	2.75E-08	2.75E-08	2.75E-08	2.75E-08
pa231	9.80E-07	1.03E-06	1.09E-06	1.14E-06	1.19E-06
pa232	8.08E-10	8.81E-10	9.28E-10	9.78E-10	1.02E-09
pa233	1.49E-08	1.57E-08	1.64E-08	1.72E-08	1.80E-08
pa234m	9.28E-13	9.31E-13	9.31E-13	9.30E-13	9.30E-13
pa234	1.38E-12	1.57E-12	1.63E-12	1.69E-12	1.75E-12
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	1.79E-15	2.00E-15	2.21E-15	2.43E-15	2.67E-15
u231	3.35E-14	3.82E-14	4.20E-14	4.60E-14	5.02E-14
u232	4.37E-07	4.81E-07	5.27E-07	5.77E-07	6.29E-07
u233	3.87E-06	3.95E-06	4.03E-06	4.11E-06	4.18E-06
u234	3.59E-01	3.55E-01	3.52E-01	3.48E-01	3.44E-01
u235	2.97E+01	2.89E+01	2.82E+01	2.75E+01	2.68E+01
u236	5.53E+00	5.65E+00	5.76E+00	5.88E+00	5.99E+00
u237	7.11E-03	7.30E-03	7.43E-03	7.57E-03	7.70E-03

u238	1.86E+03	1.86E+03	1.86E+03	1.86E+03	1.86E+03
u239	7.90E-05	5.40E-04	5.41E-04	5.43E-04	5.44E-04
u240	2.14E-26	3.08E-26	4.37E-26	6.13E-26	8.49E-26
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	1.08E-08	1.10E-08	1.19E-08	1.27E-08	1.36E-08
np236m	9.42E-09	1.04E-08	1.10E-08	1.15E-08	1.20E-08
np236	1.12E-06	1.22E-06	1.33E-06	1.45E-06	1.57E-06
np237	4.46E-01	4.67E-01	4.89E-01	5.11E-01	5.33E-01
np238	5.70E-04	6.12E-04	6.42E-04	6.73E-04	7.04E-04
np239	7.65E-02	7.80E-02	7.82E-02	7.83E-02	7.85E-02
np240m	1.83E-28	2.63E-28	3.73E-28	5.23E-28	7.25E-28
np240	7.06E-07	1.49E-06	1.50E-06	1.51E-06	1.52E-06

1

sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp actinides page 26

power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec

0 nuclide concentrations, gram atoms

basis = single reactor assembly

	charge	1160.2 d	1200.2 d	1240.2 d	1280.2 d
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	1.21E-06	1.32E-06	1.43E-06	1.54E-06	1.66E-06
pu237	3.73E-08	3.97E-08	4.21E-08	4.45E-08	4.69E-08
pu238	8.34E-02	9.10E-02	9.91E-02	1.07E-01	1.16E-01
pu239	1.04E+01	1.05E+01	1.07E+01	1.08E+01	1.09E+01
pu240	2.41E+00	2.51E+00	2.61E+00	2.71E+00	2.80E+00
pu241	1.40E+00	1.46E+00	1.53E+00	1.61E+00	1.68E+00
pu242	2.09E-01	2.28E-01	2.49E-01	2.70E-01	2.93E-01
pu243	2.52E-05	3.21E-05	3.51E-05	3.82E-05	4.15E-05
pu244	1.07E-15	1.54E-15	2.18E-15	3.05E-15	4.23E-15
pu245	7.21E-22	1.12E-21	1.59E-21	2.23E-21	3.10E-21
pu246	3.15E-24	4.58E-24	6.58E-24	9.31E-24	1.30E-23
am239	8.63E-13	1.01E-12	1.10E-12	1.18E-12	1.27E-12
am240	3.92E-10	4.35E-10	4.75E-10	5.12E-10	5.51E-10
am241	5.25E-02	5.69E-02	6.14E-02	6.61E-02	7.08E-02
am242m	1.26E-03	1.35E-03	1.51E-03	1.65E-03	1.78E-03
am242	5.74E-05	6.51E-05	7.04E-05	7.55E-05	8.16E-05
am243	2.55E-02	2.90E-02	3.28E-02	3.70E-02	4.15E-02
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	8.58E-06	1.06E-05	1.20E-05	1.36E-05	1.53E-05
am245	6.30E-20	9.02E-20	1.27E-19	1.77E-19	2.44E-19
am246	7.85E-27	1.15E-26	1.66E-26	2.33E-26	3.26E-26
cm241	1.47E-12	1.72E-12	1.98E-12	2.26E-12	2.57E-12
cm242	7.37E-03	8.15E-03	8.98E-03	9.84E-03	1.07E-02
cm243	1.49E-04	1.71E-04	1.95E-04	2.21E-04	2.48E-04
cm244	3.25E-03	3.86E-03	4.55E-03	5.33E-03	6.20E-03
cm245	8.69E-05	1.07E-04	1.30E-04	1.56E-04	1.87E-04
cm246	4.82E-06	6.16E-06	7.80E-06	9.79E-06	1.22E-05
cm247	4.49E-08	5.97E-08	7.84E-08	1.02E-07	1.31E-07
cm248	1.93E-09	2.67E-09	3.66E-09	4.95E-09	6.62E-09
cm249	6.75E-15	1.91E-14	2.62E-14	3.56E-14	4.77E-14
cm250	2.92E-18	4.23E-18	6.05E-18	8.54E-18	1.19E-17
cm251	4.90E-27	1.03E-25	1.47E-25	2.08E-25	2.91E-25
bk249	1.62E-11	2.33E-11	3.28E-11	4.57E-11	6.28E-11
bk250	4.54E-15	8.26E-15	1.17E-14	1.63E-14	2.25E-14
bk251	3.75E-20	1.19E-19	1.69E-19	2.36E-19	3.28E-19
totals	1.91E+03	1.91E+03	1.91E+03	1.91E+03	1.91E+03
0 flux		1.62E+13	1.63E+13	1.63E+13	1.64E+13

0 .results on logical unit no. 71, position 1, for time step 4, subcase 9. (run position 1, case position 1)

title: sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp

1

decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 nuclide concentrations, grams
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
total	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 element radioactivity, curies
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
totals	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 element thermal power, watts
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
totals	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 nuclide gamma power, watts
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
total	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 nuclide concentrations, gram atoms
basis = single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
he 4	1.69E-02	2.64E-02	3.03E-02	3.28E-02	3.48E-02	3.69E-02	3.89E-02
th230	2.71E-06	3.52E-06	4.34E-06	5.15E-06	5.96E-06	6.78E-06	7.60E-06
th232	3.63E-07	5.10E-07	6.58E-07	8.06E-07	9.53E-07	1.10E-06	1.25E-06
pa231	1.19E-06	1.22E-06	1.24E-06	1.26E-06	1.28E-06	1.30E-06	1.33E-06
u232	6.29E-07	9.24E-07	1.16E-06	1.35E-06	1.51E-06	1.63E-06	1.73E-06
u233	4.18E-06	4.34E-06	4.51E-06	4.67E-06	4.84E-06	5.00E-06	5.17E-06
u234	3.44E-01	3.45E-01	3.46E-01	3.47E-01	3.47E-01	3.48E-01	3.49E-01
u235	2.68E+01	2.68E+01	2.68E+01	2.68E+01	2.68E+01	2.68E+01	2.68E+01
u236	5.99E+00	5.99E+00	5.99E+00	5.99E+00	5.99E+00	5.99E+00	5.99E+00
u238	1.86E+03	1.86E+03	1.86E+03	1.86E+03	1.86E+03	1.86E+03	1.86E+03
np236	1.57E-06	1.57E-06	1.57E-06	1.57E-06	1.57E-06	1.57E-06	1.57E-06
np237	5.33E-01	5.41E-01	5.41E-01	5.42E-01	5.42E-01	5.43E-01	5.43E-01
pu238	1.16E-01	1.24E-01	1.25E-01	1.25E-01	1.25E-01	1.24E-01	1.23E-01
pu239	1.09E+01	1.10E+01	1.10E+01	1.10E+01	1.10E+01	1.10E+01	1.10E+01
pu240	2.80E+00	2.80E+00	2.80E+00	2.80E+00	2.80E+00	2.80E+00	2.80E+00
pu241	1.68E+00	1.61E+00	1.55E+00	1.49E+00	1.43E+00	1.37E+00	1.32E+00
pu242	2.95E-01	2.95E-01	2.95E-01	2.95E-01	2.95E-01	2.95E-01	2.95E-01
am241	7.08E-02	1.37E-01	2.00E-01	2.61E-01	3.20E-01	3.75E-01	4.29E-01
am242m	1.78E-03	1.78E-03	1.77E-03	1.76E-03	1.76E-03	1.75E-03	1.74E-03
am243	4.15E-02	4.15E-02	4.15E-02	4.15E-02	4.15E-02	4.15E-02	4.15E-02
cm242	1.07E-02	2.97E-03	8.16E-04	2.27E-04	6.55E-05	2.12E-05	9.12E-06
cm243	2.48E-04	2.43E-04	2.38E-04	2.33E-04	2.29E-04	2.24E-04	2.20E-04
cm244	6.20E-03	6.02E-03	5.83E-03	5.65E-03	5.47E-03	5.30E-03	5.13E-03
cm245	1.87E-04	1.87E-04	1.87E-04	1.87E-04	1.87E-04	1.87E-04	1.87E-04
cm246	1.22E-05	1.22E-05	1.22E-05	1.22E-05	1.22E-05	1.22E-05	1.22E-05
total	1.91E+03	1.91E+03	1.91E+03	1.91E+03	1.91E+03	1.91E+03	1.91E+03

1

decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 element concentrations, gram atoms
basis = single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
he	1.69E-02	2.64E-02	3.03E-02	3.28E-02	3.48E-02	3.69E-02	3.89E-02
th	3.11E-06	4.07E-06	5.04E-06	6.00E-06	6.97E-06	7.94E-06	8.91E-06
pa	1.21E-06	1.25E-06	1.26E-06	1.28E-06	1.30E-06	1.32E-06	1.34E-06
u	1.89E+03	1.89E+03	1.89E+03	1.89E+03	1.89E+03	1.89E+03	1.89E+03
np	6.13E-01	5.41E-01	5.41E-01	5.42E-01	5.42E-01	5.43E-01	5.43E-01
pu	1.58E+01	1.58E+01	1.58E+01	1.57E+01	1.57E+01	1.56E+01	1.55E+01
am	1.14E-01	1.80E-01	2.44E-01	3.04E-01	3.63E-01	4.19E-01	4.72E-01
cm	1.74E-02	9.43E-03	7.09E-03	6.31E-03	5.97E-03	5.75E-03	5.56E-03
totals	1.91E+03	1.91E+03	1.91E+03	1.91E+03	1.91E+03	1.91E+03	1.91E+03

1
sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp actinides page 33
decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 nuclide concentrations, grams
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
he 4	6.78E-02	1.06E-01	1.21E-01	1.31E-01	1.39E-01	1.47E-01	1.56E-01
pb208	2.83E-07	7.04E-07	1.43E-06	2.49E-06	3.88E-06	5.59E-06	7.58E-06
th228	1.05E-06	2.06E-06	3.24E-06	4.46E-06	5.63E-06	6.73E-06	7.71E-06
th230	6.24E-04	8.10E-04	9.97E-04	1.18E-03	1.37E-03	1.56E-03	1.75E-03
th232	8.41E-05	1.18E-04	1.53E-04	1.87E-04	2.21E-04	2.55E-04	2.90E-04
th234	6.43E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06
pa231	2.75E-04	2.81E-04	2.86E-04	2.91E-04	2.96E-04	3.01E-04	3.06E-04
pa233	4.15E-06	4.36E-06	4.36E-06	4.36E-06	4.37E-06	4.37E-06	4.37E-06
u232	1.46E-04	2.14E-04	2.70E-04	3.14E-04	3.50E-04	3.78E-04	4.01E-04
u233	9.73E-04	1.01E-03	1.05E-03	1.09E-03	1.13E-03	1.17E-03	1.20E-03
u234	8.05E+01	8.07E+01	8.09E+01	8.11E+01	8.13E+01	8.15E+01	8.17E+01
u235	6.30E+03	6.30E+03	6.30E+03	6.30E+03	6.30E+03	6.30E+03	6.30E+03
u236	1.41E+03	1.41E+03	1.41E+03	1.41E+03	1.41E+03	1.41E+03	1.41E+03
u237	1.82E+00	1.18E-05	1.13E-05	1.09E-05	1.04E-05	1.00E-05	9.64E-06
u238	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05
np236	3.71E-04	3.71E-04	3.71E-04	3.71E-04	3.71E-04	3.71E-04	3.71E-04
np237	1.26E+02	1.28E+02	1.28E+02	1.28E+02	1.28E+02	1.29E+02	1.29E+02
np239	1.88E+01	8.68E-06	8.68E-06	8.68E-06	8.68E-06	8.67E-06	8.67E-06
pu236	3.91E-04	3.22E-04	2.64E-04	2.16E-04	1.77E-04	1.45E-04	1.19E-04
pu238	2.77E+01	2.95E+01	2.98E+01	2.98E+01	2.98E+01	2.95E+01	2.93E+01
pu239	2.61E+03	2.63E+03	2.63E+03	2.63E+03	2.63E+03	2.63E+03	2.63E+03
pu240	6.72E+02	6.72E+02	6.72E+02	6.72E+02	6.72E+02	6.72E+02	6.72E+02
pu241	4.05E+02	3.89E+02	3.73E+02	3.59E+02	3.45E+02	3.31E+02	3.18E+02
pu242	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01
am241	1.71E+01	3.30E+01	4.83E+01	6.29E+01	7.70E+01	9.05E+01	1.03E+02
am242m	4.32E-01	4.30E-01	4.28E-01	4.27E-01	4.25E-01	4.23E-01	4.21E-01
am242	1.97E-02	5.59E-06	5.53E-06	5.50E-06	5.48E-06	5.46E-06	5.44E-06
am243	1.01E+01	1.01E+01	1.01E+01	1.01E+01	1.01E+01	1.01E+01	1.01E+01
cm242	2.60E+00	7.18E-01	1.97E-01	5.49E-02	1.58E-02	5.14E-03	2.21E-03
cm243	6.03E-02	5.91E-02	5.79E-02	5.67E-02	5.56E-02	5.45E-02	5.34E-02
cm244	1.51E+00	1.47E+00	1.42E+00	1.38E+00	1.34E+00	1.29E+00	1.25E+00
cm245	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02
cm246	3.00E-03	3.00E-03	3.00E-03	3.00E-03	3.00E-03	3.00E-03	3.00E-03
cm247	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05
cm248	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06
total	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05

1
sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp actinides page 34
decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 element concentrations, grams
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
he	6.78E-02	1.08E-01	1.21E-01	1.31E-01	1.39E-01	1.47E-01	1.56E-01
pb	2.84E-07	7.08E-07	1.43E-06	2.49E-06	3.89E-06	5.60E-06	7.59E-06
th	7.16E-04	9.37E-04	1.14E-03	1.38E-03	1.61E-03	1.83E-03	2.05E-03
pa	2.79E-04	2.85E-04	2.90E-04	2.95E-04	3.00E-04	3.06E-04	3.11E-04
u	4.50E+05	4.50E+05	4.50E+05	4.50E+05	4.50E+05	4.50E+05	4.50E+05
np	1.45E+02	1.28E+02	1.28E+02	1.28E+02	1.28E+02	1.29E+02	1.29E+02
pu	3.79E+03	3.79E+03	3.78E+03	3.76E+03	3.75E+03	3.73E+03	3.72E+03
am	2.78E+01	4.35E+01	5.88E+01	7.35E+01	8.75E+01	1.01E+02	1.14E+02
cm	4.22E+00	2.29E+00	1.73E+00	1.54E+00	1.46E+00	1.40E+00	1.36E+00
totals	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05

1

sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp actinides page 35
decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 element radioactivity, curies
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
tl	3.11E-04	6.09E-04	9.58E-04	1.32E-03	1.67E-03	1.99E-03	2.28E-03
pb	8.64E-04	1.69E-03	2.66E-03	3.67E-03	4.64E-03	5.54E-03	6.35E-03
bi	8.64E-04	1.66E-03	2.66E-03	3.67E-03	4.64E-03	5.54E-03	6.35E-03
po	1.42E-03	2.78E-03	4.37E-03	6.01E-03	7.61E-03	9.08E-03	1.04E-02
rn	8.64E-04	1.69E-03	2.66E-03	3.67E-03	4.64E-03	5.54E-03	6.35E-03
ra	8.64E-04	1.69E-03	2.66E-03	3.67E-03	4.64E-03	5.54E-03	6.35E-03
ac	5.99E-07	8.95E-07	1.22E-06	1.55E-06	1.87E-06	2.19E-06	2.51E-06
th	5.05E-01	1.64E-01	1.65E-01	1.66E-01	1.67E-01	1.68E-01	1.69E-01
pa	3.40E-01	2.40E-01	2.40E-01	2.40E-01	2.40E-01	2.40E-01	2.40E-01
u	4.51E+06	1.72E+00	1.69E+00	1.65E+00	1.62E+00	1.59E+00	1.56E+00
np	4.40E+06	2.13E+00	2.13E+00	2.12E+00	2.12E+00	2.12E+00	2.12E+00
pu	6.85E+04	4.10E+04	3.95E+04	3.79E+04	3.65E+04	3.51E+04	3.37E+04
am	2.08E+04	1.24E+02	1.77E+02	2.27E+02	2.75E+02	3.21E+02	3.66E+02
cm	8.74E+03	2.50E+03	7.72E+02	2.98E+02	1.64E+02	1.25E+02	1.12E+02
bk	4.78E-05	1.33E-05	6.88E-06	3.55E-06	1.84E-06	9.50E-07	4.91E-07
totals	9.01E+06	4.37E+04	4.04E+04	3.86E+04	3.69E+04	3.55E+04	3.42E+04

1

sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp actinides page 36
decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 element thermal power, watts
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
tl	7.26E-06	1.42E-05	2.24E-05	3.08E-05	3.90E-05	4.65E-05	5.34E-05
pb	1.63E-06	3.20E-06	5.04E-06	6.95E-06	8.77E-06	1.05E-05	1.20E-05
bi	1.45E-05	2.84E-05	4.46E-05	6.14E-05	7.77E-05	9.28E-05	1.06E-04
po	6.47E-05	1.27E-04	2.00E-04	2.75E-04	3.47E-04	4.15E-04	4.76E-04
rn	3.28E-05	6.43E-05	1.01E-04	1.39E-04	1.76E-04	2.10E-04	2.41E-04
ra	2.90E-05	5.81E-05	9.14E-05	1.26E-04	1.59E-04	1.90E-04	2.18E-04
th	4.82E-04	1.32E-04	1.66E-04	1.97E-04	2.29E-04	2.58E-04	2.85E-04
pa	1.64E-03	9.63E-04	9.63E-04	9.63E-04	9.63E-04	9.63E-04	9.64E-04
u	1.21E+04	2.31E-02	2.31E-02	2.31E-02	2.31E-02	2.31E-02	2.31E-02
np	1.13E+04	7.77E-03	7.77E-03	7.77E-03	7.78E-03	7.78E-03	7.78E-03
pu	5.71E+01	2.79E+01	2.80E+01	2.79E+01	2.78E+01	2.76E+01	2.75E+01
am	5.21E+01	3.85E+00	5.60E+00	7.28E+00	8.85E+00	1.04E+01	1.19E+01
cm	3.19E+02	9.10E+01	2.80E+01	1.06E+01	5.80E+00	4.39E+00	3.92E+00
cf	1.73E-08	1.63E-08	1.50E-08	1.38E-08	1.27E-08	1.17E-08	1.09E-08
totals	2.38E+04	1.23E+02	6.16E+01	4.59E+01	4.25E+01	4.25E+01	4.34E+01

1

sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp actinides page 37
decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 nuclide gamma power, watts
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d

tl208	6.18E-06	1.21E-05	1.91E-05	2.62E-05	3.32E-05	3.96E-05	4.54E-05
pb212	7.42E-07	1.46E-06	2.29E-06	3.15E-06	3.98E-06	4.78E-06	5.46E-06
bi212	5.38E-07	1.06E-06	1.66E-06	2.29E-06	2.89E-06	3.45E-06	3.96E-06
rn220	3.12E-09	6.12E-09	9.63E-09	1.33E-08	1.68E-08	2.00E-08	2.30E-08
ra224	5.15E-08	1.01E-07	1.59E-07	2.19E-07	2.77E-07	3.30E-07	3.79E-07
th228	1.79E-08	3.53E-08	5.54E-08	7.62E-08	9.64E-08	1.15E-07	1.32E-07
th231	6.47E-05	2.50E-06	2.50E-06	2.50E-06	2.50E-06	2.50E-06	2.50E-06
th234	8.56E-06	8.56E-06	8.56E-06	8.56E-06	8.56E-06	8.56E-06	8.56E-06
pa233	1.15E-04	1.20E-04	1.20E-04	1.20E-04	1.20E-04	1.20E-04	1.20E-04
pa234m	9.84E-06	9.79E-06	9.79E-06	9.79E-06	9.79E-06	9.79E-06	9.79E-06
pa234	9.50E-06	2.25E-06	2.25E-06	2.25E-06	2.25E-06	2.25E-06	2.25E-06
u232	4.15E-08	6.09E-08	7.66E-08	8.92E-08	9.95E-08	1.07E-07	1.14E-07
u234	4.78E-06	4.79E-06	4.80E-06	4.82E-06	4.83E-06	4.84E-06	4.85E-06
u235	1.34E-05	1.34E-05	1.34E-05	1.34E-05	1.34E-05	1.34E-05	1.34E-05
u236	9.21E-07	9.21E-07	9.21E-07	9.21E-07	9.21E-07	9.21E-07	9.22E-07
u237	1.26E+02	8.13E-04	7.81E-04	7.50E-04	7.21E-04	6.92E-04	6.65E-04
u238	1.19E-06	1.19E-06	1.19E-06	1.19E-06	1.19E-06	1.19E-06	1.19E-06
np235	1.86E-07	1.09E-07	6.42E-08	3.77E-08	2.21E-08	1.30E-08	7.63E-09
np237	1.85E-05	1.88E-05	1.88E-05	1.88E-05	1.85E-05	1.85E-05	1.85E-05
np238	1.67E+02	7.78E-05	7.75E-05	7.72E-05	7.69E-05	7.65E-05	7.62E-05
np239	4.74E+03	2.19E-03	2.19E-03	2.19E-03	2.19E-03	2.19E-03	2.19E-03
pu236	2.83E-06	2.32E-06	1.90E-06	1.56E-06	1.28E-06	1.05E-06	8.58E-07
pu238	5.34E-03	5.70E-03	5.78E-03	5.75E-03	5.72E-03	5.68E-03	5.65E-03
pu239	7.79E-04	7.84E-04	7.84E-04	7.84E-04	7.84E-04	7.84E-04	7.84E-04
pu240	1.49E-03	1.49E-03	1.49E-03	1.49E-03	1.49E-03	1.49E-03	1.49E-03
pu241	4.34E-04	4.17E-04	4.01E-04	3.85E-04	3.70E-04	3.55E-04	3.41E-04
pu242	2.44E-06	2.44E-06	2.44E-06	2.44E-06	2.44E-06	2.44E-06	2.44E-06
am241	9.92E-03	1.92E-02	2.81E-02	3.66E-02	4.48E-02	5.26E-02	6.02E-02
am242m	1.64E-04	1.63E-04	1.62E-04	1.62E-04	1.61E-04	1.60E-04	1.60E-04
am242	1.84E+00	5.17E-04	5.15E-04	5.13E-04	5.10E-04	5.08E-04	5.06E-04
am243	7.00E-04	7.01E-04	7.01E-04	7.01E-04	7.01E-04	7.01E-04	7.01E-04
cm242	1.08E-01	2.97E-02	8.18E-03	2.27E-03	6.57E-04	2.13E-04	9.14E-05
cm243	2.45E-03	2.40E-03	2.35E-03	2.31E-03	2.26E-03	2.22E-03	2.17E-03
cm244	1.35E-03	1.31E-03	1.27E-03	1.23E-03	1.19E-03	1.15E-03	1.12E-03
cm245	4.34E-06	4.34E-06	4.34E-06	4.34E-06	4.34E-06	4.34E-06	4.34E-06
cm246	2.71E-08	2.71E-08	2.71E-08	2.71E-08	2.71E-08	2.71E-08	2.71E-08
total	6.41E+03	6.57E-02	5.30E-02	5.54E-02	6.19E-02	6.91E-02	7.63E-02

1

sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp fission products page 38

decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec

0 nuclide concentrations, grams

basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
h 3	1.36E-02	1.30E-02	1.24E-02	1.18E-02	1.13E-02	1.07E-02	1.03E-02
li 6	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05
li 7	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06
be 9	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06
be 10	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05
c 14	7.47E-06	7.47E-06	7.47E-06	7.47E-06	7.47E-06	7.46E-06	7.46E-06
zn 70	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06
ga 71	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
ge 72	1.29E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
ga 73	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03
ge 74	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03
as 75	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02
ge 76	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01
se 76	6.29E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04
se 77	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01
se 78	7.24E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01
se 79	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00

br 79	5.12E-05	7.58E-05	1.00E-04	1.25E-04	1.49E-04	1.74E-04	1.98E-04
se 80	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00
kr 80	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
br 81	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00
kr 81	7.13E-07	7.13E-07	7.13E-07	7.13E-07	7.13E-07	7.13E-07	7.13E-07
se 82	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00
kr 82	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01
kr 83	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01
kr 84	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01
kr 85	6.65E+00	6.31E+00	5.97E+00	5.66E+00	5.36E+00	5.08E+00	4.82E+00
rb 85	2.80E+01	2.83E+01	2.86E+01	2.90E+01	2.93E+01	2.95E+01	2.98E+01
kr 86	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01
sr 86	6.15E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02
rb 87	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01
sr 87	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.06E-04
sr 88	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02
y 89	1.33E+02	1.35E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
sr 90	1.63E+02	1.59E+02	1.56E+02	1.53E+02	1.50E+02	1.47E+02	1.44E+02
y 90	4.30E-02	4.14E-02	4.05E-02	3.97E-02	3.85E-02	3.81E-02	3.74E-02
zr 90	7.74E+00	1.10E+01	1.43E+01	1.74E+01	2.06E+01	2.36E+01	2.66E+01
zr 91	1.69E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02
zr 92	1.85E+02	1.85E+02	1.85E+02	1.85E+02	1.85E+02	1.85E+02	1.85E+02
zr 93	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
rb 93	8.41E-06	1.32E-05	1.97E-05	2.78E-05	3.74E-05	4.86E-05	6.12E-05
rb 93m	1.10E-04	1.58E-04	2.04E-04	2.48E-04	2.91E-04	3.32E-04	3.72E-04
zr 94	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02
nb 94	1.25E-04	1.25E-04	1.25E-04	1.25E-04	1.25E-04	1.25E-04	1.25E-04
zr 95	1.55E+01	5.78E-01	2.13E-02	7.90E-04	2.93E-05	1.08E-06	4.02E-08
nb 95	8.53E+00	6.69E-01	2.56E-02	9.51E-04	3.52E-05	1.30E-06	4.83E-08
mo 95	2.00E+02	2.23E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02
zr 96	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02
mo 96	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00
mo 97	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02
mo 98	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02
tc 98	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03

1

ses2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp fission products page 39

decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec

0 nuclide concentrations, grams

basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
tc 99	2.30E+02	2.31E+02	2.31E+02	2.31E+02	2.31E+02	2.31E+02	2.31E+02
ru 99	9.13E-03	9.75E-03	1.04E-02	1.10E-02	1.17E-02	1.23E-02	1.29E-02
mo100	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02
ru100	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01
ru101	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02
ru102	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02
rh102	2.17E-04	1.78E-04	1.46E-04	1.19E-04	9.75E-05	8.02E-05	6.57E-05
rh103	1.34E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02
ru104	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
pd104	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01
pd105	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02
ru106	3.37E+01	1.91E+01	1.08E+01	6.14E+00	3.48E+00	1.97E+00	1.12E+00
rh106	3.22E-05	1.77E-05	1.00E-05	5.69E-06	3.23E-06	1.83E-06	1.04E-06
pd106	4.57E+01	6.03E+01	6.86E+01	7.33E+01	7.59E+01	7.74E+01	7.83E+01
pd107	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01
ag107	7.30E-06	1.18E-05	1.64E-05	2.09E-05	2.55E-05	3.00E-05	3.46E-05
pd108	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01
ag109m	4.21E-05	4.19E-05	4.17E-05	4.14E-05	4.14E-05	4.12E-05	4.10E-05
cd108	4.34E-05	4.34E-05	4.34E-05	4.34E-05	4.35E-05	4.35E-05	4.35E-05

ag109	2.18E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01
pd110	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00
ag110m	1.04E-01	4.46E-02	1.92E-02	8.25E-03	3.54E-03	1.52E-03	6.53E-04
cd110	5.66E+00	5.72E+00	5.74E+00	5.75E+00	5.76E+00	5.76E+00	5.76E+00
cd111	4.98E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00
cd112	2.63E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00
cd113	4.52E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02
cd113m	2.80E-02	2.69E-02	2.58E-02	2.48E-02	2.38E-02	2.29E-02	2.19E-02
in113	1.97E-03	3.10E-03	4.18E-03	5.21E-03	6.21E-03	7.16E-03	8.08E-03
cd114	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00
sn114	6.61E-05	7.50E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05
in115	4.53E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01
sn115	4.55E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02
cd116	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
sn116	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01
sn117	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00
sn118	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01
sn119	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00
sn119m	2.29E-03	1.12E-03	5.43E-04	2.64E-04	1.29E-04	6.26E-05	3.05E-05
sn120	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00
sn121m	1.08E-02	1.07E-02	1.05E-02	1.04E-02	1.03E-02	1.02E-02	1.01E-02
sb121	1.03E+00	1.04E+00	1.04E+00	1.04E+00	1.04E+00	1.04E+00	1.04E+00
sn122	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
te122	4.65E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02
sn123	1.57E-02	3.07E-03	6.00E-04	1.17E-04	2.25E-05	4.47E-06	8.72E-07
sb123	1.22E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00
te123	2.99E-04	3.56E-04	3.66E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04
sn124	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00
te124	3.43E-02	3.96E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02
sb125	1.85E+00	1.50E+00	1.22E+00	9.84E-01	7.96E-01	6.45E-01	5.22E-01
te125	8.02E-01	1.14E+00	1.45E+00	1.68E+00	1.87E+00	2.03E+00	2.15E+00
te125m	2.33E-02	2.13E-02	1.73E-02	1.40E-02	1.13E-02	9.16E-03	7.41E-03
sn126	4.89E+00	4.89E+00	4.89E+00	4.89E+00	4.89E+00	4.89E+00	4.89E+00

1

sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp fission products page 40
decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 nuclide concentrations, grams
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
te126	7.78E-02	7.84E-02	7.84E-02	7.85E-02	7.85E-02	7.85E-02	7.85E-02
te127m	2.94E-01	4.41E-02	6.37E-03	9.19E-04	1.33E-04	1.92E-05	2.77E-06
i127	1.08E+01	1.11E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01
te128	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01
xe128	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01
i129	4.95E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01
xe129	1.18E-03	1.20E-03	1.21E-03	1.21E-03	1.21E-03	1.21E-03	1.21E-03
te130	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02
xe130	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00
xe131	1.36E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02
xe132	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02
ba132	4.82E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05
cs133	3.38E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02
xe134	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02
cs134	2.08E+01	1.57E+01	1.19E+01	8.99E+00	6.79E+00	5.13E+00	3.88E+00
ba134	8.91E+00	1.40E+01	1.79E+01	2.08E+01	2.30E+01	2.46E+01	2.59E+01
cs135	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02
ba135	3.81E-02	3.82E-02	3.83E-02	3.83E-02	3.84E-02	3.84E-02	3.84E-02
xe136	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02
ba136	4.65E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00
cs137	3.46E+02	3.39E+02	3.33E+02	3.26E+02	3.20E+02	3.14E+02	3.08E+02

ba137	1.43E+01	2.09E+01	2.74E+01	3.37E+01	3.99E+01	4.60E+01	5.20E+01
ba137m	5.31E-05	5.18E-05	5.08E-05	4.99E-05	4.89E-05	4.80E-05	4.71E-05
ba138	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02
la138	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03
la139	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02
ce140	3.61E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02
pr141	3.10E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02
ce142	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02
nd142	3.23E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00
nd143	2.64E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02
ce144	8.57E+01	4.05E+01	1.95E+01	9.30E+00	4.44E+00	2.12E+00	1.01E+00
pr144	3.62E-03	1.72E-03	8.22E-04	3.92E-04	1.87E-04	8.91E-05	4.25E-05
nd144	2.56E+02	3.01E+02	3.22E+02	3.33E+02	3.38E+02	3.40E+02	3.41E+02
nd145	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02
pm145	7.90E-05	1.19E-04	1.38E-04	1.45E-04	1.47E-04	1.46E-04	1.43E-04
sm145	9.31E-05	5.00E-05	2.69E-05	1.45E-05	7.78E-06	4.18E-06	2.25E-06
nd146	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02
pm146	1.87E-03	1.69E-03	1.52E-03	1.37E-03	1.23E-03	1.11E-03	1.00E-03
sm146	1.95E-03	2.01E-03	2.07E-03	2.12E-03	2.17E-03	2.21E-03	2.24E-03
pm147	5.78E+01	4.77E+01	3.83E+01	3.07E+01	2.46E+01	1.98E+01	1.59E+01
sm147	3.03E+01	4.20E+01	5.14E+01	5.90E+01	6.51E+01	6.99E+01	7.38E+01
nd148	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02
sm148	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01
sm149	1.17E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00
nd150	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01
sm150	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01
sm151	6.15E+00	6.16E+00	6.12E+00	6.08E+00	6.04E+00	6.01E+00	5.97E+00
eu151	1.55E-02	5.51E-02	9.46E-02	1.34E-01	1.73E-01	2.11E-01	2.50E-01
sm152	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01
eu152	2.65E-02	2.54E-02	2.43E-02	2.33E-02	2.23E-02	2.14E-02	2.05E-02
gd152	2.45E-02	2.48E-02	2.52E-02	2.54E-02	2.57E-02	2.60E-02	2.62E-02

1

sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp fission products page 41
decay, following reactor irradiation identified by: power= 7.25MW, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0 nuclide concentrations, grams
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
eu153	2.68E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01
gd153	7.13E-04	2.98E-04	1.24E-04	5.19E-05	2.17E-05	9.05E-06	3.78E-06
sm154	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00
eu154	7.30E+00	6.83E+00	6.38E+00	5.97E+00	5.58E+00	5.22E+00	4.88E+00
gd154	6.33E-01	1.11E+00	1.55E+00	1.97E+00	2.35E+00	2.72E+00	3.06E+00
eu155	3.12E+00	2.78E+00	2.44E+00	2.14E+00	1.91E+00	1.69E+00	1.49E+00
gd155	5.34E-02	4.16E-01	7.37E-01	1.02E+00	1.27E+00	1.49E+00	1.69E+00
gd156	9.00E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00
gd157	2.88E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02
gd158	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00
tb159	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01
gd160	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01
dy160	3.04E-02	3.88E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02
dy161	8.12E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02
dy162	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02
dy163	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02
dy164	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
ho165	9.49E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03
ho166m	2.38E-05	2.38E-05	2.38E-05	2.38E-05	2.38E-05	2.37E-05	2.37E-05
er166	1.54E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03
er167	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05
er168	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05
tm169	7.29E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07

er170	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07
yb171	3.69E-07	5.46E-07	6.77E-07	7.75E-07	8.46E-07	9.00E-07	9.39E-07
total	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03

1

sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp fission products page 42
decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0
element radioactivity, curies
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
h	1.31E+02	1.25E+02	1.20E+02	1.14E+02	1.08E+02	1.04E+02	9.91E+01
be	8.26E-07	8.26E-07	8.26E-07	8.26E-07	8.26E-07	8.26E-07	8.26E-07
c	3.33E-05	3.33E-05	3.33E-05	3.33E-05	3.33E-05	3.33E-05	3.33E-05
se	2.20E+05	1.92E-01	1.92E-01	1.92E-01	1.92E-01	1.92E-01	1.92E-01
kr	9.07E+05	2.47E+03	2.35E+03	2.22E+03	2.11E+03	2.00E+03	1.89E+03
rb	1.29E+06	2.64E-03	6.24E-06	6.21E-06	6.21E-06	6.21E-06	6.21E-06
sr	1.90E+06	2.54E+04	2.21E+04	2.16E+04	2.11E+04	2.07E+04	2.03E+04
y	2.46E+06	2.95E+04	2.22E+04	2.16E+04	2.11E+04	2.07E+04	2.03E+04
zr	2.03E+06	1.24E+04	4.59E+02	1.73E+01	9.78E-01	3.72E-01	3.50E-01
nb	2.93E+06	2.64E+04	1.01E+03	3.76E+01	1.46E+00	1.31E-01	9.06E-02
tc	2.04E+06	3.95E+00	3.95E+00	3.95E+00	3.95E+00	3.95E+00	3.95E+00
ru	8.68E+05	6.47E+04	3.59E+04	2.03E+04	1.15E+04	6.54E+03	3.71E+03
rh	1.11E+06	6.47E+04	3.59E+04	2.03E+04	1.15E+04	6.54E+03	3.71E+03
pd	8.87E+04	2.63E-02	2.63E-02	2.63E-02	2.63E-02	2.63E-02	2.63E-02
ag	1.23E+05	2.15E+02	9.23E+01	3.97E+01	1.71E+01	7.35E+00	3.15E+00
cd	1.75E+04	6.65E+00	5.81E+00	5.57E+00	5.35E+00	5.13E+00	4.92E+00
sn	2.79E+05	3.06E+01	8.11E+00	3.06E+00	1.79E+00	1.38E+00	1.22E+00
sb	7.37E+05	1.58E+03	1.27E+03	1.03E+03	8.36E+02	6.78E+02	5.47E+02
te	1.64E+06	1.24E+03	4.30E+02	2.69E+02	2.06E+02	1.65E+02	1.34E+02
i	2.39E+06	8.82E-03	8.82E-03	8.82E-03	8.82E-03	8.82E-03	8.82E-03
cs	1.59E+06	4.99E+04	4.44E+04	4.00E+04	3.67E+04	3.40E+04	3.18E+04
ba	1.98E+06	2.79E+04	2.73E+04	2.68E+04	2.63E+04	2.58E+04	2.53E+04
ce	1.56E+06	1.31E+05	6.21E+04	2.96E+04	1.41E+04	6.74E+03	3.21E+03
pr	1.33E+06	1.32E+05	6.30E+04	3.00E+04	1.43E+04	6.83E+03	3.26E+03
pm	2.98E+05	4.43E+04	3.55E+04	2.85E+04	2.28E+04	1.83E+04	1.47E+04
sm	8.12E+04	1.62E+02	1.61E+02	1.60E+02	1.59E+02	1.58E+02	1.57E+02
eu	2.66E+04	3.21E+03	2.95E+03	2.68E+03	2.45E+03	2.24E+03	2.06E+03
gd	1.14E+03	1.05E+00	4.40E-01	1.84E-01	7.66E-02	3.20E-02	1.34E-02
tb	3.82E+02	5.44E+00	2.94E-01	1.59E-02	8.59E-04	4.64E-05	2.51E-06
ho	4.24E+00	4.27E-05	4.27E-05	4.27E-05	4.26E-05	4.26E-05	4.26E-05
tm	1.67E-03	5.51E-04	4.07E-04	3.01E-04	2.23E-04	1.65E-04	1.22E-04
totals	3.45E+07	6.17E+05	3.57E+05	2.45E+05	1.86E+05	1.52E+05	1.31E+05

1

sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp fission products page 43
decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0
element thermal power, watts
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
h	4.43E-03	4.23E-03	4.03E-03	3.85E-03	3.67E-03	3.50E-03	3.34E-03
c	9.77E-09	9.76E-09	9.76E-09	9.76E-09	9.76E-09	9.76E-09	9.76E-09
se	3.98E+03	6.03E-05	6.03E-05	6.03E-05	6.03E-05	6.03E-05	6.03E-05
kr	1.48E+04	3.71E+00	3.52E+00	3.33E+00	3.16E+00	2.99E+00	2.84E+00
sr	2.78E+04	3.63E+01	2.57E+01	2.51E+01	2.45E+01	2.40E+01	2.36E+01
y	4.05E+04	1.49E+02	1.23E+02	1.20E+02	1.17E+02	1.15E+02	1.12E+02
zr	2.05E+04	6.24E+01	2.31E+00	8.56E-02	3.21E-03	1.57E-04	4.37E-05
nb	4.16E+04	1.28E+02	4.84E+00	1.80E-01	6.66E-03	2.60E-04	2.46E-05
tc	2.36E+04	1.98E-03	1.98E-03	1.98E-03	1.98E-03	1.98E-03	1.98E-03
ru	4.60E+03	8.43E+00	2.16E+00	1.21E+00	6.86E-01	3.89E-01	2.20E-01
rh	5.01E+03	6.07E+02	3.44E+02	1.95E+02	1.11E+02	6.27E+01	3.55E+01
pd	2.98E+02	1.45E-06	1.45E-06	1.45E-06	1.45E-06	1.45E-06	1.45E-06
ag	4.89E+02	3.56E+00	1.53E+00	6.57E-01	2.82E-01	1.21E-01	5.21E-02

cd	2.07E+02	8.85E-03	6.33E-03	6.06E-03	5.81E-03	5.58E-03	5.36E-03
sn	3.71E+03	8.18E-02	1.71E-02	4.17E-03	1.48E-03	8.70E-04	7.11E-04
sb	1.39E+04	5.02E+00	4.03E+00	3.28E+00	2.64E+00	2.14E+00	1.73E+00
te	1.57E+04	1.19E+00	3.71E-01	2.28E-01	1.71E-01	1.39E-01	1.12E-01
i	3.55E+04	4.13E-06	4.13E-06	4.13E-06	4.13E-06	4.13E-06	4.13E-06
cs	2.92E+04	2.41E+02	1.85E+02	1.50E+02	1.21E+02	9.81E+01	8.10E+01
ba	1.73E+04	1.10E+02	1.07E+02	1.05E+02	1.03E+02	1.01E+02	9.95E+01
ce	7.13E+03	8.55E+01	4.08E+01	1.94E+01	9.24E+00	4.41E+00	2.10E+00
pr	1.08E+04	9.56E+02	4.56E+02	2.17E+02	1.04E+02	4.95E+01	2.36E+01
pm	1.35E+03	1.69E+01	1.30E+01	1.05E+01	8.39E+00	6.73E+00	5.40E+00
sm	2.00E+02	1.91E-02	1.90E-02	1.88E-02	1.87E-02	1.86E-02	1.85E-02
eu	2.36E+02	1.78E+01	1.66E+01	1.55E+01	1.45E+01	1.35E+01	1.26E+01
gd	3.47E+00	9.25E-04	3.86E-04	1.61E-04	6.74E-05	2.81E-05	1.17E-05
tb	2.21E+00	4.77E-02	2.58E-03	1.39E-04	7.53E-06	4.07E-07	2.20E-08
ho	1.82E-02	4.49E-07	4.49E-07	4.49E-07	4.48E-07	4.48E-07	4.48E-07
tm	5.59E-06	8.70E-08	6.32E-08	4.66E-08	3.44E-08	2.55E-08	1.88E-08
totals	4.30E+05	2.43E+03	1.33E+03	8.67E+02	6.19E+02	4.81E+02	4.01E+02

1

ses2h: babcock wilcox 15x15, 3.00w/o, 20gwd/mtu burn high temp fission products page 44
decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec
0
nuclide gamma power, watts
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
kr 85	3.45E-02	3.27E-02	3.10E-02	2.94E-02	2.78E-02	2.64E-02	2.50E-02
y 90	2.35E-04	2.27E-04	2.22E-04	2.17E-04	2.13E-04	2.09E-04	2.05E-04
y 91	5.30E+00	1.45E-01	3.94E-03	1.07E-04	2.91E-06	7.89E-08	2.14E-09
nb 93m	2.93E-07	4.19E-07	5.41E-07	6.59E-07	7.73E-07	8.82E-07	9.88E-07
nb 94	2.18E-07	2.18E-07	2.18E-07	2.18E-07	2.18E-07	2.18E-07	2.18E-07
zr 95	1.45E+03	5.37E+01	1.99E+00	7.37E-02	2.73E-03	1.01E-04	3.74E-06
nb 95	1.52E+03	1.19E+02	4.56E+00	1.69E-01	6.27E-03	2.32E-04	8.61E-06
nb 95m	1.57E+00	5.92E-02	2.19E-03	8.12E-05	3.01E-06	1.11E-07	4.13E-09
tc 98	9.81E-09	9.81E-09	9.81E-09	9.81E-09	9.81E-09	9.81E-09	9.81E-09
tc 99	1.44E-08	1.45E-08	1.45E-08	1.45E-08	1.45E-08	1.45E-08	1.45E-08
rh102	3.36E-03	2.75E-03	2.26E-03	1.85E-03	1.52E-03	1.24E-03	1.02E-03
rh106	1.41E+02	7.73E+01	4.38E+01	2.48E+01	1.41E+01	7.98E+00	4.52E+00
ag108	1.74E-05	1.04E-08	1.03E-08	1.03E-08	1.02E-08	1.02E-08	1.01E-08
ag108m	1.06E-05	1.05E-05	1.05E-05	1.04E-05	1.04E-05	1.03E-05	1.03E-05
ag110	3.54E+00	5.25E-04	2.25E-04	9.69E-05	4.16E-05	1.79E-05	7.69E-06
ag110m	8.01E+00	3.44E+00	1.48E+00	6.36E-01	2.73E-01	1.17E-01	5.04E-02
cd113m	2.64E-06	2.53E-06	2.43E-06	2.33E-06	2.24E-06	2.15E-06	2.06E-06
sn119m	5.82E-04	2.83E-04	1.38E-04	6.71E-05	3.27E-05	1.59E-05	7.74E-06
sn121m	1.71E-05	1.70E-05	1.68E-05	1.66E-05	1.64E-05	1.63E-05	1.61E-05
sn123	5.26E-03	1.03E-03	2.02E-04	3.94E-05	7.70E-06	1.50E-06	2.93E-07
te123m	5.38E-04	9.24E-05	1.58E-05	2.72E-06	4.66E-07	8.00E-08	1.37E-08
sb124	1.05E+00	3.15E-02	9.47E-04	2.85E-05	8.55E-07	2.57E-08	7.73E-10
sb125	4.98E+00	4.05E+00	3.28E+00	2.65E+00	2.15E+00	1.74E+00	1.41E+00
te125m	8.84E-02	8.08E-02	6.57E-02	5.32E-02	4.30E-02	3.48E-02	2.82E-02
sn126	1.07E-04	1.07E-04	1.07E-04	1.07E-04	1.07E-04	1.07E-04	1.07E-04
sb126	1.04E+00	3.17E-04	3.17E-04	3.17E-04	3.17E-04	3.17E-04	3.17E-04
sb126m	7.41E-01	1.28E-03	1.28E-03	1.28E-03	1.28E-03	1.28E-03	1.28E-03
te127	4.78E-01	1.18E-02	1.71E-03	2.47E-04	3.56E-05	5.14E-06	7.42E-07
te127m	1.83E-01	2.74E-02	3.95E-03	5.71E-04	8.24E-05	1.19E-05	1.72E-06
i129	1.28E-06	1.29E-06	1.29E-06	1.29E-06	1.29E-06	1.29E-06	1.29E-06
ba133	1.54E-08	1.46E-08	1.38E-08	1.30E-08	1.24E-08	1.17E-08	1.11E-08
cs134	2.49E+02	1.88E+02	1.42E+02	1.07E+02	8.11E+01	6.13E+01	4.63E+01
ba137m	1.01E+02	9.90E+01	9.71E+01	9.52E+01	9.34E+01	9.16E+01	8.99E+01
ce139	2.19E-05	4.73E-06	1.02E-06	2.21E-07	4.76E-08	1.03E-08	2.22E-09
ce144	3.07E+01	1.47E+01	6.99E+00	3.34E+00	1.59E+00	7.59E-01	3.62E-01
pr144	4.69E+01	2.23E+01	1.06E+01	5.07E+00	2.42E+00	1.15E+00	5.50E-01
pr144m	2.84E-01	1.35E-01	6.44E-02	3.07E-02	1.47E-02	6.99E-03	3.33E-03

pm145	2.11E-06	3.17E-06	3.67E-06	3.88E-06	3.93E-06	3.90E-06	3.82E-06
sm145	9.50E-05	5.11E-05	2.75E-05	1.48E-05	7.94E-06	4.27E-06	2.30E-06
pm146	3.69E-03	3.33E-03	3.00E-03	2.70E-03	2.43E-03	2.19E-03	1.97E-03
pm147	1.39E-03	1.15E-03	9.21E-04	7.39E-04	5.93E-04	4.76E-04	3.82E-04
eu150	1.30E-07	1.28E-07	1.26E-07	1.24E-07	1.22E-07	1.20E-07	1.18E-07
sm151	1.36E-05	1.36E-05	1.36E-05	1.35E-05	1.34E-05	1.33E-05	1.32E-05
eu152	3.23E-02	3.09E-02	2.96E-02	2.83E-02	2.71E-02	2.60E-02	2.49E-02
gd153	1.61E-03	6.71E-04	2.80E-04	1.17E-04	4.89E-05	2.04E-05	8.52E-06
eu154	1.47E+01	1.37E+01	1.28E+01	1.20E+01	1.12E+01	1.05E+01	9.80E+00
eu155	5.91E-01	5.22E-01	4.61E-01	4.08E-01	3.61E-01	3.19E-01	2.82E-01
tb160	7.30E-01	3.94E-02	2.13E-03	1.15E-04	6.22E-06	3.36E-07	1.82E-08
ho166m	4.12E-07	4.12E-07	4.12E-07	4.12E-07	4.11E-07	4.11E-07	4.11E-07
total	2.13E+05	6.01E+02	3.25E+02	2.52E+02	2.07E+02	1.78E+02	1.53E+02

1

ses2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp fission products page 45
decay, following reactor irradiation identified by: power= 7.25mw, burnup= 9280.mwd, flux= 1.63E+13n/cm**2-sec

0 element gamma power, watts
basis =single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
kr	7.71E+03	3.27E-02	3.10E-02	2.94E-02	2.78E-02	2.64E-02	2.50E-02
y	1.47E+04	1.47E-01	4.19E-03	3.25E-04	2.16E-04	2.09E-04	2.05E-04
zr	8.12E+03	5.37E+01	1.99E+00	7.37E-02	2.73E-03	1.01E-04	3.74E-06
rb	1.75E+04	1.19E+02	4.56E+00	1.69E-01	6.28E-03	2.34E-04	9.82E-06
tc	1.21E+04	2.43E-08	2.43E-08	2.43E-08	2.43E-08	2.43E-08	2.43E-08
rh	1.55E+03	7.73E+01	4.38E+01	2.48E+01	1.41E+01	7.98E+00	4.53E+00
ag	1.30E+02	3.44E+00	1.48E+00	6.36E-01	2.73E-01	1.17E-01	5.04E-02
cd	9.93E+01	1.20E-04	3.48E-06	2.35E-06	2.24E-06	2.15E-06	2.06E-06
sn	2.40E+03	1.44E-03	4.64E-04	2.30E-04	1.64E-04	1.41E-04	1.31E-04
sb	9.36E+03	4.08E+00	3.28E+00	2.66E+00	2.15E+00	1.74E+00	1.41E+00
te	9.32E+03	1.30E-01	7.14E-02	5.40E-02	4.31E-02	3.48E-02	2.82E-02
i	2.38E+04	1.29E-06	1.29E-06	1.29E-06	1.29E-06	1.29E-06	1.29E-06
cs	1.44E+04	1.88E+02	1.42E+02	1.07E+02	8.11E+01	6.13E+01	4.63E+01
ba	7.30E+03	9.90E+01	9.71E+01	9.52E+01	9.34E+01	9.16E+01	8.99E+01
ce	3.37E+03	1.49E+01	6.99E+00	3.34E+00	1.59E+00	7.59E-01	3.62E-01
pr	3.19E+03	2.24E+01	1.07E+01	5.10E+00	2.43E+00	1.16E+00	5.54E-01
pm	5.12E+02	5.92E-01	7.47E-03	3.46E-03	3.03E-03	2.67E-03	2.36E-03
sm	4.66E+01	6.47E-05	4.10E-05	2.82E-05	2.13E-05	1.76E-05	1.55E-05
eu	1.61E+02	1.43E+01	1.33E+01	1.24E+01	1.16E+01	1.08E+01	1.01E+01
gd	1.08E+00	6.71E-04	2.80E-04	1.17E-04	4.89E-05	2.04E-05	8.52E-06
tb	1.52E+00	3.94E-02	2.13E-03	1.15E-04	6.22E-06	3.36E-07	1.82E-08
ho	7.42E-04	4.12E-07	4.12E-07	4.12E-07	4.11E-07	4.11E-07	4.11E-07
totals	2.13E+05	6.01E+02	3.25E+02	2.52E+02	2.07E+02	1.78E+02	1.53E+02

1 page 46

photon spectrum as a function of time for light elements, cladding and structural materials

0 ses2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
power= 7.25 mw, burnup= 9280.mwd, flux= 1.63E+13 n**2-sec

0 spectrum of photon release rates, photons/sec
basis = single reactor assembly

0

emean	time after discharge						
(mev)	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
1.00E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
3.00E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
5.50E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
8.50E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
1.20E-01	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
1.70E-01	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
3.00E-01	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
6.50E-01	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

	1.13E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	1.58E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	2.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	2.40E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	2.80E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	3.25E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	3.75E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	4.25E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	4.75E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	5.50E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
0	total	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
0	mev/sec	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

0 spectrum of energy release rates, mev/watt-sec
basis = single reactor assembly

0

	emean			time after discharge				
	(mev)	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
	1.00E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	3.00E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	5.50E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	8.50E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	1.20E-01	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	1.70E-01	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	3.00E-01	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	6.50E-01	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	1.13E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	1.58E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	2.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	2.40E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	2.80E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	3.25E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	3.75E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	4.25E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	4.75E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
	5.50E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
0	total	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
0	gamma watts	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1 photon spectrum as a function of time for fission products

0 ees2h: babcock wilcox 15x15, 3.00w%, 20gd/mtu burn high temp
power= 7.25 mw, burnup= 9280.mwd, flux= 1.63E+13 n**2-sec

0 spectrum of photon release rates, photons/sec
basis = single reactor assembly

0

	emean			time after discharge				
	(mev)	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
	1.00E-02	4.22E+17	6.46E+15	3.54E+15	2.14E+15	1.43E+15	1.05E+15	8.42E+14
	3.00E-02	1.87E+17	2.77E+15	1.52E+15	9.21E+14	6.14E+14	4.54E+14	3.68E+14
	5.50E-02	9.88E+16	1.51E+15	8.32E+14	5.00E+14	3.29E+14	2.39E+14	1.91E+14
	8.50E-02	6.85E+16	9.54E+14	5.17E+14	3.05E+14	1.96E+14	1.39E+14	1.08E+14
	1.20E-01	5.58E+16	1.20E+15	6.29E+14	3.51E+14	2.13E+14	1.42E+14	1.06E+14
	1.70E-01	9.03E+16	6.24E+14	3.35E+14	1.98E+14	1.25E+14	8.75E+13	6.74E+13
	3.00E-01	1.91E+17	7.19E+14	3.89E+14	2.25E+14	1.41E+14	9.75E+13	7.41E+13
	6.50E-01	3.90E+17	5.53E+15	2.94E+15	2.28E+15	1.87E+15	1.59E+15	1.39E+15
	1.13E+00	1.26E+17	1.80E+14	1.20E+14	8.60E+13	6.61E+13	5.37E+13	4.55E+13
	1.58E+00	6.53E+16	6.08E+13	3.68E+13	2.30E+13	1.53E+13	1.07E+13	7.78E+12
	2.00E+00	1.92E+16	4.68E+13	2.27E+13	1.11E+13	5.41E+12	2.66E+12	1.32E+12
	2.40E+00	1.58E+16	2.84E+12	1.57E+12	8.74E+11	4.87E+11	2.72E+11	1.53E+11
	2.80E+00	6.55E+15	4.44E+11	2.49E+11	1.40E+11	7.84E+10	4.41E+10	2.49E+10

	3.25E+00	3.37E+15	7.07E+10	4.01E+10	2.27E+10	1.29E+10	7.30E+09	4.14E+09
	3.75E+00	1.60E+15	3.12E+07	1.77E+07	1.00E+07	5.68E+06	3.22E+06	1.82E+06
	4.25E+00	1.58E+15	9.80E-06	1.00E-05	1.02E-05	1.04E-05	1.05E-05	1.05E-05
	4.75E+00	4.67E+14	4.92E-06	5.04E-06	5.14E-06	5.22E-06	5.28E-06	5.33E-06
	5.50E+00	3.58E+14	3.65E-06	3.74E-06	3.81E-06	3.87E-06	3.92E-06	3.95E-06
0	total	1.74E+18	2.01E+16	1.09E+16	7.04E+15	5.00E+15	3.86E+15	3.20E+15
0	mev/sec	7.22E+17	4.77E+15	2.58E+15	1.88E+15	1.48E+15	1.25E+15	1.06E+15

0 spectrum of energy release rates, mev/watt-sec

basis = single reactor assembly

0

emean		time after discharge					
(mev)	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
1.00E-02	5.82E+08	8.90E+06	4.88E+06	2.98E+06	1.97E+06	1.44E+06	1.16E+06
3.00E-02	7.73E+08	1.15E+07	6.30E+06	3.81E+06	2.54E+06	1.88E+06	1.52E+06
5.50E-02	7.50E+08	1.15E+07	6.31E+06	3.79E+06	2.50E+06	1.82E+06	1.45E+06
8.50E-02	8.00E+08	1.12E+07	6.07E+06	3.57E+06	2.29E+06	1.63E+06	1.27E+06
1.20E-01	9.23E+08	1.99E+07	1.06E+07	5.81E+06	3.52E+06	2.35E+06	1.75E+06
1.70E-01	2.12E+09	1.46E+07	7.86E+06	4.60E+06	2.98E+06	2.05E+06	1.58E+06
3.00E-01	7.91E+09	2.98E+07	1.61E+07	9.32E+06	5.85E+06	4.08E+06	3.07E+06
6.50E-01	3.50E+10	4.96E+08	2.64E+08	2.04E+08	1.68E+08	1.43E+08	1.25E+08
1.13E+00	1.96E+10	2.79E+07	1.86E+07	1.33E+07	1.05E+07	8.33E+06	7.06E+06
1.58E+00	1.42E+10	1.31E+07	7.88E+06	4.99E+06	3.33E+06	2.32E+06	1.69E+06
2.00E+00	5.31E+09	1.29E+07	6.26E+06	3.05E+06	1.49E+06	7.34E+05	3.64E+05
2.40E+00	5.22E+09	9.35E+05	5.21E+05	2.85E+05	1.61E+05	9.02E+04	5.05E+04
2.80E+00	2.53E+09	1.71E+05	9.60E+04	5.39E+04	3.03E+04	1.70E+04	9.60E+03
3.25E+00	1.51E+09	3.17E+04	1.80E+04	1.02E+04	5.78E+03	3.27E+03	1.86E+03
3.75E+00	8.27E+08	1.61E+01	9.14E+00	5.18E+00	2.94E+00	1.67E+00	9.44E-01
4.25E+00	9.28E+08	5.75E-12	5.89E-12	6.00E-12	6.10E-12	6.17E-12	6.23E-12
4.75E+00	3.06E+08	3.22E-12	3.30E-12	3.37E-12	3.42E-12	3.46E-12	3.49E-12
5.50E+00	2.71E+08	2.77E-12	2.84E-12	2.89E-12	2.94E-12	2.97E-12	3.00E-12
0 total	9.95E+10	6.58E+08	3.55E+08	2.60E+08	2.05E+08	1.69E+08	1.46E+08
0 gamma watts	1.16E+05	7.65E+02	4.13E+02	3.02E+02	2.38E+02	1.97E+02	1.69E+02

1 page 48

0 principal photon sources in group 1, photons/sec

mean energy = .0100 mev. nuclides exceeding 1.0E-03 of total group release rate (1.05E+15) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
kr 85	1.38E+13	1.31E+13	1.24E+13	1.17E+13	1.11E+13	1.05E+13	9.98E+12
sr 90	9.35E+13	9.16E+13	8.97E+13	8.79E+13	8.61E+13	8.44E+13	8.27E+13
y 90	4.68E+14	4.50E+14	4.41E+14	4.32E+14	4.23E+14	4.15E+14	4.06E+14
rh106	3.42E+15	1.88E+15	1.07E+15	6.05E+14	3.43E+14	1.95E+14	1.10E+14
sb125	4.63E+12	3.77E+12	3.05E+12	2.47E+12	2.00E+12	1.62E+12	1.31E+12
cs134	8.74E+13	6.60E+13	4.99E+13	3.77E+13	2.85E+13	2.15E+13	1.63E+13
cs137	1.06E+14	1.04E+14	1.02E+14	1.00E+14	9.83E+13	9.66E+13	9.46E+13
ba137m	5.01E+12	4.89E+12	4.79E+12	4.70E+12	4.61E+12	4.52E+12	4.44E+12
ce144	5.25E+14	2.51E+14	1.20E+14	5.70E+13	2.72E+13	1.30E+13	6.18E+12
pr144	6.98E+15	3.32E+15	1.58E+15	7.55E+14	3.60E+14	1.72E+14	8.19E+13
pm147	6.23E+13	5.14E+13	4.12E+13	3.31E+13	2.68E+13	2.13E+13	1.71E+13
eu154	1.30E+13	1.21E+13	1.13E+13	1.06E+13	9.91E+12	9.27E+12	8.67E+12
eu155	4.07E+12	3.60E+12	3.18E+12	2.81E+12	2.49E+12	2.20E+12	1.94E+12

0 principal photon sources in group 2, photons/sec

mean energy = .0300 mev. nuclides exceeding 1.0E-03 of total group release rate (4.54E+14) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
kr 85	4.02E+12	3.81E+12	3.61E+12	3.42E+12	3.24E+12	3.07E+12	2.91E+12
sr 90	2.64E+13	2.59E+13	2.54E+13	2.48E+13	2.43E+13	2.38E+13	2.34E+13
y 90	1.52E+14	1.47E+14	1.44E+14	1.41E+14	1.38E+14	1.35E+14	1.32E+14
rh106	1.14E+15	6.29E+14	3.57E+14	2.02E+14	1.15E+14	6.50E+13	3.68E+13
sb125	3.55E+13	2.89E+13	2.34E+13	1.89E+13	1.53E+13	1.24E+13	1.00E+13
te125m	1.79E+13	1.64E+13	1.33E+13	1.08E+13	8.72E+12	7.08E+12	5.71E+12

cs134	3.26E+13	2.46E+13	1.86E+13	1.41E+13	1.09E+13	8.03E+12	6.07E+12
cs137	2.96E+13	2.90E+13	2.85E+13	2.79E+13	2.74E+13	2.69E+13	2.64E+13
ba137m	8.60E+13	8.39E+13	8.23E+13	8.08E+13	7.92E+13	7.77E+13	7.62E+13
ce144	1.22E+15	5.82E+14	2.78E+14	1.32E+14	6.31E+13	3.01E+13	1.44E+13
pr144	2.31E+15	1.10E+15	5.24E+14	2.50E+14	1.19E+14	5.68E+13	2.71E+13
pr144m	4.72E+13	2.24E+13	1.07E+13	5.10E+12	2.43E+12	1.16E+12	5.54E+11
pm147	1.37E+13	1.13E+13	9.07E+12	7.27E+12	5.84E+12	4.68E+12	3.76E+12
eu154	2.83E+12	2.64E+12	2.47E+12	2.31E+12	2.16E+12	2.02E+12	1.89E+12

0 principal photon sources in group 3, photons/sec

mean energy = .0550 mev. nuclides exceeding 1.0E-03 of total group release rate (2.39E+14) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
kr 85	2.46E+12	2.33E+12	2.21E+12	2.10E+12	1.99E+12	1.88E+12	1.78E+12
sr 90	1.56E+13	1.53E+13	1.50E+13	1.47E+13	1.44E+13	1.41E+13	1.38E+13
y 90	1.05E+14	1.01E+14	9.95E+13	9.73E+13	9.53E+13	9.34E+13	9.15E+13
rh106	8.10E+14	4.46E+14	2.53E+14	1.43E+14	8.12E+13	4.60E+13	2.61E+13
cs134	1.45E+13	1.09E+13	8.26E+12	6.24E+12	4.72E+12	3.57E+12	2.69E+12
cs137	1.72E+13	1.69E+13	1.66E+13	1.63E+13	1.59E+13	1.56E+13	1.53E+13
ce144	1.77E+14	8.42E+13	4.02E+13	1.91E+13	9.13E+12	4.36E+12	2.08E+12
pr144	1.62E+15	7.71E+14	3.68E+14	1.75E+14	8.37E+13	3.99E+13	1.90E+13
pm147	5.75E+12	4.75E+12	3.81E+12	3.06E+12	2.45E+12	1.97E+12	1.58E+12
eu154	1.66E+13	1.56E+13	1.46E+13	1.36E+13	1.27E+13	1.19E+13	1.11E+13
eu155	1.19E+13	1.05E+13	9.28E+12	8.20E+12	7.25E+12	6.41E+12	5.66E+12

1 page 49

0 principal photon sources in group 4, photons/sec

mean energy = .0850 mev. nuclides exceeding 1.0E-03 of total group release rate (1.39E+14) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
kr 85	1.23E+12	1.17E+12	1.11E+12	1.05E+12	9.94E+11	9.42E+11	8.92E+11
sr 90	7.45E+12	7.29E+12	7.15E+12	7.00E+12	6.86E+12	6.72E+12	6.58E+12
y 90	6.05E+13	5.87E+13	5.75E+13	5.63E+13	5.52E+13	5.40E+13	5.29E+13
rh106	4.81E+14	2.65E+14	1.50E+14	8.51E+13	4.82E+13	2.73E+13	1.55E+13
cs134	7.00E+12	5.29E+12	4.00E+12	3.02E+12	2.28E+12	1.73E+12	1.30E+12
cs137	8.05E+12	7.91E+12	7.76E+12	7.61E+12	7.47E+12	7.32E+12	7.18E+12
ce144	2.49E+14	1.19E+14	5.67E+13	2.70E+13	1.29E+13	6.15E+12	2.93E+12
pr144	9.55E+14	4.54E+14	2.17E+14	1.03E+14	4.90E+13	2.35E+13	1.12E+13
pm147	1.64E+12	1.35E+12	1.08E+12	8.70E+11	6.98E+11	5.60E+11	4.49E+11
eu154	9.14E+11	8.54E+11	7.99E+11	7.47E+11	6.98E+11	6.53E+11	6.10E+11
eu155	1.80E+13	1.59E+13	1.41E+13	1.25E+13	1.10E+13	9.73E+12	8.60E+12

0 principal photon sources in group 5, photons/sec

mean energy = .1200 mev. nuclides exceeding 1.0E-03 of total group release rate (1.42E+14) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
kr 85	7.43E+11	7.04E+11	6.67E+11	6.32E+11	5.99E+11	5.68E+11	5.38E+11
sr 90	4.24E+12	4.15E+12	4.07E+12	3.99E+12	3.90E+12	3.82E+12	3.75E+12
y 90	4.20E+13	4.13E+13	4.04E+13	3.98E+13	3.88E+13	3.80E+13	3.72E+13
rh106	3.48E+14	1.91E+14	1.08E+14	6.15E+13	3.48E+13	1.97E+13	1.12E+13
cs134	4.08E+12	3.08E+12	2.33E+12	1.76E+12	1.33E+12	1.00E+12	7.59E+11
cs137	4.52E+12	4.43E+12	4.35E+12	4.27E+12	4.19E+12	4.11E+12	4.03E+12
ce144	1.22E+15	5.83E+14	2.78E+14	1.33E+14	6.32E+13	3.02E+13	1.44E+13
pr144	6.83E+14	3.25E+14	1.55E+14	7.39E+13	3.52E+13	1.68E+13	8.02E+12
pm147	5.19E+11	4.28E+11	3.44E+11	2.76E+11	2.21E+11	1.78E+11	1.42E+11
eu154	3.10E+13	2.85E+13	2.71E+13	2.53E+13	2.37E+13	2.21E+13	2.07E+13
eu155	1.03E+13	9.10E+12	8.04E+12	7.11E+12	6.28E+12	5.55E+12	4.91E+12

0 principal photon sources in group 6, photons/sec

mean energy = .1700 mev. nuclides exceeding 1.0E-03 of total group release rate (8.75E+13) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
kr 85	5.90E+11	5.59E+11	5.30E+11	5.02E+11	4.76E+11	4.51E+11	4.27E+11
sr 90	3.02E+12	2.98E+12	2.90E+12	2.84E+12	2.78E+12	2.73E+12	2.67E+12

y 90	4.42E+13	4.25E+13	4.17E+13	4.08E+13	4.00E+13	3.92E+13	3.84E+13
rh106	3.73E+14	2.05E+14	1.16E+14	6.59E+13	3.74E+13	2.12E+13	1.20E+13
sb125	5.35E+12	4.35E+12	3.52E+12	2.85E+12	2.31E+12	1.87E+12	1.51E+12
cs134	3.05E+12	2.30E+12	1.74E+12	1.32E+12	9.94E+11	7.51E+11	5.68E+11
cs137	3.19E+12	3.13E+12	3.07E+12	3.01E+12	2.96E+12	2.90E+12	2.84E+12
pr144	7.22E+14	3.44E+14	1.64E+14	7.81E+13	3.73E+13	1.78E+13	8.48E+12
eu154	7.24E+11	6.77E+11	6.33E+11	5.91E+11	5.53E+11	5.17E+11	4.84E+11

1 page 50

0 principal photon sources in group 7, photons/sec

mean energy = .3000 mev. nuclides exceeding 1.0E-03 of total group release rate (9.75E+13) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
kr 85	3.56E+11	3.38E+11	3.20E+11	3.03E+11	2.87E+11	2.72E+11	2.58E+11
sr 90	1.37E+12	1.34E+12	1.32E+12	1.29E+12	1.26E+12	1.24E+12	1.21E+12
y 90	4.91E+13	4.72E+13	4.63E+13	4.53E+13	4.44E+13	4.35E+13	4.26E+13
rh106	4.50E+14	2.47E+14	1.40E+14	7.95E+13	4.51E+13	2.55E+13	1.45E+13
sb125	2.03E+12	1.65E+12	1.33E+12	1.08E+12	8.73E+11	7.07E+11	5.72E+11
cs134	1.94E+12	1.47E+12	1.11E+12	8.37E+11	6.33E+11	4.78E+11	3.61E+11
cs137	1.62E+12	1.58E+12	1.55E+12	1.52E+12	1.50E+12	1.47E+12	1.44E+12
pr144	8.46E+14	4.02E+14	1.92E+14	9.15E+13	4.36E+13	2.08E+13	9.92E+12
eu154	4.73E+12	4.42E+12	4.14E+12	3.87E+12	3.62E+12	3.38E+12	3.16E+12

0 principal photon sources in group 8, photons/sec

mean energy = .6500 mev. nuclides exceeding 1.0E-03 of total group release rate (1.59E+15) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
y 90	2.07E+13	2.00E+13	1.96E+13	1.92E+13	1.88E+13	1.84E+13	1.80E+13
rh106	1.39E+15	7.64E+14	4.33E+14	2.45E+14	1.39E+14	7.89E+13	4.47E+13
sb125	4.35E+13	3.54E+13	2.86E+13	2.32E+13	1.87E+13	1.52E+13	1.23E+13
cs134	2.27E+15	1.72E+15	1.30E+15	9.81E+14	7.42E+14	5.60E+14	4.24E+14
ba137m	9.67E+14	9.44E+14	9.26E+14	9.08E+14	8.91E+14	8.74E+14	8.57E+14
pr144	5.77E+14	2.74E+14	1.31E+14	6.24E+13	2.98E+13	1.42E+13	6.77E+12
eu154	3.96E+13	3.70E+13	3.46E+13	3.24E+13	3.03E+13	2.83E+13	2.65E+13

0 principal photon sources in group 9, photons/sec

mean energy = 1.1250 mev. nuclides exceeding 1.0E-03 of total group release rate (5.37E+13) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
y 90	2.70E+12	2.60E+12	2.55E+12	2.50E+12	2.45E+12	2.40E+12	2.35E+12
rh106	1.29E+14	7.12E+13	4.03E+13	2.29E+13	1.30E+13	7.35E+12	4.16E+12
ag110m	5.33E+12	2.23E+12	9.84E+11	4.23E+11	1.82E+11	7.81E+10	3.35E+10
cs134	2.78E+13	2.10E+13	1.59E+13	1.20E+13	9.08E+12	6.86E+12	5.19E+12
pr144	7.39E+13	3.51E+13	1.67E+13	7.99E+12	3.81E+12	1.82E+12	8.66E+11
eu152	7.28E+10	6.97E+10	6.67E+10	6.39E+10	6.12E+10	5.86E+10	5.61E+10
eu154	4.91E+13	4.59E+13	4.29E+13	4.02E+13	3.75E+13	3.51E+13	3.28E+13

0 principal photon sources in group 10, photons/sec

mean energy = 1.5750 mev. nuclides exceeding 1.0E-03 of total group release rate (1.07E+13) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
y 90	3.45E+11	3.32E+11	3.26E+11	3.19E+11	3.13E+11	3.06E+11	3.00E+11
rh106	2.44E+13	1.34E+13	7.61E+12	4.31E+12	2.44E+12	1.39E+12	7.85E+11
ag110m	7.10E+12	3.05E+12	1.31E+12	5.63E+11	2.42E+11	1.04E+11	4.47E+10
cs134	2.63E+13	1.99E+13	1.50E+13	1.13E+13	8.57E+12	6.48E+12	4.90E+12
pr144	4.59E+13	2.18E+13	1.04E+13	4.97E+12	2.37E+12	1.13E+12	5.39E+11
eu152	3.34E+10	3.20E+10	3.07E+10	2.94E+10	2.81E+10	2.69E+10	2.58E+10
eu154	1.78E+12	1.66E+12	1.55E+12	1.45E+12	1.36E+12	1.27E+12	1.19E+12

1 page 51

0 principal photon sources in group 11, photons/sec

mean energy = 2.0000 mev. nuclides exceeding 1.0E-03 of total group release rate (2.66E+12) at 1521.9 d

nuclide	time after discharge						
	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
y 90	2.07E+10	1.99E+10	1.95E+10	1.91E+10	1.87E+10	1.83E+10	1.79E+10

```
    rh106  7.95E+12  4.36E+12  2.47E+12  1.40E+12  7.94E+11  4.50E+11  2.55E+11
    pr144  8.91E+13  4.24E+13  2.02E+13  9.64E+12  4.60E+12  2.19E+12  1.05E+12
0                  principal photon sources in group 12, photons/sec
      mean energy = 2.4000 mev.  nuclides exceeding  1.0E-03 of total group release rate (2.72E+11) at  1521.9 d
   nuclide                                          time after discharge
            initial  304.4 d  608.8 d  913.1 d  1217.5 d  1521.9 d  1826.3 d
    rh106  4.43E+12  2.44E+12  1.38E+12  7.83E+11  4.44E+11  2.52E+11  1.43E+11
    pr144  8.42E+11  4.00E+11  1.91E+11  9.11E+10  4.34E+10  2.07E+10  9.88E+09
0                  principal photon sources in group 13, photons/sec
      mean energy = 2.8000 mev.  nuclides exceeding  1.0E-03 of total group release rate (4.41E+10) at  1521.9 d
   nuclide                                          time after discharge
            initial  304.4 d  608.8 d  913.1 d  1217.5 d  1521.9 d  1826.3 d
    rh106  7.47E+11  4.11E+11  2.33E+11  1.32E+11  7.49E+10  4.25E+10  2.41E+10
    pr144  6.78E+10  3.22E+10  1.54E+10  7.33E+09  3.50E+09  1.67E+09  7.98E+08
0                  principal photon sources in group 14, photons/sec
      mean energy = 3.2500 mev.  nuclides exceeding  1.0E-03 of total group release rate (7.30E+09) at  1521.9 d
   nuclide                                          time after discharge
            initial  304.4 d  608.8 d  913.1 d  1217.5 d  1521.9 d  1826.3 d
    rh106  1.29E+11  7.07E+10  4.01E+10  2.27E+10  1.29E+10  7.30E+09  4.14E+09
0                  principal photon sources in group 15, photons/sec
      mean energy = 3.7500 mev.  nuclides exceeding  1.0E-03 of total group release rate (3.22E+06) at  1521.9 d
   nuclide                                          time after discharge
            initial  304.4 d  608.8 d  913.1 d  1217.5 d  1521.9 d  1826.3 d
    rh106  5.67E+07  3.12E+07  1.77E+07  1.00E+07  5.68E+06  3.22E+06  1.82E+06
0                  principal photon sources in group 16, photons/sec
      mean energy = 4.2500 mev.  nuclides exceeding  1.0E-03 of total group release rate (1.05E-05) at  1521.9 d
   nuclide                                          time after discharge
            initial  304.4 d  608.8 d  913.1 d  1217.5 d  1521.9 d  1826.3 d
    ce142  8.67E-06  8.67E-06  8.67E-06  8.67E-06  8.67E-06  8.67E-06  8.67E-06
    sm146  5.18E-08  5.35E-08  5.50E-08  5.63E-08  5.76E-08  5.87E-08  5.97E-08
    sm147  7.76E-07  1.08E-06  1.32E-06  1.51E-06  1.67E-06  1.79E-06  1.89E-06
1                                                                                  page 52
0                  principal photon sources in group 17, photons/sec
      mean energy = 4.7500 mev.  nuclides exceeding  1.0E-03 of total group release rate (5.28E-06) at  1521.9 d
   nuclide                                          time after discharge
            initial  304.4 d  608.8 d  913.1 d  1217.5 d  1521.9 d  1826.3 d
    ce142  4.35E-06  4.35E-06  4.35E-06  4.35E-06  4.35E-06  4.35E-06  4.35E-06
    sm146  2.60E-08  2.68E-08  2.76E-08  2.83E-08  2.89E-08  2.94E-08  2.99E-08
    sm147  3.89E-07  5.40E-07  6.62E-07  7.59E-07  8.37E-07  9.00E-07  9.50E-07
0                  principal photon sources in group 18, photons/sec
      mean energy = 5.5000 mev.  nuclides exceeding  1.0E-03 of total group release rate (3.92E-06) at  1521.9 d
   nuclide                                          time after discharge
            initial  304.4 d  608.8 d  913.1 d  1217.5 d  1521.9 d  1826.3 d
    ce142  3.23E-06  3.23E-06  3.23E-06  3.23E-06  3.23E-06  3.23E-06  3.23E-06
    sm146  1.93E-08  1.99E-08  2.05E-08  2.10E-08  2.14E-08  2.18E-08  2.22E-08
    sm147  2.89E-07  4.01E-07  4.91E-07  5.63E-07  6.21E-07  6.67E-07  7.05E-07
1                                                                                  page 53
          photon spectrum as a function of time for heavy metals and their daughters

0                        ses2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp
                              power=  7.25 mw, burnup=  9280.mwd, flux= 1.63E+13 n**2-sec
0                                actinide photon release rates, photons/sec
                                 basis = single reactor assembly
0
        ensen                                    time after discharge
        (mev)     initial  304.4 d  608.8 d  913.1 d  1217.5 d  1521.9 d  1826.3 d
      1.00E-02  2.27E+17  2.10E+13  1.10E+13  8.56E+12  8.12E+12  8.22E+12  8.46E+12
      3.00E-02  1.43E+16  1.02E+11  1.46E+11  1.88E+11  2.28E+11  2.67E+11  3.04E+11
      5.50E-02  1.92E+16  1.69E+12  2.43E+12  3.15E+12  3.84E+12  4.51E+12  5.14E+12
      8.50E-02  9.06E+16  8.07E+10  8.08E+10  8.08E+10  8.08E+10  8.08E+10  8.07E+10
```

	1.20E-01	9.33E+16	1.12E+11	1.10E+11	1.09E+11	1.08E+11	1.07E+11	1.06E+11
	1.70E-01	2.97E+15	3.54E+09	2.71E+09	2.47E+09	2.39E+09	2.36E+09	2.35E+09
	3.00E-01	4.92E+16	5.79E+10	5.72E+10	5.64E+10	5.57E+10	5.50E+10	5.43E+10
	6.50E-01	2.59E+15	6.37E+08	4.92E+08	4.79E+08	5.01E+08	5.31E+08	5.62E+08
	1.13E+00	1.13E+15	4.46E+08	4.27E+08	4.20E+08	4.18E+08	4.16E+08	4.15E+08
	1.58E+00	3.91E+07	2.06E+07	1.72E+07	1.71E+07	1.79E+07	1.88E+07	1.97E+07
	2.00E+00	2.22E+06	1.92E+06	1.96E+06	1.99E+06	2.03E+06	2.06E+06	2.09E+06
	2.40E+00	1.45E+07	6.30E+06	3.98E+06	3.28E+06	3.02E+06	2.89E+06	2.79E+06
	2.80E+00	1.95E+07	2.48E+07	3.54E+07	4.74E+07	5.92E+07	7.03E+07	8.03E+07
	3.25E+00	5.18E+06	2.26E+06	1.42E+06	1.17E+06	1.08E+06	1.03E+06	1.00E+06
	3.75E+00	3.00E+06	1.31E+06	8.25E+05	6.80E+05	6.27E+05	5.99E+05	5.80E+05
	4.25E+00	1.74E+06	7.57E+05	4.78E+05	3.94E+05	3.63E+05	3.47E+05	3.36E+05
	4.75E+00	1.01E+06	4.39E+05	2.77E+05	2.28E+05	2.10E+05	2.01E+05	1.95E+05
	5.50E+00	9.10E+05	3.97E+05	2.51E+05	2.06E+05	1.90E+05	1.82E+05	1.76E+05
0	total	5.00E+17	2.30E+13	1.39E+13	1.21E+13	1.24E+13	1.32E+13	1.42E+13
0	mev/sec	4.09E+16	3.45E+11	2.87E+11	3.08E+11	3.37E+11	3.78E+11	4.14E+11

0 actinide energy release rates, mev/watt-sec
basis = single reactor assembly

0

emean	time after discharge						
(mev)	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
1.00E-02	3.13E+08	2.90E+04	1.52E+04	1.18E+04	1.12E+04	1.13E+04	1.17E+04
3.00E-02	5.94E+07	4.23E+02	6.04E+02	7.78E+02	9.45E+02	1.10E+03	1.26E+03
5.50E-02	1.46E+08	1.28E+04	1.84E+04	2.35E+04	2.91E+04	3.42E+04	3.90E+04
8.50E-02	1.06E+09	9.47E+02	9.47E+02	9.47E+02	9.47E+02	9.47E+02	9.47E+02
1.20E-01	1.54E+09	1.85E+03	1.82E+03	1.80E+03	1.79E+03	1.77E+03	1.76E+03
1.70E-01	6.96E+07	8.31E+01	6.35E+01	5.79E+01	5.61E+01	5.54E+01	5.50E+01
3.00E-01	2.04E+09	2.40E+03	2.37E+03	2.33E+03	2.31E+03	2.28E+03	2.25E+03
6.50E-01	2.32E+08	5.71E+01	4.41E+01	4.30E+01	4.50E+01	4.78E+01	5.04E+01
1.13E+00	1.75E+08	6.98E+01	6.62E+01	6.52E+01	6.48E+01	6.46E+01	6.44E+01
1.58E+00	8.50E+00	4.48E+00	3.73E+00	3.71E+00	3.89E+00	4.09E+00	4.29E+00
2.00E+00	6.11E-01	5.31E-01	5.40E-01	5.50E-01	5.59E-01	5.68E-01	5.76E-01
2.40E+00	4.79E+00	2.09E+00	1.32E+00	1.08E+00	1.00E+00	9.57E-01	9.25E-01
2.80E+00	7.52E+00	9.58E+00	1.37E+01	1.83E+01	2.29E+01	2.72E+01	3.10E+01
3.25E+00	2.32E+00	1.01E+00	6.39E-01	5.26E-01	4.85E-01	4.64E-01	4.48E-01
3.75E+00	1.55E+00	6.76E-01	4.27E-01	3.52E-01	3.24E-01	3.10E-01	3.00E-01
4.25E+00	1.02E+00	4.44E-01	2.80E-01	2.31E-01	2.13E-01	2.04E-01	1.97E-01
4.75E+00	6.59E-01	2.87E-01	1.82E-01	1.50E-01	1.38E-01	1.32E-01	1.28E-01
5.50E+00	6.90E-01	3.01E-01	1.90E-01	1.57E-01	1.44E-01	1.38E-01	1.34E-01
0 total	5.64E+09	4.76E+04	3.96E+04	4.17E+04	4.65E+04	5.18E+04	5.71E+04
0 gamma watts	6.55E+05	5.53E-02	4.60E-02	4.85E-02	5.40E-02	6.02E-02	6.64E-02

1 page 54

neutron source intensity as a function of time

0 sea2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
alpha-n neutron source, neutrons/sec/basis
basis = single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
pb210	2.24E-15	3.18E-15	4.36E-15	5.98E-15	8.09E-15	1.09E-14	1.41E-14
bi210	5.61E-13	8.11E-13	1.11E-12	1.53E-12	2.07E-12	2.75E-12	3.60E-12
bi211	8.13E-04	1.41E-03	1.93E-03	2.45E-03	2.96E-03	3.47E-03	3.98E-03
bi212	3.78E-01	7.42E-01	1.17E+00	1.61E+00	2.03E+00	2.43E+00	2.78E+00
bi213	9.63E-07	1.79E-07	1.96E-07	2.14E-07	2.32E-07	2.50E-07	2.70E-07
bi214	3.35E-09	4.84E-09	6.72E-09	9.00E-09	1.17E-08	1.47E-08	1.82E-08
po210	4.43E-07	7.84E-07	1.11E-06	1.54E-06	2.09E-06	2.81E-06	3.72E-06
po211	3.22E-06	5.58E-06	7.64E-06	9.69E-06	1.17E-05	1.37E-05	1.57E-05
po212	1.94E+00	3.80E+00	5.97E+00	8.22E+00	1.04E+01	1.24E+01	1.42E+01
po213	1.27E-04	2.36E-05	2.59E-05	2.82E-05	3.08E-05	3.30E-05	3.56E-05

po214	7.16E-05	4.31E-05	5.99E-05	8.01E-05	1.04E-04	1.31E-04	1.62E-04
po215	1.15E-03	1.99E-03	2.73E-03	3.46E-03	4.18E-03	4.90E-03	5.62E-03
po216	1.51E+00	2.98E+00	4.66E+00	6.42E+00	8.12E+00	9.69E+00	1.11E+01
po218	1.42E-05	2.05E-05	2.85E-05	3.81E-05	4.94E-05	6.24E-05	7.70E-05
at217	8.23E-05	1.53E-05	1.68E-05	1.83E-05	1.98E-05	2.14E-05	2.31E-05
rn218	3.40E-05	1.34E-09	5.25E-14	2.07E-18	8.12E-23	2.73E-27	.00E+00
rn219	9.14E-04	1.58E-03	2.17E-03	2.75E-03	3.33E-03	3.90E-03	4.47E-03
rn220	1.20E+00	2.35E+00	3.65E+00	5.08E+00	6.43E+00	7.68E+00	8.80E+00
rn222	1.04E-05	1.50E-05	2.08E-05	2.78E-05	3.61E-05	4.55E-05	5.62E-05
fr221	6.01E-05	1.12E-05	1.22E-05	1.33E-05	1.45E-05	1.56E-05	1.68E-05
fr223	3.77E-10	5.99E-10	8.21E-10	1.04E-09	1.26E-09	1.47E-09	1.69E-09
ra222	2.63E-05	1.03E-09	4.05E-14	1.60E-18	6.28E-23	2.47E-27	.00E+00
ra223	5.25E-04	9.17E-04	1.26E-03	1.59E-03	1.93E-03	2.26E-03	2.59E-03
ra224	8.46E-01	1.66E+00	2.61E+00	3.59E+00	4.54E+00	5.43E+00	6.22E+00
ra226	6.05E-06	8.76E-06	1.22E-05	1.63E-05	2.11E-05	2.66E-05	3.25E-05
ac225	4.32E-05	8.04E-06	8.79E-06	9.58E-06	1.04E-05	1.12E-05	1.21E-05
ac227	4.24E-06	6.75E-06	9.24E-06	1.17E-05	1.42E-05	1.66E-05	1.90E-05
ac228	2.26E-17	3.90E-17	6.02E-17	8.56E-17	1.15E-16	1.48E-16	1.83E-16
th226	2.37E-05	9.33E-10	3.67E-14	1.44E-18	5.67E-23	2.23E-27	.00E+00
th227	6.03E-04	1.01E-03	1.39E-03	1.78E-03	2.12E-03	2.49E-03	2.85E-03
th228	7.10E-01	1.40E+00	2.20E+00	3.02E+00	3.82E+00	4.56E+00	5.23E+00
th229	4.27E-06	4.70E-06	5.14E-06	5.60E-06	6.07E-06	6.56E-06	7.07E-06
th230	6.02E-03	7.82E-03	9.62E-03	1.14E-02	1.32E-02	1.51E-02	1.69E-02
th232	2.05E-09	2.85E-09	3.73E-09	4.56E-09	5.40E-09	6.24E-09	7.07E-09
pa231	7.88E-03	8.05E-03	8.19E-03	8.34E-03	8.49E-03	8.63E-03	8.78E-03
u230	1.87E-05	7.34E-10	2.89E-14	1.13E-18	4.46E-23	1.76E-27	.00E+00
u231	7.25E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u232	2.49E+00	3.69E+00	4.59E+00	5.35E+00	5.98E+00	6.44E+00	6.83E+00
u233	4.98E-03	5.16E-03	5.35E-03	5.55E-03	5.74E-03	5.94E-03	6.14E-03
u234	2.52E+02	2.52E+02	2.53E+02	2.54E+02	2.54E+02	2.55E+02	2.55E+02
u235	5.03E+00	5.03E+00	5.03E+00	5.03E+00	5.03E+00	5.03E+00	5.03E+00
u236	3.58E+01	3.58E+01	3.58E+01	3.58E+01	3.58E+01	3.58E+01	3.58E+01
u238	4.25E+01	4.25E+01	4.25E+01	4.25E+01	4.25E+01	4.25E+01	4.25E+01
np235	3.81E-05	2.24E-05	1.31E-05	7.71E-06	4.53E-06	2.66E-06	1.56E-06
np237	4.24E+01	4.31E+01	4.31E+01	4.31E+01	4.31E+01	4.32E+01	4.32E+01
pu236	2.11E+02	1.74E+02	1.42E+02	1.17E+02	9.55E+01	7.82E+01	6.41E+01
pu237	4.58E-03	4.30E-05	4.02E-07	3.77E-09	3.53E-11	3.31E-13	3.10E-15
pu238	4.11E+05	4.39E+05	4.43E+05	4.43E+05	4.40E+05	4.38E+05	4.35E+05

1

neutron source intensity as a function of time

0

sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
alpha-n neutron source, neutrons/sec/basis
basis = single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
pu239	1.10E+05	1.11E+05	1.11E+05	1.11E+05	1.11E+05	1.11E+05	1.11E+05
pu240	1.05E+05	1.05E+05	1.05E+05	1.05E+05	1.05E+05	1.05E+05	1.05E+05
pu241	5.56E+02	5.34E+02	5.13E+02	4.93E+02	4.73E+02	4.54E+02	4.37E+02
pu242	1.57E+02	1.57E+02	1.57E+02	1.57E+02	1.57E+02	1.57E+02	1.57E+02
pu244	8.07E-15	2.77E-14	4.74E-14	6.71E-14	8.68E-14	1.06E-13	1.26E-13
am239	3.45E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am240	5.15E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am241	5.04E+04	9.75E+04	1.43E+05	1.89E+05	2.28E+05	2.67E+05	3.06E+05
am242m	1.46E+01	1.45E+01	1.45E+01	1.44E+01	1.44E+01	1.43E+01	1.42E+01
am243	1.51E+03	1.51E+03	1.51E+03	1.51E+03	1.51E+03	1.51E+03	1.51E+03
cm241	1.15E-04	1.85E-07	2.97E-10	4.78E-13	7.70E-16	1.24E-18	1.99E-21
cm242	1.05E+07	2.89E+06	7.94E+05	2.21E+05	6.37E+04	2.07E+04	8.87E+03
cm243	3.38E+03	3.32E+03	3.25E+03	3.18E+03	3.12E+03	3.06E+03	3.00E+03

cm244	1.30E+05	1.26E+05	1.22E+05	1.18E+05	1.14E+05	1.11E+05	1.07E+05
cm245	6.55E+00	6.55E+00	6.55E+00	6.55E+00	6.55E+00	6.55E+00	6.55E+00
cm246	7.41E-01	7.41E-01	7.41E-01	7.41E-01	7.41E-01	7.41E-01	7.41E-01
cm247	1.72E-06	1.72E-06	1.72E-06	1.72E-06	1.72E-06	1.72E-06	1.72E-06
cm248	4.09E-06	4.09E-06	4.09E-06	4.09E-06	4.09E-06	4.09E-06	4.09E-06
cm250	4.25E-14	4.25E-14	4.25E-14	4.25E-14	4.25E-14	4.25E-14	4.25E-14
bk249	2.95E-07	1.53E-07	7.90E-08	4.09E-08	2.11E-08	1.09E-08	5.65E-09
cf249	1.29E-05	4.70E-05	6.45E-05	7.35E-05	7.81E-05	8.04E-05	8.16E-05
cf250	2.27E-04	2.18E-04	2.09E-04	2.00E-04	1.91E-04	1.83E-04	1.75E-04
cf251	1.45E-06	1.45E-06	1.45E-06	1.45E-06	1.44E-06	1.44E-06	1.44E-06
cf252	1.66E-04	1.34E-04	1.07E-04	8.63E-05	6.94E-05	5.58E-05	4.48E-05
cf253	2.36E-08	1.69E-13	1.22E-18	8.73E-24	6.27E-29	.00E+00	.00E+00
cf254	2.47E-12	7.55E-14	2.31E-15	7.06E-17	2.16E-18	6.60E-20	2.02E-21
es253	7.89E-06	2.07E-09	8.24E-14	2.89E-18	9.62E-23	3.21E-27	.00E+00
es254	9.36E-09	4.35E-09	2.03E-09	9.42E-10	4.38E-10	2.04E-10	9.48E-11
es255	9.38E-11	4.21E-13	1.88E-15	8.42E-18	3.77E-20	1.68E-22	7.53E-25
0 total	1.13E+07	3.77E+06	1.72E+06	1.19E+06	1.07E+06	1.06E+06	1.08E+06

1

neutron source intensity as a function of time

0

sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
spontaneous fission neutron source, neutrons/sec/basis
basis = single reactor assembly

	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
th230	1.55E-07	2.01E-07	2.47E-07	2.93E-07	3.40E-07	3.86E-07	4.33E-07
pa231	9.88E-07	1.01E-06	1.03E-06	1.05E-06	1.06E-06	1.08E-06	1.10E-06
u232	1.53E-04	2.24E-04	2.82E-04	3.25E-04	3.66E-04	3.96E-04	4.19E-04
u234	5.42E-01	5.43E-01	5.44E-01	5.46E-01	5.47E-01	5.48E-01	5.50E-01
u235	6.15E-02	6.15E-02	6.15E-02	6.15E-02	6.15E-02	6.15E-02	6.15E-02
u236	5.38E+00	5.38E+00	5.38E+00	5.38E+00	5.38E+00	5.38E+00	5.38E+00
u237	3.03E-06	1.95E-11	1.88E-11	1.80E-11	1.73E-11	1.66E-11	1.60E-11
u238	6.00E+03	6.00E+03	6.00E+03	6.00E+03	6.00E+03	6.00E+03	6.00E+03
u239	1.66E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np236	5.88E-08	5.88E-08	5.88E-08	5.88E-08	5.88E-08	5.88E-08	5.88E-08
np238	9.14E-06	4.27E-12	4.25E-12	4.23E-12	4.22E-12	4.20E-12	4.18E-12
np239	3.38E-02	1.56E-08	1.56E-08	1.56E-08	1.56E-08	1.56E-08	1.56E-08
pu236	1.43E+01	1.17E+01	9.63E+00	7.89E+00	6.46E+00	5.30E+00	4.34E+00
pu238	7.59E+04	8.10E+04	8.19E+04	8.17E+04	8.13E+04	8.08E+04	8.03E+04
pu239	5.91E+01	5.95E+01	5.95E+01	5.95E+01	5.95E+01	5.95E+01	5.95E+01
pu240	6.98E+05	6.98E+05	6.98E+05	6.98E+05	6.98E+05	6.98E+05	6.98E+05
pu241	2.00E+01	1.92E+01	1.85E+01	1.77E+01	1.70E+01	1.64E+01	1.57E+01
pu242	1.22E+05	1.22E+05	1.22E+05	1.22E+05	1.22E+05	1.22E+05	1.22E+05
pu243	6.67E-04	7.45E-17	7.45E-17	7.45E-17	7.45E-17	7.45E-17	7.45E-17
pu244	1.93E-09	6.64E-09	1.13E-08	1.60E-08	2.08E-08	2.55E-08	3.02E-08
am241	1.94E+01	3.75E+01	5.49E+01	7.16E+01	8.78E+01	1.03E+02	1.18E+02
am242m	6.94E+01	6.91E+01	6.88E+01	6.86E+01	6.83E+01	6.80E+01	6.77E+01
am242	2.67E+02	7.51E-02	7.48E-02	7.44E-02	7.41E-02	7.38E-02	7.35E-02
am243	6.95E+00	6.95E+00	6.95E+00	6.95E+00	6.95E+00	6.95E+00	6.95E+00
am244	6.80E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm242	5.22E+07	1.44E+07	3.97E+06	1.10E+06	3.18E+05	1.03E+05	4.43E+04
cm243	7.35E+01	7.20E+01	7.06E+01	6.91E+01	6.78E+01	6.64E+01	6.51E+01
cm244	1.69E+07	1.64E+07	1.59E+07	1.54E+07	1.49E+07	1.44E+07	1.40E+07
cm245	1.78E+00	1.78E+00	1.78E+00	1.78E+00	1.78E+00	1.78E+00	1.78E+00
cm246	2.67E+04	2.67E+04	2.67E+04	2.67E+04	2.67E+04	2.67E+04	2.67E+04
cm248	6.70E+01	6.70E+01	6.70E+01	6.70E+01	6.70E+01	6.70E+01	6.70E+01
cm250	1.83E-05	1.83E-05	1.83E-05	1.83E-05	1.83E-05	1.83E-05	1.83E-05
bk249	1.63E-03	8.42E-04	4.35E-04	2.25E-04	1.16E-04	6.03E-05	3.12E-05
cf249	7.83E-06	2.86E-05	3.92E-05	4.47E-05	4.75E-05	4.89E-05	4.96E-05

	cf250	1.49E+01	1.48E+01	1.46E+01	1.44E+01	1.40E+01	1.32E+01	1.17E+01
	cf252	5.82E+02	4.68E+02	3.76E+02	3.02E+02	2.43E+02	1.95E+02	1.57E+02
	cf254	1.06E-01	3.24E-03	9.91E-05	3.03E-06	9.27E-08	2.83E-09	8.67E-11
	es253	5.85E-05	1.54E-08	6.13E-13	2.12E-17	7.16E-22	2.40E-26	8.08E-31
	es255	2.70E-07	1.21E-09	5.42E-12	2.42E-14	1.08E-16	4.85E-19	2.17E-21
0	total	7.00E+07	3.18E+07	2.08E+07	1.74E+07	1.62E+07	1.55E+07	1.50E+07
0	total	8.13E+07	3.55E+07	2.25E+07	1.86E+07	1.72E+07	1.68E+07	1.60E+07

1

alpha-n neutron source spectrum as a function of time
(using reaction spectra for uranium dioxide)

0

sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
alpha-n neutron spectra, neutrons/sec/basis
basis = single reactor assembly

	boundaries, mev	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
1	6.43E+00 - 2.00E+01	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
2	3.00E+00 - 6.43E+00	4.957E+06	1.553E+06	6.080E+05	3.278E+05	2.469E+05	2.269E+05	2.256E+05
3	1.85E+00 - 3.00E+00	5.320E+06	1.812E+06	8.610E+05	6.208E+05	5.717E+05	5.719E+05	5.845E+05
4	1.40E+00 - 1.85E+00	7.028E+05	2.721E+05	1.616E+05	1.423E+05	1.442E+05	1.490E+05	1.538E+05
5	9.00E-01 - 1.40E+00	2.409E+05	1.072E+05	7.586E+04	7.450E+04	7.877E+04	8.248E+04	8.545E+04
6	4.00E-01 - 9.00E-01	3.964E+04	2.217E+04	1.912E+04	2.061E+04	2.248E+04	2.376E+04	2.468E+04
7	1.00E-01 - 4.00E-01	7.422E+03	3.864E+03	3.159E+03	3.328E+03	3.603E+03	3.798E+03	3.941E+03
8	1.70E-02 - 1.00E-01	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
9	3.00E-03 - 1.70E-02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
10	5.50E-04 - 3.00E-03	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
11	1.00E-04 - 5.50E-04	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
12	3.00E-05 - 1.00E-04	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
13	1.00E-05 - 3.00E-05	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
14	3.05E-06 - 1.00E-05	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
15	1.77E-06 - 3.05E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
16	1.30E-06 - 1.77E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
17	1.13E-06 - 1.30E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
18	1.00E-06 - 1.13E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
19	8.00E-07 - 1.00E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
20	4.00E-07 - 8.00E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
21	3.25E-07 - 4.00E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
22	2.25E-07 - 3.25E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
23	1.00E-07 - 2.25E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
24	5.00E-08 - 1.00E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
25	3.00E-08 - 5.00E-08	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
26	1.00E-08 - 3.00E-08	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
27	1.00E-11 - 1.00E-08	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0		1.127E+07	3.770E+06	1.724E+06	1.189E+06	1.067E+06	1.058E+06	1.078E+06

1

spontaneous fission neutron source spectrum as a function of time

0

sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
spontaneous fission neutron spectra, neutrons/sec/basis
basis = single reactor assembly

	boundaries, mev	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
1	6.43E+00 - 2.00E+01	1.333E+06	6.018E+05	3.925E+05	3.284E+05	3.043E+05	2.913E+05	2.817E+05
2	3.00E+00 - 6.43E+00	1.467E+07	6.651E+06	4.357E+06	3.653E+06	3.387E+06	3.244E+06	3.136E+06
3	1.85E+00 - 3.00E+00	1.595E+07	7.218E+06	4.717E+06	3.951E+06	3.662E+06	3.507E+06	3.391E+06
4	1.40E+00 - 1.85E+00	9.080E+06	4.131E+06	2.713E+06	2.278E+06	2.114E+06	2.025E+06	1.958E+06
5	9.00E-01 - 1.40E+00	1.246E+07	5.663E+06	3.718E+06	3.121E+06	2.895E+06	2.772E+06	2.681E+06

6	4.00E-01 - 9.00E-01	1.300E+07	6.259E+06	4.092E+06	3.427E+06	3.177E+06	3.043E+06	2.942E+06	
7	1.00E-01 - 4.00E-01	2.725E+06	1.290E+06	8.025E+05	6.715E+05	6.222E+05	5.958E+05	5.760E+05	
8	1.70E-02 - 1.00E-01	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
9	3.00E-03 - 1.70E-02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
10	5.50E-04 - 3.00E-03	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
11	1.00E-04 - 5.50E-04	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
12	3.00E-05 - 1.00E-04	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
13	1.00E-05 - 3.00E-05	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
14	3.05E-06 - 1.00E-05	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
15	1.77E-06 - 3.05E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
16	1.30E-06 - 1.77E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
17	1.13E-06 - 1.30E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
18	1.00E-06 - 1.13E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
19	8.00E-07 - 1.00E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
20	4.00E-07 - 8.00E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
21	3.25E-07 - 4.00E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
22	2.25E-07 - 3.25E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
23	1.00E-07 - 2.25E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
24	5.00E-08 - 1.00E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
25	3.00E-08 - 5.00E-08	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
26	1.00E-08 - 3.00E-08	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
27	1.00E-11 - 1.00E-08	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	
0		7.004E+07	3.175E+07	2.079E+07	1.743E+07	1.616E+07	1.548E+07	1.498E+07	
1									

total (alpha-n plus spon. fission) neutron source spectrum as a function of time
(using reaction spectra for uranium dioxide)

0 sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp
neutron spectra, neutrons/sec/basis
basis = single reactor assembly

boundaries, mev	initial	304.4 d	608.8 d	913.1 d	1217.5 d	1521.9 d	1826.3 d
1 6.43E+00 - 2.00E+01	1.333E+06	6.018E+05	3.925E+05	3.284E+05	3.043E+05	2.913E+05	2.817E+05
2 3.00E+00 - 6.43E+00	1.962E+07	8.204E+06	4.960E+06	3.980E+06	3.634E+06	3.471E+06	3.362E+06
3 1.85E+00 - 3.00E+00	2.127E+07	9.080E+06	5.578E+06	4.572E+06	4.234E+06	4.079E+06	3.975E+06
4 1.40E+00 - 1.85E+00	9.783E+06	4.403E+06	2.875E+06	2.421E+06	2.258E+06	2.174E+06	2.111E+06
5 9.00E-01 - 1.40E+00	1.270E+07	5.770E+06	3.794E+06	3.195E+06	2.974E+06	2.855E+06	2.766E+06
6 4.00E-01 - 9.00E-01	1.387E+07	6.281E+06	4.111E+06	3.448E+06	3.200E+06	3.066E+06	2.966E+06
7 1.00E-01 - 4.00E-01	2.732E+05	1.254E+05	8.057E+05	6.748E+05	6.258E+05	5.995E+05	5.799E+05
8 1.70E-02 - 1.00E-01	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
9 3.00E-03 - 1.70E-02	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
10 5.50E-04 - 3.00E-03	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
11 1.00E-04 - 5.50E-04	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
12 3.00E-05 - 1.00E-04	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
13 1.00E-05 - 3.00E-05	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
14 3.05E-06 - 1.00E-05	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
15 1.77E-06 - 3.05E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
16 1.30E-06 - 1.77E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
17 1.13E-06 - 1.30E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
18 1.00E-06 - 1.13E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
19 8.00E-07 - 1.00E-06	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
20 4.00E-07 - 8.00E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
21 3.25E-07 - 4.00E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
22 2.25E-07 - 3.25E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
23 1.00E-07 - 2.25E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
24 5.00E-08 - 1.00E-07	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
25 3.00E-08 - 5.00E-08	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
26 1.00E-08 - 3.00E-08	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
27 1.00E-11 - 1.00E-08	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00

0 8.1912+07 3.552E+07 2.258E+07 1.852E+07 1.725E+07 1.654E+07 1.604E+07
1
1 * gamma sources determined *
0case applies the following photon data base
master photon library
in binary mode
0 the sources include photons of nuclides for...

light elements
actinides
fission products
1 gamma source spectrum for gamma lines (sas2)
0 1826.25 day time of the requested nuclides
0 energy interval in mev photons / second mev / second
0

	1.0000E-02 to	5.0000E-02	6.8561E+14	2.0568E+13
	5.0000E-02 to	1.0000E-01	2.0809E+14	1.5231E+13
	1.0000E-01 to	2.0000E-01	1.6111E+14	2.4167E+13
	2.0000E-01 to	3.0000E-01	4.5083E+13	1.1271E+13
	3.0000E-01 to	4.0000E-01	3.1358E+13	1.0975E+13
	4.0000E-01 to	6.0000E-01	2.2631E+14	1.1315E+14
	6.0000E-01 to	8.0000E-01	1.0168E+15	7.1177E+14
	8.0000E-01 to	1.0000E+00	9.6947E+13	8.7252E+13
	1.0000E+00 to	1.3300E+00	3.6226E+13	4.2204E+13
	1.3300E+00 to	1.6600E+00	7.9534E+12	1.1860E+13
	1.6600E+00 to	2.0000E+00	4.2814E+11	8.0192E+11
	2.0000E+00 to	2.5000E+00	1.1466E+12	2.5799E+12
	2.5000E+00 to	3.0000E+00	3.0775E+10	8.4631E+10
	3.0000E+00 to	4.0000E+00	3.7983E+09	1.3294E+10
	4.0000E+00 to	5.0000E+00	5.2258E+05	2.3516E+06
	5.0000E+00 to	6.5000E+00	2.0954E+05	1.2048E+06
	6.5000E+00 to	8.0000E+00	4.1069E+04	2.9775E+05
	8.0000E+00 to	1.0000E+01	8.7149E+03	7.8634E+04
0	totals		2.5121E+15	1.0519E+15

0
0 total energy from nuclides with spectrum data = 1.0519E+15
0 total energy from nuclides with no spectrum data = 6.4491E+09
1
0 .results on logical unit no. 71, position 2, for time step 6, subcase10. (run position 1, case position 2)
title: sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp
0 .terminated logical unit no. 71 with zero flag record.
1 * normal termination of execution *
0 table of contents for material tables
0 case or subcase printed page

1	1
2	3
3	6
4	9
5	12
6	15
7	18
8	21
9	24
10	27

0nbset 33

33	4	1	27	6	0	0	0	0	0
0	0	0	0	0	2	-1	1698	650	130
880	7985	0	5	99	2	16	96	18	18
18	0	71							

```
0       56q array has      20 entries.
0       57q array has       3 entries.
0        1q array has      20 entries.
0        1q array has      10 entries.
     L90  87162
     L116  49981
     L32  33663 rudata (library) storage size
     L44  33734
     L103  65583
0       60q array has       1 entries.
0       61q array has       7 entries.
0       65q array has      63 entries.
0       73q array has       4 entries.
0       74q array has       4 entries.
0       75q array has       4 entries.
     L140  56777
     used  88136 in size  200000
0jcpt          12
               5          0          0          0          0          0          0          0          0          0
               0          0
0therm          4
 5.091676E-01 3.604486E-01 2.731459E+00 1.000000E-31
0non            5
            7985         20          6         18       1697
0mm            19
               0          1          0          0          1         -1          0          0          0          0
              21        100          4          4          3          0          4          0          0
0tconst         5
 8.640000E+04 1.000000E-20  .000000E+00  .000000E+00 1.000000E-08
0mzero          4
               0        689        129        879
0pow            3
  .000000E+00  .000000E+00  .000000E+00
0 lirp          9
               6          0         51         26          2       3000       1000       1697         94
0 case or subcase    1  sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       57q array has       4 entries.
0        1q array has      20 entries.
0        1q array has      10 entries.
     L90  93972
     L116  57212
     L32  33663 rudata (library) storage size
     L44  33734
     L103  72497
0       58q array has       5 entries.
0       60q array has       5 entries.
0       66q array has       1 entries.
0       73q array has       4 entries.
0       74q array has       4 entries.
0       75q array has       4 entries.
     L140  63587
     used  96742 in size  200000
```

```
0jopt          12
          5          0          0          0          0          0          0          0          0          0
          0          0
0therm          4
 5.091676E-01 3.604486E-01 2.731459E+00 1.000000E-31
0ncn            5
       7935         20          6         18       1697
0mm            19
          5          5          0          0          1          3          0          0          0          0
         21        100          4          4          3         74          4          1          0
0tconst         5
 8.640000E+04 1.000000E-20 5.000000E+00  .000000E+00 1.000000E-08
0nzero          4
         12        689        129        879
0pow            3
  .000000E+00  .000000E+00  .000000E+00
0 lirp          9
          6          0         51         26          2       3000       1000       1697         94
 n-gamma, fission and total mev/fission =          4.4180E+00 1.9429E+02 1.9871E+02
 start of interval flux =        1.71666E+13
 n-gamma, fission and total mev/fission =          4.8296E+00 1.9446E+02 1.9929E+02
 start of interval flux =        1.70887E+13
 n-gamma, fission and total mev/fission =          4.9247E+00 1.9462E+02 1.9955E+02
 start of interval flux =        1.69221E+13
 n-gamma, fission and total mev/fission =          5.0218E+00 1.9477E+02 1.9980E+02
 start of interval flux =        1.68318E+13
 n-gamma, fission and total mev/fission =          5.1227E+00 1.9491E+02 2.0004E+02
 start of interval flux =        1.67630E-02
0 case or subcase    2  sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0ndset         33
         33          4          2         27          6          0          0          0          0          0
          0          0          0          0          0          2         -1       1698        690        130
        880       7935          0          5         99          2         16         96         18         18
         18          0         71
0      56q array has      1 entries.
0      56q array has      1 entries.
0      56q array has      1 entries.
0      56q array has      1 entries.
0      56q array has      1 entries.
0      56q array has      1 entries.
0      56q array has      1 entries.
0      56q array has      1 entries.
0      57q array has      4 entries.
0       1q array has     20 entries.
0       1q array has     10 entries.
    l90  98972
    l116  57212
    l32  33663 nudata (library) storage size
    l44  33734
    l108  72497
0      58q array has      5 entries.
0      60q array has      5 entries.
0      66q array has      1 entries.
    l140  63587
    used   96742 in size  200000
0jopt          12
          5          0          0          0          0          0          0          0          0          0
          0          0
0therm          4
 5.091676E-01 3.604486E-01 2.731459E+00 1.000000E-31
```

```
0nen            5
        7935          20           6          18        1697
0mm            19
           5           5           0           0           1           3           0           0           0           5
          21         100           0           4           3          74           4           1           0
0tconst         5
  8.640000E+04 1.600064E+02 2.900000E+01  .000000E+00 1.000000E-08
0mzero          4
          16         689         129         879
0pow            3
  7.250000E+00 1.159993E+03 1.694262E+13
0 lirp          9
           6           0          51          26           2        3000        1000        1697          94
 n-gamma, fission and total nev/fission =            5.2408E+00  1.9492E+02  2.0016E+02
 start of interval flux =          1.6520E+13
 n-gamma, fission and total nev/fission =            5.3397E+00  1.9505E+02  2.0039E+02
 start of interval flux =          1.6459E+13
 n-gamma, fission and total nev/fission =            5.4422E+00  1.9518E+02  2.0062E+02
 start of interval flux =          1.6411BE+13
 n-gamma, fission and total nev/fission =            5.5462E+00  1.9530E+02  2.0085E+02
 start of interval flux =          1.6377BE+13
 n-gamma, fission and total nev/fission =            5.6512E+00  1.9542E+02  2.0107E+02
 start of interval flux =          1.6355BE-02
0 case or subcase    3  sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0ndset          33
          33           4           3          27           6           0           0           0           0           0
           0           0           0           0           0           2          -1        1698         650         130
         880        7935           0           5          99           2          16          96          18          18
          18           0          71
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       57q array has       4 entries.
0        1q array has      20 entries.
0        1q array has      10 entries.
     l90  99972
     l116  57212
     l32  33663 nudata (library) storage size
     l44  33734
     l103  72697
0       58q array has       5 entries.
0       60q array has       5 entries.
0       66q array has       1 entries.
     l140  63587
     used   96742 in size  200000
0jopt           12
           5           0           0           0           0           0           0           0           0           0
           0           0
0therm          4
  5.091678E-01 3.604488E-01 2.731459E+00 1.000000E-31
0nen            5
        7935          20           6          18        1697
0mm            19
           5           5           0           0           1           3           0           0           0           5
          21         100           0           4           3          74           4           1           0
```

```
Otconst          5
  8.640000E+04 3.200192E+02 2.600000E+01  .000000E+00 1.000000E-08
Onzero           4
          16          689          129          879
Opow             3
  7.250000E+00 2.319985E+03 1.642759E+13
0 lirp           9
           6            0           51           26            2         3000         1000         1697           94
 n-gamma, fission and total mev/fission =              5.7355E+00   1.9541E+02   2.0115E+02
 start of interval flux =          1.61872E+13
 n-gamma, fission and total mev/fission =              5.8325E+00   1.9552E+02   2.0136E+02
 start of interval flux =          1.61661E+13
 n-gamma, fission and total mev/fission =              5.9353E+00   1.9563E+02   2.0157E+02
 start of interval flux =          1.61526E+13
 n-gamma, fission and total mev/fission =              6.0589E+00   1.9574E+02   2.0178E+02
 start of interval flux =          1.61473E+13
 n-gamma, fission and total mev/fission =              6.1413E+00   1.9584E+02   2.0198E+02
 start of interval flux =          1.61492E-02
0 case or subcase    4  sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp
Ondset           33
          33           4           4          27           6           0           0           0           0           0
           0           0           0           0           0           2          -1        1698         650         130
         880        7935           0           5          99           2          16          96          18          18
          18           0          71
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       57q array has       4 entries.
0        1q array has      20 entries.
0        1q array has      10 entries.
     l90  98972
     l116  57212
     l32  33663 nudata (library) storage size
     l44  33734
     l103  72497
0       58q array has       5 entries.
0       60q array has       5 entries.
0       66q array has       1 entries.
     l140  63587
     used   96742 in size   200000
Ojcpt            12
          5            0            0            0            0            0            0            0            0            0
          0            0
Otherm           4
  5.091678E-01 3.604886E-01 2.731459E+00 1.000000E-31
Onon             5
       7935           20            6           18         1697
Onmn            19
          5            5            0            0            1            3            0            0            0            5
         21          100            0            4            3           74            4            1            0
Otconst          5
  8.640000E+04 4.800385E+02 2.900000E+01  .000000E+00 1.000000E-08
Onzero           4
          16          689          129          879
Opow             3
```

```
  7.249999E+00 3.479978E+03 1.616451E+13
0 lirp          9
          6          0         51         26          2       3000       1000       1697         94
 n-gamma, fission and total mev/fission =              6.1975E+00  1.9583E+02  2.0208E+02
 start of interval flux =          1.60283E+13
 n-gamma, fission and total mev/fission =              6.2896E+00  1.9593E+02  2.0222E+02
 start of interval flux =          1.60310E+13
 n-gamma, fission and total mev/fission =              6.3902E+00  1.9602E+02  2.0241E+02
 start of interval flux =          1.60378E+13
 n-gamma, fission and total mev/fission =              6.4905E+00  1.9612E+02  2.0261E+02
 start of interval flux =          1.60502E+13
 n-gamma, fission and total mev/fission =              6.5905E+00  1.9621E+02  2.0280E+02
 start of interval flux =          1.60674E-02
0 case or subcase    5  sas2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp
0ndset          33
         33         4         5        27         6         0         0         0         0
          0         0         0         0         0         2        -1      1698       690       130
        880      7985         0         5        99         2        16        96        18        18
         18         0        71
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       57q array has       4 entries.
0        1q array has      20 entries.
0        1q array has      10 entries.
     l90   95972
     l116  57212
     l32   33663 nuclide (library) storage size
     l44   33734
     l108  72697
0       58q array has       5 entries.
0       60q array has       5 entries.
0       66q array has       1 entries.
     l140  63587
     used   96742 in size   200000
0jcpt           12
          5         0         0         0         0         0         0         0         0         0
          0         0
0therm          4
  5.091676E-01 3.604486E-01 2.731459E+00 1.000000E-31
0non            5
       7935        20         6        18      1697
0mm            19
          5         5         0         0         1         3         0         0         0         5
         21       100         0         4         3        74         4         1         0
0tconst         5
  8.640000E+04 6.400641E+02 2.900000E+01  .000000E+00 1.000000E-08
0mzero          4
         16       689       129       879
0pow            3
  7.250002E+00 4.639970E+03 1.604761E+13
0 lirp          9
          6          0         51         26          2       3000       1000       1697         94
 n-gamma, fission and total mev/fission =              6.6274E+00  1.9620E+02  2.0289E+02
 start of interval flux =          1.59778E+13
```

```
 n-gamma, fission and total mev/fission =          6.7144E+00    1.9629E+02    2.0300E+02
 start of interval flux =       1.59963E+13
 n-gamma, fission and total mev/fission =          6.8126E+00    1.9637E+02    2.0319E+02
 start of interval flux =       1.60171E+13
 n-gamma, fission and total mev/fission =          6.9104E+00    1.9646E+02    2.0337E+02
 start of interval flux =       1.60417E+13
 n-gamma, fission and total mev/fission =          7.0078E+00    1.9654E+02    2.0355E+02
 start of interval flux =       1.60697E-02
0 case or subcase    6  ses2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0nbset          33
          33          4          6         27          6          0          0          0          0          0
           0          0          0          0          0          2         -1       1698        690        130
         880       7935          0          5         99          2         16         96         18         18
          18          0         71
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       57q array has      4 entries.
0        1q array has     20 entries.
0        1q array has     10 entries.
     l90  93972
     l116 57212
     l32  33663 nudata (library) storage size
     l44  33734
     l103 72497
0       58q array has      5 entries.
0       60q array has      5 entries.
0       66q array has      1 entries.
     l140 63587
     used   96742 in size  200000
0jqpt           12
           5          0          0          0          0          0          0          0          0          0
           0          0
0therm          4
 5.091678E-01 3.604886E-01 2.731459E+00 1.000000E-31
0nan            5
        7935         20          6         18       1697
0mm            19
           5          5          0          0          1          3          0          0          0          5
          21        100          0          4          3         74          4          1          0
0tconst         5
 8.640000E+04 8.000961E+02 2.800000E+01  .000000E+00 1.000000E-08
0nzero          4
          16        689        129        879
0pow            3
 7.250000E+00 5.799963E+03 1.602551E+13
0 lirp          9
           6          0         51         26          2       3000       1000       1697         94
 n-gamma, fission and total mev/fission =          7.0520E+00    1.9653E+02    2.0356E+02
 start of interval flux =       1.60012E+13
 n-gamma, fission and total mev/fission =          7.1140E+00    1.9661E+02    2.0372E+02
 start of interval flux =       1.60313E+13
 n-gamma, fission and total mev/fission =          7.2102E+00    1.9669E+02    2.0390E+02
 start of interval flux =       1.60621E+13
 n-gamma, fission and total mev/fission =          7.3057E+00    1.9677E+02    2.0407E+02
```

```
 start of interval flux =        1.60956E+13
 n-gamma, fission and total mev/fission =            7.4007E+00      1.9684E+02      2.0424E+02
 start of interval flux =        1.61315E-02
0 case or subcase    7  sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0ndset          33
          33          4          7         27          6          0          0          0          0          0
           0          0          0          0          0          2         -1       1698        690        130
         880       7955          0          5         99          2         16         96         18         18
          18          0         71
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       56q array has      1 entries.
0       57q array has      4 entries.
0        1q array has     20 entries.
0        1q array has     10 entries.
     l90  93972
     l116  57212
     l32  33663 rudata (library) storage size
     l44  33734
     l103  72497
0       58q array has      5 entries.
0       60q array has      5 entries.
0       66q array has      1 entries.
     l140  63587
     used   96742 in size   200000
0jqpt           12
           5          0          0          0          0          0          0          0          0          0
           0          0
0therm           4
  5.091675E-01 3.604886E-01 2.731459E+00 1.000000E-31
0nan            5
        7955         20          6         18       1697
0mm             19
           5          5          0          0          1          3          0          0          0          5
          21        100          0          4          3         74          4          1          0
0tconst         5
  8.640000E+04 9.601346E+02 2.900000E+01  .000000E+00 1.000000E-08
0mzero          4
          16        689        129        879
0paw            3
  7.250001E+00 6.959956E+03 1.606958E+13
0 lirp          9
           6          0         51         26          2       3000       1000       1697         94
 n-gamma, fission and total mev/fission =            7.4172E+00      1.9683E+02      2.0425E+02
 start of interval flux =        1.60782E+13
 n-gamma, fission and total mev/fission =            7.4945E+00      1.9691E+02      2.0440E+02
 start of interval flux =        1.61169E+13
 n-gamma, fission and total mev/fission =            7.5869E+00      1.9698E+02      2.0457E+02
 start of interval flux =        1.61552E+13
 n-gamma, fission and total mev/fission =            7.6825E+00      1.9705E+02      2.0473E+02
 start of interval flux =        1.61953E+13
 n-gamma, fission and total mev/fission =            7.7755E+00      1.9712E+02      2.0490E+02
 start of interval flux =        1.62571E-02
0 case or subcase    8  sas2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0ndset          33
```

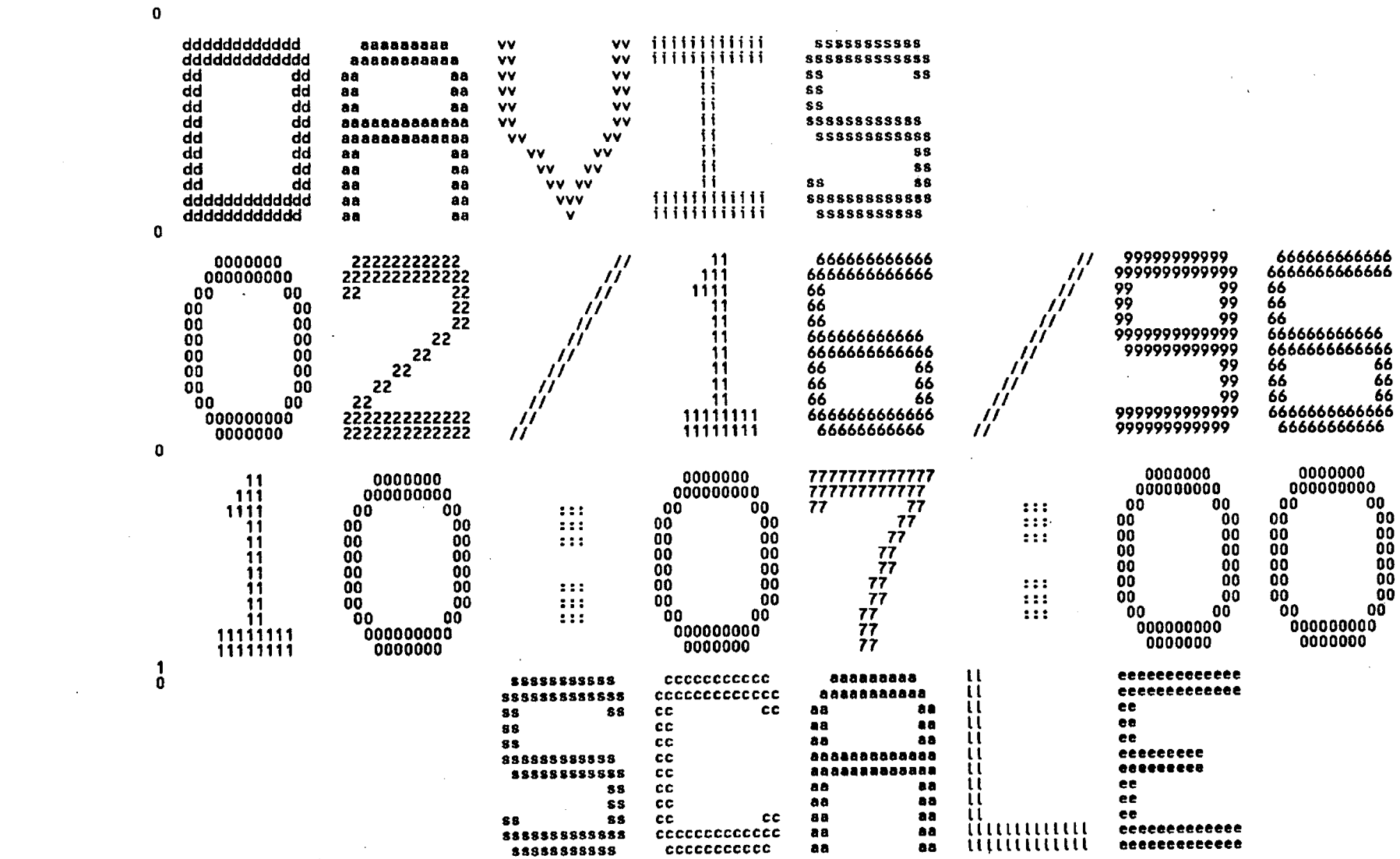
```
          15          4          1         27          6          0          0          0          0          0
           0          0          0          0          0          2         -1       1698        690        130
         880       7935          0          5         99          2         16         96         18         18
          18          0         71
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       57q array has       4 entries.
0        1q array has      20 entries.
0        1q array has      10 entries.
     l90   92270
     l116  55405
     l32   33663 nuclide (library) storage size
     l44   33734
     l103  70769
0       58q array has       4 entries.
0       60q array has       4 entries.
0       66q array has       1 entries.
     l140  61885
     used   94591 in size   200000
0jcpt          12
          5          0          0          0          0          0          0          0          0          0
          0          0
0therm         4
  5.134401E-01 4.563286E-01 3.548801E+00 1.000000E-31
0nan           5
       7935         20          6         18       1697
0mm           19
          4          4          0          0          1          1          0          0          0          5
         21        100          0          4          3         74          4          1          0
0tconst        5
  8.640000E+04 1.120179E+03 2.800000E+01  .000000E+00 1.000000E-08
0mzero         4
         16        689        129        879
0pow           3
  7.250000E+00 8.119948E+03 1.616192E+13
0 lirp         9
          6          0         51         26          2       3000       1000       1697         94
 n-gamma, fission and total mev/fission =          7.7875E+00 1.9711E+02 2.0490E+02
 start of interval flux =        1.61945E+13
 n-gamma, fission and total mev/fission =          7.8604E+00 1.9718E+02 2.0504E+02
 start of interval flux =        1.62397E+13
 n-gamma, fission and total mev/fission =          7.9532E+00 1.9725E+02 2.0520E+02
 start of interval flux =        1.62885E+13
 n-gamma, fission and total mev/fission =          8.0451E+00 1.9732E+02 2.0536E+02
 start of interval flux =        1.63286E+13
0 case or subcase    9  ses2h: babcock wilcox 15x15, 3.00w%, 20gwd/mtu burn high temp
0       56q array has      20 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
```

```
0       56q array has       1 entries.
0       57q array has       4 entries.
0        1q array has      20 entries.
0        1q array has      10 entries.
     l90   95662
     l116  59001
     l32   33663 nudata (library) storage size
     l44   33734
     l103  74213
0       60q array has       6 entries.
0       66q array has       1 entries.
0       61q array has       7 entries.
0       65q array has      63 entries.
0       81q array has       4 entries.
0       82q array has       6 entries.
0       83q array has      19 entries.
     l140  80695
     used    98881 in size   200000
0jqpt            12
             5          0          0          0          0          0          0          0          0          0
             0          0
0therm            4
  5.134401E-01 4.563286E-01 3.548801E+00 1.000000E-31
0ron              5
          7935         20          6         18       1697
0mm              19
             0          6          0          0          5          1          0          0          0          4
            21        100          0          4          3         74          2          1          0
0tconst           5
  8.640000E+04 1.000000E-19 2.900000E+01  .000000E+00 1.000000E-03
0mzero            4
            15        689        129        879
0pow              3
  7.250000E+00 9.279940E+03 1.626613E+13
0 lirp            9
             6          2         51         26          1      18418       1000       1697         94
0 case or subcase    10  sec2h: babcock wilcox 15x15, 3.00wt%, 20gwd/mtu burn high temp
0       56q array has      20 entries.
0       56q array has       1 entries.
0       56q array has       1 entries.
0       56q array has      20 entries.
0requested parm=halt8,skipcellwt,skipshipdata
  pass= 9, exec halts after pass   8
1
0     ************************************************************
      ************************************************************
0        information on the origen-s library produced
0
           dataset name:  ft33f001
0          logical unit number: 33
0          number of records:   68
0
      ************************************************************
      ************************************************************
0.....................................................
0 halt feature invoked stop 0
```

```
0*********************************************************************************
 *                                                                               *
 *                    scale4.2  bulletin  board                                  *
 *                    --------  --------  -----                                  *
 *                                                                               *
 *      welcome to the configuration controlled version of scale4.2.             *
 *      any problems should be reported to kay martin at 4-9213.                 *
 *                                                                               *
 *      updates that have been made from version 4.1 to 4.2 include:             *
 *                                                                               *
 *      nitawl:  parameter added to prevent exponent underflows for very         *
 *      dilute resonance calculations on workstation.  (mrr 93-011)              *
 *                                                                               *
 *      nitawl:   corrected discrepancies in maximum fractional energy loss      *
 *      of neutron in admixed moderator calculation and simpson rule             *
 *      calculation of collision density as documented in "improved              *
 *      calculation of flux shapes with the resonance shielding code             *
 *      nitawl", by j. oppe, ecn-i--93-003.  affects all calculations.           *
 *      impact will vary, but is insignificant for hydrogen-moderated            *
 *      systems. (mrr 93-030)                                                    *
 *                                                                               *
 *      sas4:  added option of axial source profile input for both radial        *
 *      and axial dose calculations. also added option idr = 2 for               *
 *      estimation to point detectors from collisions in both top and            *
 *      bottom halves of geometry.  (mrr 92-016)                                 *
 *                                                                               *
 *      morse:  modifications made for compatibility with the new options in     *
 *      sas4 (i.e., the axial source profile input option and                    *
 *      the option idr = 2 for estimation to point detectors from collisions     *
 *      in both top and bottom halves of geometry).  (mrr 92-016)                *
 *                                                                               *
 *      csas & keno-v.a:  error checking during input processing was added       *
 *      so that these modules terminate with an error message if input           *
 *      errors are encountered.  (mrr 93-013, 93-014, 93-015, 93-018)            *
 *                                                                               *
 *      keno-v.a:  corrections made for applying differential albedo             *
 *      boundary conditions to supergrouped problems where global unit           *
 *      contains only an array specification.  effect on keff is very large      *
 *      for this type of problem.  (mrr 93-033)                                  *
 *                                                                               *
 *      keno-v.a:  corrected an error introduced with modification on may 24,    *
 *      1993 (mrr 93-033). this error affected problems with mirror or           *
 *      periodic boundary conditions and could cause problem to loop, fail,      *
 *      or run incorrectly.                                                      *
 *                                                                               *
 *      xsdrnpm:  corrected calculation of number of direct access data          *
 *      blocks needed to weight the cross sections to prevent occasional         *
 *      failure.  improved calculation of balance tables.  (mrr 93-021)          *
 *                                                                               *
 *      origen-s:  modified program to read combined binary libraries that       *
 *      include multi-cycle cross sections.  add option to edit binary           *
 *      library.  (mrr 93-026)                                                   *
 *                                                                               *
 *      sas2:  modified to produce combined binary libraries for origen-s.       *
 *      (mrr 93-027)                                                             *
 *                                                                               *
 *      couple:  modified to allow combined binary libraries to be made by       *
 *      sas2.  (mrr 93-031)                                                      *
 *                                                                               *
 *      origen-s couple, sas2:  modified programs to accept the new updated      *
```

```
*      and expanded decay data and fission product yield libraries.  (mrr     *
*      92-088, 92-025, 92-026)                                                *
*                                                                             *
*      origen-s libraries:  the six standard origen-s card image libraries    *
*      have been replaced by two new libraries, end6dec and xsectpho.         *
*      end6dec contains the updated and expanded decay data library based     *
*      on endf/b-vi data.  xsectpho contains the basic cross section and      *
*      photon spectra data and updated fission product yield data based on    *
*      endf/b-v data.  (drr 92-006, 007, 008, 009, 010, and drr 93-001,       *
*      002, 003, 006, 008, 009)                                               *
*                                                                             *
*      std. comp. library:  in drr 92-033, the following nuclides were        *
*      changed to turn on resonance processing flag but should not have       *
*      been changed:  niss, fess, mnss, crss, niinconel, crinconel,           *
*      feinconel.  flags for these nuclides have now been returned to off.    *
*      (drr 93-014)                                                           *
*                                                                             *
*      heating7:  replaced heating6 with version 7.2.  (mrr 93-038)           *
*                                                                             *
*      htas1:  updated for compatibility with heating7 and to interact        *
*      effectively with ocular.  fin effectiveness technique was added.       *
*      (mrr 93-036)                                                           *
*                                                                             *
*      ocular:  made compatible with heating7 and htas1 on mainframe and      *
*      workstation.  (mrr 93-037)                                             *
*                                                                             *
*      sas2:  corrected so that 'parm=skipshipdata' would work on             *
*      workstation.  (mrr 93-051)                                             *
*                                                                             *
*      aim:  ft47ft001 is no longer require for aim to execute on             *
*      workstation.  (mrr 93-052)                                             *
*                                                                             *
*      27group, 27burnup, and 218group - these libraries have been            *
*      updated to correct an error found in the chlorine cross-sections.      *
*      (drr93-022)                                                            *
*                                                                             *
*      bonami:  corrected so that a case with a number density of zero        *
*      for a nuclide that has bondarenko data will run without failing.       *
*      (mrr 93-060)                                                           *
*                                                                             *
*      csas:  corrected calculation of dancoff correction factor for          *
*      cylindrical cells.  note that previous calculations of small           *
*      cylindrical cells (o.d. < 0.3 cm) gave non-conservative keff           *
*      values.  also corrected dancoff factor for multiregion slab            *
*      cell with vacuum boundary conditions to be set to zero.                *
*      (mrr 93-065)                                                           *
*                                                                             *
*      csas, sas1, sas2, sas3, sas4:  error in miplib was corrected.  for     *
*      resonance materials that are not part of the unit cell in lattice-     *
*      cell or multiregion problems, the dancoff factor defaulted  to -1.     *
*      check your nitawl output in any previous scale-4.2 calculations        *
*      for dancoff factors =-1.                                               *
*      (mrr 93-070)                                                           *
*                                                                             *
*******************************************************************************
1          primary module access and input record ( scale driver - 10/01/86 - 14:00 )
-    module origens  will be called
       0$$  a8 26 a11 71 e
       1$$ 1  1t
        b&w 15x15, 3.0%/20 Decay
```

```
      3$$ 21 0 1 e
      '   3$$ 21 0 1  a33  -88
      2t
      35$$ 0  t
      '  54$$ a8 1 e
      '   56$$ 0 7 a5 1 a13 -1 a15 3 0 4 e   5t
      56$$ 0 7 a13 -1 a15 3 0 4 e   5t
      Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay
      per B&W assembly, 0.409 mthm for grams
      60**  0 1 90 365.25 730.5 1826.25  3652.5
      '  61** f1-20
      '  65$$ a4 1 2z 1 2z 1 5z 1 2z 1
      '   a25 1 2z 1 2z 1 5z 1 2z 1
      '   a46 1 2z 1 2z 1 5z 1 2z 1 e
      65$$ a25 1 5z 0 a46 1 5z 0 e
      6t
      '   56$$ 0 -6 a10 1  e  t
      56$$ 0 10 a10 7 a14 5 a17 4 e  57** 10  e  5t
      60**  15 20 30 50 100 150 200 250 300 400
      '  61** f1-20
      '  65$$ a4 1 2z 1 2z 1 5z 1 2z 1
      '   a25 1 2z 1 2z 1 5z 1 2z 1
      '   a46 1 2z 1 2z 1 5z 1 2z 1 e
      65$$ a25 1 5z 0 a46 1 5z 0 e
      6t
      56$$ 0 10 a10 10 a14 5 a17 4 e  57** 400  e  5t
      60**  500 1+3 2+3 4+3 6+3 8+3 1+4 1.2+4 1.4+4 1.6+4
      '    61** f1-20
      65$$ a25 1 5z 0 a46 1 5z 0 e
      6t
      56$$ 0 10 a10 10 a14 5 a17 4 e  57** 1.6+4  e  5t
      60**  1.8+4 2.0+4 2.2+4 2.4+4 2.6+4 2.8+4 3+4 3.2+4 3.6+4 3.8+4
      '  61** f1-20
      65$$ a25 1 5z 0 a46 1 5z 0 e
      6t
      56$$ 0 10 a10 10 a14 5 a17 4 e  57** 3.8+4  e  5t
      60**  4+4 4.5+4 5+4 5.5+4 6+4 6.5+4 7+4 1+5 2+5 2.5+5
      '    61** f1-20
      65$$ a25 1 5z 0 a46 1 5z 0 e
      6t
      56$$ 0 3 a10 10 a14 5 a17 4 e  57** 2.5+5  e  5t
      60**  3+5 5+5 999999
      '  61** f1-20
      65$$ a25 1 5z 0 a46 1 5z 0 e
      6t
      '   56$$ 0 -10 a10 1 e  t
      56$$ f0  t
0   module origens  is finished. completion code     0. cpu time used     5.00 (seconds).
1    ooooooooooo    rrrrrrrrrrr    iiiiiiiiiii     ggggggggggg    eeeeeeeeeeeee   nn          nn   sssssssssss
   oooooooooooo    rrrrrrrrrrrr   iiiiiiiiiii    gggggggggggg   eeeeeeeeeeeee   nnn         nn  sssssssssssss
   oo          oo   rr          rr        ii        gg          gg   ee              nnnn        nn  ss          ss
   oo          oo   rr          rr        ii        gg               ee              nn nn       nn  ss
   oo          oo   rr          rr        ii        gg               ee              nn   nn     nn  ss
   oo          oo   rrrrrrrrrrrr         ii        gg    ggggggg    eeeeeeeee       nn    nn    nn  sssssssssss
   oo          oo   rrrrrrrrrrrr         ii        gg    ggggggg    eeeeeeeee       nn     nn   nn   sssssssssss
   oo          oo   rr        rr         ii        gg         gg    ee              nn      nn  nn              ss
   oo          oo   rr         rr        ii        gg         gg    ee              nn       nn nn              ss
   oo          oo   rr          rr       ii        gg         gg    ee              nn        nnnn  ss          ss
   oooooooooooo    rr           rr  iiiiiiiiiii    ggggggggggg    eeeeeeeeeeeee   nn         nnn  sssssssssssss
    oooooooooo    rr           rr  iiiiiiiiiii     ggggggggg    eeeeeeeeeeeee   nn          nn   sssssssssss
```



```
*********************************************************************************
*********************************************************************************
*********************************************************************************
*****                                                                       *****
*****                  program verification information                  *****
*****                                                                       *****
*****                 code system:    scale  version:    4.2              *****
*****                                                                       *****
*********************************************************************************
*********************************************************************************
*****                                                                       *****
*****                                                                       *****
*****              program:  origns                                         *****
*****                                                                       *****
*****        creation date:  04/27/95                                       *****
*****                                                                       *****
*****              library:  /neutronics/scale/exe                          *****
*****                                                                       *****
*****                                                                       *****
*****    this is not a   scale  configuration controlled code               *****
*****                                                                       *****
*****              jobname:  davis                                          *****
*****                                                                       *****
*****    date of execution:  02/16/96                                       *****
*****                                                                       *****
*****    time of execution:  10:07:00                                       *****
*****                                                                       *****
*****                                                                       *****
*********************************************************************************
*********************************************************************************
*********************************************************************************
```

```
1
1            * input echo * (with break between col. 1-72 and 73-80)
0        note:  only comments are permitted after column 72.
0--------------------only this is used as input data.--------------------          comment or title end
0..............................columns 1-72.............................               ..73-80.

 0$$  a8 26 a11 71 e
 1$$ 1  1t
  b&w 15x15, 3.0%/20 Decay
 3$$ 21 0 1 e
 '   3$$ 21 0 1  a33  -88
 2t
 35$$ 0  t
 '  54$$ a8 1 e
 '   56$$ 0 7 a5 1 a13 -1 a15 3 0 4 e   5t
 56$$ 0 7 a13 -1 a15 3 0 4 e   5t
 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay
 per B&W assembly, 0.409 mthm for grams
 60**  0 1 90 365.25 730.5 1826.25  3652.5
 '  61** f1-20
 '  65$$ a4 1 2z 1 2z 1 5z 1 2z 1
 '   a25 1 2z 1 2z 1 5z 1 2z 1
 '   a46 1 2z 1 2z 1 5z 1 2z 1 e
 65$$ a25 1 5z 0 a46 1 5z 0 e
 6t
 '   56$$ 0 -6 a10 1  e  t
 56$$ 0 10 a10 7 a14 5 a17 4 e  57** 10  e  5t
 60**  15 20 30 50 100 150 200 250 300 400
 '  61** f1-20
```

```
'  65$$ a4 1 2z 1 2z 1 5z 1 2z 1
'   a25 1 2z 1 2z 1 5z 1 2z 1
'   a46 1 2z 1 2z 1 5z 1 2z 1 e
65$$ a25 1 5z 0 a46 1 5z 0 e
6t
56$$ 0 10 a10 10 a14 5 a17 4 e  57** 400  e  5t
60**  500 1+3 2+3 4+3 6+3 8+3 1+4 1.2+4 1.4+4 1.6+4
'    61** f1-20
65$$ a25 1 5z 0 a46 1 5z 0 e
6t
56$$ 0 10 a10 10 a14 5 a17 4 e  57** 1.6+4  e  5t
60**  1.8+4 2.0+4 2.2+4 2.4+4 2.6+4 2.8+4 3+4 3.2+4 3.6+4 3.8+4
'  61** f1-20
65$$ a25 1 5z 0 a46 1 5z 0 e
6t
56$$ 0 10 a10 10 a14 5 a17 4 e  57** 3.8+4  e  5t
60**  4+4 4.5+4 5+4 5.5+4 6+4 6.5+4 7+4 1+5 2+5 2.5+5
'    61** f1-20
65$$ a25 1 5z 0 a46 1 5z 0 e
6t
56$$ 0 3 a10 10 a14 5 a17 4 e  57** 2.5+5  e  5t
60**  3+5 5+5 999999
'  61** f1-20
65$$ a25 1 5z 0 a46 1 5z 0 e
6t
'   56$$ 0 -10 a10 1 e  t
 56$$ f0  t
0when job "fails", make sure no fido input.....................................is out here!

0    0$ array     12 entries read
0    1$ array      1 entries read
0    1t
0         dbl. prec. machine word applied has, at least, a 16 significant figure accuracy.
0             short-lived split test fraction, qxn =    9.1188E-04
0             half-norm of matrix used, axn =    7.0000E+00
0             4-place-accuracy-retention ratio, ratio4 =    6.4516E-13
    3$$ 21 0 1  a33  -88
0    3$ array     33 entries read
0    2t
1library information...

          cross-section data taken from position number  1 of library on unit 21.

          pass   1
          pass   0
          *scale-system control module sas2 library*
          used a time-dependent neutron spectrum, for each of the above passes
            pass 0 applies start-up fuel densities
            pass n applies mid time densities of nth library interval
          first library updated was...
          ********************************************************************************
          *                                                                              *
          *            prelim lwr origen-s binary working library--id = 1143             *
          *          made from modified card-image origen-s libraries of scale 4.2       *
          *       data from the light element, actinide, and fission product libraries   *
          *         decay data, including gamma and total energy, are from endf/b-vi     *
          *                                                                              *
          *       neutron flux spectrum factors and cross sections were produced from    *
          *      the "presas2" case updating all nuclides on the scale "burnup" library  *
          *
```

```
          *                  fission product yields are from endf/b-v                  *
          *                                                                            *
          *              photon libraries use an 18-energy-group structure             *
          *             the photon data are from the master photon data base,          *
          *              produced to include bremsstrahlung from uo2 matrix            *
          *                                                                            *
          *        see information above this box (if present) for later updates       *
          *                                                                            *
          ******************************************************************************
          *                                                                            *
0         ******************************************************************************
0                   .other identification and sizes of library.
0                    data set name:  /neutronics/scale/datalib/origen/binrylib/pr
0                 4/20/1995     date library was produced
0                      1697     total number of nuclides in library
                        689     number of light-element nuclides
                        129     number of actinide nuclides
                        879     number of fission product nuclides
0                      7935     number of nonzero off-diagonal matrix elements
0         ******************************************************************************
0obtaining data from position no.     1 on unit no.   71
1
     Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay                                                    actinides          page     1
0                                                  nuclide concentrations, grams
                                                   basis =per B&W assembly, 0.409 mthm for grams
          charge  discharge     .0 d     1.0 d    90.0 d   365.3 d   730.5 d  1826.3 d  3652.5 d
he  4   6.76E-02  6.76E-02  6.76E-02  6.78E-02  8.33E-02  1.10E-01  1.26E-01  1.56E-01  2.09E-01
tl206   5.52E-24  5.52E-24  5.52E-24  5.54E-24  6.41E-24  8.49E-24  1.24E-23  3.54E-23  1.29E-22
tl207   2.68E-15  2.68E-15  2.68E-15  2.69E-15  3.19E-15  5.00E-15  7.05E-15  1.31E-14  2.29E-14
tl208   1.05E-12  1.05E-12  1.05E-12  1.07E-12  1.32E-12  2.28E-12  3.72E-12  7.68E-12  1.13E-11
tl209   2.14E-18  2.14E-18  2.14E-18  2.13E-18  4.40E-19  4.05E-19  4.50E-19  5.97E-19  8.79E-19
pb206   1.77E-13  1.77E-13  1.77E-13  1.78E-13  2.43E-13  5.26E-13  1.08E-12  4.78E-12  2.81E-11
pb207   1.97E-10  1.97E-10  1.97E-10  1.98E-10  2.53E-10  4.88E-10  9.40E-10  3.23E-09  1.01E-08
pb208   2.83E-07  2.83E-07  2.83E-07  2.84E-07  3.79E-07  8.23E-07  1.81E-06  7.58E-06  2.38E-05
pb209   9.02E-15  9.02E-15  9.02E-15  8.59E-15  1.86E-15  1.71E-15  1.90E-15  2.52E-15  3.71E-15
pb210   1.21E-11  1.21E-11  1.21E-11  1.21E-11  1.38E-11  1.83E-11  2.68E-11  7.64E-11  2.79E-10
pb211   2.08E-14  2.08E-14  2.08E-14  2.08E-14  2.47E-14  3.87E-14  5.46E-14  1.01E-13  1.77E-13
pb212   6.21E-10  6.21E-10  6.21E-10  6.20E-10  7.81E-10  1.35E-09  2.20E-09  4.55E-09  6.68E-09
pb214   3.64E-16  3.64E-16  3.64E-16  3.64E-16  4.08E-16  5.64E-16  8.25E-16  1.98E-15  5.12E-15
bi208    .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00
bi209   1.42E-11  1.42E-11  1.42E-11  1.43E-11  1.63E-11  1.86E-11  2.19E-11  3.42E-11  6.31E-11
bi210m   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00
bi210   7.33E-15  7.33E-15  7.33E-15  7.34E-15  8.50E-15  1.13E-14  1.65E-14  4.70E-14  1.72E-13
bi211   1.23E-15  1.23E-15  1.23E-15  1.23E-15  1.46E-15  2.29E-15  3.23E-15  6.01E-15  1.05E-14
bi212   5.89E-11  5.89E-11  5.89E-11  6.01E-11  7.41E-11  1.28E-10  2.09E-10  4.32E-10  6.34E-10
bi213   2.15E-15  2.15E-15  2.15E-15  2.14E-15  4.43E-16  4.07E-16  4.52E-16  6.01E-16  8.84E-16
bi214   2.70E-16  2.70E-16  2.70E-16  2.71E-16  3.03E-16  4.19E-16  6.13E-16  1.47E-15  3.81E-15
po210   1.29E-13  1.29E-13  1.29E-13  1.30E-13  1.62E-13  2.47E-13  3.71E-13  1.10E-12  4.74E-12
po211m   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00   .00E+00
po211   1.36E-20  1.36E-20  1.36E-20  1.36E-20  1.61E-20  2.53E-20  3.57E-20  6.64E-20  1.16E-19
po212   3.09E-21  3.09E-21  3.09E-21  3.16E-21  3.89E-21  6.74E-21  1.10E-20  2.27E-20  3.33E-20
po213   3.23E-24  3.23E-24  3.23E-24  3.22E-24  6.66E-25  6.12E-25  6.80E-25  9.03E-25  1.33E-24
po214   8.94E-23  8.94E-23  8.94E-23  8.77E-23  4.42E-23  5.76E-23  8.43E-23  2.02E-22  5.24E-22
po215   1.74E-20  1.74E-20  1.74E-20  1.74E-20  2.06E-20  3.24E-20  4.57E-20  8.49E-20  1.48E-19
po216   2.39E-15  2.39E-15  2.39E-15  2.39E-15  3.01E-15  5.22E-15  8.50E-15  1.76E-14  2.58E-14
po218   4.29E-17  4.29E-17  4.29E-17  4.29E-17  4.80E-17  6.65E-17  9.73E-17  2.33E-16  6.04E-16
at217   2.58E-20  2.58E-20  2.58E-20  2.58E-20  5.33E-21  4.90E-21  5.44E-21  7.23E-21  1.06E-20
rn218   1.13E-20  1.13E-20  1.13E-20  1.10E-20  5.64E-22  5.86E-26  3.03E-31   .00E+00   .00E+00
rn219   3.94E-17  3.94E-17  3.94E-17  3.95E-17  4.68E-17  7.34E-17  1.04E-16  1.92E-16  3.36E-16
rn220   9.35E-13  9.35E-13  9.35E-13  9.35E-13  1.18E-12  2.04E-12  3.32E-12  6.86E-12  1.01E-11
```

rn222	7.77E-14	7.77E-14	7.77E-14	7.77E-14	8.69E-14	1.20E-13	1.76E-13	4.21E-13	1.09E-12
fr221	2.39E-16	2.39E-16	2.39E-16	2.39E-16	4.94E-17	4.54E-17	5.05E-17	6.70E-17	9.86E-17
fr223	1.99E-16	1.99E-16	1.99E-16	1.99E-16	2.34E-16	3.40E-16	4.80E-16	8.92E-16	1.56E-15
ra222	1.25E-17	1.25E-17	1.25E-17	1.21E-17	6.24E-19	6.48E-23	3.35E-28	.00E+00	.00E+00
ra223	1.00E-11	1.00E-11	1.00E-11	1.00E-11	1.19E-11	1.86E-11	2.63E-11	4.89E-11	8.54E-11
ra224	5.42E-09	5.42E-09	5.42E-09	5.41E-09	6.82E-09	1.18E-08	1.92E-08	3.97E-08	5.83E-08
ra225	1.05E-12	1.05E-12	1.05E-12	1.01E-12	1.96E-13	2.01E-13	2.24E-13	2.97E-13	4.37E-13
ra226	1.21E-08	1.21E-08	1.21E-08	1.21E-08	1.35E-08	1.87E-08	2.74E-08	6.55E-08	1.70E-07
ra228	4.74E-15	4.74E-15	4.74E-15	4.75E-15	5.65E-15	9.00E-15	1.47E-14	3.85E-14	9.44E-14
ac225	7.17E-13	7.17E-13	7.17E-13	7.15E-13	1.48E-13	1.36E-13	1.51E-13	2.00E-13	2.95E-13
ac227	7.71E-09	7.71E-09	7.71E-09	7.72E-09	9.06E-09	1.32E-08	1.86E-08	3.46E-08	6.04E-08
ac228	5.79E-19	5.79E-19	5.79E-19	5.79E-19	6.90E-19	1.10E-18	1.79E-18	4.70E-18	1.15E-17
th226	6.22E-16	6.22E-16	6.22E-16	6.02E-16	3.10E-17	3.22E-21	1.66E-26	.00E+00	.00E+00
th227	1.70E-11	1.70E-11	1.70E-11	1.70E-11	2.01E-11	3.06E-11	4.32E-11	8.03E-11	1.40E-10
th228	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.32E-06	2.29E-06	3.73E-06	7.71E-06	1.13E-05
th229	3.55E-08	3.55E-08	3.55E-08	3.55E-08	3.65E-08	3.98E-08	4.42E-08	5.87E-08	8.64E-08
th230	6.24E-04	6.24E-04	6.24E-04	6.25E-04	6.79E-04	8.48E-04	1.07E-03	1.75E-03	2.89E-03
th231	6.62E-07	6.62E-07	6.62E-07	3.57E-07	2.56E-08	2.56E-08	2.56E-08	2.56E-08	2.56E-08

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 2

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
th232	8.41E-05	8.41E-05	8.41E-05	8.43E-05	9.43E-05	1.25E-04	1.66E-04	2.90E-04	4.95E-04
th233	8.02E-11	8.02E-11	8.02E-11	2.92E-30	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
th234	6.43E-06	6.43E-06	6.43E-06	6.43E-06	6.42E-06	6.43E-06	6.42E-06	6.42E-06	6.42E-06
pa231	2.75E-04	2.75E-04	2.75E-04	2.75E-04	2.77E-04	2.82E-04	2.88E-04	3.06E-04	3.37E-04
pa232	2.38E-07	2.38E-07	2.38E-07	1.40E-07	4.98E-28	.00E+00	.00E+00	.00E+00	.00E+00
pa233	4.19E-06	4.19E-06	4.19E-06	4.20E-06	4.34E-06	4.36E-06	4.36E-06	4.37E-06	4.41E-06
pa234m	2.18E-10	2.18E-10	2.18E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10
pa234	4.09E-10	4.09E-10	4.09E-10	1.23E-10	9.67E-11	9.68E-11	9.67E-11	9.67E-11	9.67E-11
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	6.13E-13	6.13E-13	6.13E-13	5.93E-13	3.05E-14	3.17E-18	1.64E-23	2.26E-39	.00E+00
u231	1.16E-11	1.16E-11	1.16E-11	9.83E-12	4.13E-18	7.84E-38	.00E+00	.00E+00	.00E+00
u232	1.46E-04	1.46E-04	1.46E-04	1.46E-04	1.68E-04	2.26E-04	2.89E-04	4.01E-04	4.60E-04
u233	9.73E-04	9.73E-04	9.73E-04	9.73E-04	9.83E-04	1.02E-03	1.06E-03	1.19E-03	1.40E-03
u234	8.05E+01	8.05E+01	8.05E+01	8.05E+01	8.06E+01	8.08E+01	8.10E+01	8.17E+01	8.28E+01
u235	6.30E+03	6.30E+03	6.30E+03	6.30E+03	6.30E+03	6.30E+03	6.30E+03	6.30E+03	6.30E+03
u236	1.41E+03	1.41E+03	1.41E+03	1.41E+03	1.41E+03	1.41E+03	1.41E+03	1.41E+03	1.41E+03
u237	1.82E+00	1.82E+00	1.82E+00	1.65E+00	1.89E-04	1.17E-05	1.11E-05	9.64E-06	7.57E-06
u238	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05
u239	1.30E-01	1.30E-01	1.30E-01	4.38E-20	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u240	2.04E-23	2.04E-23	2.04E-23	2.05E-23	3.51E-23	8.00E-23	1.40E-22	3.19E-22	6.17E-22
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	3.20E-06	3.20E-06	3.20E-06	3.19E-06	2.73E-06	1.69E-06	8.91E-07	1.31E-07	5.36E-09
np236m	2.84E-06	2.84E-06	2.84E-06	1.36E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np236	3.71E-04	3.71E-04	3.71E-04	3.71E-04	3.71E-04	3.71E-04	3.71E-04	3.71E-04	3.71E-04
np237	1.26E+02	1.26E+02	1.26E+02	1.27E+02	1.28E+02	1.28E+02	1.28E+02	1.29E+02	1.30E+02
np238	1.68E-01	1.68E-01	1.68E-01	1.21E-01	7.85E-08	7.82E-08	7.78E-08	7.67E-08	7.48E-08
np239	1.88E+01	1.88E+01	1.88E+01	1.41E+01	8.68E-06	8.68E-06	8.68E-06	8.67E-06	8.67E-06
np240m	1.74E-25	1.74E-25	1.74E-25	1.75E-25	2.99E-25	6.83E-25	1.19E-24	2.72E-24	5.27E-24
np240	3.64E-04	3.64E-04	3.64E-04	3.61E-11	3.08E-27	7.03E-27	1.23E-26	2.80E-26	5.42E-26
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	3.91E-04	3.91E-04	3.91E-04	3.92E-04	3.70E-04	3.09E-04	2.44E-04	1.19E-04	3.60E-05
pu237	1.11E-05	1.11E-05	1.11E-05	1.09E-05	2.79E-06	4.09E-08	1.51E-10	7.52E-18	5.08E-30
pu238	2.77E+01	2.77E+01	2.77E+01	2.77E+01	2.86E+01	2.96E+01	2.98E+01	2.93E+01	2.81E+01
pu239	2.61E+03	2.61E+03	2.61E+03	2.62E+03	2.63E+03	2.63E+03	2.63E+03	2.63E+03	2.63E+03
pu240	6.72E+02	6.72E+02	6.72E+02	6.72E+02	6.72E+02	6.72E+02	6.72E+02	6.72E+02	6.72E+02
pu241	4.05E+02	4.05E+02	4.05E+02	4.05E+02	4.00E+02	3.86E+02	3.67E+02	3.18E+02	2.50E+02
pu242	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01

pu243	1.01E-02	1.01E-02	1.01E-02	3.52E-04	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15
pu244	1.03E-12	1.03E-12	1.03E-12	1.04E-12	1.78E-12	4.05E-12	7.07E-12	1.61E-11	3.12E-11
pu245	7.59E-19	7.59E-19	7.59E-19	1.56E-19	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu246	3.21E-21	3.21E-21	3.21E-21	3.08E-21	1.26E-21	1.25E-21	1.25E-21	1.25E-21	1.25E-21
am239	3.03E-10	3.03E-10	3.03E-10	7.49E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am240	1.32E-07	1.32E-07	1.32E-07	9.53E-08	2.21E-20	.00E+00	.00E+00	.00E+00	.00E+00
am241	1.71E+01	1.71E+01	1.71E+01	1.71E+01	2.18E+01	3.61E+01	5.42E+01	1.03E+02	1.71E+02
am242m	4.32E-01	4.32E-01	4.32E-01	4.32E-01	4.31E-01	4.30E-01	4.28E-01	4.21E-01	4.11E-01
am242	1.97E-02	1.97E-02	1.97E-02	6.99E-03	5.57E-06	5.54E-06	5.52E-06	5.44E-06	5.30E-06
am243	1.01E+01	1.01E+01	1.01E+01	1.01E+01	1.01E+01	1.01E+01	1.01E+01	1.01E+01	1.01E+01
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	3.73E-03	3.73E-03	3.73E-03	7.18E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am245	5.97E-17	5.97E-17	5.97E-17	5.95E-17	4.91E-17	2.70E-17	1.23E-17	1.14E-18	2.19E-20
am246	8.01E-24	8.01E-24	8.01E-24	7.72E-24	3.14E-24	3.12E-24	3.12E-24	3.12E-24	3.12E-24
cm241	6.19E-10	6.19E-10	6.19E-10	6.06E-10	9.25E-11	2.75E-13	1.22E-16	1.08E-26	3.38E-43

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 3

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
cm242	2.60E+00	2.60E+00	2.60E+00	2.60E+00	1.78E+00	5.54E-01	1.18E-01	2.21E-03	1.07E-03
cm243	6.03E-02	6.03E-02	6.03E-02	6.03E-02	5.99E-02	5.88E-02	5.74E-02	5.34E-02	4.73E-02
cm244	1.51E+00	1.51E+00	1.51E+00	1.52E+00	1.50E+00	1.46E+00	1.41E+00	1.25E+00	1.03E+00
cm245	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02
cm246	3.00E-03	3.00E-03	3.00E-03	3.00E-03	3.00E-03	3.00E-03	3.00E-03	3.00E-03	2.99E-03
cm247	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05
cm248	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06
cm249	1.19E-11	1.19E-11	1.19E-11	3.68E-18	5.01E-20	1.12E-24	7.51E-31	.00E+00	.00E+00
cm250	2.98E-15	2.98E-15	2.98E-15	2.98E-15	2.98E-15	2.98E-15	2.98E-15	2.98E-15	2.98E-15
cm251	7.30E-23	7.30E-23	7.30E-23	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bk249	1.56E-08	1.56E-08	1.56E-08	1.56E-08	1.29E-08	7.10E-09	3.22E-09	3.00E-10	5.74E-12
bk250	5.62E-12	5.62E-12	5.62E-12	3.19E-14	1.36E-18	6.81E-19	2.72E-19	1.73E-20	1.84E-22
bk251	8.19E-17	8.19E-17	8.19E-17	3.31E-21	6.81E-22	5.11E-24	7.74E-27	2.70E-35	.00E+00
cf249	2.85E-09	2.85E-09	2.85E-09	2.88E-09	5.62E-09	1.14E-08	1.52E-08	1.81E-08	1.82E-08
cf250	1.73E-09	1.73E-09	1.73E-09	1.74E-09	1.72E-09	1.65E-09	1.56E-09	1.33E-09	1.02E-09
cf251	8.53E-10	8.53E-10	8.53E-10	8.53E-10	8.53E-10	8.52E-10	8.52E-10	8.50E-10	8.46E-10
cf252	2.52E-10	2.52E-10	2.52E-10	2.52E-10	2.36E-10	1.94E-10	1.49E-10	6.80E-11	1.83E-11
cf253	2.17E-13	2.17E-13	2.17E-13	2.09E-13	6.55E-15	1.46E-19	9.81E-26	.00E+00	.00E+00
cf254	8.70E-17	8.70E-17	8.70E-17	8.60E-17	3.10E-17	1.32E-18	2.02E-20	7.12E-26	5.83E-35
cf255	8.67E-21	8.67E-21	8.67E-21	1.32E-25	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es253	1.91E-13	1.91E-13	1.91E-13	1.92E-13	3.80E-14	6.80E-18	3.30E-23	2.56E-39	.00E+00
es254m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es254	3.56E-15	3.56E-15	3.56E-15	3.55E-15	2.84E-15	1.42E-15	5.68E-16	3.61E-17	3.66E-19
es255	3.36E-18	3.36E-18	3.36E-18	3.31E-18	6.81E-19	5.11E-21	7.74E-24	2.70E-32	.00E+00
s250	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
total	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 4

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
h 3	1.36E-02	1.36E-02	1.36E-02	1.36E-02	1.34E-02	1.28E-02	1.21E-02	1.03E-02	7.74E-03
li 6	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05
li 7	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06
be 9	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06
be 10	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05
c 14	7.47E-06	7.47E-06	7.47E-06	7.47E-06	7.47E-06	7.47E-06	7.47E-06	7.46E-06	7.46E-06
ni 66	5.76E-10	5.76E-10	5.76E-10	4.25E-10	7.15E-22	.00E+00	.00E+00	.00E+00	.00E+00
cu 66	9.01E-13	9.01E-13	9.01E-13	6.62E-13	1.11E-24	.00E+00	.00E+00	.00E+00	.00E+00
zn 66	1.74E-07	1.74E-07	1.74E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07

cu 67	7.94E-11	7.94E-11	7.94E-11	6.07E-11	2.42E-21	.00E+00	.00E+00	.00E+00	.00E+00
zn 67	2.31E-08	2.31E-08	2.31E-08	2.31E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08
zn 68	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09
zn 69	4.71E-12	4.71E-12	4.71E-12	1.22E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 69m	5.59E-11	5.59E-11	5.59E-11	1.67E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 69	7.62E-08	7.62E-08	7.62E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08
zn 70	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06
ga 70	6.89E-14	6.89E-14	6.89E-14	2.12E-34	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 70	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09
zn 71	9.82E-12	9.82E-12	9.82E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 71m	4.07E-09	4.07E-09	4.07E-09	6.11E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 71	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
ge 71	7.98E-13	7.98E-13	7.98E-13	7.52E-13	3.41E-15	1.94E-22	4.70E-32	.00E+00	.00E+00
ge 71m	8.27E-21	8.27E-21	8.27E-21	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
co 72	1.19E-14	1.19E-14	1.19E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 72	2.12E-11	2.12E-11	2.12E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 72	1.02E-10	1.02E-10	1.02E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 72	3.42E-06	3.42E-06	3.42E-06	2.39E-06	3.55E-20	.00E+00	.00E+00	.00E+00	.00E+00
ga 72	1.04E-06	1.04E-06	1.04E-06	9.02E-07	1.54E-20	.00E+00	.00E+00	.00E+00	.00E+00
ge 72	1.29E-03	1.29E-03	1.29E-03	1.29E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
co 73	6.86E-15	6.86E-15	6.86E-15	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 73	2.80E-12	2.80E-12	2.80E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 73	1.70E-10	1.70E-10	1.70E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 73	1.36E-09	1.36E-09	1.36E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 73	1.03E-06	1.03E-06	1.03E-06	3.38E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 73	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03
ge 73m	2.91E-11	2.91E-11	2.91E-11	9.50E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
co 74	9.82E-16	9.82E-16	9.82E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 74	3.42E-12	3.42E-12	3.42E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 74	2.74E-11	2.74E-11	2.74E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 74	1.39E-08	1.39E-08	1.39E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 74	2.21E-08	2.21E-08	2.21E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 74	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03
co 75	1.80E-16	1.80E-16	1.80E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 75	3.96E-13	3.96E-13	3.96E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 75	5.04E-11	5.04E-11	5.04E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 75	3.48E-09	3.48E-09	3.48E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 75	5.25E-08	5.25E-08	5.25E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 75	2.09E-06	2.09E-06	2.09E-06	1.24E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 75m	1.08E-09	1.08E-09	1.08E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 75	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02
ni 76	2.11E-13	2.11E-13	2.11E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 76	1.16E-11	1.16E-11	1.16E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 5

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
zn 76	4.24E-09	4.24E-09	4.24E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 76	3.70E-08	3.70E-08	3.70E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 76	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01
as 76	1.65E-06	1.65E-06	1.65E-06	8.78E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 76	6.29E-04	6.29E-04	6.29E-04	6.30E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04
ni 77	1.71E-14	1.71E-14	1.71E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 77	8.14E-12	8.14E-12	8.14E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 77	1.96E-09	1.96E-09	1.96E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 77	3.17E-08	3.17E-08	3.17E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 77	3.79E-05	3.79E-05	3.79E-05	8.69E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 77m	1.30E-07	1.30E-07	1.30E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 77	4.03E-04	4.03E-04	4.03E-04	2.85E-04	8.23E-21	.00E+00	.00E+00	.00E+00	.00E+00

FOR INFORMATION ONLY

se 77	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01
se 77m	1.65E-10	1.65E-10	1.65E-10	1.14E-10	3.29E-27	.00E+00	.00E+00	.00E+00	.00E+00
ni 78	4.61E-15	4.61E-15	4.61E-15	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 78	1.28E-12	1.28E-12	1.28E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 78	1.79E-09	1.79E-09	1.79E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 78	2.77E-08	2.77E-08	2.77E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 78	4.88E-05	4.88E-05	4.88E-05	5.79E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 78	5.09E-05	5.09E-05	5.09E-05	8.65E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 78	7.24E-01	7.24E-01	7.24E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01
cu 79	3.71E-13	3.71E-13	3.71E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 79	5.92E-10	5.92E-10	5.92E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 79	1.65E-08	1.65E-08	1.65E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 79	3.08E-07	3.08E-07	3.08E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 79	9.49E-06	9.49E-06	9.49E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 79	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00
se 79m	4.08E-06	4.08E-06	4.08E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 79	5.12E-05	5.12E-05	5.12E-05	5.13E-05	5.85E-05	8.07E-05	1.10E-04	1.98E-04	3.46E-04
br 79m	3.00E-14	3.00E-14	3.00E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 79	6.66E-14	6.66E-14	6.66E-14	4.14E-14	1.82E-32	.00E+00	.00E+00	.00E+00	.00E+00
cu 80	2.91E-14	2.91E-14	2.91E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 80	1.23E-10	1.23E-10	1.23E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 80	7.45E-09	7.45E-09	7.45E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 80	1.19E-06	1.19E-06	1.19E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 80	7.11E-07	7.11E-07	7.11E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 80	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00
br 80	3.70E-10	3.70E-10	3.70E-10	6.11E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 80m	3.69E-09	3.69E-09	3.69E-09	8.56E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 80	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
cu 81	2.46E-15	2.46E-15	2.46E-15	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 81	6.41E-12	6.41E-12	6.41E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 81	3.53E-09	3.53E-09	3.53E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 81	3.27E-07	3.27E-07	3.27E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 81	2.28E-06	2.28E-06	2.28E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 81	7.98E-05	7.98E-05	7.98E-05	2.27E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 81m	1.78E-05	1.78E-05	1.78E-05	4.78E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 81	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00
kr 81	7.13E-07	7.13E-07	7.13E-07	7.13E-07	7.13E-07	7.13E-07	7.13E-07	7.13E-07	7.13E-07
kr 81m	9.94E-14	9.94E-14	9.94E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 82	1.50E-12	1.50E-12	1.50E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 82	1.10E-09	1.10E-09	1.10E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 6

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
ge 82	1.92E-07	1.92E-07	1.92E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 82	1.30E-06	1.30E-06	1.30E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 82m	3.59E-07	3.59E-07	3.59E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 82	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00
br 82	3.96E-04	3.96E-04	3.96E-04	2.48E-04	1.52E-22	.00E+00	.00E+00	.00E+00	.00E+00
br 82m	9.40E-07	9.40E-07	9.40E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 82	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01
zn 83	5.12E-14	5.12E-14	5.12E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 83	6.88E-11	6.88E-11	6.88E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 83	3.59E-08	3.59E-08	3.59E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 83	1.47E-06	1.47E-06	1.47E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 83	1.12E-04	1.12E-04	1.12E-04	4.08E-24	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 83m	6.19E-06	6.19E-06	6.19E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 83	1.53E-03	1.53E-03	1.53E-03	1.63E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 83	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01

kr 83m	1.16E-03	1.16E-03	1.16E-03	5.36E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 84	1.80E-10	1.80E-10	1.80E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 84	1.51E-08	1.51E-08	1.51E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 84	4.51E-07	4.51E-07	4.51E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 84	6.23E-05	6.23E-05	6.23E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 84	6.36E-04	6.36E-04	6.36E-04	1.65E-17	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 84m	3.22E-06	3.22E-06	3.22E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 84	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01
ga 85	3.15E-13	3.15E-13	3.15E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 85	5.49E-10	5.49E-10	5.49E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 85	9.72E-08	9.72E-08	9.72E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 85	4.92E-06	4.92E-06	4.92E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 85m	2.59E-06	2.59E-06	2.59E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 85	6.48E-05	6.48E-05	6.48E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 85	6.65E+00	6.65E+00	6.65E+00	6.65E+00	6.55E+00	6.24E+00	5.85E+00	4.82E+00	3.49E+00
kr 85m	6.08E-03	6.08E-03	6.08E-03	1.50E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 85	2.80E+01	2.80E+01	2.80E+01	2.80E+01	2.81E+01	2.84E+01	2.88E+01	2.98E+01	3.11E+01
ge 86	1.17E-10	1.17E-10	1.17E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 86	2.45E-08	2.45E-08	2.45E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 86	5.76E-06	5.76E-06	5.76E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 86	2.56E-05	2.56E-05	2.56E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 86m	4.85E-06	4.85E-06	4.85E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 86	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01
rb 86	2.67E-03	2.67E-03	2.67E-03	2.57E-03	9.38E-05	3.35E-09	4.22E-15	8.39E-33	.00E+00
rb 86m	8.18E-09	8.18E-09	8.18E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 86	6.19E-02	6.19E-02	6.19E-02	6.20E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02
ge 87	5.35E-10	5.35E-10	5.35E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 87	4.80E-09	4.80E-09	4.80E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 87	1.25E-06	1.25E-06	1.25E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 87	3.41E-05	3.41E-05	3.41E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 87	3.55E-03	3.55E-03	3.55E-03	7.48E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 87	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01
sr 87	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.06E-04
sr 87m	5.51E-08	5.51E-08	5.51E-08	1.48E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 88	9.21E-13	9.21E-13	9.21E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 88	9.66E-10	9.66E-10	9.66E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 88	1.82E-07	1.82E-07	1.82E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 7

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
br 88	9.89E-06	9.89E-06	9.89E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 88	1.11E-02	1.11E-02	1.11E-02	3.17E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 88	1.19E-03	1.19E-03	1.19E-03	3.70E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 88	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02
as 89	1.60E-11	1.60E-11	1.60E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 89	1.77E-08	1.77E-08	1.77E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 89	1.84E-06	1.84E-06	1.84E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 89	2.61E-04	2.61E-04	2.61E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 89	1.35E-03	1.35E-03	1.35E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 89	6.62E+00	6.62E+00	6.62E+00	6.53E+00	1.93E+00	4.43E-02	2.96E-04	8.85E-11	1.18E-21
y 89	1.33E+02	1.33E+02	1.33E+02	1.33E+02	1.37E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
y 89m	2.28E-09	2.28E-09	2.28E-09	2.23E-09	6.59E-10	1.51E-11	1.01E-13	3.02E-20	4.04E-31
as 90	1.18E-13	1.18E-13	1.18E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 90	4.12E-09	4.12E-09	4.12E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 90	4.43E-07	4.43E-07	4.43E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 90	4.79E-05	4.79E-05	4.79E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 90	2.10E-04	2.10E-04	2.10E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 90m	1.12E-04	1.12E-04	1.12E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

sr 90	1.63E+02	1.63E+02	1.63E+02	1.63E+02	1.62E+02	1.59E+02	1.55E+02	1.44E+02	1.27E+02
y 90	4.30E-02	4.30E-02	4.30E-02	4.28E-02	4.20E-02	4.12E-02	4.02E-02	3.74E-02	3.30E-02
y 90m	3.65E-08	3.65E-08	3.65E-08	1.98E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 90	7.74E+00	7.74E+00	7.74E+00	7.75E+00	8.72E+00	1.17E+01	1.56E+01	2.66E+01	4.32E+01
zr 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 91	2.67E-10	2.67E-10	2.67E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 91	4.62E-08	4.62E-08	4.62E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 91	8.82E-06	8.82E-06	8.82E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 91	1.07E-04	1.07E-04	1.07E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 91	6.74E-02	6.74E-02	6.74E-02	1.18E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 91	1.01E+01	1.01E+01	1.01E+01	1.01E+01	3.51E+00	1.35E-01	1.78E-03	4.09E-09	1.64E-18
y 91m	3.40E-03	3.40E-03	3.40E-03	6.50E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 91	1.69E+02	1.69E+02	1.69E+02	1.69E+02	1.76E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02
nb 91	2.67E-10	2.67E-10	2.67E-10	2.67E-10	2.67E-10	2.67E-10	2.66E-10	2.65E-10	2.64E-10
se 92	1.39E-11	1.39E-11	1.39E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 92	4.84E-09	4.84E-09	4.84E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 92	1.03E-06	1.03E-06	1.03E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 92	7.36E-06	7.36E-06	7.36E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 92	2.06E-02	2.06E-02	2.06E-02	4.44E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 92	2.71E-02	2.71E-02	2.71E-02	8.55E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 92	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02
nb 92	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08
se 93	6.10E-14	6.10E-14	6.10E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 93	6.53E-10	6.53E-10	6.53E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 93	2.47E-07	2.47E-07	2.47E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 93	7.80E-06	7.80E-06	7.80E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 93	1.07E-03	1.07E-03	1.07E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 93	5.92E-02	5.92E-02	5.92E-02	1.15E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 93	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
nb 93	8.41E-06	8.41E-06	8.41E-06	8.42E-06	9.65E-06	1.44E-05	2.27E-05	6.12E-05	1.65E-04
nb 93m	1.10E-04	1.10E-04	1.10E-04	1.10E-04	1.24E-04	1.67E-04	2.22E-04	3.72E-04	5.83E-04
br 94	2.17E-11	2.17E-11	2.17E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 94	1.87E-08	1.87E-08	1.87E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 94	1.93E-06	1.93E-06	1.93E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 8

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
sr 94	1.81E-04	1.81E-04	1.81E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 94	2.93E-03	2.93E-03	2.93E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 94	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02
nb 94	1.25E-04	1.25E-04	1.25E-04	1.25E-04	1.25E-04	1.25E-04	1.25E-04	1.25E-04	1.25E-04
nb 94m	3.29E-10	3.29E-10	3.29E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 95	2.38E-13	2.38E-13	2.38E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 95	6.61E-09	6.61E-09	6.61E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 95	1.34E-07	1.34E-07	1.34E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 95	5.48E-05	5.48E-05	5.48E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 95	1.72E-03	1.72E-03	1.72E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 95	1.55E+01	1.55E+01	1.55E+01	1.54E+01	5.87E+00	2.98E-01	5.71E-03	4.02E-08	1.04E-16
nb 95	8.53E+00	8.53E+00	8.53E+00	8.53E+00	5.35E+00	3.51E-01	7.08E-03	4.84E-08	1.25E-16
nb 95m	1.01E-02	1.01E-02	1.01E-02	1.00E-02	3.89E-03	1.98E-04	3.79E-06	2.66E-11	6.88E-20
mo 95	2.00E+02	2.00E+02	2.00E+02	2.00E+02	2.13E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02
br 96	4.47E-14	4.47E-14	4.47E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 96	4.35E-10	4.35E-10	4.35E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 96	1.75E-08	1.75E-08	1.75E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 96	1.71E-06	1.71E-06	1.71E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 96	1.57E-05	1.57E-05	1.57E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 96	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02
nb 96	2.59E-04	2.59E-04	2.59E-04	1.27E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

mo 96	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00
kr 97	2.02E-12	2.02E-12	2.02E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 97	4.20E-09	4.20E-09	4.20E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 97	3.46E-07	3.46E-07	3.46E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 97	7.71E-06	7.71E-06	7.71E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 97	1.66E-01	1.66E-01	1.66E-01	6.21E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 97	1.19E-02	1.19E-02	1.19E-02	4.44E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 97m	1.56E-04	1.56E-04	1.56E-04	5.81E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 97	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02
kr 98	1.17E-12	1.17E-12	1.17E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 98	2.82E-10	2.82E-10	2.82E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 98	2.21E-07	2.21E-07	2.21E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 98	1.06E-06	1.06E-06	1.06E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 98	8.98E-05	8.98E-05	8.98E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 98	8.43E-06	8.43E-06	8.43E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 98m	7.05E-05	7.05E-05	7.05E-05	2.50E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 98	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02
tc 98	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03
rb 99	4.36E-12	4.36E-12	4.36E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 99	3.65E-08	3.65E-08	3.65E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 99	1.54E-06	1.54E-06	1.54E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 99	6.09E-06	6.09E-06	6.09E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 99	2.82E-05	2.82E-05	2.82E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 99m	2.01E-04	2.01E-04	2.01E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 99	7.60E-01	7.60E-01	7.60E-01	5.91E-01	1.05E-10	.00E+00	.00E+00	.00E+00	.00E+00
tc 99	2.30E+02	2.30E+02	2.30E+02	2.30E+02	2.31E+02	2.31E+02	2.31E+02	2.31E+02	2.31E+02
tc 99m	6.10E-02	6.10E-02	6.10E-02	5.18E-02	9.26E-12	.00E+00	.00E+00	.00E+00	.00E+00
ru 99	9.13E-03	9.13E-03	9.13E-03	9.14E-03	9.34E-03	9.91E-03	1.07E-02	1.29E-02	1.67E-02
rb100	2.25E-12	2.25E-12	2.25E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr100	3.57E-09	3.57E-09	3.57E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y100	2.48E-07	2.48E-07	2.48E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 9

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
zr100	2.05E-05	2.05E-05	2.05E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb100	4.70E-06	4.70E-06	4.70E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb100m	7.50E-07	7.50E-07	7.50E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo100	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02
tc100	7.90E-06	7.90E-06	7.90E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru100	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01
rb101	1.75E-14	1.75E-14	1.75E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr101	5.22E-10	5.22E-10	5.22E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y101	8.60E-08	8.60E-08	8.60E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr101	3.36E-06	3.36E-06	3.36E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb101	2.00E-05	2.00E-05	2.00E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo101	2.59E-03	2.59E-03	2.59E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc101	2.52E-03	2.52E-03	2.52E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru101	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02
sr102	1.32E-10	1.32E-10	1.32E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y102	7.27E-08	7.27E-08	7.27E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr102	3.41E-06	3.41E-06	3.41E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb102	3.10E-06	3.10E-06	3.10E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo102	1.91E-03	1.91E-03	1.91E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc102	1.49E-05	1.49E-05	1.49E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc102m	7.52E-07	7.52E-07	7.52E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru102	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02
rh102	2.17E-04	2.17E-04	2.17E-04	2.17E-04	2.05E-04	1.71E-04	1.35E-04	6.57E-05	1.99E-05
pd102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

sr103	4.49E-13	4.49E-13	4.49E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y103	6.32E-09	6.32E-09	6.32E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr103	5.65E-07	5.65E-07	5.65E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb103	2.64E-06	2.64E-06	2.64E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo103	1.83E-04	1.83E-04	1.83E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc103	1.50E-04	1.50E-04	1.50E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru103	9.36E+00	9.36E+00	9.36E+00	9.19E+00	1.91E+00	1.48E-02	2.34E-05	9.29E-14	9.22E-28
rh103	1.34E+02	1.34E+02	1.34E+02	1.34E+02	1.42E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02
rh103m	9.27E-03	9.27E-03	9.27E-03	9.11E-03	1.89E-03	1.47E-05	2.32E-08	9.20E-17	9.13E-31
sr104	1.95E-13	1.95E-13	1.95E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y104	8.72E-11	8.72E-11	8.72E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr104	3.30E-07	3.30E-07	3.30E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb104	3.85E-06	3.85E-06	3.85E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo104	1.28E-04	1.28E-04	1.28E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc104	2.46E-03	2.46E-03	2.46E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru104	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
rh104	4.73E-05	4.73E-05	4.73E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh104m	2.12E-05	2.12E-05	2.12E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd104	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01
y105	1.25E-12	1.25E-12	1.25E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr105	1.86E-08	1.86E-08	1.86E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb105	9.52E-07	9.52E-07	9.52E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo105	5.53E-05	5.53E-05	5.53E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc105	8.43E-04	8.43E-04	8.43E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru105	2.99E-02	2.99E-02	2.99E-02	7.25E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh105	2.32E-01	2.32E-01	2.32E-01	1.66E-01	1.09E-19	.00E+00	.00E+00	.00E+00	.00E+00
rh105m	2.39E-05	2.39E-05	2.39E-05	5.82E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd105	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 10

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
y106	1.39E-14	1.39E-14	1.39E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr106	1.59E-09	1.59E-09	1.59E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb106	6.07E-08	6.07E-08	6.07E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo106	7.13E-06	7.13E-06	7.13E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc106	4.67E-05	4.67E-05	4.67E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru106	3.37E+01	3.37E+01	3.37E+01	3.36E+01	2.85E+01	1.70E+01	8.63E+00	1.12E+00	3.71E-02
rh106	3.22E-05	3.22E-05	3.22E-05	3.12E-05	2.64E-05	1.58E-05	8.01E-06	1.04E-06	3.44E-08
rh106m	1.10E-04	1.10E-04	1.10E-04	5.11E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd106	4.57E+01	4.57E+01	4.57E+01	4.58E+01	5.09E+01	6.24E+01	7.08E+01	7.83E+01	7.94E+01
ag106	2.68E-15	2.68E-15	2.68E-15	2.33E-33	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y107	1.31E-16	1.31E-16	1.31E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr107	4.24E-12	4.24E-12	4.24E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb107	8.29E-09	8.29E-09	8.29E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo107	1.19E-06	1.19E-06	1.19E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc107	1.86E-05	1.86E-05	1.86E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru107	2.39E-04	2.39E-04	2.39E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh107	1.39E-03	1.39E-03	1.39E-03	1.80E-23	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd107	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01
pd107m	6.52E-08	6.52E-08	6.52E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag107	7.30E-06	7.30E-06	7.30E-06	7.31E-06	8.64E-06	1.28E-05	1.82E-05	3.46E-05	6.19E-05
zr108	2.68E-13	2.68E-13	2.68E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb108	8.12E-11	8.12E-11	8.12E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo108	7.28E-08	7.28E-08	7.28E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc108	1.54E-06	1.54E-06	1.54E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru108	1.85E-04	1.85E-04	1.85E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh108	1.16E-05	1.16E-05	1.16E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh108m	4.06E-06	4.06E-06	4.06E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

pd108	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01
ag108	2.17E-10	2.17E-10	2.17E-10	1.30E-13	1.30E-13	1.29E-13	1.29E-13	1.27E-13	1.23E-13
ag108m	4.21E-05	4.21E-05	4.21E-05	4.21E-05	4.21E-05	4.19E-05	4.17E-05	4.10E-05	3.99E-05
cd108	4.34E-05	4.34E-05	4.34E-05	4.34E-05	4.34E-05	4.34E-05	4.34E-05	4.35E-05	4.36E-05
zr109	6.67E-17	6.67E-17	6.67E-17	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb109	4.24E-12	4.24E-12	4.24E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo109	7.22E-09	7.22E-09	7.22E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc109	1.41E-07	1.41E-07	1.41E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru109	1.63E-05	1.63E-05	1.63E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh109	4.36E-05	4.36E-05	4.36E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh109m	1.36E-05	1.36E-05	1.36E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd109	2.97E-02	2.97E-02	2.97E-02	8.84E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd109m	7.34E-07	7.34E-07	7.34E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag109	2.18E+01	2.18E+01	2.18E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01
ag109m	2.39E-05	2.39E-05	2.39E-05	7.10E-06	2.85E-14	1.88E-14	1.09E-14	2.11E-15	1.37E-16
cd109	3.29E-08	3.29E-08	3.29E-08	3.28E-08	2.87E-08	1.90E-08	1.10E-08	2.13E-09	1.38E-10
nb110	7.02E-14	7.02E-14	7.02E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo110	1.49E-09	1.49E-09	1.49E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc110	1.28E-08	1.28E-08	1.28E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru110	2.20E-06	2.20E-06	2.20E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh110	8.06E-08	8.06E-08	8.06E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh110m	4.90E-06	4.90E-06	4.90E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd110	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00
ag110	4.66E-06	4.66E-06	4.66E-06	1.60E-09	1.25E-09	5.84E-10	2.12E-10	1.01E-11	6.37E-14
ag110m	1.04E-01	1.04E-01	1.04E-01	1.03E-01	8.08E-02	3.77E-02	1.37E-02	6.53E-04	4.11E-06

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 11

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
cd110	5.66E+00	5.66E+00	5.66E+00	5.66E+00	5.68E+00	5.72E+00	5.75E+00	5.76E+00	5.76E+00
nb111	6.56E-16	6.56E-16	6.56E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo111	2.22E-11	2.22E-11	2.22E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc111	5.89E-09	5.89E-09	5.89E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru111	7.75E-08	7.75E-08	7.75E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh111	1.06E-06	1.06E-06	1.06E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd111	1.45E-04	1.45E-04	1.45E-04	2.51E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd111m	9.29E-05	9.29E-05	9.29E-05	4.51E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag111	6.65E-02	6.65E-02	6.65E-02	6.08E-02	1.54E-05	1.16E-16	2.03E-31	.00E+00	.00E+00
ag111m	6.70E-06	6.70E-06	6.70E-06	1.44E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd111	4.98E+00	4.98E+00	4.98E+00	4.98E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00
cd111m	2.40E-07	2.40E-07	2.40E-07	2.89E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb112	1.14E-17	1.14E-17	1.14E-17	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo112	6.07E-12	6.07E-12	6.07E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc112	2.10E-10	2.10E-10	2.10E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru112	5.80E-08	5.80E-08	5.80E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh112	5.87E-08	5.87E-08	5.87E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd112	3.68E-03	3.68E-03	3.68E-03	1.67E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag112	5.50E-04	5.50E-04	5.50E-04	2.92E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd112	2.63E+00	2.63E+00	2.63E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00
mo113	2.68E-14	2.68E-14	2.68E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc113	7.30E-11	7.30E-11	7.30E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru113	1.53E-08	1.53E-08	1.53E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh113	1.70E-08	1.70E-08	1.70E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd113	2.63E-06	2.63E-06	2.63E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag113	5.31E-04	5.31E-04	5.31E-04	2.41E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag113m	3.79E-07	3.79E-07	3.79E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd113	4.52E-02	4.52E-02	4.52E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02
cd113m	2.80E-02	2.80E-02	2.80E-02	2.81E-02	2.77E-02	2.67E-02	2.54E-02	2.19E-02	1.72E-02
in113	1.97E-03	1.97E-03	1.97E-03	1.98E-03	2.31E-03	3.32E-03	4.60E-03	8.08E-03	1.29E-02

in113m	1.77E-13	1.77E-13	1.77E-13	7.77E-18	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo114	2.22E-14	2.22E-14	2.22E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc114	3.44E-12	3.44E-12	3.44E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru114	1.50E-08	1.50E-08	1.50E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh114	1.64E-08	1.64E-08	1.64E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd114	3.32E-06	3.32E-06	3.32E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag114	1.08E-07	1.08E-07	1.08E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd114	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00
in114	2.18E-10	2.18E-10	2.18E-10	1.49E-10	4.30E-11	9.11E-13	5.48E-15	1.19E-21	9.42E-33
in114m	9.41E-06	9.41E-06	9.41E-06	9.28E-06	2.67E-06	5.66E-08	3.41E-10	7.43E-17	5.86E-28
sn114	6.61E-05	6.61E-05	6.61E-05	6.62E-05	7.25E-05	7.50E-05	7.51E-05	7.51E-05	7.51E-05
mo115	3.27E-17	3.27E-17	3.27E-17	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc115	1.58E-13	1.58E-13	1.58E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru115	3.72E-10	3.72E-10	3.72E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh115	3.31E-08	3.31E-08	3.31E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd115	5.26E-07	5.26E-07	5.26E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag115	1.32E-05	1.32E-05	1.32E-05	2.88E-27	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag115m	8.28E-08	8.28E-08	8.28E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd115	2.96E-03	2.96E-03	2.96E-03	2.18E-03	2.06E-15	.00E+00	.00E+00	.00E+00	.00E+00
cd115m	2.68E-03	2.68E-03	2.68E-03	2.64E-03	6.63E-04	9.19E-06	3.15E-08	1.26E-15	5.93E-28
in115	4.53E-01	4.53E-01	4.53E-01	4.54E-01	4.58E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01
in115m	2.49E-04	2.49E-04	2.49E-04	1.99E-04	3.07E-10	4.25E-12	1.46E-14	5.84E-22	2.75E-34

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 12

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
sn115	4.55E-02	4.55E-02	4.55E-02	4.55E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02
tc116	2.84E-14	2.84E-14	2.84E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru116	2.36E-10	2.36E-10	2.36E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh116	1.90E-09	1.90E-09	1.90E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd116	1.96E-07	1.96E-07	1.96E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag116	2.84E-06	2.84E-06	2.84E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag116m	2.32E-08	2.32E-08	2.32E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd116	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
in116	3.47E-08	3.47E-08	3.47E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in116m	3.01E-05	3.01E-05	3.01E-05	2.97E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn116	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01
tc117	4.62E-16	4.62E-16	4.62E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru117	7.53E-12	7.53E-12	7.53E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh117	9.56E-10	9.56E-10	9.56E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd117	5.24E-08	5.24E-08	5.24E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag117	6.78E-07	6.78E-07	6.78E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag117m	4.97E-08	4.97E-08	4.97E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd117	1.46E-04	1.46E-04	1.46E-04	1.84E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd117m	4.51E-05	4.51E-05	4.51E-05	3.20E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in117	3.19E-05	3.19E-05	3.19E-05	2.06E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in117m	1.04E-04	1.04E-04	1.04E-04	6.20E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn117	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00
sn117m	9.88E-05	9.88E-05	9.88E-05	9.45E-05	1.01E-06	8.18E-13	6.73E-21	.00E+00	.00E+00
tc118	7.42E-18	7.42E-18	7.42E-18	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru118	2.38E-12	2.38E-12	2.38E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh118	5.96E-11	5.96E-11	5.96E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd118	1.57E-08	1.57E-08	1.57E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag118	3.27E-08	3.27E-08	3.27E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag118m	1.23E-08	1.23E-08	1.23E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd118	4.60E-05	4.60E-05	4.60E-05	1.11E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in118	7.63E-08	7.63E-08	7.63E-08	1.84E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in118m	5.28E-09	5.28E-09	5.28E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn118	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01

ru119	9.05E-14	9.05E-14	9.05E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh119	3.06E-11	3.06E-11	3.06E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd119	4.56E-09	4.56E-09	4.56E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag119	2.09E-08	2.09E-08	2.09E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd119	1.73E-06	1.73E-06	1.73E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd119m	6.82E-07	6.82E-07	6.82E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in119	9.69E-07	9.69E-07	9.69E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in119m	1.05E-05	1.05E-05	1.05E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn119	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00
sn119m	2.29E-03	2.29E-03	2.29E-03	2.29E-03	1.85E-03	9.66E-04	4.07E-04	3.05E-05	4.06E-07
ru120	2.08E-14	2.08E-14	2.08E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh120	2.64E-12	2.64E-12	2.64E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd120	5.71E-09	5.71E-09	5.71E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag120	7.90E-09	7.90E-09	7.90E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd120	7.69E-07	7.69E-07	7.69E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in120	4.75E-08	4.75E-08	4.75E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in120m	1.26E-08	1.26E-08	1.26E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn120	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00
rh121	1.06E-12	1.06E-12	1.06E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 13

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
pd121	3.96E-10	3.96E-10	3.96E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag121	3.89E-09	3.89E-09	3.89E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd121	2.06E-07	2.06E-07	2.06E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in121	3.41E-08	3.41E-08	3.41E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in121m	3.62E-06	3.62E-06	3.62E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn121	1.63E-03	1.63E-03	1.63E-03	8.83E-04	4.67E-07	4.63E-07	4.57E-07	4.40E-07	4.13E-07
sn121m	1.08E-02	1.08E-02	1.08E-02	1.08E-02	1.07E-02	1.06E-02	1.05E-02	1.01E-02	9.49E-03
sb121	1.03E+00	1.03E+00	1.03E+00	1.04E+00	1.04E+00	1.04E+00	1.04E+00	1.04E+00	1.04E+00
rh122	5.06E-14	5.06E-14	5.06E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd122	2.88E-10	2.88E-10	2.88E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag122	1.21E-09	1.21E-09	1.21E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd122	8.64E-08	8.64E-08	8.64E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in122	2.76E-08	2.76E-08	2.76E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in122m	1.97E-08	1.97E-08	1.97E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn122	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
sb122	3.32E-04	3.32E-04	3.32E-04	2.57E-04	3.07E-14	.00E+00	.00E+00	.00E+00	.00E+00
sb122m	3.59E-08	3.59E-08	3.59E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te122	4.65E-02	4.65E-02	4.65E-02	4.66E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02
rh123	5.43E-15	5.43E-15	5.43E-15	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd123	1.08E-11	1.08E-11	1.08E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag123	3.96E-10	3.96E-10	3.96E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd123	9.52E-08	9.52E-08	9.52E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in123	8.20E-08	8.20E-08	8.20E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in123m	1.79E-07	1.79E-07	1.79E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn123	1.57E-02	1.57E-02	1.57E-02	1.57E-02	9.71E-03	2.22E-03	3.12E-04	8.72E-07	4.84E-11
sn123m	4.31E-05	4.31E-05	4.31E-05	6.67E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb123	1.22E+00	1.22E+00	1.22E+00	1.22E+00	1.22E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00
te123	2.99E-04	2.99E-04	2.99E-04	2.99E-04	3.27E-04	3.60E-04	3.67E-04	3.68E-04	3.68E-04
te123m	6.92E-05	6.92E-05	6.92E-05	6.88E-05	4.11E-05	8.34E-06	1.01E-06	1.76E-09	4.49E-14
pd124	1.00E-11	1.00E-11	1.00E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag124	1.96E-10	1.96E-10	1.96E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd124	1.49E-08	1.49E-08	1.49E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in124	9.87E-08	9.87E-08	9.87E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn124	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00
sb124	5.48E-03	5.48E-03	5.48E-03	5.41E-03	1.94E-03	8.17E-05	1.22E-06	4.03E-12	2.97E-21
sb124m	2.46E-09	2.46E-09	2.46E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

te124	3.43E-02	3.43E-02	3.43E-02	3.43E-02	3.78E-02	3.97E-02	3.98E-02	3.98E-02	3.98E-02
pd125	7.83E-13	7.83E-13	7.83E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag125	1.19E-10	1.19E-10	1.19E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd125	1.60E-08	1.60E-08	1.60E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in125	4.16E-08	4.16E-08	4.16E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in125m	1.67E-07	1.67E-07	1.67E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn125	8.76E-03	8.76E-03	8.76E-03	8.15E-03	1.36E-05	3.44E-14	1.35E-25	.00E+00	.00E+00
sn125m	1.85E-05	1.85E-05	1.85E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb125	1.85E+00	1.85E+00	1.85E+00	1.85E+00	1.74E+00	1.44E+00	1.12E+00	5.22E-01	1.47E-01
te125	8.02E-01	8.02E-01	8.02E-01	8.04E-01	9.14E-01	1.22E+00	1.55E+00	2.15E+00	2.53E+00
te125m	2.33E-02	2.33E-02	2.33E-02	2.33E-02	2.37E-02	2.04E-02	1.59E-02	7.41E-03	2.08E-03
pd126	2.73E-13	2.73E-13	2.73E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag126	2.20E-11	2.20E-11	2.20E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd126	6.17E-09	6.17E-09	6.17E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in126	6.12E-08	6.12E-08	6.12E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn126	4.89E+00	4.89E+00	4.89E+00	4.89E+00	4.89E+00	4.89E+00	4.89E+00	4.89E+00	4.89E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 14

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
sb126	7.63E-04	7.63E-04	7.63E-04	7.22E-04	5.21E-06	2.32E-07	2.32E-07	2.32E-07	2.32E-07
sb126m	1.02E-06	1.02E-06	1.02E-06	1.77E-09	1.77E-09	1.77E-09	1.77E-09	1.77E-09	1.76E-09
te126	7.76E-02	7.76E-02	7.76E-02	7.77E-02	7.84E-02	7.84E-02	7.84E-02	7.85E-02	7.87E-02
xe126	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09
ag127	1.54E-11	1.54E-11	1.54E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd127	5.35E-09	5.35E-09	5.35E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in127	4.37E-08	4.37E-08	4.37E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in127m	1.43E-07	1.43E-07	1.43E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn127	5.72E-04	5.72E-04	5.72E-04	2.07E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn127m	2.51E-05	2.51E-05	2.51E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb127	6.23E-02	6.23E-02	6.23E-02	5.25E-02	5.76E-09	1.72E-30	.00E+00	.00E+00	.00E+00
te127	6.23E-03	6.23E-03	6.23E-03	5.80E-03	6.04E-04	1.05E-04	1.03E-05	9.68E-09	8.76E-14
te127m	2.94E-01	2.94E-01	2.94E-01	2.94E-01	1.72E-01	3.00E-02	2.94E-03	2.77E-06	2.50E-11
i127	1.08E+01	1.08E+01	1.08E+01	1.08E+01	1.10E+01	1.11E+01	1.12E+01	1.12E+01	1.12E+01
xe127	1.45E-07	1.45E-07	1.45E-07	1.43E-07	2.62E-08	1.39E-10	1.32E-13	1.15E-22	9.04E-38
ag128	4.02E-12	4.02E-12	4.02E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd128	9.25E-09	9.25E-09	9.25E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in128	6.18E-08	6.18E-08	6.18E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn128	1.11E-03	1.11E-03	1.11E-03	5.11E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb128	1.07E-03	1.07E-03	1.07E-03	1.77E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb128m	2.06E-04	2.06E-04	2.06E-04	1.09E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te128	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01
i128	1.96E-05	1.96E-05	1.96E-05	8.75E-23	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe128	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01
cd129	1.32E-09	1.32E-09	1.32E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in129	4.70E-08	4.70E-08	4.70E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn129	3.60E-05	3.60E-05	3.60E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn129m	1.09E-04	1.09E-04	1.09E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb129	1.14E-02	1.14E-02	1.14E-02	2.63E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te129	2.84E-03	2.84E-03	2.84E-03	4.39E-04	5.77E-05	1.97E-07	1.05E-10	1.61E-20	6.97E-37
te129m	3.99E-01	3.99E-01	3.99E-01	3.93E-01	6.26E-02	2.14E-04	1.14E-07	1.74E-17	7.56E-34
i129	4.95E+01	4.95E+01	4.95E+01	4.95E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01
xe129	1.18E-03	1.18E-03	1.18E-03	1.18E-03	1.20E-03	1.20E-03	1.21E-03	1.21E-03	1.22E-03
xe129m	2.07E-05	2.07E-05	2.07E-05	1.92E-05	1.86E-08	8.88E-18	3.81E-30	.00E+00	.00E+00
cd130	7.83E-10	7.83E-10	7.83E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in130	1.86E-08	1.86E-08	1.86E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn130	1.69E-04	1.69E-04	1.69E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb130	5.74E-04	5.74E-04	5.74E-04	6.09E-15	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb130m	3.82E-04	3.82E-04	3.82E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

te130	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02
i130	1.31E-03	1.31E-03	1.31E-03	3.43E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i130m	8.33E-06	8.33E-06	8.33E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe130	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00
cd131	2.73E-11	2.73E-11	2.73E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in131	6.83E-09	6.83E-09	6.83E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn131	2.52E-05	2.52E-05	2.52E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb131	2.46E-03	2.46E-03	2.46E-03	3.54E-22	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te131	2.88E-03	2.88E-03	2.88E-03	8.74E-05	3.22E-26	.00E+00	.00E+00	.00E+00	.00E+00
te131m	4.85E-02	4.85E-02	4.85E-02	2.80E-02	1.03E-23	.00E+00	.00E+00	.00E+00	.00E+00
i131	1.57E+00	1.57E+00	1.57E+00	1.46E+00	6.97E-04	3.45E-14	7.30E-28	.00E+00	.00E+00
xe131	1.36E+02	1.36E+02	1.36E+02	1.36E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02
xe131m	2.55E-02	2.55E-02	2.55E-02	2.55E-02	4.00E-04	4.60E-11	2.64E-20	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 15

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
cd132	4.27E-12	4.27E-12	4.27E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in132	1.27E-09	1.27E-09	1.27E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn132	2.11E-05	2.11E-05	2.11E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb132	2.70E-04	2.70E-04	2.70E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb132m	1.74E-04	1.74E-04	1.74E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te132	9.25E-01	9.25E-01	9.25E-01	7.48E-01	4.48E-09	.00E+00	.00E+00	.00E+00	.00E+00
i132	2.75E-02	2.75E-02	2.75E-02	2.25E-02	1.35E-10	.00E+00	.00E+00	.00E+00	.00E+00
xe132	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02
cs132	4.00E-05	4.00E-05	4.00E-05	3.59E-05	2.63E-09	4.29E-22	4.59E-39	.00E+00	.00E+00
ba132	4.82E-05	4.82E-05	4.82E-05	4.83E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05
in133	2.45E-11	2.45E-11	2.45E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn133	2.08E-07	2.08E-07	2.08E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb133	2.24E-04	2.24E-04	2.24E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te133	1.93E-03	1.93E-03	1.93E-03	5.39E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te133m	7.03E-03	7.03E-03	7.03E-03	1.06E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i133	3.55E-01	3.55E-01	3.55E-01	1.64E-01	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i133m	3.25E-06	3.25E-06	3.25E-06	2.93E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe133	2.09E+00	2.09E+00	2.09E+00	2.02E+00	1.76E-05	2.76E-21	2.98E-42	.00E+00	.00E+00
xe133m	2.82E-02	2.82E-02	2.82E-02	2.54E-02	1.94E-14	.00E+00	.00E+00	.00E+00	.00E+00
cs133	3.38E+02	3.38E+02	3.38E+02	3.39E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02
ba133	2.52E-08	2.52E-08	2.52E-08	2.52E-08	2.48E-08	2.36E-08	2.21E-08	1.81E-08	1.30E-08
in134	2.98E-12	2.98E-12	2.98E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn134	2.57E-08	2.57E-08	2.57E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb134	2.33E-07	2.33E-07	2.33E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb134m	2.08E-06	2.08E-06	2.08E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te134	1.06E-02	1.06E-02	1.06E-02	4.51E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i134	1.67E-02	1.67E-02	1.67E-02	3.90E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i134m	1.02E-04	1.02E-04	1.02E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe134	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02
xe134m	2.79E-08	2.79E-08	2.79E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs134	2.08E+01	2.08E+01	2.08E+01	2.08E+01	1.92E+01	1.49E+01	1.06E+01	3.88E+00	7.23E-01
cs134m	6.61E-04	6.61E-04	6.61E-04	2.18E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba134	8.91E+00	8.91E+00	8.91E+00	8.93E+00	1.06E+01	1.49E+01	1.91E+01	2.59E+01	2.90E+01
sn135	8.95E-10	8.95E-10	8.95E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb135	2.17E-07	2.17E-07	2.17E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te135	4.34E-05	4.34E-05	4.34E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i135	1.08E-01	1.08E-01	1.08E-01	8.60E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe135	7.66E-02	7.66E-02	7.66E-02	4.43E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe135m	9.14E-04	9.14E-04	9.14E-04	5.45E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs135	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02
cs135m	1.03E-04	1.03E-04	1.03E-04	6.85E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba135	3.81E-02	3.81E-02	3.81E-02	3.82E-02	3.82E-02	3.82E-02	3.83E-02	3.84E-02	3.87E-02

ba135m	3.22E-05	3.22E-05	3.22E-05	1.81E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn136	1.36E-10	1.36E-10	1.36E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb136	1.65E-08	1.65E-08	1.65E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te136	1.80E-05	1.80E-05	1.80E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i136	1.75E-04	1.75E-04	1.75E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i136m	4.82E-05	4.82E-05	4.82E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe136	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02
cs136	1.34E-01	1.34E-01	1.34E-01	1.27E-01	1.17E-03	5.92E-10	2.61E-18	.00E+00	.00E+00
ba136	4.65E+00	4.65E+00	4.65E+00	4.66E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00
ba136m	4.08E-09	4.08E-09	4.08E-09	3.87E-09	3.56E-11	1.80E-17	7.94E-26	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 16

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
sb137	9.38E-09	9.38E-09	9.38E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te137	1.23E-06	1.23E-06	1.23E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i137	5.54E-05	5.54E-05	5.54E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe137	1.02E-03	1.02E-03	1.02E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs137	3.46E+02	3.46E+02	3.46E+02	3.46E+02	3.44E+02	3.38E+02	3.30E+02	3.08E+02	2.75E+02
ba137	1.43E+01	1.43E+01	1.43E+01	1.43E+01	1.63E+01	2.22E+01	2.99E+01	5.20E+01	8.56E+01
ba137m	5.31E-05	5.31E-05	5.31E-05	5.28E-05	5.25E-05	5.16E-05	5.04E-05	4.71E-05	4.19E-05
sb138	4.92E-11	4.92E-11	4.92E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te138	1.20E-07	1.20E-07	1.20E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i138	7.48E-06	7.48E-06	7.48E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe138	3.54E-03	3.54E-03	3.54E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs138	8.77E-03	8.77E-03	8.77E-03	5.21E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs138m	3.36E-05	3.36E-05	3.36E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba138	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02
la138	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03
sb139	4.72E-12	4.72E-12	4.72E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te139	7.94E-09	7.94E-09	7.94E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i139	1.30E-06	1.30E-06	1.30E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe139	1.24E-04	1.24E-04	1.24E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs139	2.37E-03	2.37E-03	2.37E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba139	2.22E-02	2.22E-02	2.22E-02	1.89E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la139	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02
ce139	3.11E-06	3.11E-06	3.11E-06	3.10E-06	1.98E-06	4.95E-07	7.86E-08	3.15E-10	3.19E-14
pr139	2.13E-10	2.13E-10	2.13E-10	4.91E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te140	1.80E-09	1.80E-09	1.80E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i140	1.25E-07	1.25E-07	1.25E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe140	2.98E-05	2.98E-05	2.98E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs140	2.45E-04	2.45E-04	2.45E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba140	4.85E+00	4.85E+00	4.85E+00	4.59E+00	3.64E-02	1.16E-08	2.78E-17	.00E+00	.00E+00
la140	6.59E-01	6.59E-01	6.59E-01	6.46E-01	5.52E-03	1.76E-09	4.22E-18	.00E+00	.00E+00
ce140	3.61E+02	3.61E+02	3.61E+02	3.62E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02
pr140	9.58E-09	9.58E-09	9.58E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te141	6.64E-12	6.64E-12	6.64E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i141	9.03E-09	9.03E-09	9.03E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe141	1.47E-06	1.47E-06	1.47E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs141	7.39E-05	7.39E-05	7.39E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba141	4.42E-03	4.42E-03	4.42E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la141	5.74E-02	5.74E-02	5.74E-02	8.94E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce141	1.15E+01	1.15E+01	1.15E+01	1.13E+01	1.69E+00	4.77E-03	1.97E-06	1.40E-16	1.70E-33
pr141	3.10E+02	3.10E+02	3.10E+02	3.10E+02	3.20E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02
nd141	5.58E-10	5.58E-10	5.58E-10	6.97E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te142	5.69E-12	5.69E-12	5.69E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i142	1.06E-09	1.06E-09	1.06E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe142	4.13E-07	4.13E-07	4.13E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs142	2.93E-06	2.93E-06	2.93E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

ba142	2.45E-03	2.45E-03	2.45E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la142	2.19E-02	2.19E-02	2.19E-02	4.30E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce142	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02
pr142	6.12E-03	6.12E-03	6.12E-03	2.56E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr142m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd142	3.23E+00	3.23E+00	3.23E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00
i143	2.57E-11	2.57E-11	2.57E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 17

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
xe143	4.92E-08	4.92E-08	4.92E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs143	1.57E-06	1.57E-06	1.57E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba143	4.82E-05	4.82E-05	4.82E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la143	3.25E-03	3.25E-03	3.25E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce143	4.58E-01	4.58E-01	4.58E-01	2.79E-01	9.13E-21	.00E+00	.00E+00	.00E+00	.00E+00
pr143	4.38E+00	4.38E+00	4.38E+00	4.34E+00	4.92E-02	3.84E-08	3.01E-16	.00E+00	.00E+00
nd143	2.64E+02	2.64E+02	2.64E+02	2.64E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02
i144	3.79E-13	3.79E-13	3.79E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe144	1.22E-08	1.22E-08	1.22E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs144	2.64E-07	2.64E-07	2.64E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba144	2.96E-05	2.96E-05	2.96E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la144	1.39E-04	1.39E-04	1.39E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce144	8.57E+01	8.57E+01	8.57E+01	8.55E+01	6.89E+01	3.53E+01	1.45E+01	1.01E+00	1.19E-02
pr144	3.62E-03	3.62E-03	3.62E-03	3.60E-03	2.90E-03	1.49E-03	6.11E-04	4.25E-05	5.00E-07
pr144m	2.11E-05	2.11E-05	2.11E-05	2.10E-05	1.69E-05	8.66E-06	3.56E-06	2.48E-07	2.92E-09
nd144	2.56E+02	2.56E+02	2.56E+02	2.56E+02	2.73E+02	3.07E+02	3.27E+02	3.41E+02	3.42E+02
i145	1.59E-14	1.59E-14	1.59E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe145	1.01E-09	1.01E-09	1.01E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs145	3.80E-08	3.80E-08	3.80E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba145	5.01E-06	5.01E-06	5.01E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la145	5.89E-05	5.89E-05	5.89E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce145	4.80E-04	4.80E-04	4.80E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr145	5.73E-02	5.73E-02	5.73E-02	3.59E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd145	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02
pm145	7.90E-05	7.90E-05	7.90E-05	7.92E-05	9.38E-05	1.24E-04	1.42E-04	1.43E-04	1.20E-04
sm145	9.31E-05	9.31E-05	9.31E-05	9.29E-05	7.75E-05	4.42E-05	2.10E-05	2.25E-06	5.44E-08
xe146	5.73E-11	5.73E-11	5.73E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs146	4.87E-09	4.87E-09	4.87E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba146	1.33E-06	1.33E-06	1.33E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la146	9.74E-06	9.74E-06	9.74E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce146	1.73E-03	1.73E-03	1.73E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr146	3.11E-03	3.11E-03	3.11E-03	7.92E-21	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd146	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02
pm146	1.87E-03	1.87E-03	1.87E-03	1.87E-03	1.82E-03	1.65E-03	1.46E-03	1.00E-03	5.35E-04
sm146	1.95E-03	1.95E-03	1.95E-03	1.95E-03	1.97E-03	2.02E-03	2.09E-03	2.24E-03	2.40E-03
xe147	6.43E-14	6.43E-14	6.43E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs147	1.75E-10	1.75E-10	1.75E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba147	7.16E-08	7.16E-08	7.16E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la147	2.96E-06	2.96E-06	2.96E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce147	9.09E-05	9.09E-05	9.09E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr147	1.39E-03	1.39E-03	1.39E-03	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd147	1.62E+00	1.62E+00	1.62E+00	1.52E+00	5.52E-03	1.57E-10	1.52E-20	.00E+00	.00E+00
pm147	5.78E+01	5.78E+01	5.78E+01	5.79E+01	5.57E+01	4.56E+01	3.50E+01	1.59E+01	4.23E+00
sm147	3.03E+01	3.03E+01	3.03E+01	3.03E+01	3.40E+01	4.40E+01	5.46E+01	7.38E+01	8.54E+01
cs148	1.21E-11	1.21E-11	1.21E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba148	1.24E-08	1.24E-08	1.24E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la148	2.25E-07	2.25E-07	2.25E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce148	6.40E-05	6.40E-05	6.40E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

pr148	1.80E-04	1.80E-04	1.80E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd148	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02
pm148	1.79E-01	1.79E-01	1.79E-01	1.57E-01	5.80E-04	5.70E-06	1.24E-08	1.28E-16	6.21E-30
pm148m	3.81E-01	3.81E-01	3.81E-01	3.75E-01	8.42E-02	8.29E-04	1.80E-06	1.86E-14	9.04E-28

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 18

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
sm148	2.84E+01	2.84E+01	2.84E+01	2.84E+01	2.88E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01
cs149	1.19E-13	1.19E-13	1.19E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba149	1.60E-09	1.60E-09	1.60E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la149	1.48E-07	1.48E-07	1.48E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce149	3.08E-06	3.08E-06	3.08E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr149	1.24E-04	1.24E-04	1.24E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd149	6.03E-03	6.03E-03	6.03E-03	3.99E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm149	2.49E-01	2.49E-01	2.49E-01	1.87E-01	1.44E-13	.00E+00	.00E+00	.00E+00	.00E+00
sm149	1.17E+00	1.17E+00	1.17E+00	1.23E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00
eu149	3.79E-11	3.79E-11	3.79E-11	3.76E-11	1.94E-11	2.49E-12	1.64E-13	4.68E-17	5.79E-23
cs150	7.79E-15	7.79E-15	7.79E-15	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba150	2.02E-10	2.02E-10	2.02E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la150	6.33E-09	6.33E-09	6.33E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce150	1.07E-06	1.07E-06	1.07E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr150	3.53E-06	3.53E-06	3.53E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd150	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01
pm150	5.92E-05	5.92E-05	5.92E-05	1.19E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm150	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01
eu150	2.14E-07	2.14E-07	2.14E-07	2.14E-07	2.13E-07	2.10E-07	2.06E-07	1.95E-07	1.77E-07
ba151	7.05E-13	7.05E-13	7.05E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la151	1.28E-09	1.28E-09	1.28E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce151	7.82E-08	7.82E-08	7.82E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr151	5.63E-06	5.63E-06	5.63E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd151	3.73E-04	3.73E-04	3.73E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm151	5.17E-02	5.17E-02	5.17E-02	2.90E-02	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm151	6.15E+00	6.15E+00	6.15E+00	6.17E+00	6.19E+00	6.15E+00	6.11E+00	5.97E+00	5.74E+00
eu151	1.55E-02	1.55E-02	1.55E-02	1.56E-02	2.72E-02	6.30E-02	1.10E-01	2.50E-01	4.75E-01
ba152	4.80E-15	4.80E-15	4.80E-15	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la152	6.93E-12	6.93E-12	6.93E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce152	6.72E-08	6.72E-08	6.72E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr152	6.55E-07	6.55E-07	6.55E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd152	2.30E-04	2.30E-04	2.30E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm152	8.57E-05	8.57E-05	8.57E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm152m	5.66E-06	5.66E-06	5.66E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm152	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01
eu152	2.65E-02	2.65E-02	2.65E-02	2.65E-02	2.62E-02	2.52E-02	2.39E-02	2.05E-02	1.58E-02
eu152m	2.51E-05	2.51E-05	2.51E-05	4.21E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd152	2.45E-02	2.45E-02	2.45E-02	2.45E-02	2.46E-02	2.49E-02	2.53E-02	2.62E-02	2.75E-02
la153	4.68E-12	4.68E-12	4.68E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce153	5.33E-09	5.33E-09	5.33E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr153	1.88E-07	1.88E-07	1.88E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd153	1.30E-05	1.30E-05	1.30E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm153	7.53E-05	7.53E-05	7.53E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm153	1.48E-01	1.48E-01	1.48E-01	1.03E-01	1.32E-15	.00E+00	.00E+00	.00E+00	.00E+00
eu153	2.68E+01	2.68E+01	2.68E+01	2.69E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01
gd153	7.13E-04	7.13E-04	7.13E-04	7.11E-04	5.51E-04	2.50E-04	8.77E-05	3.78E-06	2.00E-08
la154	5.64E-14	5.64E-14	5.64E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce154	7.52E-10	7.52E-10	7.52E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr154	8.48E-09	8.48E-09	8.48E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd154	3.79E-06	3.79E-06	3.79E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm154	1.24E-05	1.24E-05	1.24E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

pm154m	4.02E-06	4.02E-06	4.02E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 19

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
sm154	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00
eu154	7.30E+00	7.30E+00	7.30E+00	7.30E+00	7.16E+00	6.73E+00	6.21E+00	4.88E+00	3.26E+00
gd154	6.33E-01	6.33E-01	6.33E-01	6.35E-01	7.77E-01	1.20E+00	1.72E+00	3.06E+00	4.67E+00
la155	2.88E-16	2.88E-16	2.88E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce155	1.71E-11	1.71E-11	1.71E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr155	1.98E-09	1.98E-09	1.98E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd155	5.96E-07	5.96E-07	5.96E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm155	3.63E-06	3.63E-06	3.63E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm155	1.23E-04	1.23E-04	1.23E-04	4.63E-24	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu155	3.12E+00	3.12E+00	3.12E+00	3.12E+00	3.01E+00	2.69E+00	2.32E+00	1.49E+00	7.10E-01
gd155m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd155	5.34E-02	5.34E-02	5.34E-02	5.46E-02	1.65E-01	4.83E-01	8.54E-01	1.69E+00	2.47E+00
ce156	1.51E-12	1.51E-12	1.51E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr156	9.59E-11	9.59E-11	9.59E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd156	2.27E-07	2.27E-07	2.27E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm156	4.95E-07	4.95E-07	4.95E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm156	1.97E-03	1.97E-03	1.97E-03	3.36E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu156	3.13E-01	3.13E-01	3.13E-01	3.01E-01	5.19E-03	1.81E-08	1.04E-15	.00E+00	.00E+00
gd156	9.00E+00	9.00E+00	9.00E+00	9.01E+00	9.31E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00
ce157	2.60E-14	2.60E-14	2.60E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr157	1.46E-11	1.46E-11	1.46E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd157	7.14E-09	7.14E-09	7.14E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm157	1.02E-06	1.02E-06	1.02E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm157	1.74E-05	1.74E-05	1.74E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu157	2.31E-03	2.31E-03	2.31E-03	7.80E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd157	2.88E-02	2.88E-02	2.88E-02	3.03E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02
pr158	3.40E-13	3.40E-13	3.40E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd158	1.29E-09	1.29E-09	1.29E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm158	1.68E-08	1.68E-08	1.68E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm158	6.11E-06	6.11E-06	6.11E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu158	5.75E-05	5.75E-05	5.75E-05	2.32E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd158	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00
pr159	1.49E-14	1.49E-14	1.49E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd159	2.75E-11	2.75E-11	2.75E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm159	2.99E-09	2.99E-09	2.99E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm159	1.21E-06	1.21E-06	1.21E-06	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu159	1.14E-05	1.14E-05	1.14E-05	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd159	8.20E-04	8.20E-04	8.20E-04	3.40E-04	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb159	5.02E-01	5.02E-01	5.02E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01
nd160	1.99E-12	1.99E-12	1.99E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm160	8.10E-11	8.10E-11	8.10E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm160	1.60E-07	1.60E-07	1.60E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu160	1.87E-07	1.87E-07	1.87E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd160	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01
tb160	8.91E-03	8.91E-03	8.91E-03	8.83E-03	3.76E-03	2.69E-04	8.10E-06	2.22E-10	5.53E-18
dy160	3.04E-02	3.04E-02	3.04E-02	3.05E-02	3.55E-02	3.90E-02	3.93E-02	3.93E-02	3.93E-02
nd161	3.04E-14	3.04E-14	3.04E-14	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm161	9.99E-12	9.99E-12	9.99E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm161	2.24E-09	2.24E-09	2.24E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu161	6.86E-08	6.86E-08	6.86E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd161	5.03E-07	5.03E-07	5.03E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb161	1.44E-03	1.44E-03	1.44E-03	1.30E-03	1.71E-07	1.68E-19	1.96E-35	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 20

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	charge	discharge	.0 d	1.0 d	90.0 d	365.3 d	730.5 d	1826.3 d	3652.5 d
dy161	8.12E-02	8.12E-02	8.12E-02	8.13E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02
pm162	2.17E-13	2.17E-13	2.17E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm162	3.58E-10	3.58E-10	3.58E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu162	6.73E-08	6.73E-08	6.73E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd162	4.94E-07	4.94E-07	4.94E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb162	4.65E-07	4.65E-07	4.65E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb162m	1.49E-07	1.49E-07	1.49E-07	8.55E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy162	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02
sm163	6.78E-12	6.78E-12	6.78E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu163	6.20E-10	6.20E-10	6.20E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd163	3.23E-08	3.23E-08	3.23E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb163	4.70E-07	4.70E-07	4.70E-07	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb163m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy163	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02
sm164	4.86E-13	4.86E-13	4.86E-13	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu164	1.47E-11	1.47E-11	1.47E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd164	1.35E-07	1.35E-07	1.35E-07	1.38E-27	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb164	2.63E-08	2.63E-08	2.63E-08	2.21E-28	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy164	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
sm165	7.20E-15	7.20E-15	7.20E-15	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu165	1.41E-12	1.41E-12	1.41E-12	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd165	9.57E-10	9.57E-10	9.57E-10	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb165	6.35E-09	6.35E-09	6.35E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy165	3.09E-06	3.09E-06	3.09E-06	2.50E-09	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy165m	2.11E-08	2.11E-08	2.11E-08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho165	9.49E-03	9.49E-03	9.49E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03
dy166	2.61E-06	2.61E-06	2.61E-06	2.13E-06	2.82E-14	.00E+00	.00E+00	.00E+00	.00E+00
ho166	6.02E-06	6.02E-06	6.02E-06	3.59E-06	1.38E-14	.00E+00	.00E+00	.00E+00	.00E+00
ho166m	2.38E-05	2.38E-05	2.38E-05	2.38E-05	2.38E-05	2.38E-05	2.38E-05	2.37E-05	2.37E-05
er166	1.54E-03	1.54E-03	1.54E-03	1.54E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03
er167	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05
er167m	6.33E-16	6.33E-16	6.33E-16	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er168	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05
yb168	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er169	1.23E-08	1.23E-08	1.23E-08	1.14E-08	1.61E-11	2.47E-20	4.97E-32	.00E+00	.00E+00
tm169	7.29E-07	7.29E-07	7.29E-07	7.30E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07
yb169	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er170	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07
tm170	9.71E-10	9.71E-10	9.71E-10	9.66E-10	5.98E-10	1.36E-10	1.89E-11	5.15E-14	2.73E-18
tm170m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb170	3.65E-09	3.65E-09	3.65E-09	3.66E-09	4.02E-09	4.49E-09	4.60E-09	4.62E-09	4.62E-09
er171	5.73E-10	5.73E-10	5.73E-10	6.27E-11	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm171	6.82E-07	6.82E-07	6.82E-07	6.82E-07	6.24E-07	4.76E-07	3.31E-07	1.12E-07	1.85E-08
yb171	3.69E-07	3.69E-07	3.69E-07	3.70E-07	4.27E-07	5.76E-07	7.20E-07	9.39E-07	1.03E-06
er172	2.37E-09	2.37E-09	2.37E-09	1.69E-09	1.54E-22	.00E+00	.00E+00	.00E+00	.00E+00
tm172	3.20E-09	3.20E-09	3.20E-09	3.06E-09	8.23E-19	.00E+00	.00E+00	.00E+00	.00E+00
yb172	6.67E-07	6.67E-07	6.67E-07	6.68E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07
total	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03

1 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 21

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
he 4	2.09E-01	2.70E-01	3.35E-01	4.74E-01	7.72E-01	1.51E+00	2.18E+00	2.79E+00	3.36E+00	3.87E+00	4.81E+00
tl206	1.29E-22	3.23E-22	6.46E-22	1.79E-21	6.59E-21	3.78E-20	1.01E-19	2.00E-19	3.34E-19	5.04E-19	9.52E-19
tl207	2.29E-14	3.24E-14	4.16E-14	5.93E-14	9.27E-14	1.71E-13	2.47E-13	3.22E-13	3.98E-13	4.73E-13	6.23E-13
tl208	1.13E-11	1.22E-11	1.22E-11	1.12E-11	9.22E-12	5.61E-12	3.41E-12	2.08E-12	1.26E-12	7.70E-13	2.85E-13

tl209	8.79E-19	1.21E-18	1.58E-18	2.46E-18	4.80E-18	1.44E-17	3.01E-17	5.28E-17	8.35E-17	1.23E-16	2.31E-16	
pb206	2.81E-11	9.66E-11	2.48E-10	9.95E-10	6.06E-09	7.08E-08	2.91E-07	7.77E-07	1.65E-06	3.02E-06	7.74E-06	
pb207	1.01E-08	2.07E-08	3.48E-08	7.35E-08	1.90E-07	6.97E-07	1.50E-06	2.59E-06	3.97E-06	5.64E-06	9.84E-06	
pb208	2.38E-05	4.36E-05	6.40E-05	1.03E-04	1.71E-04	2.91E-04	3.65E-04	4.09E-04	4.37E-04	4.53E-04	4.69E-04	
pb209	3.71E-15	5.09E-15	6.66E-15	1.04E-14	2.03E-14	6.08E-14	1.27E-13	2.23E-13	3.53E-13	5.19E-13	9.74E-13	
pb210	2.79E-10	6.96E-10	1.39E-09	3.85E-09	1.42E-08	8.16E-08	2.19E-07	4.31E-07	7.20E-07	1.09E-06	2.05E-06	
pb211	1.77E-13	2.51E-13	3.22E-13	4.58E-13	7.17E-13	1.32E-12	1.91E-12	2.49E-12	3.08E-12	3.66E-12	4.82E-12	
pb212	6.68E-09	7.26E-09	7.21E-09	6.65E-09	5.46E-09	3.32E-09	2.02E-09	1.23E-09	7.50E-10	4.56E-10	1.69E-10	
pb214	5.12E-15	9.83E-15	1.61E-14	3.34E-14	8.76E-14	3.41E-13	7.70E-13	1.38E-12	2.17E-12	3.14E-12	5.62E-12	
bi208	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
bi209	6.31E-11	1.04E-10	1.59E-10	3.16E-10	8.78E-10	4.48E-09	1.30E-08	2.91E-08	5.57E-08	9.61E-08	2.33E-07	
bi210m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
bi210	1.72E-13	4.29E-13	8.58E-13	2.37E-12	8.75E-12	5.02E-11	1.35E-10	2.65E-10	4.43E-10	6.69E-10	1.26E-09	
bi211	1.05E-14	1.49E-14	1.91E-14	2.72E-14	4.25E-14	7.84E-14	1.13E-13	1.48E-13	1.82E-13	2.17E-13	2.86E-13	
bi212	6.34E-10	6.89E-10	6.84E-10	6.30E-10	5.18E-10	3.15E-10	1.92E-10	1.17E-10	7.11E-11	4.33E-11	1.61E-11	
bi213	8.84E-16	1.21E-15	1.59E-15	2.47E-15	4.83E-15	1.45E-14	3.02E-14	5.31E-14	8.40E-14	1.24E-13	2.32E-13	
bi214	3.81E-15	7.30E-15	1.20E-14	2.48E-14	6.50E-14	2.53E-13	5.72E-13	1.02E-12	1.61E-12	2.33E-12	4.17E-12	
po210	4.74E-12	1.18E-11	2.37E-11	6.55E-11	2.42E-10	1.39E-09	3.71E-09	7.32E-09	1.22E-08	1.85E-08	3.49E-08	
po211m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
po211	1.16E-19	1.64E-19	2.11E-19	3.00E-19	4.70E-19	8.66E-19	1.25E-18	1.63E-18	2.01E-18	2.40E-18	3.16E-18	
po212	3.33E-20	3.62E-20	3.59E-20	3.31E-20	2.72E-20	1.66E-20	1.01E-20	6.14E-21	3.74E-21	2.27E-21	8.44E-22	
po213	1.33E-24	1.82E-24	2.38E-24	3.72E-24	7.26E-24	2.17E-23	4.55E-23	7.99E-23	1.26E-22	1.86E-22	3.49E-22	
po214	5.24E-22	1.00E-21	1.65E-21	3.42E-21	8.95E-21	3.48E-20	7.86E-20	1.41E-19	2.21E-19	3.21E-19	5.74E-19	
po215	1.48E-19	2.10E-19	2.69E-19	3.84E-19	6.00E-19	1.11E-18	1.60E-18	2.09E-18	2.58E-18	3.06E-18	4.04E-18	
po216	2.58E-14	2.80E-14	2.78E-14	2.56E-14	2.11E-14	1.28E-14	7.80E-15	4.75E-15	2.89E-15	1.76E-15	6.53E-16	
po218	6.04E-16	1.16E-15	1.90E-15	3.94E-15	1.03E-14	4.02E-14	9.07E-14	1.62E-13	2.56E-13	3.70E-13	6.62E-13	
at217	1.06E-20	1.46E-20	1.91E-20	2.98E-20	5.81E-20	1.74E-19	3.64E-19	6.39E-19	1.01E-18	1.49E-18	2.79E-18	
rn218	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
rn219	3.36E-16	4.75E-16	6.10E-16	8.70E-16	1.36E-15	2.51E-15	3.62E-15	4.73E-15	5.84E-15	6.94E-15	9.14E-15	
rn220	1.01E-11	1.09E-11	1.09E-11	1.00E-11	8.23E-12	5.01E-12	3.05E-12	1.85E-12	1.13E-12	6.88E-13	2.55E-13	
rn222	1.09E-12	2.10E-12	3.43E-12	7.13E-12	1.87E-11	7.27E-11	1.64E-10	2.94E-10	4.62E-10	6.69E-10	1.20E-09	
fr221	9.86E-17	1.35E-16	1.77E-16	2.76E-16	5.39E-16	1.61E-15	3.37E-15	5.93E-15	9.36E-15	1.38E-14	2.59E-14	
fr223	1.56E-15	2.20E-15	2.83E-15	4.03E-15	6.31E-15	1.16E-14	1.68E-14	2.19E-14	2.71E-14	3.22E-14	4.24E-14	
ra222	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ra223	8.54E-11	1.21E-10	1.55E-10	2.21E-10	3.46E-10	6.37E-10	9.20E-10	1.20E-09	1.48E-09	1.76E-09	2.32E-09	
ra224	5.83E-08	6.33E-08	6.29E-08	5.80E-08	4.77E-08	2.90E-08	1.76E-08	1.07E-08	6.54E-09	3.98E-09	1.48E-09	
ra225	4.37E-13	5.99E-13	7.84E-13	1.22E-12	2.39E-12	7.15E-12	1.49E-11	2.62E-11	4.15E-11	6.10E-11	1.15E-10	
ra226	1.70E-07	3.26E-07	5.34E-07	1.11E-06	2.91E-06	1.13E-05	2.55E-05	4.57E-05	7.19E-05	1.04E-04	1.86E-04	
ra228	9.44E-14	1.62E-13	2.37E-13	3.96E-13	7.24E-13	1.55E-12	2.38E-12	3.22E-12	4.05E-12	4.89E-12	6.71E-12	
ac225	2.95E-13	4.05E-13	5.29E-13	8.25E-13	1.61E-12	4.83E-12	1.01E-11	1.77E-11	2.80E-11	4.12E-11	7.74E-11	
ac227	6.04E-08	8.54E-08	1.10E-07	1.56E-07	2.44E-07	4.51E-07	6.51E-07	8.50E-07	1.05E-06	1.25E-06	1.64E-06	
ac228	1.15E-17	1.98E-17	2.89E-17	4.83E-17	8.84E-17	1.90E-16	2.91E-16	3.93E-16	4.95E-16	5.97E-16	8.19E-16	
th226	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
th227	1.40E-10	1.98E-10	2.55E-10	3.63E-10	5.68E-10	1.05E-09	1.51E-09	1.97E-09	2.44E-09	2.90E-09	3.82E-09	
th228	1.13E-05	1.23E-05	1.22E-05	1.13E-05	9.26E-06	5.63E-06	3.43E-06	2.09E-06	1.27E-06	7.74E-07	2.87E-07	
th229	8.64E-08	1.19E-07	1.55E-07	2.42E-07	4.72E-07	1.41E-06	2.96E-06	5.19E-06	8.21E-06	1.21E-05	2.27E-05	
th230	2.89E-03	4.04E-03	5.21E-03	7.59E-03	1.25E-02	2.55E-02	3.93E-02	5.35E-02	6.81E-02	8.29E-02	1.13E-01	
th231	2.56E-08	2.56E-08	2.56E-08	2.56E-08	2.56E-08	2.56E-08	2.57E-08	2.57E-08	2.57E-08	2.57E-08	2.57E-08	

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 22

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
th232	4.95E-04	7.01E-04	9.07E-04	1.32E-03	2.14E-03	4.21E-03	6.27E-03	8.35E-03	1.04E-02	1.25E-02	1.67E-02
th233	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
th234	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06
pa231	3.37E-04	3.67E-04	3.98E-04	4.59E-04	5.80E-04	8.85E-04	1.19E-03	1.49E-03	1.80E-03	2.10E-03	2.71E-03
pa232	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pa233	4.41E-06	4.46E-06	4.53E-06	4.68E-06	5.05E-06	6.05E-06	7.00E-06	7.88E-06	8.70E-06	9.45E-06	1.08E-05
pa234m	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10

pa234	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u231	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u232	4.60E-04	4.62E-04	4.47E-04	4.07E-04	3.34E-04	2.03E-04	1.24E-04	7.54E-05	4.59E-05	2.79E-05	1.04E-05
u233	1.40E-03	1.60E-03	1.81E-03	2.25E-03	3.16E-03	5.76E-03	8.82E-03	1.23E-02	1.62E-02	2.04E-02	2.99E-02
u234	8.28E+01	8.39E+01	8.49E+01	8.68E+01	9.03E+01	9.69E+01	1.01E+02	1.04E+02	1.06E+02	1.08E+02	1.09E+02
u235	6.30E+03	6.30E+03	6.30E+03	6.30E+03	6.30E+03	6.31E+03	6.31E+03	6.31E+03	6.32E+03	6.32E+03	6.33E+03
u236	1.41E+03	1.41E+03	1.41E+03	1.42E+03	1.42E+03	1.42E+03	1.42E+03	1.43E+03	1.43E+03	1.43E+03	1.44E+03
u237	7.57E-06	5.94E-06	4.67E-06	2.88E-06	1.10E-06	9.79E-08	8.74E-09	7.83E-10	7.20E-11	8.48E-12	2.28E-12
u238	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05
u239	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u240	6.17E-22	9.15E-22	1.21E-21	1.81E-21	3.00E-21	5.99E-21	8.97E-21	1.20E-20	1.49E-20	1.79E-20	2.39E-20
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	5.36E-09	2.20E-10	9.00E-12	1.51E-14	4.24E-20	5.62E-34	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np236m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np236	3.71E-04	3.71E-04	3.71E-04	3.71E-04	3.71E-04	3.70E-04	3.70E-04	3.70E-04	3.70E-04	3.70E-04	3.70E-04
np237	1.30E+02	1.31E+02	1.33E+02	1.38E+02	1.49E+02	1.78E+02	2.06E+02	2.32E+02	2.56E+02	2.78E+02	3.17E+02
np238	7.48E-08	7.30E-08	7.12E-08	6.78E-08	6.14E-08	4.81E-08	3.76E-08	2.94E-08	2.30E-08	1.80E-08	1.10E-08
np239	8.67E-06	8.67E-06	8.66E-06	8.65E-06	8.64E-06	8.60E-06	8.56E-06	8.52E-06	8.48E-06	8.44E-06	8.36E-06
np240m	5.27E-24	7.81E-24	1.04E-23	1.54E-23	2.56E-23	5.11E-23	7.65E-23	1.02E-22	1.27E-22	1.53E-22	2.04E-22
np240	5.42E-26	8.04E-26	1.07E-25	1.59E-25	2.64E-25	5.26E-25	7.87E-25	1.05E-24	1.31E-24	1.57E-24	2.10E-24
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	3.60E-05	1.09E-05	3.30E-06	3.03E-07	3.37E-09	8.32E-10	8.31E-10	8.31E-10	8.31E-10	8.30E-10	8.30E-10
pu237	5.08E-30	3.32E-42	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu238	2.81E+01	2.71E+01	2.60E+01	2.41E+01	2.06E+01	1.39E+01	9.40E+00	6.36E+00	4.31E+00	2.92E+00	1.35E+00
pu239	2.63E+03	2.63E+03	2.63E+03	2.63E+03	2.63E+03	2.62E+03	2.62E+03	2.62E+03	2.61E+03	2.61E+03	2.60E+03
pu240	6.72E+02	6.72E+02	6.71E+02	6.71E+02	6.70E+02	6.66E+02	6.63E+02	6.59E+02	6.56E+02	6.52E+02	6.46E+02
pu241	2.50E+02	1.96E+02	1.54E+02	9.50E+01	3.62E+01	3.23E+00	2.88E-01	2.58E-02	2.37E-03	2.80E-04	7.54E-05
pu242	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01	7.08E+01
pu243	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15
pu244	3.12E-11	4.63E-11	6.15E-11	9.17E-11	1.52E-10	3.03E-10	4.54E-10	6.05E-10	7.56E-10	9.07E-10	1.21E-09
pu245	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu246	1.25E-21	1.25E-21	1.25E-21	1.25E-21	1.25E-21	1.24E-21	1.24E-21	1.24E-21	1.24E-21	1.23E-21	1.23E-21
am239	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am240	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am241	1.71E+02	2.23E+02	2.63E+02	3.17E+02	3.65E+02	3.68E+02	3.42E+02	3.16E+02	2.92E+02	2.69E+02	2.30E+02
am242m	4.11E-01	4.01E-01	3.91E-01	3.73E-01	3.38E-01	2.64E-01	2.07E-01	1.62E-01	1.26E-01	9.88E-02	6.05E-02
am242	5.30E-06	5.18E-06	5.05E-06	4.81E-06	4.36E-06	3.41E-06	2.67E-06	2.08E-06	1.63E-06	1.28E-06	7.80E-07
am243	1.01E+01	1.01E+01	1.01E+01	1.01E+01	1.00E+01	9.99E+00	9.94E+00	9.90E+00	9.85E+00	9.80E+00	9.71E+00
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am245	2.19E-20	4.18E-22	8.01E-24	2.94E-27	3.94E-34	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am246	3.12E-24	3.12E-24	3.12E-24	3.12E-24	3.12E-24	3.11E-24	3.10E-24	3.10E-24	3.09E-24	3.08E-24	3.07E-24
cm241	3.38E-43	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 23

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
cm242	1.07E-03	1.05E-03	1.02E-03	9.71E-04	8.80E-04	6.88E-04	5.38E-04	4.21E-04	3.29E-04	2.57E-04	1.57E-04
cm243	4.73E-02	4.18E-02	3.71E-02	2.91E-02	1.79E-02	5.29E-03	1.57E-03	4.65E-04	1.38E-04	4.08E-05	3.59E-06
cm244	1.03E+00	8.54E-01	7.05E-01	4.81E-01	2.24E-01	3.29E-02	4.85E-03	7.15E-04	1.05E-04	1.55E-05	3.37E-07
cm245	4.58E-02	4.58E-02	4.58E-02	4.57E-02	4.56E-02	4.55E-02	4.53E-02	4.51E-02	4.49E-02	4.47E-02	4.44E-02
cm246	2.99E-03	2.99E-03	2.99E-03	2.98E-03	2.98E-03	2.95E-03	2.93E-03	2.91E-03	2.89E-03	2.87E-03	2.83E-03
cm247	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05
cm248	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.64E-06
cm249	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm250	2.98E-15	2.98E-15	2.98E-15	2.97E-15	2.97E-15	2.97E-15	2.96E-15	2.95E-15	2.95E-15	2.94E-15	2.93E-15
cm251	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

bk249	5.74E-12	1.10E-13	2.10E-15	7.71E-19	1.03E-25	6.98E-43	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bk250	1.84E-22	1.06E-23	8.80E-24	8.78E-24	8.77E-24	8.76E-24	8.74E-24	8.72E-24	8.71E-24	8.69E-24	8.65E-24
bk251	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf249	1.82E-08	1.80E-08	1.78E-08	1.75E-08	1.68E-08	1.52E-08	1.38E-08	1.25E-08	1.13E-08	1.02E-08	8.41E-09
cf250	1.02E-09	7.85E-10	6.02E-10	3.55E-10	1.23E-10	8.68E-12	6.14E-13	4.34E-14	3.06E-15	2.17E-16	1.39E-18
cf251	8.46E-10	8.43E-10	8.40E-10	8.33E-10	8.21E-10	7.90E-10	7.60E-10	7.31E-10	7.03E-10	6.77E-10	6.26E-10
cf252	1.83E-11	4.95E-12	1.33E-12	9.71E-14	5.14E-16	1.05E-21	2.13E-27	4.34E-33	8.84E-39	.00E+00	.00E+00
cf253	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf254	5.83E-35	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf255	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es253	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es254m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es254	3.66E-19	3.71E-21	3.76E-23	3.86E-27	4.07E-35	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es255	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
s250	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
total	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 24

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
h 3	7.74E-03	5.84E-03	4.41E-03	2.51E-03	8.17E-04	4.91E-05	2.95E-06	1.78E-07	1.07E-08	6.43E-10	2.32E-12
li 6	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05
li 7	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06
be 9	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06
be 10	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05
c 14	7.46E-06	7.45E-06	7.45E-06	7.44E-06	7.42E-06	7.38E-06	7.33E-06	7.29E-06	7.25E-06	7.20E-06	7.12E-06
ni 66	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 66	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 66	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07
cu 67	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 67	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08
zn 68	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09
zn 69	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 69m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 69	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08
zn 70	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06
ga 70	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 70	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09
zn 71	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 71m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 71	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
ge 71	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 71m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
co 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 72	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
co 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 73	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03
ge 73m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
co 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

zn 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 74	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03
co 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 75m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 75	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02
ni 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 25

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
zn 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 76	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01
as 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 76	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04
ni 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 77m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 77	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01
se 77m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 78	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01
cu 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 79	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.40E+00	1.39E+00	1.39E+00	1.39E+00
se 79m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 79	3.46E-04	4.93E-04	6.40E-04	9.35E-04	1.52E-03	2.99E-03	4.46E-03	5.93E-03	7.40E-03	8.86E-03	1.18E-02
br 79m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 80	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00
br 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 80m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 80	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
cu 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

ga 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 81m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 81	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00
kr 81	7.13E-07	7.13E-07	7.12E-07	7.12E-07	7.12E-07	7.12E-07	7.12E-07	7.12E-07	7.12E-07	7.12E-07	7.12E-07
kr 81m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 26

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
ge 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 82m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 82	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00
br 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 82m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 82	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01
zn 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 83m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 83	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01
kr 83m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 84m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 84	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01
ga 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 85m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 85	3.49E+00	2.52E+00	1.83E+00	9.56E-01	2.62E-01	1.03E-02	4.08E-04	1.61E-05	6.34E-07	2.50E-08	3.89E-11
kr 85m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 85	3.11E+01	3.21E+01	3.28E+01	3.37E+01	3.44E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01
ge 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 86m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 86	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01
rb 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 86m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 86	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02
ge 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

kr 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 87	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01
sr 87	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.06E-04	3.07E-04	3.07E-04	3.07E-04	3.07E-04	3.07E-04
sr 87m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 27

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
br 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 88	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02
as 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 89	1.18E-21	1.57E-32	2.49E-43	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 89	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
y 89m	4.04E-31	5.74E-42	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 90	1.27E+02	1.12E+02	9.93E+01	7.77E+01	4.75E+01	1.39E+01	4.04E+00	1.18E+00	3.45E-01	1.01E-01	8.57E-03
y 90	3.30E-02	2.92E-02	2.58E-02	2.02E-02	1.23E-02	3.60E-03	1.05E-03	3.07E-04	8.95E-05	2.61E-05	2.23E-06
y 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 90	4.32E+01	5.80E+01	7.10E+01	9.27E+01	1.23E+02	1.56E+02	1.66E+02	1.69E+02	1.70E+02	1.70E+02	1.70E+02
zr 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+08	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 91	1.64E-18	6.59E-28	2.64E-37	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 91m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 91	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02
nb 91	2.64E-10	2.63E-10	2.61E-10	2.59E-10	2.54E-10	2.41E-10	2.29E-10	2.18E-10	2.07E-10	1.97E-10	1.77E-10
se 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 92	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02
nb 92	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08
se 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 93	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
nb 93	1.65E-04	3.09E-04	4.86E-04	9.15E-04	1.96E-03	4.96E-03	8.09E-03	1.12E-02	1.44E-02	1.75E-02	2.38E-02

nb 93m	5.83E-04	7.53E-04	8.91E-04	1.09E-03	1.31E-03	1.45E-03	1.46E-03	1.46E-03	1.46E-03	1.46E-03	1.46E-03
br 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 28

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
sr 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 94	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02
nb 94	1.25E-04	1.25E-04	1.25E-04	1.25E-04	1.25E-04	1.24E-04	1.24E-04	1.24E-04	1.24E-04	1.24E-04	1.23E-04
nb 94m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 95	1.04E-16	2.68E-25	6.91E-34	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 95	1.25E-16	3.22E-25	8.31E-34	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 95m	6.88E-20	1.78E-28	4.44E-37	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 95	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02
br 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 96	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02
nb 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 96	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00
kr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 97m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 97	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02
kr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 98m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 98	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02
tc 98	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03
rb 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 99m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc 99	2.31E+02	2.31E+02	2.31E+02	2.31E+02	2.31E+02	2.30E+02	2.30E+02	2.30E+02	2.30E+02	2.30E+02	2.30E+02
tc 99m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru 99	1.67E-02	2.05E-02	2.43E-02	3.19E-02	4.70E-02	8.48E-02	1.23E-01	1.61E-01	1.98E-01	2.36E-01	3.12E-01
rb100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

y100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 29

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
zr100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb100m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo100	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02
tc100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru100	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01
rb101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru101	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02
sr102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc102m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru102	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02
rh102	1.99E-05	6.02E-06	1.82E-06	1.67E-07	1.40E-09	9.04E-15	5.83E-20	3.76E-25	2.43E-30	1.56E-35	.00E+00
pd102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru103	9.22E-28	9.09E-42	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh103	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02
rh103m	9.13E-31	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru104	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
rh104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh104m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd104	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01
y105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh105m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd105	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02

1

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
y106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru106	3.71E-02	1.23E-03	4.08E-05	4.48E-08	5.42E-14	8.72E-29	1.49E-43	.00E+00	.00E+00	.00E+00	.00E+00
rh106	3.44E-08	1.14E-09	3.78E-11	4.16E-14	5.03E-20	8.09E-35	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh106m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd106	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01
ag106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd107	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01
pd107m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag107	6.19E-05	8.92E-05	1.16E-04	1.71E-04	2.80E-04	5.53E-04	8.26E-04	1.10E-03	1.37E-03	1.65E-03	2.19E-03
zr108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh108m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd108	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01
ag108	1.23E-13	1.20E-13	1.17E-13	1.10E-13	9.90E-14	7.53E-14	5.73E-14	4.36E-14	3.32E-14	2.53E-14	1.47E-14
ag108m	3.99E-05	3.88E-05	3.78E-05	3.58E-05	3.21E-05	2.44E-05	1.86E-05	1.41E-05	1.08E-05	8.19E-06	4.75E-06
cd108	4.36E-05	4.37E-05	4.38E-05	4.39E-05	4.43E-05	4.49E-05	4.54E-05	4.58E-05	4.61E-05	4.63E-05	4.66E-05
zr109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag109	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01
ag109m	1.37E-16	8.87E-18	5.74E-19	2.41E-21	4.25E-26	5.54E-38	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd109	1.38E-10	8.95E-12	5.80E-13	2.43E-15	4.29E-20	5.60E-32	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh110m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd110	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00
ag110	6.37E-14	4.01E-16	2.52E-18	9.99E-23	1.56E-31	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag110m	4.11E-06	2.59E-08	1.63E-10	6.44E-15	1.01E-23	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 31

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr

cd110	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00
nb111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd111	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00
cd111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd112	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00
mo113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag113m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd113	4.57E-02	4.57E-02	4.57E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02
cd113m	1.72E-02	1.34E-02	1.05E-02	6.42E-03	2.40E-03	2.06E-04	1.76E-05	1.51E-06	1.29E-07	1.10E-08	8.09E-11
in113	1.29E-02	1.66E-02	1.95E-02	2.36E-02	2.76E-02	2.98E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02
in113m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd114	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00
in114	9.42E-33	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in114m	5.86E-28	4.61E-39	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn114	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05
mo115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag115m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd115m	5.93E-28	2.78E-40	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in115	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01
in115m	2.75E-34	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 32

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
sn115	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02
tc116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

rh116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag116m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd116	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
in116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in116m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn116	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01
tc117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn117	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00
sn117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag118m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in118m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn118	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01
ru119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn119	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00
sn119m	4.06E-07	5.40E-09	7.18E-11	1.27E-14	3.98E-22	6.89E-41	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in120m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn120	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00
rh121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 33

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	Initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
pd121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in121m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn121	4.13E-07	3.88E-07	3.64E-07	3.21E-07	2.50E-07	1.33E-07	7.08E-08	3.77E-08	2.01E-08	1.07E-08	3.03E-09

sn121m	9.49E-03	8.91E-03	8.37E-03	7.38E-03	5.73E-03	3.05E-03	1.63E-03	8.66E-04	4.61E-04	2.46E-04	6.96E-05
sb121	1.04E+00	1.04E+00	1.04E+00	1.04E+00	1.04E+00	1.04E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00
rh122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in122m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn122	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
sb122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb122m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te122	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02
rh123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn123	4.84E-11	2.68E-15	1.48E-19	4.55E-28	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb123	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00
te123	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04
te123m	4.49E-14	1.14E-18	2.91E-23	1.89E-32	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn124	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00
sb124	2.97E-21	2.19E-30	1.61E-39	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb124m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te124	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02
pd125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb125	1.47E-01	4.12E-02	1.16E-02	9.13E-04	5.69E-06	1.74E-11	5.33E-17	1.63E-22	5.00E-28	1.53E-33	.00E+00
te125	2.53E+00	2.64E+00	2.67E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00
te125m	2.08E-03	5.85E-04	1.64E-04	1.30E-05	8.08E-08	2.47E-13	7.57E-19	2.32E-24	7.10E-30	2.15E-35	.00E+00
pd126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn126	4.89E+00	4.89E+00	4.89E+00	4.89E+00	4.88E+00	4.88E+00	4.88E+00	4.88E+00	4.88E+00	4.88E+00	4.87E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 34

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
sb126	2.32E-07	2.32E-07	2.32E-07	2.32E-07	2.32E-07	2.32E-07	2.32E-07	2.32E-07	2.32E-07	2.32E-07	2.32E-07
sb126m	1.76E-09	1.76E-09	1.76E-09	1.76E-09	1.76E-09	1.76E-09	1.76E-09	1.76E-09	1.76E-09	1.76E-09	1.76E-09
te126	7.87E-02	7.89E-02	7.91E-02	7.94E-02	8.01E-02	8.18E-02	8.35E-02	8.51E-02	8.68E-02	8.85E-02	9.19E-02
xe126	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09
ag127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

sn127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te127	8.76E-14	7.92E-19	7.16E-24	5.85E-34	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te127m	2.50E-11	2.26E-16	2.04E-21	1.67E-31	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i127	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01
xe127	9.04E-38	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb128m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te128	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01
i128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe128	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01
cd129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te129	6.97E-37	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te129m	7.56E-34	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i129	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01
xe129	1.22E-03	1.24E-03	1.25E-03	1.27E-03	1.31E-03	1.42E-03	1.53E-03	1.64E-03	1.75E-03	1.86E-03	2.08E-03
xe129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb130m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te130	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02
i130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i130m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe130	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00
cd131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te131m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe131	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02
xe131m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 35

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	Initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
cd132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb132m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe132	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02
cs132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba132	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05
in133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

sb133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs133	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02
ba133	1.30E-08	9.38E-09	6.75E-09	3.49E-09	9.35E-10	3.47E-11	1.29E-12	4.77E-14	1.77E-15	6.56E-17	9.02E-20
in134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe134	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02
xe134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs134	7.23E-01	1.35E-01	2.50E-02	8.68E-04	1.04E-06	5.23E-14	2.62E-21	1.31E-28	6.57E-36	3.76E-43	.00E+00
cs134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba134	2.90E+01	2.96E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01
sn135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs135	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02
cs135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba135	3.87E-02	3.90E-02	3.92E-02	3.98E-02	4.09E-02	4.35E-02	4.62E-02	4.89E-02	5.15E-02	5.42E-02	5.95E-02
ba135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i136m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe136	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02
cs136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba136	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00
ba136m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 36

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
sb137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs137	2.75E+02	2.45E+02	2.18E+02	1.73E+02	1.09E+02	3.43E+01	1.08E+01	3.40E+00	1.07E+00	3.37E-01	3.35E-02
ba137	8.56E+01	1.16E+02	1.42E+02	1.87E+02	2.51E+02	3.26E+02	3.49E+02	3.57E+02	3.59E+02	3.60E+02	3.60E+02
ba137m	4.19E-05	3.73E-05	3.33E-05	2.64E-05	1.66E-05	5.24E-06	1.65E-06	5.20E-07	1.64E-07	5.15E-08	5.11E-09
sb138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs138m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba138	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02
la138	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03

sb139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la139	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02
ce139	3.19E-14	3.22E-18	3.26E-22	3.33E-30	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce140	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02
pr140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce141	1.70E-33	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr141	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02
nd141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce142	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02
pr142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr142m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd142	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00
i143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1
0 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 37

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
xe143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd143	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02
i144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce144	1.19E-02	1.40E-04	1.64E-06	2.27E-10	4.36E-18	2.21E-37	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr144	5.00E-07	5.88E-09	6.92E-11	9.58E-15	1.84E-22	2.02E-43	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr144m	2.92E-09	3.43E-11	4.04E-13	5.59E-17	1.07E-24	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd144	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02
i145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

cs145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd145	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02
pm145	1.20E-04	9.85E-05	8.10E-05	5.47E-05	2.50E-05	3.53E-06	4.98E-07	7.03E-08	9.92E-09	1.40E-09	2.79E-11
sm145	5.44E-08	1.31E-09	3.17E-11	1.85E-14	6.32E-21	4.29E-37	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd146	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02
pm146	5.35E-04	2.86E-04	1.53E-04	4.36E-05	3.55E-06	6.73E-09	1.28E-11	2.42E-14	4.59E-17	8.69E-20	3.12E-25
sm146	2.40E-03	2.49E-03	2.53E-03	2.57E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03
xe147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm147	4.23E+00	1.13E+00	3.01E-01	2.15E-02	1.09E-04	1.99E-10	3.64E-16	6.66E-22	1.22E-27	2.23E-33	.00E+00
sm147	8.54E+01	8.85E+01	8.94E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01
cs148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd148	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02
pm148	6.21E-30	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm148m	9.04E-28	4.40E-41	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 38

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
sm148	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01
cs149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm149	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00
eu149	5.79E-23	7.15E-29	8.83E-35	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd150	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01
pm150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm150	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01
eu150	1.77E-07	1.60E-07	1.45E-07	1.20E-07	8.14E-08	3.09E-08	1.17E-08	4.46E-09	1.69E-09	6.44E-10	9.29E-11
ba151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

ce151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm151	5.74E+00	5.52E+00	5.32E+00	4.92E+00	4.22E+00	2.87E+00	1.95E+00	1.33E+00	9.04E-01	6.15E-01	2.85E-01
eu151	4.75E-01	6.92E-01	9.01E-01	1.29E+00	2.00E+00	3.35E+00	4.26E+00	4.89E+00	5.31E+00	5.60E+00	5.93E+00
ba152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm152m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm152	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01
eu152	1.58E-02	1.22E-02	9.38E-03	5.57E-03	1.97E-03	1.46E-04	1.09E-05	8.06E-07	5.98E-08	4.44E-09	2.45E-11
eu152m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd152	2.75E-02	2.85E-02	2.93E-02	3.04E-02	3.14E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02
la153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu153	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01
gd153	2.00E-08	1.06E-10	5.61E-13	1.57E-17	1.24E-26	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm154m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 39

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
sm154	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00
eu154	3.26E+00	2.18E+00	1.45E+00	6.49E-01	1.29E-01	2.29E-03	4.04E-05	7.15E-07	1.27E-08	2.24E-10	7.01E-14
gd154	4.67E+00	5.76E+00	6.48E+00	7.28E+00	7.80E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00
la155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu155	7.10E-01	3.39E-01	1.62E-01	3.67E-02	1.90E-03	1.15E-06	7.02E-10	4.27E-13	2.59E-16	1.58E-19	5.83E-26
gd155m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd155	2.47E+00	2.84E+00	3.02E+00	3.14E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00
ce156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd156	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00
ce157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

eu157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd157	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02
pr158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd158	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00
pr159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb159	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01
nd160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd160	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01
tb160	5.53E-18	1.38E-25	3.43E-33	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy160	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02
nd161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 40

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	15.0 yr	20.0 yr	30.0 yr	50.0 yr	100.0 yr	150.0 yr	200.0 yr	250.0 yr	300.0 yr	400.0 yr
dy161	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02
pm162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb162m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy162	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02
sm163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb163m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy163	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02
sm164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy164	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
sm165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy165m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho165	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03
dy166	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

ho166	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho166m	2.37E-05	2.36E-05	2.35E-05	2.34E-05	2.31E-05	2.25E-05	2.18E-05	2.12E-05	2.06E-05	2.00E-05	1.89E-05
er166	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03
er167	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05
er167m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er168	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05
yb168	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er169	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm169	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07
yb169	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er170	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07
tm170	2.73E-18	1.45E-22	7.68E-27	2.16E-35	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm170m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb170	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09
er171	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm171	1.85E-08	3.04E-09	5.00E-10	1.35E-11	9.89E-15	1.43E-22	2.08E-30	3.01E-38	.00E+00	.00E+00	.00E+00
yb171	1.03E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06
er172	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm172	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb172	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07
total	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 41

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
he 4	4.81E+00	5.62E+00	8.60E+00	1.20E+01	1.64E+01	2.01E+01	2.33E+01	2.62E+01	2.89E+01	3.13E+01	3.35E+01
tl206	9.52E-19	1.54E-18	6.83E-18	2.46E-17	7.84E-17	1.44E-16	2.13E-16	2.82E-16	3.51E-16	4.19E-16	4.85E-16
tl207	6.23E-13	7.73E-13	1.57E-12	3.06E-12	5.99E-12	8.86E-12	1.17E-11	1.44E-11	1.71E-11	1.97E-11	2.23E-11
tl208	2.85E-13	1.06E-13	1.26E-15	5.33E-16	5.39E-16	5.46E-16	5.53E-16	5.61E-16	5.70E-16	5.79E-16	5.88E-16
tl209	2.31E-16	3.81E-16	1.90E-15	9.43E-15	4.29E-14	9.80E-14	1.71E-13	2.59E-13	3.59E-13	4.70E-13	5.88E-13
pb206	7.74E-06	1.59E-05	1.44E-04	1.12E-03	7.68E-03	2.22E-02	4.57E-02	7.83E-02	1.20E-01	1.71E-01	2.31E-01
pb207	9.84E-06	1.52E-05	6.00E-05	2.36E-04	9.26E-04	2.06E-03	3.63E-03	5.63E-03	8.04E-03	1.09E-02	1.41E-02
pb208	4.69E-04	4.75E-04	4.79E-04	4.79E-04	4.79E-04	4.80E-04	4.80E-04	4.81E-04	4.81E-04	4.81E-04	4.82E-04
pb209	9.74E-13	1.61E-12	8.02E-12	3.98E-11	1.81E-10	4.14E-10	7.23E-10	1.09E-09	1.52E-09	1.98E-09	2.48E-09
pb210	2.05E-06	3.32E-06	1.47E-05	5.30E-05	1.69E-04	3.10E-04	4.58E-04	6.08E-04	7.57E-04	9.03E-04	1.05E-03
pb211	4.82E-12	5.98E-12	1.21E-11	2.36E-11	4.63E-11	6.85E-11	9.03E-11	1.12E-10	1.32E-10	1.53E-10	1.72E-10
pb212	1.69E-10	6.29E-11	7.49E-13	3.16E-13	3.19E-13	3.24E-13	3.28E-13	3.33E-13	3.38E-13	3.43E-13	3.49E-13
pb214	5.62E-12	8.80E-12	3.43E-11	1.23E-10	3.94E-10	7.21E-10	1.07E-09	1.42E-09	1.76E-09	2.10E-09	2.44E-09
bi208	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bi209	2.33E-07	4.71E-07	4.52E-06	4.51E-05	4.27E-04	1.51E-03	3.61E-03	6.99E-03	1.19E-02	1.84E-02	2.67E-02
bi210m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bi210	1.26E-09	2.04E-09	9.06E-09	3.26E-08	1.04E-07	1.91E-07	2.82E-07	3.74E-07	4.66E-07	5.56E-07	6.44E-07
bi211	2.86E-13	3.55E-13	7.20E-13	1.40E-12	2.74E-12	4.06E-12	5.35E-12	6.61E-12	7.84E-12	9.05E-12	1.02E-11
bi212	1.61E-11	5.97E-12	7.10E-14	3.00E-14	3.03E-14	3.07E-14	3.11E-14	3.16E-14	3.20E-14	3.25E-14	3.31E-14
bi213	2.32E-13	3.83E-13	1.91E-12	9.48E-12	4.31E-11	9.85E-11	1.72E-10	2.61E-10	3.61E-10	4.72E-10	5.91E-10
bi214	4.17E-12	6.53E-12	2.55E-11	9.16E-11	2.92E-10	5.35E-10	7.93E-10	1.05E-09	1.31E-09	1.56E-09	1.81E-09
po210	3.49E-08	5.65E-08	2.50E-07	9.01E-07	2.87E-06	5.26E-06	7.79E-06	1.03E-05	1.29E-05	1.54E-05	1.78E-05
po211m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
po211	3.16E-18	3.92E-18	7.95E-18	1.55E-17	3.03E-17	4.49E-17	5.91E-17	7.31E-17	8.67E-17	1.00E-16	1.13E-16
po212	8.44E-22	3.14E-22	3.73E-24	1.57E-24	1.59E-24	1.61E-24	1.63E-24	1.66E-24	1.68E-24	1.71E-24	1.74E-24
po213	3.49E-22	5.76E-22	2.87E-21	1.43E-20	6.48E-20	1.48E-19	2.59E-19	3.92E-19	5.43E-19	7.10E-19	8.89E-19
po214	5.74E-19	8.99E-19	3.50E-18	1.26E-17	4.02E-17	7.37E-17	1.09E-16	1.45E-16	1.80E-16	2.15E-16	2.49E-16
po215	4.04E-18	5.01E-18	1.02E-17	1.98E-17	3.88E-17	5.74E-17	7.56E-17	9.34E-17	1.11E-16	1.28E-16	1.44E-16
po216	6.53E-16	2.43E-16	2.89E-18	1.22E-18	1.23E-18	1.25E-18	1.27E-18	1.28E-18	1.30E-18	1.32E-18	1.34E-18
po218	6.62E-13	1.04E-12	4.04E-12	1.45E-11	4.64E-11	8.50E-11	1.26E-10	1.67E-10	2.08E-10	2.48E-10	2.87E-10
at217	2.79E-18	4.61E-18	2.30E-17	1.14E-16	5.19E-16	1.19E-15	2.07E-15	3.14E-15	4.35E-15	5.68E-15	7.11E-15
rn218	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rn219	9.14E-15	1.13E-14	2.30E-14	4.49E-14	8.79E-14	1.30E-13	1.71E-13	2.12E-13	2.51E-13	2.90E-13	3.27E-13
rn220	2.55E-13	9.48E-14	1.13E-15	4.76E-16	4.81E-16	4.87E-16	4.94E-16	5.01E-16	5.09E-16	5.17E-16	5.25E-16

rn222	1.20E-09	1.88E-09	7.31E-09	2.63E-08	8.39E-08	1.54E-07	2.28E-07	3.02E-07	3.76E-07	4.49E-07	5.20E-07
fr221	2.59E-14	4.27E-14	2.13E-13	1.06E-12	4.81E-12	1.10E-11	1.92E-11	2.91E-11	4.03E-11	5.27E-11	6.59E-11
fr223	4.24E-14	5.27E-14	1.07E-13	2.08E-13	4.08E-13	6.03E-13	7.95E-13	9.82E-13	1.17E-12	1.34E-12	1.52E-12
ra222	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ra223	2.32E-09	2.88E-09	5.85E-09	1.14E-08	2.23E-08	3.30E-08	4.35E-08	5.38E-08	6.38E-08	7.36E-08	8.31E-08
ra224	1.48E-09	5.49E-10	6.53E-12	2.76E-12	2.79E-12	2.82E-12	2.86E-12	2.90E-12	2.95E-12	2.99E-12	3.04E-12
ra225	1.15E-10	1.89E-10	9.43E-10	4.68E-09	2.13E-08	4.87E-08	8.50E-08	1.29E-07	1.79E-07	2.33E-07	2.92E-07
ra226	1.86E-04	2.92E-04	1.14E-03	4.09E-03	1.31E-02	2.39E-02	3.54E-02	4.70E-02	5.85E-02	6.98E-02	8.08E-02
ra228	6.71E-12	8.40E-12	1.70E-11	3.46E-11	7.19E-11	1.11E-10	1.52E-10	1.95E-10	2.39E-10	2.83E-10	3.29E-10
ac225	7.74E-11	1.28E-10	6.37E-10	3.16E-09	1.44E-08	3.29E-08	5.74E-08	8.70E-08	1.21E-07	1.58E-07	1.97E-07
ac227	1.64E-06	2.04E-06	4.14E-06	8.07E-06	1.58E-05	2.34E-05	3.08E-05	3.81E-05	4.52E-05	5.21E-05	5.89E-05
ac228	8.19E-16	1.03E-15	2.07E-15	4.23E-15	8.77E-15	1.36E-14	1.86E-14	2.38E-14	2.91E-14	3.46E-14	4.01E-14
th226	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
th227	3.82E-09	4.74E-09	9.61E-09	1.87E-08	3.67E-08	5.43E-08	7.15E-08	8.83E-08	1.05E-07	1.21E-07	1.37E-07
th228	2.87E-07	1.07E-07	1.27E-09	5.35E-10	5.41E-10	5.48E-10	5.56E-10	5.64E-10	5.73E-10	5.82E-10	5.91E-10
th229	2.27E-05	3.75E-05	1.87E-04	9.27E-04	4.21E-03	9.63E-03	1.68E-02	2.55E-02	3.53E-02	4.62E-02	5.78E-02
th230	1.13E-01	1.43E-01	2.95E-01	5.98E-01	1.19E+00	1.77E+00	2.34E+00	2.89E+00	3.44E+00	3.96E+00	4.48E+00
th231	2.57E-08	2.58E-08	2.59E-08	2.62E-08	2.68E-08	2.73E-08	2.78E-08	2.82E-08	2.87E-08	2.91E-08	2.95E-08

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay

0 actinides page 42

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
th232	1.67E-02	2.09E-02	4.22E-02	8.61E-02	1.79E-01	2.77E-01	3.79E-01	4.85E-01	5.94E-01	7.04E-01	8.17E-01
th233	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
th234	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06
pa231	2.71E-03	3.32E-03	6.34E-03	1.23E-02	2.42E-02	3.58E-02	4.71E-02	5.83E-02	6.91E-02	7.97E-02	9.01E-02
pa232	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pa233	1.08E-05	1.19E-05	1.55E-05	1.78E-05	1.84E-05	1.84E-05	1.84E-05	1.84E-05	1.84E-05	1.84E-05	1.84E-05
pa234m	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10
pa234	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u231	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u232	1.04E-05	3.85E-06	4.62E-08	1.95E-08	1.92E-08	1.90E-08	1.88E-08	1.85E-08	1.83E-08	1.81E-08	1.79E-08
u233	2.99E-02	4.06E-02	1.06E-01	2.64E-01	6.03E-01	9.41E-01	1.28E+00	1.61E+00	1.94E+00	2.26E+00	2.59E+00
u234	1.09E+02	1.10E+02	1.11E+02	1.10E+02	1.10E+02	1.09E+02	1.09E+02	1.08E+02	1.08E+02	1.07E+02	1.07E+02
u235	6.33E+03	6.34E+03	6.37E+03	6.44E+03	6.58E+03	6.71E+03	6.83E+03	6.95E+03	7.06E+03	7.16E+03	7.26E+03
u236	1.44E+03	1.45E+03	1.48E+03	1.54E+03	1.64E+03	1.72E+03	1.79E+03	1.84E+03	1.89E+03	1.92E+03	1.95E+03
u237	2.28E-12	2.22E-12	2.13E-12	1.96E-12	1.67E-12	1.41E-12	1.20E-12	1.02E-12	8.67E-13	7.37E-13	6.26E-13
u238	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05
u239	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u240	2.39E-20	2.98E-20	5.96E-20	1.19E-19	2.38E-19	3.56E-19	4.73E-19	5.91E-19	7.07E-19	8.24E-19	9.39E-19
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np236m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np236	3.70E-04	3.70E-04	3.68E-04	3.66E-04	3.62E-04	3.58E-04	3.53E-04	3.49E-04	3.45E-04	3.41E-04	3.37E-04
np237	3.17E+02	3.51E+02	4.57E+02	5.25E+02	5.42E+02	5.42E+02	5.42E+02	5.41E+02	5.41E+02	5.41E+02	5.40E+02
np238	1.10E-08	6.73E-09	5.76E-10	4.22E-12	2.27E-16	1.22E-20	6.54E-25	3.51E-29	1.89E-33	8.80E-38	.00E+00
np239	8.36E-06	8.28E-06	7.90E-06	7.19E-06	5.96E-06	4.94E-06	4.09E-06	3.39E-06	2.81E-06	2.33E-06	1.93E-06
np240m	2.04E-22	2.55E-22	5.09E-22	1.02E-21	2.03E-21	3.04E-21	4.04E-21	5.04E-21	6.04E-21	7.03E-21	8.02E-21
np240	2.10E-24	2.62E-24	5.24E-24	1.05E-23	2.09E-23	3.12E-23	4.16E-23	5.19E-23	6.21E-23	7.23E-23	8.25E-23
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	8.30E-10	8.29E-10	8.27E-10	8.22E-10	8.12E-10	8.02E-10	7.93E-10	7.83E-10	7.74E-10	7.65E-10	7.55E-10
pu237	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu238	1.35E+00	6.24E-01	1.53E-02	1.74E-05	1.67E-09	9.00E-14	4.83E-18	2.60E-22	1.39E-26	7.49E-31	4.02E-35
pu239	2.60E+03	2.59E+03	2.56E+03	2.49E+03	2.35E+03	2.22E+03	2.10E+03	1.98E+03	1.87E+03	1.77E+03	1.67E+03
pu240	6.46E+02	6.39E+02	6.06E+02	5.45E+02	4.41E+02	3.57E+02	2.89E+02	2.34E+02	1.90E+02	1.53E+02	1.24E+02
pu241	7.54E-05	7.32E-05	7.03E-05	6.48E-05	5.50E-05	4.67E-05	3.97E-05	3.37E-05	2.86E-05	2.43E-05	2.07E-05
pu242	7.08E+01	7.08E+01	7.07E+01	7.06E+01	7.03E+01	7.01E+01	6.98E+01	6.96E+01	6.93E+01	6.91E+01	6.88E+01

pu243	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15
pu244	1.21E-09	1.51E-09	3.02E-09	6.03E-09	1.20E-08	1.80E-08	2.40E-08	2.99E-08	3.58E-08	4.17E-08	4.76E-08
pu245	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu246	1.23E-21	1.22E-21	1.20E-21	1.15E-21	1.07E-21	9.84E-22	9.09E-22	8.39E-22	7.75E-22	7.15E-22	6.61E-22
am239	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am240	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am241	2.30E+02	1.96E+02	8.77E+01	1.77E+01	7.18E-01	3.05E-02	2.43E-03	1.11E-03	9.03E-04	7.66E-04	6.50E-04
am242m	6.05E-02	3.70E-02	3.17E-03	2.32E-05	1.25E-09	6.69E-14	3.60E-18	1.93E-22	1.04E-26	5.57E-31	2.99E-35
am242	7.80E-07	4.77E-07	4.08E-08	2.99E-10	1.61E-14	8.64E-19	4.64E-23	2.49E-27	1.34E-31	7.19E-36	.00E+00
am243	9.71E+00	9.62E+00	9.18E+00	8.36E+00	6.92E+00	5.74E+00	4.75E+00	3.94E+00	3.26E+00	2.70E+00	2.24E+00
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am245	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am246	3.07E-24	3.06E-24	3.00E-24	2.88E-24	2.66E-24	2.46E-24	2.27E-24	2.10E-24	1.94E-24	1.79E-24	1.65E-24
cm241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 43

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
cm242	1.57E-04	9.63E-05	8.25E-06	6.04E-08	3.26E-12	1.75E-16	9.40E-21	5.05E-25	2.71E-29	1.46E-33	7.82E-38
cm243	3.59E-06	3.15E-07	1.65E-12	4.51E-23	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm244	3.37E-07	7.32E-09	3.54E-17	8.24E-34	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm245	4.44E-02	4.40E-02	4.22E-02	3.89E-02	3.31E-02	2.81E-02	2.39E-02	2.03E-02	1.72E-02	1.46E-02	1.24E-02
cm246	2.83E-03	2.79E-03	2.59E-03	2.24E-03	1.67E-03	1.24E-03	9.28E-04	6.93E-04	5.17E-04	3.85E-04	2.88E-04
cm247	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05
cm248	1.64E-06	1.64E-06	1.64E-06	1.64E-06	1.63E-06	1.62E-06	1.62E-06	1.61E-06	1.60E-06	1.60E-06	1.59E-06
cm249	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm250	2.93E-15	2.92E-15	2.86E-15	2.75E-15	2.54E-15	2.34E-15	2.17E-15	2.00E-15	1.85E-15	1.70E-15	1.57E-15
cm251	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bk249	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bk250	8.65E-24	8.62E-24	8.45E-24	8.12E-24	7.50E-24	6.92E-24	6.39E-24	5.90E-24	5.45E-24	5.03E-24	4.65E-24
bk251	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf249	8.41E-09	6.90E-09	2.57E-09	3.55E-10	6.79E-12	1.30E-13	2.49E-15	4.77E-17	9.12E-19	1.75E-20	3.34E-22
cf250	1.39E-18	3.13E-19	3.01E-19	2.89E-19	2.67E-19	2.47E-19	2.28E-19	2.10E-19	1.94E-19	1.79E-19	1.66E-19
cf251	6.26E-10	5.80E-10	3.94E-10	1.82E-10	3.89E-11	8.31E-12	1.77E-12	3.79E-13	8.09E-14	1.73E-14	3.69E-15
cf252	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf253	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf254	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf255	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es253	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es254m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es254	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es255	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
s250	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
total	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 44

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
h 3	2.32E-12	8.41E-15	5.20E-27	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
li 6	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05
li 7	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06
be 9	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06
be 10	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.69E-05	3.68E-05	3.68E-05	3.68E-05	3.67E-05	3.67E-05	3.67E-05
c 14	7.12E-06	7.03E-06	6.62E-06	5.86E-06	4.60E-06	3.61E-06	2.84E-06	2.23E-06	1.75E-06	1.37E-06	1.08E-06
ni 66	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 66	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 66	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07

cu 67	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 67	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08
zn 68	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09
zn 69	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 69m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 69	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08
zn 70	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06
ga 70	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 70	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09
zn 71	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 71m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 71	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
ge 71	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 71m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
co 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 72	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
co 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 73	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03
ge 73m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
co 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 74	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03
co 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 75m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 75	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02
ni 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 45

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
zn 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 76	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01
as 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 76	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04
ni 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 77m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

se 77	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01
se 77m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 78	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01
cu 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 79	1.39E+00	1.39E+00	1.37E+00	1.34E+00	1.29E+00	1.24E+00	1.18E+00	1.14E+00	1.09E+00	1.04E+00	1.00E+00
se 79m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 79	1.18E-02	1.47E-02	2.92E-02	5.77E-02	1.13E-01	1.66E-01	2.17E-01	2.66E-01	3.13E-01	3.57E-01	4.00E-01
br 79m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 80	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00
br 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 80m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 80	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
cu 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 81m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 81	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00
kr 81	7.12E-07	7.11E-07	7.10E-07	7.08E-07	7.03E-07	6.99E-07	6.94E-07	6.90E-07	6.85E-07	6.81E-07	6.76E-07
kr 81m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 46

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
ge 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 82m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 82	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00
br 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 82m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 82	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01
zn 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 83m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 83	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01

kr 83m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 84m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 84	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01
ga 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 85m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 85	3.89E-11	6.05E-14	5.49E-28	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 85m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 85	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01
ge 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 86m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 86	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01
rb 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 86m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 86	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02
ge 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 87	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01
sr 87	3.07E-04	3.07E-04	3.07E-04	3.08E-04	3.11E-04	3.13E-04	3.15E-04	3.17E-04	3.19E-04	3.21E-04	3.23E-04
sr 87m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 47

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
br 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 88	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02
as 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 89	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
y 89m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

sr 90	8.57E-03	7.30E-04	3.28E-09	6.62E-20	2.70E-41	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 90	2.23E-06	1.90E-07	8.52E-13	1.72E-23	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 90	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02
zr 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 91m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 91	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02
nb 91	1.77E-10	1.60E-10	9.63E-11	3.47E-11	4.52E-12	5.89E-13	7.67E-14	9.98E-15	1.30E-15	1.69E-16	2.20E-17
se 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 92	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02
nb 92	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08
se 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 93	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02
nb 93	2.38E-02	3.01E-02	6.15E-02	1.24E-01	2.50E-01	3.76E-01	5.01E-01	6.26E-01	7.51E-01	8.76E-01	1.00E+00
nb 93m	1.46E-03	1.46E-03	1.46E-03	1.46E-03	1.46E-03	1.46E-03	1.46E-03	1.46E-03	1.46E-03	1.45E-03	1.45E-03
br 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 48

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
sr 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 94	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02
nb 94	1.23E-04	1.23E-04	1.21E-04	1.17E-04	1.09E-04	1.02E-04	9.50E-05	8.88E-05	8.29E-05	7.74E-05	7.23E-05
nb 94m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 95m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 95	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02
br 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 96	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02
nb 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

mo 96	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00
kr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 97m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 97	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02
kr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 98m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 98	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02
tc 98	1.37E-03	1.37E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03
rb 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 99m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc 99	2.30E+02	2.30E+02	2.30E+02	2.29E+02	2.28E+02	2.26E+02	2.25E+02	2.23E+02	2.22E+02	2.20E+02	2.19E+02
tc 99m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru 99	3.12E-01	3.87E-01	7.65E-01	1.52E+00	3.02E+00	4.51E+00	5.99E+00	7.46E+00	8.92E+00	1.04E+01	1.18E+01
rb100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 49

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
zr100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb100m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo100	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02
tc100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru100	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01
rb101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru101	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02
sr102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc102m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru102	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02
rh102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

sr103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh103	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02
rh103m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru104	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
rh104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh104m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd104	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01
y105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh105m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd105	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 50

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
y106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh106m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd106	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01
ag106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd107	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.12E+01	5.11E+01	5.11E+01	5.11E+01	5.11E+01	5.11E+01
pd107m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag107	2.19E-03	2.74E-03	5.47E-03	1.09E-02	2.18E-02	3.28E-02	4.37E-02	5.46E-02	6.55E-02	7.64E-02	8.73E-02
zr108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh108m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

pd108	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01
ag108	1.47E-14	8.49E-15	5.54E-16	2.36E-18	4.29E-23	7.79E-28	1.42E-32	2.57E-37	.00E+00	.00E+00	.00E+00
ag108m	4.75E-06	2.75E-06	1.80E-07	7.65E-10	1.39E-14	2.52E-19	4.59E-24	8.33E-29	1.51E-33	2.75E-38	4.54E-43
cd108	4.66E-05	4.67E-05	4.69E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05
zr109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag109	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01
ag109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh110m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd110	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00
ag110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag110m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 51

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
cd110	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00
nb111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd111	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00
cd111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd112	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00
mo113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag113m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd113	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02
cd113m	8.09E-11	5.93E-13	1.25E-23	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in113	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02

in113m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd114	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00
in114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in114m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn114	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05
mo115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag115m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd115m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in115	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01
in115m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 52

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
sn115	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02
tc116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag116m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd116	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
in116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in116m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn116	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01
tc117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn117	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00
sn117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag118m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in118m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn118	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01

ru119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn119	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00
sn119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in120m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn120	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00
rh121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 53

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
pd121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in121m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn121	3.03E-09	8.60E-10	1.58E-12	5.32E-18	6.03E-29	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn121m	6.96E-05	1.98E-05	3.62E-08	1.22E-13	1.38E-24	1.57E-35	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb121	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00
rh122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in122m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn122	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
sb122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb122m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te122	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02
rh123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb123	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00
te123	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04
te123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn124	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00
sb124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb124m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

te124	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02
pd125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te125	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00
te125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn126	4.87E+00	4.87E+00	4.85E+00	4.82E+00	4.75E+00	4.69E+00	4.62E+00	4.56E+00	4.50E+00	4.43E+00	4.37E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 54

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
sb126	2.32E-07	2.31E-07	2.31E-07	2.29E-07	2.26E-07	2.23E-07	2.20E-07	2.17E-07	2.14E-07	2.11E-07	2.08E-07
sb126m	1.76E-09	1.76E-09	1.75E-09	1.74E-09	1.72E-09	1.69E-09	1.67E-09	1.65E-09	1.62E-09	1.60E-09	1.58E-09
te126	9.19E-02	9.53E-02	1.12E-01	1.46E-01	2.12E-01	2.77E-01	3.42E-01	4.06E-01	4.68E-01	5.30E-01	5.91E-01
xe126	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09
ag127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i127	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01
xe127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb128m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te128	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01
i128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe128	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01
cd129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i129	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01
xe129	2.08E-03	2.30E-03	3.41E-03	5.61E-03	1.00E-02	1.44E-02	1.88E-02	2.33E-02	2.77E-02	3.21E-02	3.65E-02
xe129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb130m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

te130	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02
i130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i130m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe130	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00
cd131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te131m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe131	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02
xe131m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 55

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
cd132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb132m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe132	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02
cs132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba132	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05
in133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs133	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02
ba133	9.02E-20	1.24E-22	6.10E-37	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe134	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02
xe134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba134	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01
sn135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs135	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.77E+02	1.76E+02	1.76E+02
cs135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba135	5.95E-02	6.49E-02	9.16E-02	1.45E-01	2.52E-01	3.58E-01	4.65E-01	5.71E-01	6.78E-01	7.84E-01	8.91E-01

ba135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i136m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe136	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02
cs136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba136	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00
ba136m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1
Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 56
0
nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
sb137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs137	3.35E-02	3.32E-03	3.19E-08	2.94E-18	2.50E-38	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba137	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02
ba137m	5.11E-09	5.07E-10	4.87E-15	4.49E-25	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs138m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba138	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02
la138	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03
sb139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la139	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02
ce139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce140	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02
pr140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr141	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02
nd141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

ba142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce142	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02
pr142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr142m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd142	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00
i143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 57

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
xe143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd143	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02
i144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr144m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd144	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02
i145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd145	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02
pm145	2.79E-11	5.55E-13	1.74E-21	1.71E-38	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd146	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02
pm146	3.12E-25	1.12E-30	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm146	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03
xe147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm147	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01
cs148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

pr148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd148	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02
pm148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm148m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 58

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
sm148	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01
cs149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm149	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00
eu149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd150	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01
pm150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm150	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01
eu150	9.29E-11	1.34E-11	8.38E-16	3.28E-24	5.02E-41	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm151	2.85E-01	1.32E-01	2.80E-03	1.26E-06	2.58E-13	5.26E-20	1.07E-26	2.19E-33	4.46E-40	.00E+00	.00E+00
eu151	5.93E+00	6.08E+00	6.21E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00
ba152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm152m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm152	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01
eu152	2.45E-11	1.35E-13	6.85E-25	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu152m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd152	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02
la153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu153	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01
gd153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

pm154m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 59

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
sm154	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00
eu154	7.01E-14	2.19E-17	6.59E-35	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd154	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00
la155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu155	5.83E-26	2.15E-32	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd155m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd155	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00
ce156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd156	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00
ce157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd157	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02
pr158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd158	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00
pr159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb159	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01
nd160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd160	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01
tb160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy160	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02
nd161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	500.0 yr	1000.0 yr	2000.0 yr	4000.0 yr	6000.0 yr	8000.0 yr	10000.0 yr	12000.0 yr	14000.0 yr	16000.0 yr
dy161	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02
pm162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb162m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy162	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02
sm163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb163m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy163	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02
sm164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy164	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
sm165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy165m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho165	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03
dy166	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho166	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho166m	1.89E-05	1.78E-05	1.34E-05	7.49E-06	2.36E-06	7.43E-07	2.34E-07	7.38E-08	2.32E-08	7.32E-09	2.30E-09
er166	1.55E-03	1.56E-03	1.56E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03
er167	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05
er167m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er168	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05
yb168	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er169	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm169	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07
yb169	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er170	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07
tm170	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm170m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb170	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09
er171	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm171	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb171	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06
er172	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm172	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb172	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07
total	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03

1 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 61

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
he 4	3.35E+01	3.54E+01	3.73E+01	3.90E+01	4.05E+01	4.20E+01	4.33E+01	4.46E+01	4.58E+01	4.79E+01	4.89E+01
tl206	4.85E-16	5.50E-16	6.14E-16	6.76E-16	7.36E-16	7.95E-16	8.53E-16	9.09E-16	9.64E-16	1.07E-15	1.12E-15
tl207	2.23E-11	2.48E-11	2.72E-11	2.96E-11	3.19E-11	3.42E-11	3.64E-11	3.85E-11	4.06E-11	4.46E-11	4.65E-11
tl208	5.88E-16	5.97E-16	6.07E-16	6.17E-16	6.27E-16	6.37E-16	6.48E-16	6.58E-16	6.69E-16	6.90E-16	7.01E-16

tl209	5.88E-13	7.13E-13	8.43E-13	9.77E-13	1.12E-12	1.26E-12	1.40E-12	1.54E-12	1.69E-12	1.98E-12	2.12E-12
pb206	2.31E-01	2.99E-01	3.76E-01	4.61E-01	5.55E-01	6.56E-01	7.65E-01	8.81E-01	1.01E+00	1.27E+00	1.42E+00
pb207	1.41E-02	1.77E-02	2.17E-02	2.60E-02	3.07E-02	3.58E-02	4.12E-02	4.70E-02	5.30E-02	6.61E-02	7.31E-02
pb208	4.82E-04	4.82E-04	4.83E-04	4.83E-04	4.83E-04	4.84E-04	4.84E-04	4.85E-04	4.85E-04	4.86E-04	4.86E-04
pb209	2.48E-09	3.01E-09	3.56E-09	4.13E-09	4.71E-09	5.30E-09	5.90E-09	6.51E-09	7.12E-09	8.34E-09	8.96E-09
pb210	1.05E-03	1.19E-03	1.32E-03	1.46E-03	1.59E-03	1.71E-03	1.84E-03	1.96E-03	2.08E-03	2.31E-03	2.42E-03
pb211	1.72E-10	1.92E-10	2.11E-10	2.29E-10	2.47E-10	2.65E-10	2.82E-10	2.98E-10	3.14E-10	3.45E-10	3.60E-10
pb212	3.49E-13	3.54E-13	3.60E-13	3.66E-13	3.72E-13	3.78E-13	3.84E-13	3.90E-13	3.96E-13	4.09E-13	4.16E-13
pb214	2.44E-09	2.76E-09	3.08E-09	3.39E-09	3.70E-09	3.99E-09	4.28E-09	4.57E-09	4.84E-09	5.38E-09	5.63E-09
bi208	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bi209	2.67E-02	3.70E-02	4.93E-02	6.36E-02	8.01E-02	9.88E-02	1.20E-01	1.43E-01	1.68E-01	2.26E-01	2.58E-01
bi210m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bi210	6.44E-07	7.30E-07	8.14E-07	8.97E-07	9.77E-07	1.06E-06	1.13E-06	1.21E-06	1.28E-06	1.42E-06	1.49E-06
bi211	1.02E-11	1.14E-11	1.25E-11	1.36E-11	1.46E-11	1.57E-11	1.67E-11	1.77E-11	1.86E-11	2.04E-11	2.13E-11
bi212	3.31E-14	3.36E-14	3.41E-14	3.47E-14	3.53E-14	3.58E-14	3.64E-14	3.70E-14	3.76E-14	3.88E-14	3.94E-14
bi213	5.91E-10	7.17E-10	8.48E-10	9.83E-10	1.12E-09	1.26E-09	1.41E-09	1.55E-09	1.69E-09	1.99E-09	2.13E-09
bi214	1.81E-09	2.05E-09	2.29E-09	2.52E-09	2.75E-09	2.97E-09	3.18E-09	3.39E-09	3.60E-09	3.99E-09	4.18E-09
po210	1.78E-05	2.02E-05	2.25E-05	2.48E-05	2.70E-05	2.91E-05	3.13E-05	3.33E-05	3.53E-05	3.92E-05	4.11E-05
po211m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
po211	1.13E-16	1.26E-16	1.38E-16	1.50E-16	1.62E-16	1.73E-16	1.84E-16	1.95E-16	2.06E-16	2.26E-16	2.36E-16
po212	1.74E-24	1.77E-24	1.79E-24	1.82E-24	1.85E-24	1.88E-24	1.91E-24	1.94E-24	1.98E-24	2.04E-24	2.07E-24
po213	8.89E-19	1.08E-18	1.27E-18	1.48E-18	1.69E-18	1.90E-18	2.11E-18	2.33E-18	2.55E-18	2.99E-18	3.20E-18
po214	2.49E-16	2.82E-16	3.15E-16	3.47E-16	3.78E-16	4.08E-16	4.38E-16	4.67E-16	4.95E-16	5.49E-16	5.75E-16
po215	1.44E-16	1.61E-16	1.76E-16	1.92E-16	2.07E-16	2.22E-16	2.36E-16	2.50E-16	2.63E-16	2.89E-16	3.01E-16
po216	1.34E-18	1.37E-18	1.39E-18	1.41E-18	1.43E-18	1.46E-18	1.48E-18	1.51E-18	1.53E-18	1.58E-18	1.60E-18
po218	2.87E-10	3.26E-10	3.63E-10	4.00E-10	4.36E-10	4.71E-10	5.05E-10	5.38E-10	5.71E-10	6.34E-10	6.64E-10
at217	7.11E-15	8.62E-15	1.02E-14	1.18E-14	1.35E-14	1.52E-14	1.69E-14	1.86E-14	2.04E-14	2.39E-14	2.57E-14
rn218	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rn219	3.27E-13	3.64E-13	4.00E-13	4.35E-13	4.69E-13	5.02E-13	5.34E-13	5.66E-13	5.96E-13	6.55E-13	6.83E-13
rn220	5.25E-16	5.34E-16	5.42E-16	5.51E-16	5.60E-16	5.69E-16	5.78E-16	5.88E-16	5.97E-16	6.16E-16	6.26E-16
rn222	5.20E-07	5.89E-07	6.57E-07	7.23E-07	7.88E-07	8.51E-07	9.13E-07	9.74E-07	1.03E-06	1.15E-06	1.20E-06
fr221	6.59E-11	8.00E-11	9.46E-11	1.10E-10	1.25E-10	1.41E-10	1.57E-10	1.73E-10	1.89E-10	2.22E-10	2.38E-10
fr223	1.52E-12	1.69E-12	1.86E-12	2.02E-12	2.18E-12	2.33E-12	2.48E-12	2.63E-12	2.77E-12	3.04E-12	3.17E-12
ra222	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ra223	8.31E-08	9.25E-08	1.02E-07	1.10E-07	1.19E-07	1.28E-07	1.36E-07	1.44E-07	1.51E-07	1.66E-07	1.73E-07
ra224	3.04E-12	3.09E-12	3.14E-12	3.19E-12	3.24E-12	3.30E-12	3.35E-12	3.40E-12	3.46E-12	3.57E-12	3.63E-12
ra225	2.92E-07	3.54E-07	4.19E-07	4.86E-07	5.54E-07	6.24E-07	6.94E-07	7.65E-07	8.37E-07	9.81E-07	1.05E-06
ra226	8.08E-02	9.16E-02	1.02E-01	1.13E-01	1.23E-01	1.32E-01	1.42E-01	1.51E-01	1.61E-01	1.78E-01	1.87E-01
ra228	3.29E-10	3.75E-10	4.21E-10	4.68E-10	5.15E-10	5.62E-10	6.10E-10	6.58E-10	7.06E-10	8.02E-10	8.50E-10
ac225	1.97E-07	2.39E-07	2.83E-07	3.28E-07	3.74E-07	4.21E-07	4.69E-07	5.17E-07	5.65E-07	6.63E-07	7.11E-07
ac227	5.89E-05	6.55E-05	7.19E-05	7.82E-05	8.43E-05	9.03E-05	9.61E-05	1.02E-04	1.07E-04	1.18E-04	1.23E-04
ac228	4.01E-14	4.57E-14	5.14E-14	5.71E-14	6.29E-14	6.86E-14	7.45E-14	8.03E-14	8.61E-14	9.79E-14	1.04E-13
th226	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
th227	1.37E-07	1.52E-07	1.67E-07	1.81E-07	1.96E-07	2.10E-07	2.23E-07	2.36E-07	2.49E-07	2.73E-07	2.85E-07
th228	5.91E-10	6.00E-10	6.10E-10	6.20E-10	6.30E-10	6.40E-10	6.51E-10	6.61E-10	6.72E-10	6.94E-10	7.05E-10
th229	5.78E-02	7.01E-02	8.29E-02	9.61E-02	1.10E-01	1.23E-01	1.37E-01	1.51E-01	1.66E-01	1.94E-01	2.08E-01
th230	4.48E+00	4.99E+00	5.48E+00	5.96E+00	6.43E+00	6.89E+00	7.34E+00	7.78E+00	8.20E+00	9.03E+00	9.42E+00
th231	2.95E-08	2.99E-08	3.02E-08	3.06E-08	3.09E-08	3.12E-08	3.14E-08	3.17E-08	3.20E-08	3.24E-08	3.26E-08

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 62

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
th232	8.17E-01	9.32E-01	1.05E+00	1.16E+00	1.28E+00	1.40E+00	1.52E+00	1.64E+00	1.76E+00	1.99E+00	2.11E+00
th233	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
th234	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06
pa231	9.01E-02	1.00E-01	1.10E-01	1.20E-01	1.29E-01	1.38E-01	1.47E-01	1.56E-01	1.64E-01	1.80E-01	1.88E-01
pa232	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pa233	1.84E-05	1.83E-05	1.83E-05	1.83E-05	1.83E-05	1.83E-05	1.83E-05	1.83E-05	1.83E-05	1.82E-05	1.82E-05
pa234m	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10

pa234	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u231	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u232	1.79E-08	1.77E-08	1.75E-08	1.72E-08	1.70E-08	1.68E-08	1.66E-08	1.64E-08	1.62E-08	1.58E-08	1.57E-08
u233	2.59E+00	2.91E+00	3.23E+00	3.54E+00	3.85E+00	4.16E+00	4.46E+00	4.77E+00	5.07E+00	5.66E+00	5.95E+00
u234	1.07E+02	1.07E+02	1.06E+02	1.06E+02	1.05E+02	1.05E+02	1.04E+02	1.04E+02	1.03E+02	1.02E+02	1.02E+02
u235	7.26E+03	7.35E+03	7.43E+03	7.52E+03	7.59E+03	7.67E+03	7.73E+03	7.80E+03	7.86E+03	7.97E+03	8.03E+03
u236	1.95E+03	1.98E+03	1.99E+03	2.01E+03	2.02E+03	2.03E+03	2.04E+03	2.05E+03	2.05E+03	2.06E+03	2.06E+03
u237	6.26E-13	5.32E-13	4.52E-13	3.84E-13	3.26E-13	2.77E-13	2.35E-13	2.00E-13	1.70E-13	1.22E-13	1.04E-13
u238	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05
u239	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u240	9.39E-19	1.05E-18	1.17E-18	1.28E-18	1.40E-18	1.51E-18	1.62E-18	1.74E-18	1.85E-18	2.07E-18	2.18E-18
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np236m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np236	3.37E-04	3.33E-04	3.29E-04	3.25E-04	3.21E-04	3.17E-04	3.13E-04	3.09E-04	3.06E-04	2.98E-04	2.95E-04
np237	5.40E+02	5.40E+02	5.40E+02	5.39E+02	5.39E+02	5.39E+02	5.38E+02	5.38E+02	5.38E+02	5.37E+02	5.37E+02
np238	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np239	1.93E-06	1.60E-06	1.32E-06	1.10E-06	9.08E-07	7.52E-07	6.23E-07	5.17E-07	4.28E-07	2.94E-07	2.43E-07
np240m	8.02E-21	9.00E-21	9.98E-21	1.10E-20	1.19E-20	1.29E-20	1.39E-20	1.48E-20	1.58E-20	1.77E-20	1.86E-20
np240	8.25E-23	9.26E-23	1.03E-22	1.13E-22	1.23E-22	1.33E-22	1.43E-22	1.52E-22	1.62E-22	1.82E-22	1.92E-22
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	7.55E-10	7.46E-10	7.37E-10	7.29E-10	7.20E-10	7.11E-10	7.03E-10	6.94E-10	6.86E-10	6.70E-10	6.62E-10
pu237	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu238	4.02E-35	2.16E-39	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu239	1.67E+03	1.57E+03	1.49E+03	1.40E+03	1.33E+03	1.25E+03	1.18E+03	1.12E+03	1.05E+03	9.39E+02	8.87E+02
pu240	1.24E+02	1.01E+02	8.14E+01	6.59E+01	5.34E+01	4.32E+01	3.50E+01	2.83E+01	2.29E+01	1.50E+01	1.22E+01
pu241	2.07E-05	1.76E-05	1.49E-05	1.27E-05	1.08E-05	9.14E-06	7.77E-06	6.60E-06	5.61E-06	4.04E-06	3.44E-06
pu242	6.88E+01	6.85E+01	6.83E+01	6.80E+01	6.78E+01	6.75E+01	6.73E+01	6.70E+01	6.68E+01	6.63E+01	6.60E+01
pu243	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.13E-15	1.12E-15
pu244	4.76E-08	5.34E-08	5.92E-08	6.50E-08	7.08E-08	7.65E-08	8.22E-08	8.79E-08	9.36E-08	1.05E-07	1.10E-07
pu245	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu246	6.61E-22	6.10E-22	5.63E-22	5.20E-22	4.80E-22	4.44E-22	4.10E-22	3.78E-22	3.49E-22	2.98E-22	2.75E-22
am239	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am240	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am241	6.50E-04	5.52E-04	4.69E-04	3.99E-04	3.39E-04	2.88E-04	2.44E-04	2.08E-04	1.76E-04	1.28E-04	1.08E-04
am242m	2.99E-35	1.61E-39	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am242	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am243	2.24E+00	1.86E+00	1.54E+00	1.27E+00	1.06E+00	8.74E-01	7.24E-01	6.00E-01	4.97E-01	3.41E-01	2.83E-01
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am245	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am246	1.65E-24	1.52E-24	1.41E-24	1.30E-24	1.20E-24	1.11E-24	1.02E-24	9.45E-25	8.72E-25	7.44E-25	6.87E-25
cm241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 63

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
cm242	7.82E-38	4.07E-42	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm243	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm244	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm245	1.24E-02	1.06E-02	8.97E-03	7.62E-03	6.47E-03	5.50E-03	4.67E-03	3.97E-03	3.37E-03	2.43E-03	2.07E-03
cm246	2.88E-04	2.14E-04	1.60E-04	1.19E-04	8.90E-05	6.64E-05	4.96E-05	3.70E-05	2.76E-05	1.53E-05	1.14E-05
cm247	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05	3.24E-05
cm248	1.59E-06	1.58E-06	1.58E-06	1.57E-06	1.56E-06	1.56E-06	1.55E-06	1.54E-06	1.54E-06	1.53E-06	1.52E-06
cm249	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm250	1.57E-15	1.45E-15	1.34E-15	1.24E-15	1.14E-15	1.06E-15	9.76E-16	9.01E-16	8.32E-16	7.10E-16	6.55E-16
cm251	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

bk249	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bk250	4.65E-24	4.29E-24	3.96E-24	3.66E-24	3.38E-24	3.12E-24	2.88E-24	2.66E-24	2.46E-24	2.10E-24	1.93E-24
bk251	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf249	3.34E-22	6.40E-24	1.23E-25	2.35E-27	4.49E-29	8.59E-31	1.65E-32	3.15E-34	6.03E-36	2.21E-39	4.22E-41
cf250	1.66E-19	1.53E-19	1.41E-19	1.30E-19	1.20E-19	1.11E-19	1.03E-19	9.49E-20	8.76E-20	7.47E-20	6.90E-20
cf251	3.69E-15	7.88E-16	1.68E-16	3.60E-17	7.68E-18	1.64E-18	3.50E-19	7.48E-20	1.60E-20	7.29E-22	1.56E-22
cf252	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf253	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf254	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf255	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es253	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es254m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es254	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es255	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
s250	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
total	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 64

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
h 3	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
li 6	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05
li 7	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06
be 9	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06
be 10	3.67E-05	3.67E-05	3.66E-05	3.66E-05	3.66E-05	3.65E-05	3.65E-05	3.65E-05	3.64E-05	3.64E-05	3.63E-05
c 14	1.08E-06	8.46E-07	6.64E-07	5.21E-07	4.09E-07	3.21E-07	2.52E-07	1.98E-07	1.55E-07	9.58E-08	7.52E-08
ni 66	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 66	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 66	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07
cu 67	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 67	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08
zn 68	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09
zn 69	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 69m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 69	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08
zn 70	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06
ga 70	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 70	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09
zn 71	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 71m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 71	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
ge 71	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 71m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
co 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 72	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
co 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 73	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03
ge 73m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
co 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

zn 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 74	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03
co 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 75m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 75	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02
ni 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 65

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr	yr
zn 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ga 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ge 76	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	
as 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
se 76	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	
ni 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
cu 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zn 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ga 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ge 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ge 77m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
as 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
se 77	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	
se 77m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ni 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
cu 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zn 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ga 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ge 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
as 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
se 78	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	
cu 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zn 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ga 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ge 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
as 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
se 79	1.00E+00	9.60E-01	9.21E-01	8.83E-01	8.47E-01	8.12E-01	7.78E-01	7.46E-01	7.16E-01	6.58E-01	6.31E-01	
se 79m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
br 79	4.00E-01	4.42E-01	4.81E-01	5.19E-01	5.55E-01	5.90E-01	6.24E-01	6.56E-01	6.86E-01	7.44E-01	7.71E-01	
br 79m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
kr 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
cu 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zn 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ga 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ge 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
as 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
se 80	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	
br 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
br 80m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
kr 80	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	
cu 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zn 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	

ga 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 81m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 81	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00
kr 81	6.76E-07	6.72E-07	6.68E-07	6.63E-07	6.59E-07	6.55E-07	6.50E-07	6.46E-07	6.42E-07	6.34E-07	6.30E-07
kr 81m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 66

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
ge 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 82m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 82	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00
br 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 82m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 82	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01
zn 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 83m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 83	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01
kr 83m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 84m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 84	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01
ga 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 85m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 85m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 85	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01
ge 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 86m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 86	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01
rb 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 86m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 86	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02
ge 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.08E+00	.00E+00
se 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

kr 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 87	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01
sr 87	3.23E-04	3.25E-04	3.27E-04	3.29E-04	3.31E-04	3.34E-04	3.36E-04	3.38E-04	3.40E-04	3.44E-04	3.46E-04
sr 87m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 67

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
br 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 88	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02
as 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 89	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
y 89m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 90	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02
zr 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 91m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 91	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02
nb 91	2.20E-17	2.87E-18	3.73E-19	4.86E-20	6.33E-21	8.24E-22	1.07E-22	1.40E-23	1.82E-24	3.08E-26	4.01E-27
se 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 92	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02
nb 92	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08
se 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 93	1.38E+02	1.38E+02	1.38E+02	1.37E+02	1.37E+02	1.37E+02	1.37E+02	1.37E+02	1.37E+02	1.37E+02	1.36E+02
nb 93	1.00E+00	1.13E+00	1.25E+00	1.38E+00	1.50E+00	1.62E+00	1.75E+00	1.87E+00	2.00E+00	2.24E+00	2.37E+00

nb 93m	1.45E-03	1.45E-03	1.45E-03	1.45E-03	1.45E-03	1.45E-03	1.45E-03	1.44E-03	1.44E-03	1.44E-03	1.44E-03
br 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 68

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr	yr
sr 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
y 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zr 94	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	
nb 94	7.23E-05	6.75E-05	6.31E-05	5.89E-05	5.50E-05	5.14E-05	4.80E-05	4.48E-05	4.19E-05	3.65E-05	3.41E-05	
nb 94m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
br 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
kr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
rb 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
y 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
nb 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
nb 95m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
mo 95	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	
br 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
kr 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
rb 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sr 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
y 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zr 96	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	
nb 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
mo 96	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	
kr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
rb 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
y 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
nb 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
nb 97m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
mo 97	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	
kr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
rb 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
y 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
nb 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
nb 98m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
mo 98	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	
tc 98	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	1.36E-03	
rb 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sr 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
y 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
zr 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
nb 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
nb 99m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
mo 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
tc 99	2.19E+02	2.17E+02	2.16E+02	2.14E+02	2.13E+02	2.12E+02	2.10E+02	2.09E+02	2.08E+02	2.05E+02	2.03E+02	
tc 99m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ru 99	1.18E+01	1.32E+01	1.47E+01	1.61E+01	1.75E+01	1.89E+01	2.03E+01	2.16E+01	2.30E+01	2.57E+01	2.71E+01	
rb100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sr100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	

y100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 69

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
zr100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb100m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo100	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02
tc100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru100	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01
rh101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru101	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02
sr102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc102m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru102	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02
rh102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh103	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02
rh103m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru104	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
rh104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh104m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd104	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01
y105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh105m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd105	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02

1

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr	yr
y106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh106m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd106	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01
ag106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd107	5.11E+01	5.11E+01	5.11E+01	5.11E+01	5.11E+01	5.10E+01	5.10E+01	5.10E+01	5.10E+01	5.10E+01	5.10E+01	5.10E+01
pd107m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag107	8.73E-02	9.82E-02	1.09E-01	1.20E-01	1.31E-01	1.42E-01	1.53E-01	1.64E-01	1.74E-01	1.96E-01	2.07E-01	
zr108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh108m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd108	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	
ag108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag108m	4.54E-43	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd108	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	
zr109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag109	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	
ag109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh110m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd110	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00
ag110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag110m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 71

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr	yr

cd110	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00
nb111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd111	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00
cd111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd112	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00
mo113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag113m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd113	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02
cd113m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in113	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02
in113m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd114	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00
in114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in114m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn114	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05
mo115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag115m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd115m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in115	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01
in115m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 72

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr	yr
sn115	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	
tc116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ru116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	

rh116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag116m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd116	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
in116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in116m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn116	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01
tc117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn117	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00
sn117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag118m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in118m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn118	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01
ru119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn119	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00
sn119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in120m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn120	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00
rh121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 73

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr	yr
pd121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in121m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

sn121m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb121	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00
rh122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in122m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn122	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
sb122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb122m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te122	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02
rh123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb123	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00
te123	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04
te123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn124	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00
sb124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb124m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te124	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02
pd125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te125	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00
te125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn126	4.37E+00	4.31E+00	4.25E+00	4.20E+00	4.14E+00	4.08E+00	4.02E+00	3.97E+00	3.91E+00	3.81E+00	3.76E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 74

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
sb126	2.08E-07	2.05E-07	2.02E-07	1.99E-07	1.97E-07	1.94E-07	1.91E-07	1.89E-07	1.86E-07	1.81E-07	1.78E-07
sb126m	1.58E-09	1.56E-09	1.54E-09	1.52E-09	1.49E-09	1.47E-09	1.45E-09	1.43E-09	1.41E-09	1.38E-09	1.36E-09
te126	5.91E-01	6.52E-01	7.11E-01	7.70E-01	8.27E-01	8.84E-01	9.40E-01	9.96E-01	1.05E+00	1.16E+00	1.21E+00
xe126	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09
ag127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

sn127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i127	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01
xe127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb128m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te128	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01
i128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe128	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01
cd129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i129	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01	4.99E+01
xe129	3.65E-02	4.09E-02	4.53E-02	4.97E-02	5.41E-02	5.85E-02	6.29E-02	6.73E-02	7.17E-02	8.05E-02	8.49E-02
xe129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb130m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te130	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02
i130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i130m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe130	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00
cd131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te131m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe131	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02
xe131m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 75

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr	yr
cd132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
in132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sn132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sb132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sb132m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
te132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
i132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
xe132	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	
cs132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ba132	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	
in133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sn133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	

sb133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs133	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02
ba133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe134	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02
xe134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba134	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01
sn135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs135	1.76E+02	1.76E+02	1.76E+02	1.76E+02	1.76E+02	1.76E+02	1.76E+02	1.76E+02	1.75E+02	1.75E+02	1.75E+02	1.75E+02
cs135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba135	8.91E-01	9.97E-01	1.10E+00	1.21E+00	1.32E+00	1.42E+00	1.53E+00	1.63E+00	1.74E+00	1.95E+00	2.06E+00	
ba135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i136m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe136	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02
cs136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba136	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00
ba136m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 76

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr	
sb137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba137	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02
ba137m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs138m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba138	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02
la138	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03

sb139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la139	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02
ce139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce140	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02
pr140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr141	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02
nd141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce142	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02
pr142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr142m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd142	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00
i143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 77

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
xe143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd143	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02
i144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr144m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd144	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02
i145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

cs145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd145	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02
pm145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd146	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02
pm146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm146	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03
xe147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm147	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01
cs148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd148	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02
pm148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm148m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 78

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr	yr
sm148	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	
cs149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ba149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
la149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ce149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
pr149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
nd149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
pm149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sm149	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	
eu149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
cs150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ba150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
la150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ce150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
pr150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
nd150	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	
pm150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
sm150	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	
eu150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
ba151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	
la151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	

ce151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu151	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00
ba152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm152m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm152	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01
eu152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu152m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd152	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02
la153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu153	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01
gd153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm154m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 79

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
sm154	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00
eu154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd154	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00
la155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd155m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd155	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00
ce156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd156	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00
ce157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

eu157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd157	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02
pr158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd158	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00
pr159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb159	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01
nd160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd160	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01
tb160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy160	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02
nd161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 80

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	18000.0 yr	20000.0 yr	22000.0 yr	24000.0 yr	26000.0 yr	28000.0 yr	30000.0 yr	32000.0 yr	36000.0 yr	38000.0 yr
dy161	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02
pm162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb162m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy162	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02
sm163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb163m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy163	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02
sm164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy164	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
sm165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy165m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho165	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03
dy166	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

ho166	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho166m	2.30E-09	7.26E-10	2.29E-10	7.20E-11	2.27E-11	7.14E-12	2.25E-12	7.08E-13	2.23E-13	2.21E-14	6.97E-15
er166	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03
er167	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05
er167m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er168	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05
yb168	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er169	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm169	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07
yb169	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er170	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07
tm170	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm170m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb170	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09
er171	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm171	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb171	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06
er172	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm172	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb172	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07
total	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 81

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
he 4	4.89E+01	4.98E+01	5.19E+01	5.37E+01	5.52E+01	5.66E+01	5.78E+01	5.89E+01	6.33E+01	6.96E+01	7.18E+01
tl206	1.12E-15	1.17E-15	1.29E-15	1.40E-15	1.51E-15	1.61E-15	1.70E-15	1.79E-15	2.25E-15	2.72E-15	2.71E-15
tl207	4.65E-11	4.84E-11	5.27E-11	5.68E-11	6.06E-11	6.40E-11	6.72E-11	7.02E-11	8.33E-11	9.83E-11	9.99E-11
tl208	7.01E-16	7.12E-16	7.40E-16	7.68E-16	7.96E-16	8.25E-16	8.54E-16	8.84E-16	1.07E-15	1.74E-15	2.10E-15
tl209	2.12E-12	2.26E-12	2.62E-12	2.98E-12	3.33E-12	3.67E-12	4.01E-12	4.34E-12	6.15E-12	1.12E-11	1.21E-11
pb206	1.42E+00	1.57E+00	1.98E+00	2.42E+00	2.90E+00	3.42E+00	3.97E+00	4.54E+00	8.56E+00	2.54E+01	3.43E+01
pb207	7.31E-02	8.03E-02	9.97E-02	1.21E-01	1.43E-01	1.67E-01	1.92E-01	2.19E-01	3.96E-01	1.11E+00	1.49E+00
pb208	4.86E-04	4.87E-04	4.88E-04	4.89E-04	4.91E-04	4.92E-04	4.93E-04	4.95E-04	5.05E-04	5.51E-04	5.83E-04
pb209	8.96E-09	9.57E-09	1.11E-08	1.26E-08	1.41E-08	1.55E-08	1.69E-08	1.83E-08	2.60E-08	4.74E-08	5.12E-08
pb210	2.42E-03	2.53E-03	2.78E-03	3.03E-03	3.25E-03	3.47E-03	3.67E-03	3.85E-03	4.86E-03	5.86E-03	5.85E-03
pb211	3.60E-10	3.74E-10	4.08E-10	4.39E-10	4.69E-10	4.95E-10	5.20E-10	5.43E-10	6.45E-10	7.61E-10	7.72E-10
pb212	4.16E-13	4.22E-13	4.39E-13	4.55E-13	4.72E-13	4.89E-13	5.07E-13	5.24E-13	6.33E-13	1.03E-12	1.24E-12
pb214	5.63E-09	5.88E-09	6.48E-09	7.05E-09	7.58E-09	8.07E-09	8.54E-09	8.98E-09	1.13E-08	1.37E-08	1.36E-08
bi208	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bi209	2.58E-01	2.93E-01	3.90E-01	5.00E-01	6.25E-01	7.63E-01	9.14E-01	1.08E+00	2.33E+00	9.35E+00	1.39E+01
bi210m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bi210	1.49E-06	1.55E-06	1.71E-06	1.86E-06	2.00E-06	2.13E-06	2.26E-06	2.37E-06	2.99E-06	3.61E-06	3.60E-06
bi211	2.13E-11	2.22E-11	2.42E-11	2.60E-11	2.78E-11	2.94E-11	3.08E-11	3.22E-11	3.82E-11	4.51E-11	4.58E-11
bi212	3.94E-14	4.00E-14	4.16E-14	4.32E-14	4.48E-14	4.64E-14	4.80E-14	4.97E-14	6.00E-14	9.77E-14	1.18E-13
bi213	2.13E-09	2.28E-09	2.64E-09	3.00E-09	3.35E-09	3.69E-09	4.03E-09	4.36E-09	6.19E-09	1.13E-08	1.22E-08
bi214	4.18E-09	4.37E-09	4.81E-09	5.23E-09	5.63E-09	6.00E-09	6.34E-09	6.67E-09	8.41E-09	1.01E-08	1.01E-08
po210	4.11E-05	4.29E-05	4.73E-05	5.14E-05	5.53E-05	5.89E-05	6.23E-05	6.55E-05	8.26E-05	9.96E-05	9.94E-05
po211m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
po211	2.36E-16	2.45E-16	2.67E-16	2.88E-16	3.07E-16	3.25E-16	3.41E-16	3.56E-16	4.22E-16	4.98E-16	5.06E-16
po212	2.07E-24	2.10E-24	2.19E-24	2.27E-24	2.35E-24	2.44E-24	2.52E-24	2.61E-24	3.15E-24	5.13E-24	6.19E-24
po213	3.20E-18	3.42E-18	3.97E-18	4.50E-18	5.03E-18	5.55E-18	6.06E-18	6.55E-18	9.30E-18	1.70E-17	1.83E-17
po214	5.75E-16	6.01E-16	6.62E-16	7.20E-16	7.74E-16	8.25E-16	8.72E-16	9.17E-16	1.16E-15	1.39E-15	1.39E-15
po215	3.01E-16	3.13E-16	3.42E-16	3.68E-16	3.92E-16	4.15E-16	4.36E-16	4.55E-16	5.40E-16	6.37E-16	6.47E-16
po216	1.60E-18	1.63E-18	1.69E-18	1.76E-18	1.82E-18	1.89E-18	1.95E-18	2.02E-18	2.44E-18	3.97E-18	4.79E-18
po218	6.64E-10	6.93E-10	7.64E-10	8.31E-10	8.93E-10	9.52E-10	1.01E-09	1.06E-09	1.33E-09	1.61E-09	1.61E-09
at217	2.57E-14	2.74E-14	3.18E-14	3.61E-14	4.03E-14	4.44E-14	4.85E-14	5.25E-14	7.45E-14	1.36E-13	1.47E-13
rn218	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rn219	6.83E-13	7.10E-13	7.74E-13	8.34E-13	8.89E-13	9.40E-13	9.87E-13	1.03E-12	1.22E-12	1.44E-12	1.47E-12
rn220	6.26E-16	6.36E-16	6.61E-16	6.86E-16	7.11E-16	7.37E-16	7.63E-16	7.89E-16	9.53E-16	1.55E-15	1.87E-15

rn222	1.20E-06	1.25E-06	1.38E-06	1.50E-06	1.62E-06	1.72E-06	1.82E-06	1.91E-06	2.41E-06	2.91E-06	2.90E-06
fr221	2.38E-10	2.54E-10	2.94E-10	3.34E-10	3.73E-10	4.12E-10	4.49E-10	4.86E-10	6.90E-10	1.26E-09	1.36E-09
fr223	3.17E-12	3.29E-12	3.59E-12	3.87E-12	4.13E-12	4.36E-12	4.58E-12	4.78E-12	5.68E-12	6.70E-12	6.80E-12
ra222	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ra223	1.73E-07	1.80E-07	1.97E-07	2.12E-07	2.26E-07	2.39E-07	2.51E-07	2.62E-07	3.11E-07	3.67E-07	3.72E-07
ra224	3.63E-12	3.68E-12	3.83E-12	3.97E-12	4.12E-12	4.27E-12	4.42E-12	4.57E-12	5.52E-12	8.98E-12	1.08E-11
ra225	1.05E-06	1.13E-06	1.30E-06	1.48E-06	1.65E-06	1.82E-06	1.99E-06	2.15E-06	3.06E-06	5.58E-06	6.03E-06
ra226	1.87E-01	1.95E-01	2.15E-01	2.34E-01	2.51E-01	2.68E-01	2.83E-01	2.98E-01	3.76E-01	4.53E-01	4.52E-01
ra228	8.50E-10	8.98E-10	1.02E-09	1.14E-09	1.26E-09	1.38E-09	1.50E-09	1.62E-09	2.35E-09	4.77E-09	5.97E-09
ac225	7.11E-07	7.60E-07	8.81E-07	1.00E-06	1.12E-06	1.23E-06	1.34E-06	1.45E-06	2.06E-06	3.77E-06	4.07E-06
ac227	1.23E-04	1.28E-04	1.39E-04	1.50E-04	1.60E-04	1.69E-04	1.77E-04	1.85E-04	2.20E-04	2.60E-04	2.64E-04
ac228	1.04E-13	1.10E-13	1.24E-13	1.39E-13	1.54E-13	1.69E-13	1.83E-13	1.98E-13	2.87E-13	5.82E-13	7.29E-13
th226	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
th227	2.85E-07	2.96E-07	3.23E-07	3.48E-07	3.71E-07	3.92E-07	4.12E-07	4.30E-07	5.11E-07	6.02E-07	6.12E-07
th228	7.05E-10	7.16E-10	7.43E-10	7.72E-10	8.00E-10	8.29E-10	8.59E-10	8.88E-10	1.07E-09	1.75E-09	2.11E-09
th229	2.08E-01	2.23E-01	2.58E-01	2.93E-01	3.27E-01	3.61E-01	3.94E-01	4.26E-01	6.05E-01	1.10E+00	1.19E+00
th230	9.42E+00	9.81E+00	1.07E+01	1.16E+01	1.24E+01	1.32E+01	1.39E+01	1.46E+01	1.78E+01	2.16E+01	2.14E+01
th231	3.26E-08	3.28E-08	3.33E-08	3.37E-08	3.40E-08	3.43E-08	3.45E-08	3.48E-08	3.56E-08	3.61E-08	3.62E-08

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 82

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
th232	2.11E+00	2.23E+00	2.53E+00	2.84E+00	3.14E+00	3.44E+00	3.74E+00	4.04E+00	5.85E+00	1.19E+01	1.49E+01
th233	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
th234	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06	6.42E-06
pa231	1.88E-01	1.95E-01	2.13E-01	2.30E-01	2.45E-01	2.59E-01	2.72E-01	2.84E-01	3.37E-01	3.97E-01	4.04E-01
pa232	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pa233	1.82E-05	1.82E-05	1.82E-05	1.82E-05	1.81E-05	1.81E-05	1.81E-05	1.80E-05	1.79E-05	1.73E-05	1.70E-05
pa234m	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10	2.17E-10
pa234	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11	9.67E-11
pa235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u230	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u231	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u232	1.57E-08	1.55E-08	1.50E-08	1.46E-08	1.41E-08	1.37E-08	1.33E-08	1.29E-08	1.08E-08	5.90E-09	4.36E-09
u233	5.95E+00	6.24E+00	6.95E+00	7.64E+00	8.32E+00	8.98E+00	9.62E+00	1.03E+01	1.37E+01	2.22E+01	2.51E+01
u234	1.02E+02	1.02E+02	1.00E+02	9.94E+01	9.83E+01	9.73E+01	9.62E+01	9.52E+01	8.94E+01	7.33E+01	6.68E+01
u235	8.03E+03	8.07E+03	8.18E+03	8.28E+03	8.36E+03	8.43E+03	8.50E+03	8.55E+03	8.75E+03	8.89E+03	8.89E+03
u236	2.06E+03	2.06E+03	2.07E+03	2.07E+03	2.07E+03	2.07E+03	2.07E+03	2.07E+03	2.07E+03	2.06E+03	2.06E+03
u237	1.04E-13	8.84E-14	5.88E-14	3.91E-14	2.60E-14	1.73E-14	1.15E-14	7.65E-15	6.62E-16	1.90E-19	3.22E-21
u238	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05	4.42E+05
u239	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
u240	2.18E-18	2.29E-18	2.57E-18	2.84E-18	3.10E-18	3.37E-18	3.63E-18	3.89E-18	5.40E-18	9.79E-18	1.17E-17
u241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np235	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np236m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np236	2.95E-04	2.91E-04	2.83E-04	2.74E-04	2.66E-04	2.58E-04	2.51E-04	2.43E-04	2.03E-04	1.11E-04	8.21E-05
np237	5.37E+02	5.36E+02	5.35E+02	5.34E+02	5.34E+02	5.33E+02	5.32E+02	5.31E+02	5.26E+02	5.09E+02	5.01E+02
np238	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
np239	2.43E-07	2.02E-07	1.26E-07	7.87E-08	4.92E-08	3.07E-08	1.92E-08	1.20E-08	7.14E-10	7.13E-14	1.30E-14
np240m	1.86E-20	1.96E-20	2.19E-20	2.42E-20	2.65E-20	2.88E-20	3.10E-20	3.32E-20	4.60E-20	8.36E-20	9.96E-20
np240	1.92E-22	2.01E-22	2.25E-22	2.49E-22	2.73E-22	2.96E-22	3.19E-22	3.42E-22	4.74E-22	8.60E-22	1.02E-21
np241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu236	6.62E-10	6.54E-10	6.34E-10	6.15E-10	5.97E-10	5.79E-10	5.62E-10	5.46E-10	4.55E-10	2.49E-10	1.84E-10
pu237	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu238	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu239	8.87E+02	8.37E+02	7.25E+02	6.28E+02	5.44E+02	4.71E+02	4.08E+02	3.54E+02	1.49E+02	8.42E+00	2.00E+00
pu240	1.22E+01	9.85E+00	5.81E+00	3.42E+00	2.02E+00	1.19E+00	7.02E-01	4.14E-01	1.74E-02	4.50E-07	2.34E-09
pu241	3.44E-06	2.92E-06	1.94E-06	1.29E-06	8.59E-07	5.71E-07	3.80E-07	2.53E-07	2.19E-08	6.27E-12	1.06E-13
pu242	6.60E+01	6.58E+01	6.52E+01	6.46E+01	6.40E+01	6.34E+01	6.28E+01	6.22E+01	5.89E+01	4.89E+01	4.46E+01

pu243	1.12E-15	1.12E-15	1.12E-15	1.12E-15	1.12E-15	1.12E-15	1.12E-15	1.12E-15	1.12E-15	1.12E-15	1.11E-15
pu244	1.10E-07	1.16E-07	1.30E-07	1.44E-07	1.57E-07	1.71E-07	1.84E-07	1.97E-07	2.73E-07	4.96E-07	5.91E-07
pu245	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pu246	2.75E-22	2.54E-22	2.08E-22	1.70E-22	1.40E-22	1.14E-22	9.38E-23	7.68E-23	2.33E-23	4.33E-25	5.90E-26
am239	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am240	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am241	1.08E-04	9.18E-05	5.86E-05	3.89E-05	2.59E-05	1.72E-05	1.15E-05	7.62E-06	6.59E-07	1.99E-10	3.20E-12
am242m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am242	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am243	2.83E-01	2.34E-01	1.46E-01	9.15E-02	5.72E-02	3.57E-02	2.23E-02	1.39E-02	8.30E-04	8.29E-08	1.52E-08
am244m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am244	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am245	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
am246	6.87E-25	6.34E-25	5.20E-25	4.26E-25	3.49E-25	2.86E-25	2.34E-25	1.92E-25	5.81E-26	1.08E-27	1.48E-28
cm241	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1
0 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 83

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
cm242	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm243	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm244	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm245	2.07E-03	1.75E-03	1.17E-03	7.76E-04	5.16E-04	3.43E-04	2.28E-04	1.52E-04	1.31E-05	3.77E-09	6.39E-11
cm246	1.14E-05	8.54E-06	4.10E-06	1.97E-06	9.48E-07	4.56E-07	2.19E-07	1.05E-07	1.30E-09	5.63E-16	3.85E-19
cm247	3.24E-05	3.24E-05	3.24E-05	3.23E-05	3.23E-05	3.23E-05	3.23E-05	3.23E-05	3.23E-05	3.21E-05	3.21E-05
cm248	1.52E-06	1.51E-06	1.50E-06	1.48E-06	1.47E-06	1.45E-06	1.44E-06	1.42E-06	1.34E-06	1.09E-06	9.86E-07
cm249	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cm250	6.55E-16	6.05E-16	4.96E-16	4.06E-16	3.33E-16	2.73E-16	2.23E-16	1.83E-16	5.54E-17	1.03E-18	1.41E-19
cm251	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bk249	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
bk250	1.93E-24	1.79E-24	1.46E-24	1.20E-24	9.83E-25	8.05E-25	6.60E-25	5.41E-25	1.64E-25	3.05E-27	4.15E-28
bk251	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf249	4.22E-41	6.98E-43	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf250	6.90E-20	6.37E-20	5.22E-20	4.28E-20	3.50E-20	2.87E-20	2.35E-20	1.93E-20	5.83E-21	1.09E-22	1.48E-23
cf251	1.56E-22	3.32E-23	7.00E-25	1.48E-26	3.11E-28	6.56E-30	1.38E-31	2.91E-33	3.52E-43	.00E+00	.00E+00
cf252	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf253	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf254	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cf255	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es253	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es254m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es254	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
es255	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
s250	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
total	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05	4.54E+05

1
0 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 84

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
h 3	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
li 6	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05	7.49E-05
li 7	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06	2.88E-06
be 9	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06	5.54E-06
be 10	3.63E-05	3.63E-05	3.62E-05	3.61E-05	3.61E-05	3.60E-05	3.59E-05	3.58E-05	3.54E-05	3.39E-05	3.31E-05
c 14	7.52E-08	5.91E-08	3.23E-08	1.76E-08	9.62E-09	5.25E-09	2.87E-09	1.57E-09	4.15E-11	2.31E-16	5.45E-19
ni 66	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 66	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 66	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07

cu 67	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 67	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08	2.32E-08
zn 68	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09
zn 69	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 69m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 69	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08	7.63E-08
zn 70	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06	2.03E-06
ga 70	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 70	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09	2.79E-09
zn 71	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 71m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 71	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05	2.00E-05
ge 71	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 71m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
co 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 72	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 72	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03	1.30E-03
co 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 73	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 73	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03	4.09E-03
ge 73m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
co 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 74	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 74	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03	3.49E-03
co 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 75	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 75m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 75	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02	3.33E-02
ni 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 85

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
zn 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 76	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01
as 76	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 76	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04	6.31E-04
ni 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 77m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 77	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

se 77	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01	2.33E-01
se 77m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ni 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 78	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 78	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01	7.25E-01
cu 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 79	6.31E-01	6.05E-01	5.45E-01	4.90E-01	4.41E-01	3.97E-01	3.58E-01	3.22E-01	1.71E-01	2.10E-02	7.33E-03
se 79m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 79	7.71E-01	7.97E-01	8.57E-01	9.12E-01	9.61E-01	1.00E+00	1.04E+00	1.08E+00	1.23E+00	1.38E+00	1.39E+00
br 79m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 79	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cu 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 80	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00	3.93E+00
br 80	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 80m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 80	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05	1.50E-05
cu 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 81	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 81m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 81	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00	5.85E+00
kr 81	6.30E-07	6.26E-07	6.15E-07	6.06E-07	5.96E-07	5.86E-07	5.77E-07	5.67E-07	5.15E-07	3.72E-07	3.16E-07
kr 81m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zn 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
ge 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 82m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 82	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00	9.54E+00
br 82	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 82m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 82	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01	1.22E-01
zn 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 83m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 83	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 83	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01	1.35E+01

kr 83m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ga 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 84	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 84m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 84	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01	3.28E+01
ga 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 85m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 85	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 85m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 85	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01	3.46E+01
ge 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 86m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 86	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01	5.55E+01
rb 86	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 86m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 86	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02
ge 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 87	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 87	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01	7.25E+01
sr 87	3.46E-04	3.48E-04	3.53E-04	3.59E-04	3.64E-04	3.69E-04	3.74E-04	3.80E-04	4.11E-04	5.16E-04	5.68E-04
sr 87m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ge 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 87

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
br 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 88	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 88	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02	1.04E+02
as 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 89	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 89	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
y 89m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
as 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

sr 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 90	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02	1.70E+02
zr 90m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
se 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 91	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 91m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 91	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02	1.79E+02
nb 91	4.01E-27	5.22E-28	3.19E-30	1.95E-32	1.19E-34	7.31E-37	4.47E-39	2.73E-41	.00E+00	.00E+00	.00E+00
se 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 92	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 92	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02	1.89E+02
nb 92	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.28E-08	3.27E-08	3.27E-08
se 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 93	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 93	1.36E+02	1.36E+02	1.36E+02	1.36E+02	1.35E+02	1.35E+02	1.35E+02	1.34E+02	1.33E+02	1.27E+02	1.24E+02
nb 93	2.37E+00	2.49E+00	2.80E+00	3.11E+00	3.42E+00	3.72E+00	4.03E+00	4.33E+00	6.15E+00	1.20E+01	1.49E+01
nb 93m	1.44E-03	1.44E-03	1.43E-03	1.43E-03	1.43E-03	1.42E-03	1.42E-03	1.42E-03	1.40E-03	1.34E-03	1.31E-03
br 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 88

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
sr 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 94	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 94	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02	2.23E+02
nb 94	3.41E-05	3.19E-05	2.69E-05	2.26E-05	1.91E-05	1.61E-05	1.36E-05	1.14E-05	4.11E-06	1.35E-07	2.45E-08
nb 94m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
br 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 95	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 95m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 95	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02	2.24E+02
br 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
kr 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 96	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02	2.32E+02
nb 96	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

mo 96	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00	6.56E+00
kr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 97	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 97m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 97	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02	2.17E+02
kr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rb 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 98	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 98m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 98	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02	2.33E+02
tc 98	1.36E-03	1.36E-03	1.36E-03	1.35E-03	1.35E-03	1.35E-03	1.35E-03	1.35E-03	1.34E-03	1.32E-03	1.31E-03
rb 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb 99m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo 99	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc 99	2.03E+02	2.02E+02	1.99E+02	1.96E+02	1.92E+02	1.89E+02	1.86E+02	1.83E+02	1.66E+02	1.20E+02	1.01E+02
tc 99m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru 99	2.71E+01	2.84E+01	3.17E+01	3.49E+01	3.81E+01	4.12E+01	4.43E+01	4.74E+01	6.45E+01	1.11E+02	1.29E+02
rb100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 89

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
zr100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb100m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo100	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02	2.63E+02
tc100	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru100	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01	1.89E+01
rb101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc101	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru101	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02	2.18E+02
sr102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc102m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru102	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02	2.10E+02
rh102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd102	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

sr103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru103	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh103	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02
rh103m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sr104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru104	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02	1.39E+02
rh104	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh104m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd104	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01	4.10E+01
y105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh105	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh105m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd105	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 90

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
y106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh106m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd106	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01	7.94E+01
ag106	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
y107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
zr107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh107	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd107	5.10E+01	5.10E+01	5.09E+01	5.09E+01	5.09E+01	5.09E+01	5.08E+01	5.08E+01	5.06E+01	5.01E+01	4.98E+01
pd107m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag107	2.07E-01	2.18E-01	2.45E-01	2.72E-01	2.99E-01	3.27E-01	3.54E-01	3.81E-01	5.43E-01	1.08E+00	1.35E+00
zr108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh108m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

pd108	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01	3.25E+01
ag108	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag108m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd108	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05	4.70E-05
zr109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag109	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01	2.19E+01
ag109m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd109	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh110m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd110	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00	9.64E+00
ag110	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag110m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 91

0 nuclide concentrations, grams

basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
cd110	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00	5.76E+00
nb111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag111	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd111	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00	5.04E+00
cd111m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nb112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag112	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd112	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00	2.64E+00
mo113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag113	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag113m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd113	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02	4.58E-02
cd113m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in113	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02	3.00E-02

in113m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
mo114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd114	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00	2.93E+00
in114	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in114m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn114	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05	7.51E-05
mo115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag115m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd115	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd115m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in115	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01	4.59E-01
in115m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 92

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
sn115	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02	4.57E-02
tc116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag116m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd116	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
in116	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in116m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn116	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01	4.77E-01
tc117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in117	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn117	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00	1.19E+00
sn117m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tc118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag118m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in118	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in118m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn118	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01	9.73E-01

ru119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in119	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn119	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00	1.03E+00
sn119m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ru120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
rh120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in120	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in120m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn120	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00	1.01E+00
rh121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 93

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
pd121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in121m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn121	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn121m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb121	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00	1.05E+00
rh122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in122m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn122	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00
sb122	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb122m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te122	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02	4.68E-02
rh123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn123	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb123	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00
te123	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04	3.68E-04
te123m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn124	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00	2.20E+00
sb124	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb124m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

te124	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02	3.98E-02
pd125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb125	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te125	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00	2.68E+00
te125m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pd126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in126	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn126	3.76E+00	3.70E+00	3.58E+00	3.46E+00	3.34E+00	3.22E+00	3.11E+00	3.01E+00	2.44E+00	1.22E+00	8.64E-01

1
0

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 94

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
sb126	1.78E-07	1.76E-07	1.70E-07	1.64E-07	1.59E-07	1.53E-07	1.48E-07	1.43E-07	1.16E-07	5.80E-08	4.10E-08
sb126m	1.36E-09	1.34E-09	1.29E-09	1.25E-09	1.21E-09	1.16E-09	1.12E-09	1.09E-09	8.83E-10	4.41E-10	3.12E-10
te126	1.21E+00	1.26E+00	1.39E+00	1.51E+00	1.63E+00	1.74E+00	1.85E+00	1.96E+00	2.52E+00	3.74E+00	4.10E+00
xe126	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09	1.22E-09
ag127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te127m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i127	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01	1.12E+01
xe127	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ag128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb128m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te128	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01	2.43E+01
i128	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe128	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01	3.97E-01
cd129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te129	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i129	4.99E+01	4.99E+01	4.98E+01	4.98E+01	4.98E+01	4.98E+01	4.98E+01	4.98E+01	4.97E+01	4.95E+01	4.94E+01
xe129	8.49E-02	8.93E-02	1.00E-01	1.11E-01	1.22E-01	1.33E-01	1.44E-01	1.55E-01	2.21E-01	4.40E-01	5.50E-01
xe129m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cd130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb130m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

te130	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02	1.01E+02
i130	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i130m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe130	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00
cd131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te131m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i131	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe131	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02	1.38E+02
xe131m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 95

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
cd132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb132m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe132	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02	2.84E+02
cs132	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba132	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05	4.90E-05
in133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe133m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs133	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02	3.41E+02
ba133	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
in134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe134	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02	4.27E+02
xe134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs134	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs134m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba134	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01	2.97E+01
sn135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe135	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs135	1.75E+02	1.75E+02	1.75E+02	1.75E+02	1.74E+02	1.74E+02	1.74E+02	1.73E+02	1.72E+02	1.67E+02	1.64E+02
cs135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba135	2.06E+00	2.16E+00	2.43E+00	2.69E+00	2.95E+00	3.21E+00	3.48E+00	3.74E+00	5.30E+00	1.04E+01	1.29E+01

ba135m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sn136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i136m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe136	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02	5.61E+02
cs136	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba136	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00	4.78E+00
ba136m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 96

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
sb137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba137	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02	3.60E+02
ba137m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sb138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs138	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs138m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba138	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02	3.65E+02
la138	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03	2.18E-03
sb139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la139	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02	3.47E+02
ce139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr139	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce140	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02	3.67E+02
pr140	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr141	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02	3.21E+02
nd141	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
te142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
i142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

ba142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce142	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02	3.23E+02
pr142	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr142m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd142	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00	3.24E+00
i143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 97

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
xe143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr143	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd143	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02	2.69E+02
i144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr144	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr144m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd144	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02	3.42E+02
i145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd145	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02	2.03E+02
pm145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm145	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
xe146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd146	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02	1.87E+02
pm146	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm146	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03
xe147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm147	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm147	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01	8.97E+01
cs148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

pr148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd148	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02	1.03E+02
pm148	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm148m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 98

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
sm148	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01	2.89E+01
cs149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm149	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00	1.42E+00
eu149	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
cs150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd150	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01	4.85E+01
pm150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm150	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01	8.04E+01
eu150	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ba151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm151	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu151	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00	6.22E+00
ba152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm152m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm152	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01	3.74E+01
eu152	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu152m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd152	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02	3.19E-02
la153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu153	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01	2.70E+01
gd153	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
la154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

pm154m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 99

0

nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
sm154	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00	9.08E+00
eu154	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd154	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00	7.93E+00
la155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ce155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu155	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd155m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd155	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00	3.18E+00
ce156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu156	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd156	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00	9.32E+00
ce157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pr157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu157	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd157	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02
pr158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu158	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd158	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00	3.25E+00
pr159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
nd159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd159	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb159	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01	5.03E-01
nd160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd160	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01	2.25E-01
tb160	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy160	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02	3.93E-02
nd161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
pm161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb161	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00

1

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	40000. yr	45000. yr	50000. yr	55000. yr	60000. yr	65000. yr	70000. yr	100000. yr	200000. yr	250000. yr
dy161	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02	8.26E-02
pm162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
sm162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb162	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb162m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy162	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02	5.62E-02
sm163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb163	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb163m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy163	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02	3.66E-02
sm164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb164	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy164	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02	1.00E-02
sm165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
eu165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
gd165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tb165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy165	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
dy165m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho165	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03	9.50E-03
dy166	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho166	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
ho166m	6.97E-15	2.20E-15	1.22E-16	6.81E-18	3.79E-19	2.11E-20	1.17E-21	6.54E-23	1.95E-30	.00E+00	.00E+00
er166	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03	1.57E-03
er167	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05	2.44E-05
er167m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er168	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05	2.01E-05
yb168	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er169	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm169	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07	7.41E-07
yb169	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
er170	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07	7.89E-07
tm170	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm170m	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb170	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09	4.62E-09
er171	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm171	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb171	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06	1.05E-06
er172	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
tm172	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
yb172	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07	6.73E-07
total	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03	9.58E+03

1 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 101

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	300000. yr	500000. yr	999999. yr
he 4	7.18E+01	7.39E+01	8.21E+01	9.90E+01
tl206	2.71E-15	2.61E-15	2.01E-15	1.18E-15
tl207	9.99E-11	1.00E-10	1.01E-10	1.01E-10
tl208	2.10E-15	2.46E-15	3.99E-15	7.90E-15

tl209	1.21E-11	1.33E-11	1.59E-11	1.52E-11
pb206	3.43E+01	4.31E+01	7.35E+01	1.23E+02
pb207	1.49E+00	1.87E+00	3.42E+00	7.27E+00
pb208	5.83E-04	6.21E-04	8.35E-04	1.82E-03
pb209	5.12E-08	5.61E-08	6.74E-08	6.41E-08
pb210	5.85E-03	5.63E-03	4.33E-03	2.55E-03
pb211	7.72E-10	7.77E-10	7.79E-10	7.78E-10
pb212	1.24E-12	1.46E-12	2.37E-12	4.68E-12
pb214	1.36E-08	1.31E-08	1.01E-08	5.95E-09
bi208	.00E+00	.00E+00	.00E+00	.00E+00
bi209	1.39E+01	1.89E+01	4.26E+01	1.06E+02
bi210m	.00E+00	.00E+00	.00E+00	.00E+00
bi210	3.60E-06	3.47E-06	2.67E-06	1.57E-06
bi211	4.58E-11	4.60E-11	4.62E-11	4.61E-11
bi212	1.18E-13	1.39E-13	2.24E-13	4.44E-13
bi213	1.22E-08	1.34E-08	1.60E-08	1.53E-08
bi214	1.01E-08	9.74E-09	7.50E-09	4.42E-09
po210	9.94E-05	9.57E-05	7.37E-05	4.34E-05
po211m	.00E+00	.00E+00	.00E+00	.00E+00
po211	5.06E-16	5.09E-16	5.10E-16	5.10E-16
po212	6.19E-24	7.28E-24	1.18E-23	2.33E-23
po213	1.83E-17	2.01E-17	2.41E-17	2.30E-17
po214	1.39E-15	1.34E-15	1.03E-15	6.08E-16
po215	6.47E-16	6.50E-16	6.52E-16	6.52E-16
po216	4.79E-18	5.63E-18	9.13E-18	1.81E-17
po218	1.61E-09	1.55E-09	1.19E-09	7.01E-10
at217	1.47E-13	1.61E-13	1.93E-13	1.84E-13
rn218	.00E+00	.00E+00	.00E+00	.00E+00
rn219	1.47E-12	1.47E-12	1.48E-12	1.48E-12
rn220	1.87E-15	2.20E-15	3.57E-15	7.05E-15
rn222	2.90E-06	2.80E-06	2.15E-06	1.27E-06
fr221	1.36E-09	1.49E-09	1.79E-09	1.70E-09
fr223	6.80E-12	6.84E-12	6.86E-12	6.86E-12
ra222	.00E+00	.00E+00	.00E+00	.00E+00
ra223	3.72E-07	3.74E-07	3.75E-07	3.75E-07
ra224	1.08E-11	1.27E-11	2.06E-11	4.09E-11
ra225	6.03E-06	6.60E-06	7.92E-06	7.54E-06
ra226	4.52E-01	4.35E-01	3.35E-01	1.97E-01
ra228	5.97E-09	7.18E-09	1.20E-08	2.39E-08
ac225	4.07E-06	4.46E-06	5.35E-06	5.09E-06
ac227	2.64E-04	2.65E-04	2.66E-04	2.66E-04
ac228	7.29E-13	8.76E-13	1.46E-12	2.91E-12
th226	.00E+00	.00E+00	.00E+00	.00E+00
th227	6.12E-07	6.15E-07	6.17E-07	6.17E-07
th228	2.11E-09	2.48E-09	4.01E-09	7.94E-09
th229	1.19E+00	1.31E+00	1.57E+00	1.49E+00
th230	2.14E+01	2.06E+01	1.60E+01	9.46E+00
th231	3.62E-08	3.62E-08	3.62E-08	3.61E-08

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 102

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	300000. yr	500000. yr	999999. yr
th232	1.49E+01	1.79E+01	2.98E+01	5.93E+01
th233	.00E+00	.00E+00	.00E+00	.00E+00
th234	6.42E-06	6.42E-06	6.42E-06	6.42E-06
pa231	4.04E-01	4.06E-01	4.07E-01	4.07E-01
pa232	.00E+00	.00E+00	.00E+00	.00E+00
pa233	1.70E-05	1.67E-05	1.57E-05	1.33E-05
pa234m	2.17E-10	2.17E-10	2.17E-10	2.17E-10

pa234	9.67E-11	9.67E-11	9.67E-11	9.67E-11
pa235	.00E+00	.00E+00	.00E+00	.00E+00
u230	.00E+00	.00E+00	.00E+00	.00E+00
u231	.00E+00	.00E+00	.00E+00	.00E+00
u232	4.36E-09	3.23E-09	9.67E-10	4.75E-11
u233	2.51E+01	2.73E+01	3.16E+01	3.05E+01
u234	6.68E+01	6.12E+01	4.51E+01	2.91E+01
u235	8.89E+03	8.89E+03	8.89E+03	8.89E+03
u236	2.06E+03	2.06E+03	2.05E+03	2.01E+03
u237	3.22E-21	5.45E-23	4.48E-30	.00E+00
u238	4.42E+05	4.42E+05	4.42E+05	4.42E+05
u239	.00E+00	.00E+00	.00E+00	.00E+00
u240	1.17E-17	1.34E-17	1.87E-17	2.53E-17
u241	.00E+00	.00E+00	.00E+00	.00E+00
np235	.00E+00	.00E+00	.00E+00	.00E+00
np236m	.00E+00	.00E+00	.00E+00	.00E+00
np236	8.21E-05	6.08E-05	1.82E-05	8.93E-07
np237	5.01E+02	4.93E+02	4.62E+02	3.93E+02
np238	.00E+00	.00E+00	.00E+00	.00E+00
np239	1.30E-14	1.25E-14	1.24E-14	1.21E-14
np240m	9.96E-20	1.14E-19	1.59E-19	2.16E-19
np240	1.02E-21	1.17E-21	1.64E-21	2.22E-21
np241	.00E+00	.00E+00	.00E+00	.00E+00
pu236	1.84E-10	1.36E-10	4.08E-11	2.01E-12
pu237	.00E+00	.00E+00	.00E+00	.00E+00
pu238	.00E+00	.00E+00	.00E+00	.00E+00
pu239	2.00E+00	4.75E-01	1.51E-03	4.61E-08
pu240	2.34E-09	6.49E-11	7.61E-11	1.03E-10
pu241	1.06E-13	1.80E-15	1.48E-22	.00E+00
pu242	4.46E+01	4.06E+01	2.80E+01	1.11E+01
pu243	1.11E-15	1.11E-15	1.10E-15	1.08E-15
pu244	5.91E-07	6.77E-07	9.45E-07	1.28E-06
pu245	.00E+00	.00E+00	.00E+00	.00E+00
pu246	5.90E-26	8.06E-27	2.79E-30	.00E+00
am239	.00E+00	.00E+00	.00E+00	.00E+00
am240	.00E+00	.00E+00	.00E+00	.00E+00
am241	3.20E-12	5.42E-14	4.70E-21	9.14E-39
am242m	.00E+00	.00E+00	.00E+00	.00E+00
am242	.00E+00	.00E+00	.00E+00	.00E+00
am243	1.52E-08	1.45E-08	1.44E-08	1.41E-08
am244m	.00E+00	.00E+00	.00E+00	.00E+00
am244	.00E+00	.00E+00	.00E+00	.00E+00
am245	.00E+00	.00E+00	.00E+00	.00E+00
am246	1.48E-28	2.01E-29	6.97E-33	1.55E-41
cm241	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay actinides page 103

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial300000. yr	500000. yr	999999. yr	
cm242	.00E+00	.00E+00	.00E+00	.00E+00
cm243	.00E+00	.00E+00	.00E+00	.00E+00
cm244	.00E+00	.00E+00	.00E+00	.00E+00
cm245	6.39E-11	1.08E-12	8.90E-20	1.73E-37
cm246	3.85E-19	2.26E-21	9.53E-25	2.13E-33
cm247	3.21E-05	3.20E-05	3.17E-05	3.10E-05
cm248	9.86E-07	8.91E-07	5.92E-07	2.14E-07
cm249	.00E+00	.00E+00	.00E+00	.00E+00
cm250	1.41E-19	1.92E-20	6.65E-24	1.48E-32
cm251	.00E+00	.00E+00	.00E+00	.00E+00

bk249	.00E+00	.00E+00	.00E+00	.00E+00
bk250	4.15E-28	5.67E-29	1.96E-32	.00E+00
bk251	.00E+00	.00E+00	.00E+00	.00E+00
cf249	.00E+00	.00E+00	.00E+00	.00E+00
cf250	1.48E-23	2.02E-24	7.00E-28	1.56E-36
cf251	.00E+00	.00E+00	.00E+00	.00E+00
cf252	.00E+00	.00E+00	.00E+00	.00E+00
cf253	.00E+00	.00E+00	.00E+00	.00E+00
cf254	.00E+00	.00E+00	.00E+00	.00E+00
cf255	.00E+00	.00E+00	.00E+00	.00E+00
es253	.00E+00	.00E+00	.00E+00	.00E+00
es254m	.00E+00	.00E+00	.00E+00	.00E+00
es254	.00E+00	.00E+00	.00E+00	.00E+00
es255	.00E+00	.00E+00	.00E+00	.00E+00
s250	.00E+00	.00E+00	.00E+00	.00E+00
total	4.54E+05	4.54E+05	4.54E+05	4.54E+05

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 104

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial300000. yr	500000. yr	999999. yr	
h 3	.00E+00	.00E+00	.00E+00	.00E+00
li 6	7.49E-05	7.49E-05	7.49E-05	7.49E-05
li 7	2.88E-06	2.88E-06	2.88E-06	2.88E-06
be 9	5.54E-06	5.54E-06	5.54E-06	5.54E-06
be 10	3.31E-05	3.24E-05	2.97E-05	2.40E-05
c 14	5.45E-19	1.29E-21	3.98E-32	.00E+00
ni 66	.00E+00	.00E+00	.00E+00	.00E+00
cu 66	.00E+00	.00E+00	.00E+00	.00E+00
zn 66	1.75E-07	1.75E-07	1.75E-07	1.75E-07
cu 67	.00E+00	.00E+00	.00E+00	.00E+00
zn 67	2.32E-08	2.32E-08	2.32E-08	2.32E-08
zn 68	2.07E-09	2.07E-09	2.07E-09	2.07E-09
zn 69	.00E+00	.00E+00	.00E+00	.00E+00
zn 69m	.00E+00	.00E+00	.00E+00	.00E+00
ga 69	7.63E-08	7.63E-08	7.63E-08	7.63E-08
zn 70	2.03E-06	2.03E-06	2.03E-06	2.03E-06
ga 70	.00E+00	.00E+00	.00E+00	.00E+00
ge 70	2.79E-09	2.79E-09	2.79E-09	2.79E-09
zn 71	.00E+00	.00E+00	.00E+00	.00E+00
zn 71m	.00E+00	.00E+00	.00E+00	.00E+00
ga 71	2.00E-05	2.00E-05	2.00E-05	2.00E-05
ge 71	.00E+00	.00E+00	.00E+00	.00E+00
ge 71m	.00E+00	.00E+00	.00E+00	.00E+00
co 72	.00E+00	.00E+00	.00E+00	.00E+00
ni 72	.00E+00	.00E+00	.00E+00	.00E+00
cu 72	.00E+00	.00E+00	.00E+00	.00E+00
zn 72	.00E+00	.00E+00	.00E+00	.00E+00
ga 72	.00E+00	.00E+00	.00E+00	.00E+00
ge 72	1.30E-03	1.30E-03	1.30E-03	1.30E-03
co 73	.00E+00	.00E+00	.00E+00	.00E+00
ni 73	.00E+00	.00E+00	.00E+00	.00E+00
cu 73	.00E+00	.00E+00	.00E+00	.00E+00
zn 73	.00E+00	.00E+00	.00E+00	.00E+00
ga 73	.00E+00	.00E+00	.00E+00	.00E+00
ge 73	4.09E-03	4.09E-03	4.09E-03	4.09E-03
ge 73m	.00E+00	.00E+00	.00E+00	.00E+00
co 74	.00E+00	.00E+00	.00E+00	.00E+00
ni 74	.00E+00	.00E+00	.00E+00	.00E+00
cu 74	.00E+00	.00E+00	.00E+00	.00E+00

zn 74	.00E+00	.00E+00	.00E+00	.00E+00
ga 74	.00E+00	.00E+00	.00E+00	.00E+00
ge 74	3.49E-03	3.49E-03	3.49E-03	3.49E-03
co 75	.00E+00	.00E+00	.00E+00	.00E+00
ni 75	.00E+00	.00E+00	.00E+00	.00E+00
cu 75	.00E+00	.00E+00	.00E+00	.00E+00
zn 75	.00E+00	.00E+00	.00E+00	.00E+00
ga 75	.00E+00	.00E+00	.00E+00	.00E+00
ge 75	.00E+00	.00E+00	.00E+00	.00E+00
ge 75m	.00E+00	.00E+00	.00E+00	.00E+00
as 75	3.33E-02	3.33E-02	3.33E-02	3.33E-02
ni 76	.00E+00	.00E+00	.00E+00	.00E+00
cu 76	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 105

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	300000. yr	500000. yr	999999. yr
zn 76	.00E+00	.00E+00	.00E+00	.00E+00
ga 76	.00E+00	.00E+00	.00E+00	.00E+00
ge 76	1.02E-01	1.02E-01	1.02E-01	1.02E-01
as 76	.00E+00	.00E+00	.00E+00	.00E+00
se 76	6.31E-04	6.31E-04	6.31E-04	6.31E-04
ni 77	.00E+00	.00E+00	.00E+00	.00E+00
cu 77	.00E+00	.00E+00	.00E+00	.00E+00
zn 77	.00E+00	.00E+00	.00E+00	.00E+00
ga 77	.00E+00	.00E+00	.00E+00	.00E+00
ge 77	.00E+00	.00E+00	.00E+00	.00E+00
ge 77m	.00E+00	.00E+00	.00E+00	.00E+00
as 77	.00E+00	.00E+00	.00E+00	.00E+00
se 77	2.33E-01	2.33E-01	2.33E-01	2.33E-01
se 77m	.00E+00	.00E+00	.00E+00	.00E+00
ni 78	.00E+00	.00E+00	.00E+00	.00E+00
cu 78	.00E+00	.00E+00	.00E+00	.00E+00
zn 78	.00E+00	.00E+00	.00E+00	.00E+00
ga 78	.00E+00	.00E+00	.00E+00	.00E+00
ge 78	.00E+00	.00E+00	.00E+00	.00E+00
as 78	.00E+00	.00E+00	.00E+00	.00E+00
se 78	7.25E-01	7.25E-01	7.25E-01	7.25E-01
cu 79	.00E+00	.00E+00	.00E+00	.00E+00
zn 79	.00E+00	.00E+00	.00E+00	.00E+00
ga 79	.00E+00	.00E+00	.00E+00	.00E+00
ge 79	.00E+00	.00E+00	.00E+00	.00E+00
as 79	.00E+00	.00E+00	.00E+00	.00E+00
se 79	7.33E-03	2.56E-03	3.83E-05	1.05E-09
se 79m	.00E+00	.00E+00	.00E+00	.00E+00
br 79	1.39E+00	1.40E+00	1.40E+00	1.40E+00
br 79m	.00E+00	.00E+00	.00E+00	.00E+00
kr 79	.00E+00	.00E+00	.00E+00	.00E+00
cu 80	.00E+00	.00E+00	.00E+00	.00E+00
zn 80	.00E+00	.00E+00	.00E+00	.00E+00
ga 80	.00E+00	.00E+00	.00E+00	.00E+00
ge 80	.00E+00	.00E+00	.00E+00	.00E+00
as 80	.00E+00	.00E+00	.00E+00	.00E+00
se 80	3.93E+00	3.93E+00	3.93E+00	3.93E+00
br 80	.00E+00	.00E+00	.00E+00	.00E+00
br 80m	.00E+00	.00E+00	.00E+00	.00E+00
kr 80	1.50E-05	1.50E-05	1.50E-05	1.50E-05
cu 81	.00E+00	.00E+00	.00E+00	.00E+00
zn 81	.00E+00	.00E+00	.00E+00	.00E+00

ga 81	.00E+00	.00E+00	.00E+00	.00E+00
ge 81	.00E+00	.00E+00	.00E+00	.00E+00
as 81	.00E+00	.00E+00	.00E+00	.00E+00
se 81	.00E+00	.00E+00	.00E+00	.00E+00
se 81m	.00E+00	.00E+00	.00E+00	.00E+00
br 81	5.85E+00	5.85E+00	5.85E+00	5.85E+00
kr 81	3.16E-07	2.68E-07	1.40E-07	2.75E-08
kr 81m	.00E+00	.00E+00	.00E+00	.00E+00
zn 82	.00E+00	.00E+00	.00E+00	.00E+00
ga 82	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 106

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	300000. yr	500000. yr	999999. yr
ge 82	.00E+00	.00E+00	.00E+00	.00E+00
as 82	.00E+00	.00E+00	.00E+00	.00E+00
as 82m	.00E+00	.00E+00	.00E+00	.00E+00
se 82	9.54E+00	9.54E+00	9.54E+00	9.54E+00
br 82	.00E+00	.00E+00	.00E+00	.00E+00
br 82m	.00E+00	.00E+00	.00E+00	.00E+00
kr 82	1.22E-01	1.22E-01	1.22E-01	1.22E-01
zn 83	.00E+00	.00E+00	.00E+00	.00E+00
ga 83	.00E+00	.00E+00	.00E+00	.00E+00
ge 83	.00E+00	.00E+00	.00E+00	.00E+00
as 83	.00E+00	.00E+00	.00E+00	.00E+00
se 83	.00E+00	.00E+00	.00E+00	.00E+00
se 83m	.00E+00	.00E+00	.00E+00	.00E+00
br 83	.00E+00	.00E+00	.00E+00	.00E+00
kr 83	1.35E+01	1.35E+01	1.35E+01	1.35E+01
kr 83m	.00E+00	.00E+00	.00E+00	.00E+00
ga 84	.00E+00	.00E+00	.00E+00	.00E+00
ge 84	.00E+00	.00E+00	.00E+00	.00E+00
as 84	.00E+00	.00E+00	.00E+00	.00E+00
se 84	.00E+00	.00E+00	.00E+00	.00E+00
br 84	.00E+00	.00E+00	.00E+00	.00E+00
br 84m	.00E+00	.00E+00	.00E+00	.00E+00
kr 84	3.28E+01	3.28E+01	3.28E+01	3.28E+01
ga 85	.00E+00	.00E+00	.00E+00	.00E+00
ge 85	.00E+00	.00E+00	.00E+00	.00E+00
as 85	.00E+00	.00E+00	.00E+00	.00E+00
se 85	.00E+00	.00E+00	.00E+00	.00E+00
se 85m	.00E+00	.00E+00	.00E+00	.00E+00
br 85	.00E+00	.00E+00	.00E+00	.00E+00
kr 85	.00E+00	.00E+00	.00E+00	.00E+00
kr 85m	.00E+00	.00E+00	.00E+00	.00E+00
rb 85	3.46E+01	3.46E+01	3.46E+01	3.46E+01
ge 86	.00E+00	.00E+00	.00E+00	.00E+00
as 86	.00E+00	.00E+00	.00E+00	.00E+00
se 86	.00E+00	.00E+00	.00E+00	.00E+00
br 86	.00E+00	.00E+00	.00E+00	.00E+00
br 86m	.00E+00	.00E+00	.00E+00	.00E+00
kr 86	5.55E+01	5.55E+01	5.55E+01	5.55E+01
rb 86	.00E+00	.00E+00	.00E+00	.00E+00
rb 86m	.00E+00	.00E+00	.00E+00	.00E+00
sr 86	6.45E-02	6.45E-02	6.45E-02	6.45E-02
ga 87	.00E+00	.00E+00	.00E+00	.00E+00
as 87	.00E+00	.00E+00	.00E+00	.00E+00
se 87	.00E+00	.00E+00	.00E+00	.00E+00
br 87	.00E+00	.00E+00	.00E+00	.00E+00

kr 87	.00E+00	.00E+00	.00E+00	.00E+00
rb 87	7.25E+01	7.25E+01	7.25E+01	7.25E+01
sr 87	5.68E-04	6.20E-04	8.30E-04	1.35E-03
sr 87m	.00E+00	.00E+00	.00E+00	.00E+00
ge 88	.00E+00	.00E+00	.00E+00	.00E+00
as 88	.00E+00	.00E+00	.00E+00	.00E+00
se 88	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 107

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial300000. yr	500000. yr	999999. yr	
br 88	.00E+00	.00E+00	.00E+00	.00E+00
kr 88	.00E+00	.00E+00	.00E+00	.00E+00
rb 88	.00E+00	.00E+00	.00E+00	.00E+00
sr 88	1.04E+02	1.04E+02	1.04E+02	1.04E+02
as 89	.00E+00	.00E+00	.00E+00	.00E+00
se 89	.00E+00	.00E+00	.00E+00	.00E+00
br 89	.00E+00	.00E+00	.00E+00	.00E+00
kr 89	.00E+00	.00E+00	.00E+00	.00E+00
rb 89	.00E+00	.00E+00	.00E+00	.00E+00
sr 89	.00E+00	.00E+00	.00E+00	.00E+00
y 89	1.39E+02	1.39E+02	1.39E+02	1.39E+02
y 89m	.00E+00	.00E+00	.00E+00	.00E+00
as 90	.00E+00	.00E+00	.00E+00	.00E+00
se 90	.00E+00	.00E+00	.00E+00	.00E+00
br 90	.00E+00	.00E+00	.00E+00	.00E+00
kr 90	.00E+00	.00E+00	.00E+00	.00E+00
rb 90	.00E+00	.00E+00	.00E+00	.00E+00
rb 90m	.00E+00	.00E+00	.00E+00	.00E+00
sr 90	.00E+00	.00E+00	.00E+00	.00E+00
y 90	.00E+00	.00E+00	.00E+00	.00E+00
y 90m	.00E+00	.00E+00	.00E+00	.00E+00
zr 90	1.70E+02	1.70E+02	1.70E+02	1.70E+02
zr 90m	.00E+00	.00E+00	.00E+00	.00E+00
se 91	.00E+00	.00E+00	.00E+00	.00E+00
br 91	.00E+00	.00E+00	.00E+00	.00E+00
kr 91	.00E+00	.00E+00	.00E+00	.00E+00
rb 91	.00E+00	.00E+00	.00E+00	.00E+00
sr 91	.00E+00	.00E+00	.00E+00	.00E+00
y 91	.00E+00	.00E+00	.00E+00	.00E+00
y 91m	.00E+00	.00E+00	.00E+00	.00E+00
zr 91	1.79E+02	1.79E+02	1.79E+02	1.79E+02
nb 91	.00E+00	.00E+00	.00E+00	.00E+00
se 92	.00E+00	.00E+00	.00E+00	.00E+00
br 92	.00E+00	.00E+00	.00E+00	.00E+00
kr 92	.00E+00	.00E+00	.00E+00	.00E+00
rb 92	.00E+00	.00E+00	.00E+00	.00E+00
sr 92	.00E+00	.00E+00	.00E+00	.00E+00
y 92	.00E+00	.00E+00	.00E+00	.00E+00
zr 92	1.89E+02	1.89E+02	1.89E+02	1.89E+02
nb 92	3.27E-08	3.26E-08	3.25E-08	3.22E-08
se 93	.00E+00	.00E+00	.00E+00	.00E+00
br 93	.00E+00	.00E+00	.00E+00	.00E+00
kr 93	.00E+00	.00E+00	.00E+00	.00E+00
rb 93	.00E+00	.00E+00	.00E+00	.00E+00
sr 93	.00E+00	.00E+00	.00E+00	.00E+00
y 93	.00E+00	.00E+00	.00E+00	.00E+00
zr 93	1.24E+02	1.21E+02	1.11E+02	8.82E+01
nb 93	1.49E+01	1.76E+01	2.81E+01	5.06E+01

nb 93m	1.31E-03	1.28E-03	1.17E-03	9.30E-04
br 94	.00E+00	.00E+00	.00E+00	.00E+00
kr 94	.00E+00	.00E+00	.00E+00	.00E+00
rb 94	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 108

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	300000. yr	500000. yr	999999. yr
sr 94	.00E+00	.00E+00	.00E+00	.00E+00
y 94	.00E+00	.00E+00	.00E+00	.00E+00
zr 94	2.23E+02	2.23E+02	2.23E+02	2.23E+02
nb 94	2.45E-08	4.44E-09	4.80E-12	1.84E-19
nb 94m	.00E+00	.00E+00	.00E+00	.00E+00
br 95	.00E+00	.00E+00	.00E+00	.00E+00
kr 95	.00E+00	.00E+00	.00E+00	.00E+00
rb 95	.00E+00	.00E+00	.00E+00	.00E+00
sr 95	.00E+00	.00E+00	.00E+00	.00E+00
y 95	.00E+00	.00E+00	.00E+00	.00E+00
zr 95	.00E+00	.00E+00	.00E+00	.00E+00
nb 95	.00E+00	.00E+00	.00E+00	.00E+00
nb 95m	.00E+00	.00E+00	.00E+00	.00E+00
mo 95	2.24E+02	2.24E+02	2.24E+02	2.24E+02
br 96	.00E+00	.00E+00	.00E+00	.00E+00
kr 96	.00E+00	.00E+00	.00E+00	.00E+00
rb 96	.00E+00	.00E+00	.00E+00	.00E+00
sr 96	.00E+00	.00E+00	.00E+00	.00E+00
y 96	.00E+00	.00E+00	.00E+00	.00E+00
zr 96	2.32E+02	2.32E+02	2.32E+02	2.32E+02
nb 96	.00E+00	.00E+00	.00E+00	.00E+00
mo 96	6.56E+00	6.56E+00	6.56E+00	6.56E+00
kr 97	.00E+00	.00E+00	.00E+00	.00E+00
rb 97	.00E+00	.00E+00	.00E+00	.00E+00
sr 97	.00E+00	.00E+00	.00E+00	.00E+00
y 97	.00E+00	.00E+00	.00E+00	.00E+00
zr 97	.00E+00	.00E+00	.00E+00	.00E+00
nb 97	.00E+00	.00E+00	.00E+00	.00E+00
nb 97m	.00E+00	.00E+00	.00E+00	.00E+00
mo 97	2.17E+02	2.17E+02	2.17E+02	2.17E+02
kr 98	.00E+00	.00E+00	.00E+00	.00E+00
rb 98	.00E+00	.00E+00	.00E+00	.00E+00
sr 98	.00E+00	.00E+00	.00E+00	.00E+00
y 98	.00E+00	.00E+00	.00E+00	.00E+00
zr 98	.00E+00	.00E+00	.00E+00	.00E+00
nb 98	.00E+00	.00E+00	.00E+00	.00E+00
nb 98m	.00E+00	.00E+00	.00E+00	.00E+00
mo 98	2.33E+02	2.33E+02	2.33E+02	2.33E+02
tc 98	1.31E-03	1.30E-03	1.26E-03	1.16E-03
rb 99	.00E+00	.00E+00	.00E+00	.00E+00
sr 99	.00E+00	.00E+00	.00E+00	.00E+00
y 99	.00E+00	.00E+00	.00E+00	.00E+00
zr 99	.00E+00	.00E+00	.00E+00	.00E+00
nb 99	.00E+00	.00E+00	.00E+00	.00E+00
nb 99m	.00E+00	.00E+00	.00E+00	.00E+00
mo 99	.00E+00	.00E+00	.00E+00	.00E+00
tc 99	1.01E+02	8.61E+01	4.46E+01	8.64E+00
tc 99m	.00E+00	.00E+00	.00E+00	.00E+00
ru 99	1.29E+02	1.44E+02	1.86E+02	2.22E+02
rb100	.00E+00	.00E+00	.00E+00	.00E+00
sr100	.00E+00	.00E+00	.00E+00	.00E+00

y100	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 109

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	300000. yr	500000. yr	999999. yr
zr100	.00E+00	.00E+00	.00E+00	.00E+00
nb100	.00E+00	.00E+00	.00E+00	.00E+00
nb100m	.00E+00	.00E+00	.00E+00	.00E+00
mo100	2.63E+02	2.63E+02	2.63E+02	2.63E+02
tc100	.00E+00	.00E+00	.00E+00	.00E+00
ru100	1.89E+01	1.89E+01	1.89E+01	1.89E+01
rb101	.00E+00	.00E+00	.00E+00	.00E+00
sr101	.00E+00	.00E+00	.00E+00	.00E+00
y101	.00E+00	.00E+00	.00E+00	.00E+00
zr101	.00E+00	.00E+00	.00E+00	.00E+00
nb101	.00E+00	.00E+00	.00E+00	.00E+00
mo101	.00E+00	.00E+00	.00E+00	.00E+00
tc101	.00E+00	.00E+00	.00E+00	.00E+00
ru101	2.18E+02	2.18E+02	2.18E+02	2.18E+02
sr102	.00E+00	.00E+00	.00E+00	.00E+00
y102	.00E+00	.00E+00	.00E+00	.00E+00
zr102	.00E+00	.00E+00	.00E+00	.00E+00
nb102	.00E+00	.00E+00	.00E+00	.00E+00
mo102	.00E+00	.00E+00	.00E+00	.00E+00
tc102	.00E+00	.00E+00	.00E+00	.00E+00
tc102m	.00E+00	.00E+00	.00E+00	.00E+00
ru102	2.10E+02	2.10E+02	2.10E+02	2.10E+02
rh102	.00E+00	.00E+00	.00E+00	.00E+00
pd102	.00E+00	.00E+00	.00E+00	.00E+00
sr103	.00E+00	.00E+00	.00E+00	.00E+00
y103	.00E+00	.00E+00	.00E+00	.00E+00
zr103	.00E+00	.00E+00	.00E+00	.00E+00
nb103	.00E+00	.00E+00	.00E+00	.00E+00
mo103	.00E+00	.00E+00	.00E+00	.00E+00
tc103	.00E+00	.00E+00	.00E+00	.00E+00
ru103	.00E+00	.00E+00	.00E+00	.00E+00
rh103	1.44E+02	1.44E+02	1.44E+02	1.44E+02
rh103m	.00E+00	.00E+00	.00E+00	.00E+00
sr104	.00E+00	.00E+00	.00E+00	.00E+00
y104	.00E+00	.00E+00	.00E+00	.00E+00
zr104	.00E+00	.00E+00	.00E+00	.00E+00
nb104	.00E+00	.00E+00	.00E+00	.00E+00
mo104	.00E+00	.00E+00	.00E+00	.00E+00
tc104	.00E+00	.00E+00	.00E+00	.00E+00
ru104	1.39E+02	1.39E+02	1.39E+02	1.39E+02
rh104	.00E+00	.00E+00	.00E+00	.00E+00
rh104m	.00E+00	.00E+00	.00E+00	.00E+00
pd104	4.10E+01	4.10E+01	4.10E+01	4.10E+01
y105	.00E+00	.00E+00	.00E+00	.00E+00
zr105	.00E+00	.00E+00	.00E+00	.00E+00
nb105	.00E+00	.00E+00	.00E+00	.00E+00
mo105	.00E+00	.00E+00	.00E+00	.00E+00
tc105	.00E+00	.00E+00	.00E+00	.00E+00
ru105	.00E+00	.00E+00	.00E+00	.00E+00
rh105	.00E+00	.00E+00	.00E+00	.00E+00
rh105m	.00E+00	.00E+00	.00E+00	.00E+00
pd105	1.01E+02	1.01E+02	1.01E+02	1.01E+02

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 110

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial300000. yr	500000. yr	999999. yr	
y106	.00E+00	.00E+00	.00E+00	.00E+00
zr106	.00E+00	.00E+00	.00E+00	.00E+00
nb106	.00E+00	.00E+00	.00E+00	.00E+00
mo106	.00E+00	.00E+00	.00E+00	.00E+00
tc106	.00E+00	.00E+00	.00E+00	.00E+00
ru106	.00E+00	.00E+00	.00E+00	.00E+00
rh106	.00E+00	.00E+00	.00E+00	.00E+00
rh106m	.00E+00	.00E+00	.00E+00	.00E+00
pd106	7.94E+01	7.94E+01	7.94E+01	7.94E+01
ag106	.00E+00	.00E+00	.00E+00	.00E+00
y107	.00E+00	.00E+00	.00E+00	.00E+00
zr107	.00E+00	.00E+00	.00E+00	.00E+00
nb107	.00E+00	.00E+00	.00E+00	.00E+00
mo107	.00E+00	.00E+00	.00E+00	.00E+00
tc107	.00E+00	.00E+00	.00E+00	.00E+00
ru107	.00E+00	.00E+00	.00E+00	.00E+00
rh107	.00E+00	.00E+00	.00E+00	.00E+00
pd107	4.98E+01	4.96E+01	4.85E+01	4.60E+01
pd107m	.00E+00	.00E+00	.00E+00	.00E+00
ag107	1.35E+00	1.61E+00	2.66E+00	5.18E+00
zr108	.00E+00	.00E+00	.00E+00	.00E+00
nb108	.00E+00	.00E+00	.00E+00	.00E+00
mo108	.00E+00	.00E+00	.00E+00	.00E+00
tc108	.00E+00	.00E+00	.00E+00	.00E+00
ru108	.00E+00	.00E+00	.00E+00	.00E+00
rh108	.00E+00	.00E+00	.00E+00	.00E+00
rh108m	.00E+00	.00E+00	.00E+00	.00E+00
pd108	3.25E+01	3.25E+01	3.25E+01	3.25E+01
ag108	.00E+00	.00E+00	.00E+00	.00E+00
ag108m	.00E+00	.00E+00	.00E+00	.00E+00
cd108	4.70E-05	4.70E-05	4.70E-05	4.70E-05
zr109	.00E+00	.00E+00	.00E+00	.00E+00
nb109	.00E+00	.00E+00	.00E+00	.00E+00
mo109	.00E+00	.00E+00	.00E+00	.00E+00
tc109	.00E+00	.00E+00	.00E+00	.00E+00
ru109	.00E+00	.00E+00	.00E+00	.00E+00
rh109	.00E+00	.00E+00	.00E+00	.00E+00
rh109m	.00E+00	.00E+00	.00E+00	.00E+00
pd109	.00E+00	.00E+00	.00E+00	.00E+00
pd109m	.00E+00	.00E+00	.00E+00	.00E+00
ag109	2.19E+01	2.19E+01	2.19E+01	2.19E+01
ag109m	.00E+00	.00E+00	.00E+00	.00E+00
cd109	.00E+00	.00E+00	.00E+00	.00E+00
nb110	.00E+00	.00E+00	.00E+00	.00E+00
mo110	.00E+00	.00E+00	.00E+00	.00E+00
tc110	.00E+00	.00E+00	.00E+00	.00E+00
ru110	.00E+00	.00E+00	.00E+00	.00E+00
rh110	.00E+00	.00E+00	.00E+00	.00E+00
rh110m	.00E+00	.00E+00	.00E+00	.00E+00
pd110	9.64E+00	9.64E+00	9.64E+00	9.64E+00
ag110	.00E+00	.00E+00	.00E+00	.00E+00
ag110m	.00E+00	.00E+00	.00E+00	.00E+00

1 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 111

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial300000. yr	500000. yr	999999. yr

cd110	5.76E+00	5.76E+00	5.76E+00	5.76E+00
nb111	.00E+00	.00E+00	.00E+00	.00E+00
mo111	.00E+00	.00E+00	.00E+00	.00E+00
tc111	.00E+00	.00E+00	.00E+00	.00E+00
ru111	.00E+00	.00E+00	.00E+00	.00E+00
rh111	.00E+00	.00E+00	.00E+00	.00E+00
pd111	.00E+00	.00E+00	.00E+00	.00E+00
pd111m	.00E+00	.00E+00	.00E+00	.00E+00
ag111	.00E+00	.00E+00	.00E+00	.00E+00
ag111m	.00E+00	.00E+00	.00E+00	.00E+00
cd111	5.04E+00	5.04E+00	5.04E+00	5.04E+00
cd111m	.00E+00	.00E+00	.00E+00	.00E+00
nb112	.00E+00	.00E+00	.00E+00	.00E+00
mo112	.00E+00	.00E+00	.00E+00	.00E+00
tc112	.00E+00	.00E+00	.00E+00	.00E+00
ru112	.00E+00	.00E+00	.00E+00	.00E+00
rh112	.00E+00	.00E+00	.00E+00	.00E+00
pd112	.00E+00	.00E+00	.00E+00	.00E+00
ag112	.00E+00	.00E+00	.00E+00	.00E+00
cd112	2.64E+00	2.64E+00	2.64E+00	2.64E+00
mo113	.00E+00	.00E+00	.00E+00	.00E+00
tc113	.00E+00	.00E+00	.00E+00	.00E+00
ru113	.00E+00	.00E+00	.00E+00	.00E+00
rh113	.00E+00	.00E+00	.00E+00	.00E+00
pd113	.00E+00	.00E+00	.00E+00	.00E+00
ag113	.00E+00	.00E+00	.00E+00	.00E+00
ag113m	.00E+00	.00E+00	.00E+00	.00E+00
cd113	4.58E-02	4.58E-02	4.58E-02	4.58E-02
cd113m	.00E+00	.00E+00	.00E+00	.00E+00
in113	3.00E-02	3.00E-02	3.00E-02	3.00E-02
in113m	.00E+00	.00E+00	.00E+00	.00E+00
mo114	.00E+00	.00E+00	.00E+00	.00E+00
tc114	.00E+00	.00E+00	.00E+00	.00E+00
ru114	.00E+00	.00E+00	.00E+00	.00E+00
rh114	.00E+00	.00E+00	.00E+00	.00E+00
pd114	.00E+00	.00E+00	.00E+00	.00E+00
ag114	.00E+00	.00E+00	.00E+00	.00E+00
cd114	2.93E+00	2.93E+00	2.93E+00	2.93E+00
in114	.00E+00	.00E+00	.00E+00	.00E+00
in114m	.00E+00	.00E+00	.00E+00	.00E+00
sn114	7.51E-05	7.51E-05	7.51E-05	7.51E-05
mo115	.00E+00	.00E+00	.00E+00	.00E+00
tc115	.00E+00	.00E+00	.00E+00	.00E+00
ru115	.00E+00	.00E+00	.00E+00	.00E+00
rh115	.00E+00	.00E+00	.00E+00	.00E+00
pd115	.00E+00	.00E+00	.00E+00	.00E+00
ag115	.00E+00	.00E+00	.00E+00	.00E+00
ag115m	.00E+00	.00E+00	.00E+00	.00E+00
cd115	.00E+00	.00E+00	.00E+00	.00E+00
cd115m	.00E+00	.00E+00	.00E+00	.00E+00
in115	4.59E-01	4.59E-01	4.59E-01	4.59E-01
in115m	.00E+00	.00E+00	.00E+00	.00E+00

1 Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 112

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	300000. yr	500000. yr	999999. yr
sn115	4.57E-02	4.57E-02	4.57E-02	4.57E-02
tc116	.00E+00	.00E+00	.00E+00	.00E+00
ru116	.00E+00	.00E+00	.00E+00	.00E+00

rh116	.00E+00	.00E+00	.00E+00	.00E+00
pd116	.00E+00	.00E+00	.00E+00	.00E+00
ag116	.00E+00	.00E+00	.00E+00	.00E+00
ag116m	.00E+00	.00E+00	.00E+00	.00E+00
cd116	1.31E+00	1.31E+00	1.31E+00	1.31E+00
in116	.00E+00	.00E+00	.00E+00	.00E+00
in116m	.00E+00	.00E+00	.00E+00	.00E+00
sn116	4.77E-01	4.77E-01	4.77E-01	4.77E-01
tc117	.00E+00	.00E+00	.00E+00	.00E+00
ru117	.00E+00	.00E+00	.00E+00	.00E+00
rh117	.00E+00	.00E+00	.00E+00	.00E+00
pd117	.00E+00	.00E+00	.00E+00	.00E+00
ag117	.00E+00	.00E+00	.00E+00	.00E+00
ag117m	.00E+00	.00E+00	.00E+00	.00E+00
cd117	.00E+00	.00E+00	.00E+00	.00E+00
cd117m	.00E+00	.00E+00	.00E+00	.00E+00
in117	.00E+00	.00E+00	.00E+00	.00E+00
in117m	.00E+00	.00E+00	.00E+00	.00E+00
sn117	1.19E+00	1.19E+00	1.19E+00	1.19E+00
sn117m	.00E+00	.00E+00	.00E+00	.00E+00
tc118	.00E+00	.00E+00	.00E+00	.00E+00
ru118	.00E+00	.00E+00	.00E+00	.00E+00
rh118	.00E+00	.00E+00	.00E+00	.00E+00
pd118	.00E+00	.00E+00	.00E+00	.00E+00
ag118	.00E+00	.00E+00	.00E+00	.00E+00
ag118m	.00E+00	.00E+00	.00E+00	.00E+00
cd118	.00E+00	.00E+00	.00E+00	.00E+00
in118	.00E+00	.00E+00	.00E+00	.00E+00
in118m	.00E+00	.00E+00	.00E+00	.00E+00
sn118	9.73E-01	9.73E-01	9.73E-01	9.73E-01
ru119	.00E+00	.00E+00	.00E+00	.00E+00
rh119	.00E+00	.00E+00	.00E+00	.00E+00
pd119	.00E+00	.00E+00	.00E+00	.00E+00
ag119	.00E+00	.00E+00	.00E+00	.00E+00
cd119	.00E+00	.00E+00	.00E+00	.00E+00
cd119m	.00E+00	.00E+00	.00E+00	.00E+00
in119	.00E+00	.00E+00	.00E+00	.00E+00
in119m	.00E+00	.00E+00	.00E+00	.00E+00
sn119	1.03E+00	1.03E+00	1.03E+00	1.03E+00
sn119m	.00E+00	.00E+00	.00E+00	.00E+00
ru120	.00E+00	.00E+00	.00E+00	.00E+00
rh120	.00E+00	.00E+00	.00E+00	.00E+00
pd120	.00E+00	.00E+00	.00E+00	.00E+00
ag120	.00E+00	.00E+00	.00E+00	.00E+00
cd120	.00E+00	.00E+00	.00E+00	.00E+00
in120	.00E+00	.00E+00	.00E+00	.00E+00
in120m	.00E+00	.00E+00	.00E+00	.00E+00
sn120	1.01E+00	1.01E+00	1.01E+00	1.01E+00
rh121	.00E+00	.00E+00	.00E+00	.00E+00

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 113

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial300000. yr	500000. yr	999999. yr	
pd121	.00E+00	.00E+00	.00E+00	.00E+00
ag121	.00E+00	.00E+00	.00E+00	.00E+00
cd121	.00E+00	.00E+00	.00E+00	.00E+00
in121	.00E+00	.00E+00	.00E+00	.00E+00
in121m	.00E+00	.00E+00	.00E+00	.00E+00
sn121	.00E+00	.00E+00	.00E+00	.00E+00

sn121m	.00E+00	.00E+00	.00E+00	.00E+00
sb121	1.05E+00	1.05E+00	1.05E+00	1.05E+00
rh122	.00E+00	.00E+00	.00E+00	.00E+00
pd122	.00E+00	.00E+00	.00E+00	.00E+00
ag122	.00E+00	.00E+00	.00E+00	.00E+00
cd122	.00E+00	.00E+00	.00E+00	.00E+00
in122	.00E+00	.00E+00	.00E+00	.00E+00
in122m	.00E+00	.00E+00	.00E+00	.00E+00
sn122	1.31E+00	1.31E+00	1.31E+00	1.31E+00
sb122	.00E+00	.00E+00	.00E+00	.00E+00
sb122m	.00E+00	.00E+00	.00E+00	.00E+00
te122	4.68E-02	4.68E-02	4.68E-02	4.68E-02
rh123	.00E+00	.00E+00	.00E+00	.00E+00
pd123	.00E+00	.00E+00	.00E+00	.00E+00
ag123	.00E+00	.00E+00	.00E+00	.00E+00
cd123	.00E+00	.00E+00	.00E+00	.00E+00
in123	.00E+00	.00E+00	.00E+00	.00E+00
in123m	.00E+00	.00E+00	.00E+00	.00E+00
sn123	.00E+00	.00E+00	.00E+00	.00E+00
sn123m	.00E+00	.00E+00	.00E+00	.00E+00
sb123	1.23E+00	1.23E+00	1.23E+00	1.23E+00
te123	3.68E-04	3.68E-04	3.68E-04	3.68E-04
te123m	.00E+00	.00E+00	.00E+00	.00E+00
pd124	.00E+00	.00E+00	.00E+00	.00E+00
ag124	.00E+00	.00E+00	.00E+00	.00E+00
cd124	.00E+00	.00E+00	.00E+00	.00E+00
in124	.00E+00	.00E+00	.00E+00	.00E+00
sn124	2.20E+00	2.20E+00	2.20E+00	2.20E+00
sb124	.00E+00	.00E+00	.00E+00	.00E+00
sb124m	.00E+00	.00E+00	.00E+00	.00E+00
te124	3.98E-02	3.98E-02	3.98E-02	3.98E-02
pd125	.00E+00	.00E+00	.00E+00	.00E+00
ag125	.00E+00	.00E+00	.00E+00	.00E+00
cd125	.00E+00	.00E+00	.00E+00	.00E+00
in125	.00E+00	.00E+00	.00E+00	.00E+00
in125m	.00E+00	.00E+00	.00E+00	.00E+00
sn125	.00E+00	.00E+00	.00E+00	.00E+00
sn125m	.00E+00	.00E+00	.00E+00	.00E+00
sb125	.00E+00	.00E+00	.00E+00	.00E+00
te125	2.68E+00	2.68E+00	2.68E+00	2.68E+00
te125m	.00E+00	.00E+00	.00E+00	.00E+00
pd126	.00E+00	.00E+00	.00E+00	.00E+00
ag126	.00E+00	.00E+00	.00E+00	.00E+00
cd126	.00E+00	.00E+00	.00E+00	.00E+00
in126	.00E+00	.00E+00	.00E+00	.00E+00
sn126	8.64E-01	6.11E-01	1.53E-01	4.77E-03

1

Part B B&W 15x15, 3.00wt%, 20gwd/mtu decay fission products page 114

0 nuclide concentrations, grams
basis =per B&W assembly, 0.409 mthm for grams

	initial	300000. yr	500000. yr	999999. yr
sb126	4.10E-08	2.90E-08	7.25E-09	2.27E-10
sb126m	3.12E-10	2.21E-10	5.52E-11	1.72E-12
te126	4.10E+00	4.35E+00	4.81E+00	4.96E+00
xe126	1.22E-09	1.22E-09	1.22E-09	1.22E-09
ag127	.00E+00	.00E+00	.00E+00	.00E+00
cd127	.00E+00	.00E+00	.00E+00	.00E+00
in127	.00E+00	.00E+00	.00E+00	.00E+00
in127m	.00E+00	.00E+00	.00E+00	.00E+00
sn127	.00E+00	.00E+00	.00E+00	.00E+00