Apéndice 2.

OUT[1]

```
1mcnp     version 4a    ld=10/01/93                      06/15/04 14:48:57
 ******************************************************************                probid =   06/15/04 14:48:57


    1-       prob1 -- ligdbo  to test some basic operations of mcnp.
    2-       1     0            -1       imp:p,e=1  $ void inside sphere 1
    3-       2     1   -3.21064  1  -2   imp:p,e=1  $ ligdbo spherical ring shell
    4-       3     0             2       imp:p,e=0  $ import. for vacuum rest of the world
    5-
    6-       1     so  7.49
    7-       2     so  7.51
    8-
    9-       mode p e
   10-       c fuente puntual en 0,0,0
   11-       sdef erg 0.5 pos 0. 0. 0.  par 2
   12-       c
   13-       m1  3000  6  64000  1  5000  3  8000  9
   14-       c
   15-       phys:p 2.0  0 0
   16-       phys:e 100  0  0  0  0  0  1  1  1
   17-       nps 10000000
   18-       c
   19-       fc1 quiero corriente en
   20-       f1:e  2
   21-       print
   22-
1source                                                                          print table 10

 values of defaulted or explicitly defined source variables

    cel        0.0000E+00
    sur        0.0000E+00
```

[1] Corresponde al archivo de entrada (inp) del Apéndice 1. Se muestra en rojo los datos más relevantes obtenidos de esta corrida.

```
    erg        5.0000E-01
    tme        0.0000E+00
    dir        isotropic
    pos        0.0000E+00   0.0000E+00   0.0000E+00
    x          0.0000E+00
    y          0.0000E+00
    z          0.0000E+00
    rad        0.0000E+00
    ext        0.0000E+00
    axs        0.0000E+00   0.0000E+00   0.0000E+00
    vec        0.0000E+00   0.0000E+00   0.0000E+00
    ccc        0.0000E+00
    nrm        1.0000E+00
    ara        0.0000E+00
    wgt        1.0000E+00
    eff        1.0000E-02
    par        2.0000E+00


 order of sampling source variables.
 pos erg tme
1tally   1                                                                    print table 30
+                                quiero corriente en
           tally type 1    number of particles crossing a surface.
           tally for  electrons
 surfaces  2
1material composition                                                         print table 40

 the sum of the fractions of material    1 was 1.900000E+01

 material
  number     component nuclide, atom fraction

      1            3000,  0.31579      64000,  0.05263       5000,  0.15789       8000,  0.47368

 material
  number     component nuclide, mass fraction

      1            3000,  0.11096      64000,  0.41898       5000,  0.08641       8000,  0.38365

 warning.    1 of the materials had unnormalized fractions.
1cell volumes and masses                                                      print table 50
```

```
        cell     atom          gram          input       calculated                          reason volume
                density       density       volume        volume         mass       pieces    not calculated

     1     1  0.00000E+00   0.00000E+00   0.00000E+00   1.76009E+03   0.00000E+00      1
     2     2  9.78773E-02   3.21064E+00   0.00000E+00   1.41372E+01   4.53894E+01      1
     3     3  0.00000E+00   0.00000E+00   0.00000E+00   0.00000E+00   0.00000E+00      0      infinite
1surface areas                                                                                    print table 50

       surface    input      calculated    reason area
                  area          area       not calculated

     1      1  0.00000E+00   7.04975E+02
     2      2  0.00000E+00   7.08745E+02
1cells                                                                                            print table 60
                     atom        gram                                        photon     electron
        cell  mat    density     density     volume       mass     pieces importance importance

     1     1    0  0.00000E+00 0.00000E+00 1.76009E+03 0.00000E+00     1  1.0000E+00 1.0000E+00
     2     2    1  9.78773E-02 3.21064E+00 1.41372E+01 4.53894E+01     1  1.0000E+00 1.0000E+00
     3     3    0  0.00000E+00 0.00000E+00 0.00000E+00 0.00000E+00     0  0.0000E+00 0.0000E+00

 total                                    1.77422E+03 4.53894E+01
1surfaces                                                                                         print table 70

       surface     trans  type   surface coefficients

     1      1              so    7.4900000E+00
     2      2              so    7.5100000E+00

    minimum source weight = 1.0000E+00    maximum source weight = 1.0000E+00

          1 warning message so far.
1physical constants                                                                               print table 98

   name                    value     description

   huge      1.0000000000000E+37     infinity
    pie      3.1415926535898E+00     pi
 avogad      6.0220434469282E+23     avogadro number (molecules/mole)
  aneut      1.0086649670000E+00     neutron mass (amu)
  avgdn      5.9703109000000E-01     avogadro number/neutron mass (1.e-24*molecules/mole/amu)
  slite      2.9979250000000E+02     speed of light (cm/shake)
 planck      4.1357320000000E-13     planck constant (mev shake)
```

```
 fscon      1.3703930000000E+02     inverse fine structure constant h*c/(2*pi*e**2)
gpt(1)      9.3958000000000E+02     neutron mass (mev)
gpt(3)      5.1100800000000E-01     electron mass (mev)

fission q-values:     nuclide    q(mev)   nuclide    q(mev)
                        90232    171.91     91233    175.57
                        92233    180.84     92234    179.45
                        92235    180.88     92236    179.50
                        92237    180.40     92238    181.31
                        92239    180.40     92240    180.40
                        93237    183.67     94238    186.65
                        94239    189.44     94240    186.36
                        94241    188.99     94242    185.98
                        94243    187.48     95241    190.83
                        95242    190.54     95243    190.25
                        96242    190.49     96244    190.49
                        other    180.00

 the following compilation options were used:

    pointer
    cheap
    unix
    sun
    plot
    mcplot
    gkssim
    xlib
    default datapath:
                       /home/fa112758/mcnp/p-e
1cross-section tables                                                          print table 100

    table    length

                        tables from file mcplib1

  3000.01p     389                                                                 12/13/82
  5000.01p     389                                                                 12/13/82
  8000.01p     389                                                                 12/13/82
 64000.01p     521                                                                 12/13/82

 total        1688
```

```
 maximum photon energy set to  100.0 mev (maximum electron energy)

                        tables from file el1

   3000.01e     478                                                                                    11/16/88
   5000.01e     478                                                                                    11/16/88
   8000.01e     478                                                                                    11/16/88
  64000.01e     478                                                                                    11/16/88
1range table for material    1 (condensed)                                                          print table 85

 electron substeps per energy step =   8     default =   8

         energy           stopping power           range   radiation   beta**2   density   rad/col   drange    dyield
    n              collision radiation   total               yield               corr
           mev      mev cm2/g mev cm2/g mev cm2/g   g/cm2                       mev cm2/g             g/cm2

  133  1.0790E-03  6.582E+01 1.732E-02 6.584E+01 8.535E-06 2.139E-05  4.210E-03 0.000E+00 2.631E-04 1.332E-06 2.308E-08
  132  1.1766E-03  6.298E+01 1.731E-02 6.300E+01 1.005E-05 4.193E-05  4.589E-03 0.000E+00 2.748E-04 1.517E-06 2.626E-08
  131  1.2831E-03  6.016E+01 1.730E-02 6.018E+01 1.178E-05 6.178E-05  5.003E-03 0.000E+00 2.875E-04 1.730E-06 2.993E-08
…[2]
    3  8.4090E+01  1.704E+00 5.166E+00 6.871E+00 2.468E+01 5.345E-01  1.000E+00 4.229E-01 3.031E+00 1.051E+00 5.191E+00
    2  9.1700E+01  1.711E+00 5.661E+00 7.372E+00 2.575E+01 5.532E-01  1.000E+00 4.342E-01 3.309E+00 1.069E+00 5.785E+00
    1  1.0000E+02  1.718E+00 6.201E+00 7.919E+00 2.684E+01 5.716E-01  1.000E+00 4.455E-01 3.610E+00 1.086E+00 6.438E+00

 the bremsstrahlung production cross section for all materials is scaled by the factor  0.0000E+00


 decimal words of dynamically allocated storage

     general              59668
     tallies               6512
     bank                  6403
     cross sections        1688

     total                73043

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

          1 warning message so far.
```

[2] No se muestra la tabla completa de poderes de frenado.

1 starting mcrun. field length = 0 cp0 = 0.02 print table 110

prob1 -- li6gdb3o9 to test some basic operations of mcnp.

nps	x	y	z	cell	surf	u	v	w	energy	weight	time
1	0.000E+00	0.000E+00	0.000E+00	1	0	5.085E-01	4.733E-01	7.193E-01	5.000E-01	1.000E+00	0.000E+00
2	0.000E+00	0.000E+00	0.000E+00	1	0	8.952E-01	-4.447E-01	-2.944E-02	5.000E-01	1.000E+00	0.000E+00
3	0.000E+00	0.000E+00	0.000E+00	1	0	-6.184E-01	-4.495E-01	6.446E-01	5.000E-01	1.000E+00	0.000E+00
… [3]											
48	0.000E+00	0.000E+00	0.000E+00	1	0	4.261E-01	9.046E-01	9.254E-03	5.000E-01	1.000E+00	0.000E+00
49	0.000E+00	0.000E+00	0.000E+00	1	0	5.431E-01	4.270E-01	-7.230E-01	5.000E-01	1.000E+00	0.000E+00
50	0.000E+00	0.000E+00	0.000E+00	1	0	-1.053E-01	-9.805E-01	1.658E-01	5.000E-01	1.000E+00	0.000E+00

1problem summary

run terminated when 10000000 particle histories were done.

\+ 06/15/04 16:04:29

prob1 -- li6gdb3o9 to test some basic operations of mcnp. probid = 06/15/04 14:48:57

0

photon creation	tracks	weight (per source particle)	energy	photon loss	tracks	weight (per source particle)	energy
source	10000000	1.0000E+00	5.0000E-01	escape	9994607	9.9946E-01	4.9865E-01
				energy cutoff	0	0.	0.
				time cutoff	0	0.	0.
weight window	0	0.	0.	weight window	0	0.	0.
cell importance	0	0.	0.	cell importance	0	0.	0.
weight cutoff	0	0.	0.	weight cutoff	0	0.	0.
energy importance	0	0.	0.	energy importance	0	0.	0.
dxtran	0	0.	0.	dxtran	0	0.	0.
forced collisions	0	0.	0.	forced collisions	0	0.	0.
exp. transform	0	0.	0.	exp. transform	0	0.	0.
from neutrons	0	0.	0.	compton scatter	0	0.	8.6370E-04
bremsstrahlung	0	0.	0.	capture	14694	1.4694E-03	5.2236E-04
p-annihilation	0	0.	0.	pair production	0	0.	0.
electron x-rays	88	8.8000E-06	3.8685E-07				
1st fluorescence	8088	8.0880E-04	3.3188E-05				
2nd fluorescence	1125	1.1250E-04	7.4722E-07				
total	10009301	1.0009E+00	5.0003E-01	total	10009301	1.0009E+00	5.0003E-01

[3] No se muestra la tabla completa.

```
   number of photons banked                      1213       average lifetime, shakes              cutoffs
   photon tracks per source particle      1.0009E+00          escape            2.5097E-02          tco    1.0000E+34
   photon collisions per source particle  6.7880E-03          capture           1.3119E-02          eco    1.0000E-03
   total photon collisions                      67880          capture or escape 2.5079E-02          wc1   -5.0000E-01
                                                               any termination   2.5079E-02          wc2   -2.5000E-01
0
 electron creation   tracks      weight        energy             electron loss       tracks      weight        energy
                                (per source particle)                                             (per source particle)

 source                    0    0.            0.                  escape               20001    2.0001E-03    5.2830E-04
                                                                  energy cutoff       739273    7.3927E-02    7.2644E-05
                                                                  time cutoff              0    0.            0.
 weight window             0    0.            0.                  weight window            0    0.            0.
 cell importance           0    0.            0.                  cell importance          0    0.            0.
 weight cutoff             0    0.            0.                  weight cutoff            0    0.            0.
 energy importance         0    0.            0.                  energy importance        0    0.            0.
 pair production           0    0.            0.                  scattering               0    0.            9.6605E-04
 compton recoil        50665    5.0665E-03    8.6369E-04          bremsstrahlung           0    0.            6.6659E-06
 photo-electric        11097    1.1097E-03    4.5891E-04
 photon auger            725    7.2500E-05    3.1871E-06
 electron auger            9    9.0000E-07    3.9564E-08
 knock-on             696778    6.9678E-02    2.4784E-04
     total            759274    7.5927E-02    1.5737E-03              total           759274    7.5927E-02    1.5737E-03

   number of electrons banked                  759274                                                 cutoffs
   electron tracks per source particle    7.5927E-02                                                    tco    1.0000E+34
   electron sub-steps per source particle 5.0761E+00                                                    eco    1.0000E-03
   total electron sub-steps                  50760961                                                    wc1    0.0000E+00
                                                                                                         wc2    0.0000E+00
 computer time so far in this run     7.66 minutes            maximum number ever in bank       56
 computer time in mcrun               7.64 minutes            bank overflows to backup file      0
 source particles per minute            1.3087E+06            field length                       0
 random numbers generated                396821949            most random numbers used was    39632 in history  6483937

 range of sampled source weights = 1.0000E+00 to 1.0000E+00
1photon   activity in each cell                                                                            print table 126

                    tracks      population   collisions   collisions     number        flux        average      average
          cell     entering                               * weight      weighted     weighted   track weight   track mfp
                                                        (per history)    energy       energy     (relative)      (cm)

     1      1     10017953      10000080            0     0.0000E+00   4.9936E-01   4.9936E-01   1.0000E+00   0.0000E+00
     2      2     10017953      10001213        67880     6.7880E-03   4.9603E-01   4.9603E-01   1.0000E+00   3.2137E+00
```

total		20035906	20001293	67880	6.7880E-03

1electron activity in each cell print table 126

	cell	tracks entering	population	substeps	substeps * weight (per history)	number weighted energy	flux weighted energy	average track weight (relative)	average track mfp (cm)
1	1	6939	3853	0	0.0000E+00	1.3255E-01	1.6632E-01	1.0000E+00	0.0000E+00
2	2	6939	759274	50760961	5.0761E+00	1.6429E-01	2.0128E-01	1.0000E+00	3.5649E-04
total		13878	763127	50760961	5.0761E+00				

1photon weight balance in each cell -- external events print table 130

	cell	entering	source	energy cutoff	time cutoff	exiting	total
1	1	1.7953E-03	1.0000E+00	0.0000E+00	0.0000E+00	-1.0018E+00	0.0000E+00
2	2	1.0018E+00	0.0000E+00	0.0000E+00	0.0000E+00	-1.0013E+00	5.3930E-04
total		1.0036E+00	1.0000E+00	0.0000E+00	0.0000E+00	-2.0031E+00	5.3930E-04

1photon weight balance in each cell -- variance reduction events print table 130

	cell	weight window	cell importance	weight cutoff	energy importance	dxtran	forced collision	exponential transform	total
1	1	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
2	2	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
total		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

1photon weight balance in each cell -- physical events print table 130

	cell	from neutrons	brems-strahlung	p-annihi-lation	electron x-rays	fluorescence	capture	pair production	total
1	1	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
2	2	0.0000E+00	0.0000E+00	0.0000E+00	8.8000E-06	9.2130E-04	-1.4694E-03	0.0000E+00	-5.3930E-04
total		0.0000E+00	0.0000E+00	0.0000E+00	8.8000E-06	9.2130E-04	-1.4694E-03	0.0000E+00	-5.3930E-04

1electron weight balance in each cell -- external events print table 130

	cell	entering	source	energy cutoff	time cutoff	exiting	total

```
     1     1   6.9390E-04   0.0000E+00   0.0000E+00   0.0000E+00  -6.9390E-04   0.0000E+00
     2     2   6.9390E-04   0.0000E+00  -7.3927E-02   0.0000E+00  -2.6940E-03  -7.5927E-02

     total     1.3878E-03   0.0000E+00  -7.3927E-02   0.0000E+00  -3.3879E-03  -7.5927E-02
1electron weight balance in each cell -- variance reduction events                                print table 130

        cell     weight        cell        weight       energy       dxtran       forced    exponential     total
                 window     importance     cutoff     importance                 collision    transform

     1     1   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
     2     2   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00

     total     0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
1electron weight balance in each cell -- physical events                                          print table 130

        cell      pair       compton       photo-       photon      electron     knock-on      total
                production     recoil      electron      auger        auger

     1     1   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00   0.0000E+00
     2     2   0.0000E+00   5.0665E-03   1.1097E-03   7.2500E-05   9.0000E-07   6.9678E-02   7.5927E-02

     total     0.0000E+00   5.0665E-03   1.1097E-03   7.2500E-05   9.0000E-07   6.9678E-02   7.5927E-02
1photon activity of each nuclide in each cell, per source particle                                print table 140

        cell    nuclides     atom          total     collisions   weight lost    total from   weight from    avg photon
                           fraction     collisions    * weight     to capture     neutrons      neutrons       energy

     2     2    3000.01p  3.1579E-01         5582    5.5820E-04    2.0000E-07           0      0.0000E+00    0.0000E+00
               64000.01p  5.2632E-02        35582    3.5582E-03    1.4520E-03           0      0.0000E+00    0.0000E+00
                5000.01p  1.5789E-01         4622    4.6220E-04    1.1000E-06           0      0.0000E+00    0.0000E+00
                8000.01p  4.7368E-01        22094    2.2094E-03    1.6100E-05           0      0.0000E+00    0.0000E+00

      total                                 67880    6.7880E-03    1.4694E-03           0      0.0000E+00    0.0000E+00

 total over all cells for each nuclide     total     collisions   weight lost    total from   weight from    avg photon
                                        collisions    * weight     to capture     neutrons      neutrons       energy

                3000.01p                     5582    5.5820E-04    2.0000E-07           0      0.0000E+00    0.0000E+00
                5000.01p                     4622    4.6220E-04    1.1000E-06           0      0.0000E+00    0.0000E+00
                8000.01p                    22094    2.2094E-03    1.6100E-05           0      0.0000E+00    0.0000E+00
               64000.01p                    35582    3.5582E-03    1.4520E-03           0      0.0000E+00    0.0000E+00
1tally   1        nps = 10000000
```

```
+                                quiero corriente en
           tally type 1    number of particles crossing a surface.
           tally for  electrons

 surface  2
                2.00010E-03 0.0071
1analysis of the results in the tally fluctuation chart bin (tfc) for tally   1 with nps =  10000000    print table 160

 normed average tally per history  = 2.00010E-03          unnormed average tally per history  = 2.00010E-03
 estimated tally relative error    = 0.0071               estimated variance of the variance  = 0.0001
 relative error from zero tallies  = 0.0071               relative error from nonzero scores  = 0.0008

 number of nonzero history tallies =       19778          efficiency for the nonzero tallies  = 0.0020
 history number of largest  tally  =     2862368          largest  unnormalized history tally = 3.00000E+00
 (largest  tally)/(average tally)  = 1.49993E+03          (largest  tally)/(avg nonzero tally)= 2.96655E+00

 (confidence interval shift)/mean  = 0.0000               shifted confidence interval center  = 2.00015E-03


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

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

      mean                            2.00010E-03            2.00040E-03                  0.000150
      relative error                  7.14335E-03            7.14385E-03                  0.000070
      variance of the variance        5.53428E-05            5.54876E-05                  0.002617
      shifted center                  2.00015E-03            2.00015E-03                  0.000000
      figure of merit                 2.56463E+03            2.56427E+03                 -0.000140

 the estimated inverse power slope of the 201 largest  tallies starting at 1.98485E+00 is 5.2202
 the history score probability density function appears to have an unsampled region at the largest  history scores:
please examine.

 ================================================================================================================================
          results of 10 statistical checks for the estimated answer for the tally fluctuation chart (tfc) bin of tally   1

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

 desired      random       <0.10      yes      1/sqrt(nps)       <0.10      yes        1/nps           constant    random      >3.00
 observed     random        0.01      yes          yes            0.00      yes         yes            constant    random       5.22
 passed?        yes          yes      yes          yes             yes      yes         yes               yes        yes         yes
 ================================================================================================================================
```

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

 estimated asymmetric confidence intervals(1,2,3 sigma): 1.9859E-03 to 2.0144E-03; 1.9716E-03 to 2.0287E-03; 1.9573E-03 to 2.0430E-03
 estimated  symmetric confidence intervals(1,2,3 sigma): 1.9858E-03 to 2.0144E-03; 1.9715E-03 to 2.0287E-03; 1.9572E-03 to 2.0430E-03
1unnormed tally density for tally   1            nonzero tally mean(m) = 1.011E+00   nps =  10000000    print table 161

 abscissa              ordinate   log plot of tally probability density function in tally fluctuation chart bin(d=decade,slope= 5.2)
  tally  number num den log den:d---------------------d-----------------------d----------------------d-----------------------d------
 1.26+00  19558 7.55-03  -2.122 mmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmm|mmmmmmmmmmmmmmmmmmmmmmm|mmmmmm
 1.58+00      0 0.00+00   0.000                      |                       |                      |                       |
 2.00+00      0 0.00+00   0.000          s           |                       |                      |                       |
 2.51+00    217 4.20-05  -4.377 *********************|***********************|                      |                       |
 3.16+00      3 4.61-07  -6.336 *                    |                       |                      |                       |
  total   19778 1.98-03         d---------------------d-----------------------d----------------------d-----------------------d------

 cumulative tally number for tally   1           nonzero tally mean(m) = 1.011E+00   nps =  10000000    print table 162

   abscissa     cum   ordinate    plot of the cumulative number of tallies in the tally fluctuation chart bin from 0 to 100 percent
    tally      number  cum pct:--------10--------20--------30--------40--------50--------60--------70--------80--------90-------100
 1.25893E+00    19558   98.888|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|
 1.58490E+00    19558   98.888|*********|*********|*********|*********|*********|*********|*********|*********|*********|*********|
 1.99527E+00    19558   98.888|*********|*********|*********|*********|*********|*********|*********|*********|*********|*********|
 2.51188E+00    19775   99.985|*********|*********|*********|*********|*********|*********|*********|*********|*********|*********|
 3.16228E+00    19778  100.000|*********|*********|*********|*********|*********|*********|*********|*********|*********|*********|
    total       19778  100.000:--------10--------20--------30--------40--------50--------60--------70--------80--------90-------100


 cumulative unnormed tally for tally   1         nonzero tally mean(m) = 1.011E+00   nps =  10000000    print table 162

  abscissa     cum    ordinate                plot of the cumulative tally in the tally fluctuation chart bin from 0 to 100 percent
   tally    tally/nps  cum pct:--------10--------20--------30--------40--------50--------60--------70--------80--------90-------100
 1.259E+00  1.956E-03   97.785|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmmm|mmmmmmmm |
 1.585E+00  1.956E-03   97.785|*********|*********|*********|*********|*********|*********|*********|*********|*********|******** |
 1.995E+00  1.956E-03   97.785|*********|*********|*********|*********|*********|*********|*********|*********|*********|******** |
 2.512E+00  1.999E-03   99.955|*********|*********|*********|*********|*********|*********|*********|*********|*********|*********|
 3.162E+00  2.000E-03  100.000|*********|*********|*********|*********|*********|*********|*********|*********|*********|*********|
   total  2.00010E-03  100.000:--------10--------20--------30--------40--------50--------60--------70--------80--------90-------100
1status of the statistical checks used to form confidence intervals for the mean for each tally bin


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

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

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

1tally fluctuation charts

nps	mean	tally 1 error	vov	slope	fom
512000	1.9688E-03	0.0318	0.0011	4.3	2542
1024000	2.0459E-03	0.0221	0.0005	5.5	2651
1536000	2.0306E-03	0.0181	0.0004	10.0	2621
2048000	2.0166E-03	0.0157	0.0003	10.0	2599
2560000	2.0086E-03	0.0141	0.0002	10.0	2587
3072000	2.0111E-03	0.0128	0.0002	10.0	2585
3584000	2.0148E-03	0.0119	0.0002	10.0	2574
4096000	2.0129E-03	0.0111	0.0001	10.0	2581
4608000	2.0011E-03	0.0105	0.0001	10.0	2565
5120000	2.0121E-03	0.0100	0.0001	10.0	2570
5632000	2.0188E-03	0.0095	0.0001	10.0	2579
6144000	2.0150E-03	0.0091	0.0001	10.0	2577
6656000	2.0089E-03	0.0087	0.0001	10.0	2563
7168000	2.0054E-03	0.0084	0.0001	10.0	2563
7680000	2.0063E-03	0.0081	0.0001	10.0	2566
8192000	1.9990E-03	0.0079	0.0001	10.0	2560
8704000	1.9969E-03	0.0077	0.0001	10.0	2561
9216000	1.9951E-03	0.0074	0.0001	7.2	2560
9728000	1.9984E-03	0.0072	0.0001	5.8	2564
10000000	2.0001E-03	0.0071	0.0001	5.2	2565

****

dump no. 2 on file runtpr nps = 10000000 coll = 50828841 ctm = 7.64 nrn = 396821949

1 warning message so far.

run terminated when 10000000 particle histories were done.

computer time = 7.66 minutes

mcnp version 4a 10/01/93 06/15/04 16:04:29 probid = 06/15/04 14:48:57