```
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 96*4 5 4 4*4 5 12*4 4*2 14*4 4*2 14*4 4*2 14*4 4*2 17*4 7 13*4 5
5*4 5 113*4 END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A4, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=400 LPI=10
'NCH=!    UNIT  X-Y VIEW                    !
'END PLOT
END DATA
END
```

A.13 A5-2

```
=CSAS26    PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS, A5-2
27GROUPNDF4   LATTICECELL
UO2  1 DEN=9.9080 1.0 293 92234 .02 92235 2.4 92236 .1 92238 97.48 END
UO2  12 DEN=10.1046 1.0 293 92234 .02 92235 2.001 92236 .1 92238 97.879 END
B4C        2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O        3  DEN=0.0001 1.0 293 END
ARBM-GR280-B 1.7 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.8 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25
 14000 2.55 26000 40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 9.9080 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027 9.09
20000 9.09 42000 4.55 15031 9.09 1  0.0022 293 END
ARBM-PRIM2 10.1046 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027 9.09
20000 9.09 42000 4.55 15031 9.09 12  0.0022 293 END
END COMP
```

```
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
MORE DATA
RES=12  CYLINDER 1.152 DAN(12)=8.2666E-5
END MORE DATA
READ PARAM TME=9000 TBA=90 GEN=1000 NPG=1000 NSK=100 RUN=YES END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER   1  0.576 173 -173
CYLINDER   2  0.585 173 -187.5
CYLINDER   3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER   1  0.325 174 -191
CYLINDER   2  0.75 174 -191
CYLINDER   3 4.  205.8 -204.2
CYLINDER   4 4.4 205.8 -204.2
CYLINDER   5 4.45 205.8 -204.2
CYLINDER   6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER   7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER   8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER   9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID    24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
CYLINDER  26  3.94  -191   -192.
CYLINDER  27  3.8   171    170.63
```

```
CYLINDER 28 3.8  135   134.63
CYLINDER 29 3.8   99    98.63
CYLINDER 30 3.8   63    62.63
CYLINDER 31 3.8   27    26.63
CYLINDER 32 3.8   -9    -9.37
CYLINDER 33 3.8  -45   -45.37
CYLINDER 34 3.8  -81   -81.37
CYLINDER 35 3.8 -117  -117.37
CYLINDER 36 3.8 -153  -153.37
CYLINDER 37 4.0 205.8  174.8
MEDIA 0 1 1
MEDIA 8 1 2 -1
MEDIA 0 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1  6   ORIGIN x=1.6
HOLE  1  7   ORIGIN x=0.8     y=1.38564
HOLE  1  8   ORIGIN x=-0.8    y=1.38564
HOLE  1  9   ORIGIN x=-1.6
HOLE  1  10  ORIGIN x=-0.8    y=-1.38564
HOLE  1  11  ORIGIN x=0.8     y=-1.38564
HOLE  1  12  ORIGIN x=2.99437  y=0.80234
HOLE  1  13  ORIGIN x=2.19203  y=2.19203
HOLE  1  14  ORIGIN x=0.80234  y=2.99437
HOLE  1  15  ORIGIN x=-0.80234 y=2.99437
HOLE  1  16  ORIGIN x=-2.19203 y=2.19203
HOLE  1  17  ORIGIN x=-2.99437 y=0.80234
HOLE  1  18  ORIGIN x=-2.99437 y=-0.80234
HOLE  1  19  ORIGIN x=-2.19203 y=-2.19203
HOLE  1  20  ORIGIN x=-0.80234 y=-2.99437
HOLE  1  21  ORIGIN x=0.80234  y=-2.99437
HOLE  1  22  ORIGIN x=2.19203  y=-2.19203
HOLE  1  23  ORIGIN x=2.99437  y=-0.80234
MEDIA  8 1 25 -2 -37
MEDIA  8 1 26 -2
MEDIA  9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
```

```
MEDIA  9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  4 1 24 -5
BOUNDARY 24
UNIT  3
COM=!CONTROL ROD!
CYLINDER  1  2.3 151.8 -151.8
CYLINDER  2  2.5 151.8 -151.8
CYLINDER  3  2.5225  151.8 -151.8
CYLINDER  4  3.2825  151.8 -151.8
CYLINDER  5  3.3 151.8 -151.8
CYLINDER  6  3.5 151.8 -151.8
CYLINDER  7  3.5 55.6 48.1
CYLINDER  8  3.5 -48.1 -55.6
CYLINDER  9  3.5 -151.8 -157.8
CYLINDER  10  3.5 163.5  -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5  -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT  4
COM=!GRAPHITE BLOCK!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID    4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  5
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
```

```
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5  3.5 163.5 -157.8  ORIGIN  z=165.6
HOLE  3   5                ORIGIN z=165.6
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  6
COM=!FUEL PIN!
CYLINDER   1  0.576 173 -173
CYLINDER   2  0.585 173 -187.5
CYLINDER   3  0.6815 173.8 -190.2
MEDIA  12 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  7
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER   1  0.325 174 -191
CYLINDER   2  0.75 174 -191
CYLINDER   3 4.  205.8 -204.2
CYLINDER   4 4.4 205.8 -204.2
CYLINDER   5 4.45 205.8 -204.2
CYLINDER   6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER   7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER   8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER   9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
```

```
CYLINDER 26 3.94 -191  -192.
CYLINDER 27 3.8  171   170.63
CYLINDER 28 3.8  135   134.63
CYLINDER 29 3.8   99    98.63
CYLINDER 30 3.8   63    62.63
CYLINDER 31 3.8   27    26.63
CYLINDER 32 3.8   -9    -9.37
CYLINDER 33 3.8  -45   -45.37
CYLINDER 34 3.8  -81   -81.37
CYLINDER 35 3.8 -117  -117.37
CYLINDER 36 3.8 -153  -153.37
CYLINDER 37 4.0 205.8  174.8
MEDIA 0 1 1
MEDIA 8 1 2 -1
MEDIA 0 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE 6  6   ORIGIN x=1.6
HOLE 6  7   ORIGIN x=0.8     y=1.38564
HOLE 6  8   ORIGIN x=-0.8    y=1.38564
HOLE 6  9   ORIGIN x=-1.6
HOLE 6 10   ORIGIN x=-0.8    y=-1.38564
HOLE 6 11   ORIGIN x=0.8     y=-1.38564
HOLE 6 12   ORIGIN x=2.99437  y=0.80234
HOLE 6 13   ORIGIN x=2.19203  y=2.19203
HOLE 6 14   ORIGIN x=0.80234  y=2.99437
HOLE 6 15   ORIGIN x=-0.80234 y=2.99437
HOLE 6 16   ORIGIN x=-2.19203 y=2.19203
HOLE 6 17   ORIGIN x=-2.99437 y=0.80234
HOLE 6 18   ORIGIN x=-2.99437 y=-0.80234
HOLE 6 19   ORIGIN x=-2.19203 y=-2.19203
HOLE 6 20   ORIGIN x=-0.80234 y=-2.99437
HOLE 6 21   ORIGIN x=0.80234  y=-2.99437
HOLE 6 22   ORIGIN x=2.19203  y=-2.19203
HOLE 6 23   ORIGIN x=2.99437  y=-0.80234
MEDIA  8 1 25 -2 -37
MEDIA  8 1 26 -2
MEDIA  9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
```

```
MEDIA  9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  4 1 24 -5
BOUNDARY 24
GLOBAL UNIT 8  COM=!CRIT STEND A5-2!
CUBOID  1 225 -225 225 -225 205.8 -204.2
CYLINDER  2  4.95  225.  -225.  ORIGIN  Z=-25. ROTATE  A1=90. A2=90.
MEDIA 0 1 2
ARRAY 1 1 -2  PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 96*4 4 4 4*4 4 12*4 4*2 14*4 4*2 14*4 4*2 14*4 4*2 17*4 7 13*4 4
5*4 4 113*4 END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
  END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A4, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=400 LPI=10
'NCH=!     UNIT  X-Y VIEW                    !
'END PLOT
END DATA
END
```

A.14 A6-0

```
=CSAS26
RBMK CRITICAL EXPERIMENTS , A6-0
27GROUPNDF4  LATTICECELL
UO2   1 DEN=10.076517 1.0 293 92234 .02 92235 2. 92236 .1 92238 97.88 END
B4C          2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O          3  0.0001 293 END
ARBM-GR280-B 1.7 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
```

```
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.8 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 10.047682 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027
9.09 20000 9.09 42000 4.55 15031 9.09 1 0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=625 NPG=800 NSK=60 RUN=YES END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER  1  0.576 173 -173
CYLINDER  2  0.585 173 -187.5
CYLINDER  3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
```

```
CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
CYLINDER  26  3.94  -191   -192.
CYLINDER  27  3.8   171    170.63
CYLINDER  28  3.8   135    134.63
CYLINDER  29  3.8    99    98.63
CYLINDER  30  3.8    63    62.63
CYLINDER  31  3.8    27    26.63
CYLINDER  32  3.8    -9    -9.37
CYLINDER  33  3.8   -45    -45.37
CYLINDER  34  3.8   -81    -81.37
CYLINDER  35  3.8  -117   -117.37
CYLINDER  36  3.8  -153   -153.37
CYLINDER  37  4.0  205.8   174.8
MEDIA 0 1 1
MEDIA 8 1 2 -1
MEDIA 0 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19  -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6    ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8      y=1.38564
HOLE  1   8   ORIGIN x=-0.8     y=1.38564
HOLE  1   9   ORIGIN x=-1.6
HOLE  1  10   ORIGIN x=-0.8     y=-1.38564
HOLE  1  11   ORIGIN x=0.8      y=-1.38564
HOLE  1  12   ORIGIN x=2.99437  y=0.80234
HOLE  1  13   ORIGIN x=2.19203  y=2.19203
HOLE  1  14   ORIGIN x=0.80234  y=2.99437
HOLE  1  15   ORIGIN x=-0.80234 y=2.99437
HOLE  1  16   ORIGIN x=-2.19203 y=2.19203
HOLE  1  17   ORIGIN x=-2.99437 y=0.80234
HOLE  1  18   ORIGIN x=-2.99437 y=-0.80234
HOLE  1  19   ORIGIN x=-2.19203 y=-2.19203
HOLE  1  20   ORIGIN x=-0.80234 y=-2.99437
HOLE  1  21   ORIGIN x=0.80234  y=-2.99437
HOLE  1  22   ORIGIN x=2.19203  y=-2.19203
HOLE  1  23   ORIGIN x=2.99437  y=-0.80234
MEDIA  8 1 25 -2 -37
MEDIA  8 1 26 -2
MEDIA  9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
```

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MEDIA  9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  4 1 24 -5
BOUNDARY 24
UNIT  3
COM=!CONTROL ROD!
CYLINDER   1  2.3 151.8 -151.8
CYLINDER   2  2.5 151.8 -151.8
CYLINDER   3  2.5225  151.8 -151.8
CYLINDER   4  3.2825  151.8 -151.8
CYLINDER   5  3.3 151.8 -151.8
CYLINDER   6  3.5 151.8 -151.8
CYLINDER   7  3.5 55.6 48.1
CYLINDER   8  3.5 -48.1 -55.6
CYLINDER   9  3.5 -151.8 -157.8
CYLINDER  10  3.5 163.5  -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5  -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT  4
COM=!GRAPHITE BLOCK!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID    4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
```

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BOUNDARY 4
UNIT 5
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER 1 4. 205.8 -204.2
CYLINDER 2 4.4 205.8 -204.2
CYLINDER 3 4.45 205.8 -204.2
CUBOID 4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 5 3.5 163.5 -157.8 ORIGIN z=255.6
HOLE 3 5 ORIGIN z=255.6
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
GLOBAL UNIT 6 COM=!CRIT STEND A6!
CUBOID 1 225 -225 225 -225 205.8 -204.2
ARRAY 1 1 PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 116*4 2 5 14*4 2*2 4 2*2 13*4 2 4 3*2 5 11*4 2 4 3*2 4 2 11*4 5 3*2
4 2 13*4 2*2 4 2*2 14*4 5 2 99*4 END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A4, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=400 LPI=10
'NCH=!  UNIT X-Y VIEW  !
'END PLOT
END DATA
END
```

A.15 A6-1

```
=CSAS26
RBMK CRITICAL EXPERIMENTS , A6-1
27GROUPNDF4 LATTICECELL
UO2 1 DEN=10.076517 1.0 293 92234 .02 92235 2. 92236 .1 92238 97.88 END
B4C 2 DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O 3 0.0001 293 END
ARBM-GR280-B 1.7 7 0 0 1 6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
```

```
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264 '8
1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.8 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 10.047682 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027
9.09 20000 9.09 42000 4.55 15031 9.09 1 0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=500 NPG=1000 NSK=50 RUN=YES END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER   1  0.576 173 -173
CYLINDER   2  0.585 173 -187.5
CYLINDER   3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER   1  0.325 174 -191
CYLINDER   2  0.75 174 -191
CYLINDER   3 4.  205.8 -204.2
CYLINDER   4 4.4 205.8 -204.2
CYLINDER   5 4.45 205.8 -204.2
CYLINDER   6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER   7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER   8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER   9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
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CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
CYLINDER  26  3.94  -191   -192.
CYLINDER  27  3.8   171    170.63
CYLINDER  28  3.8   135    134.63
CYLINDER  29  3.8    99    98.63
CYLINDER  30  3.8    63    62.63
CYLINDER  31  3.8    27    26.63
CYLINDER  32  3.8    -9    -9.37
CYLINDER  33  3.8   -45    -45.37
CYLINDER  34  3.8   -81    -81.37
CYLINDER  35  3.8  -117   -117.37
CYLINDER  36  3.8  -153   -153.37
CYLINDER  37  4.0  205.8   174.8
MEDIA 0 1 1
MEDIA 8 1 2 -1
MEDIA 0 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19  -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6   ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8     y=1.38564
HOLE  1   8   ORIGIN x=-0.8    y=1.38564
HOLE  1   9   ORIGIN x=-1.6
HOLE  1  10   ORIGIN x=-0.8    y=-1.38564
HOLE  1  11   ORIGIN x=0.8     y=-1.38564
HOLE  1  12   ORIGIN x=2.99437  y=0.80234
HOLE  1  13   ORIGIN x=2.19203  y=2.19203
HOLE  1  14   ORIGIN x=0.80234  y=2.99437
HOLE  1  15   ORIGIN x=-0.80234 y=2.99437
HOLE  1  16   ORIGIN x=-2.19203 y=2.19203
HOLE  1  17   ORIGIN x=-2.99437 y=0.80234
HOLE  1  18   ORIGIN x=-2.99437 y=-0.80234
HOLE  1  19   ORIGIN x=-2.19203 y=-2.19203
HOLE  1  20   ORIGIN x=-0.80234 y=-2.99437
HOLE  1  21   ORIGIN x=0.80234  y=-2.99437
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HOLE 1 22 ORIGIN x=2.19203 y=-2.19203
HOLE 1 23 ORIGIN x=2.99437 y=-0.80234
MEDIA 8 1 25 -2 -37
MEDIA 8 1 26 -2
MEDIA 9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 4 1 24 -5
BOUNDARY 24
UNIT 3
COM=!CONTROL ROD!
CYLINDER 1 2.3 151.8 -151.8
CYLINDER 2 2.5 151.8 -151.8
CYLINDER 3 2.5225 151.8 -151.8
CYLINDER 4 3.2825 151.8 -151.8
CYLINDER 5 3.3 151.8 -151.8
CYLINDER 6 3.5 151.8 -151.8
CYLINDER 7 3.5 55.6 48.1
CYLINDER 8 3.5 -48.1 -55.6
CYLINDER 9 3.5 -151.8 -157.8
CYLINDER 10 3.5 163.5 -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT 4
COM=!GRAPHITE BLOCK!
CYLINDER 1 4. 205.8 -204.2
CYLINDER 2 4.4 205.8 -204.2
CYLINDER 3 4.45 205.8 -204.2
```

```
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  5
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5  3.5 163.5 -157.8  ORIGIN  z=255.6
HOLE  3   5              ORIGIN z=255.6
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
GLOBAL UNIT 6  COM=!CRIT STEND A6!
CUBOID  1 225 -225 225 -225 205.8 -204.2
ARRAY 1 1  PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 116*4 2 4 14*4 2*2 4 2*2 13*4 2 4 3*2 4 11*4 2 4 3*2 4 2 11*4 4 3*2
4 2 13*4 2*2 4 2*2 14*4 4 2 99*4 END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A4, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=400 LPI=10
'NCH=!     UNIT  X-Y VIEW                    !
'END PLOT
END DATA
END
```

A.16 A6-2

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=CSAS26
RBMK CRITICAL EXPERIMENTS , A6-2
27GROUPNDF4  LATTICECELL
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```
UO2   1 DEN=10.076517 1.0 293 92234 .02 92235 2. 92236 .1 92238 97.88 END
B4C        2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O        3  1.0 293 END
ARBM-GR280-B 1.7 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.8 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 10.047682 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027
9.09 20000 9.09 42000 4.55 15031 9.09 1 0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=500 NPG=1000 NSK=50 RUN=YES END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER  1  0.576 173 -173
CYLINDER  2  0.585 173 -187.5
CYLINDER  3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
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```
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
CYLINDER  26  3.94  -191   -192.
CYLINDER  27  3.8   171    170.63
CYLINDER  28  3.8   135    134.63
CYLINDER  29  3.8    99    98.63
CYLINDER  30  3.8    63    62.63
CYLINDER  31  3.8    27    26.63
CYLINDER  32  3.8    -9    -9.37
CYLINDER  33  3.8   -45    -45.37
CYLINDER  34  3.8   -81    -81.37
CYLINDER  35  3.8  -117   -117.37
CYLINDER  36  3.8  -153   -153.37
CYLINDER  37  4.0  205.8   174.8
MEDIA 0 1 1
MEDIA 8 1 2 -1
MEDIA 0 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19  -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6   ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8     y=1.38564
HOLE  1   8   ORIGIN x=-0.8    y=1.38564
HOLE  1   9   ORIGIN x=-1.6
HOLE  1  10   ORIGIN x=-0.8    y=-1.38564
HOLE  1  11   ORIGIN x=0.8     y=-1.38564
HOLE  1  12   ORIGIN x=2.99437  y=0.80234
HOLE  1  13   ORIGIN x=2.19203  y=2.19203
HOLE  1  14   ORIGIN x=0.80234  y=2.99437
HOLE  1  15   ORIGIN x=-0.80234 y=2.99437
HOLE  1  16   ORIGIN x=-2.19203 y=2.19203
```

```
HOLE 1 17 ORIGIN x=-2.99437 y=0.80234
HOLE 1 18 ORIGIN x=-2.99437 y=-0.80234
HOLE 1 19 ORIGIN x=-2.19203 y=-2.19203
HOLE 1 20 ORIGIN x=-0.80234 y=-2.99437
HOLE 1 21 ORIGIN x=0.80234 y=-2.99437
HOLE 1 22 ORIGIN x=2.19203 y=-2.19203
HOLE 1 23 ORIGIN x=2.99437 y=-0.80234
MEDIA 8 1 25 -2 -37
MEDIA 8 1 26 -2
MEDIA 9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 4 1 24 -5
BOUNDARY 24
UNIT 3
COM=!CONTROL ROD!
CYLINDER 1 2.3 151.8 -151.8
CYLINDER 2 2.5 151.8 -151.8
CYLINDER 3 2.5225 151.8 -151.8
CYLINDER 4 3.2825 151.8 -151.8
CYLINDER 5 3.3 151.8 -151.8
CYLINDER 6 3.5 151.8 -151.8
CYLINDER 7 3.5 55.6 48.1
CYLINDER 8 3.5 -48.1 -55.6
CYLINDER 9 3.5 -151.8 -157.8
CYLINDER 10 3.5 163.5 -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
```

```
UNIT 4
COM=!GRAPHITE BLOCK!
CYLINDER 1 4. 205.8 -204.2
CYLINDER 2 4.4 205.8 -204.2
CYLINDER 3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT 5
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER 1 4. 205.8 -204.2
CYLINDER 2 4.4 205.8 -204.2
CYLINDER 3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 5 3.5 163.5 -157.8 ORIGIN z=255.6
HOLE 3 5              ORIGIN z=255.6
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
GLOBAL UNIT 6 COM=!CRIT STEND A6!
CUBOID 1 225 -225 225 -225 205.8 -204.2
ARRAY 1 1 PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 116*4 2 4 14*4 2*2 4 2*2 13*4 2 4 3*2 4 11*4 2 4 3*2 4 2 11*4 4 3*2
4 2 13*4 2*2 4 2*2 14*4 4 2 99*4 END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A4, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=400 LPI=10
'NCH=!    UNIT X-Y VIEW                    !
'END PLOT
END DATA
END
```

A.17 A7-11

```
=CSAS26   PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS , A7-11
27GROUPNDF4  LATTICECELL
UO2   1 DEN=10.059566 1.0 293 92234 .02 92235 2.00045 92236 .1  92238 97.87945 END
B4C         2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O         3  1.0  293 END
ARBM-GR280-B 1.69 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.6 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 10.059566 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027
9.09 20000 9.09 42000 4.55 15031 9.09 1 0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=1000 NPG=1000 NSK=100 RUN=YES
PLT=YES WRS=35 RES=100 END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER  1  0.576 173 -173
CYLINDER  2  0.585 173 -187.5
CYLINDER  3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
```

```
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER 10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER 11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER 12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER 13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER 14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER 15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER 16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER 17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER 18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER 19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER 20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER 21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER 22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER 23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 25  3.94   174.8  174
CYLINDER 26  3.94  -191   -192.
CYLINDER 27  3.8   171    170.63
CYLINDER 28  3.8   135    134.63
CYLINDER 29  3.8    99     98.63
CYLINDER 30  3.8    63     62.63
CYLINDER 31  3.8    27     26.63
CYLINDER 32  3.8    -9     -9.37
CYLINDER 33  3.8   -45    -45.37
CYLINDER 34  3.8   -81    -81.37
CYLINDER 35  3.8  -117   -117.37
CYLINDER 36  3.8  -153   -153.37
CYLINDER 37  4.0  205.8   174.8
MEDIA 3 1 1
MEDIA 8 1 2 -1
MEDIA 3 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19  -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6   ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8     y=1.38564
HOLE  1   8   ORIGIN x=-0.8    y=1.38564
HOLE  1   9   ORIGIN x=-1.6
HOLE  1  10   ORIGIN x=-0.8    y=-1.38564
```

```
HOLE 1 11 ORIGIN x=0.8     y=-1.38564
HOLE 1 12 ORIGIN x=2.99437 y=0.80234
HOLE 1 13 ORIGIN x=2.19203 y=2.19203
HOLE 1 14 ORIGIN x=0.80234 y=2.99437
HOLE 1 15 ORIGIN x=-0.80234 y=2.99437
HOLE 1 16 ORIGIN x=-2.19203 y=2.19203
HOLE 1 17 ORIGIN x=-2.99437 y=0.80234
HOLE 1 18 ORIGIN x=-2.99437 y=-0.80234
HOLE 1 19 ORIGIN x=-2.19203 y=-2.19203
HOLE 1 20 ORIGIN x=-0.80234 y=-2.99437
HOLE 1 21 ORIGIN x=0.80234 y=-2.99437
HOLE 1 22 ORIGIN x=2.19203 y=-2.19203
HOLE 1 23 ORIGIN x=2.99437 y=-0.80234
MEDIA 8 1 25 -2 -37
MEDIA 8 1 26 -2
MEDIA 9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 4 1 24 -5
BOUNDARY 24
UNIT 3
COM=!CONTROL ROD!
CYLINDER 1 2.3 151.8 -151.8
CYLINDER 2 2.5 151.8 -151.8
CYLINDER 3 2.5225 151.8 -151.8
CYLINDER 4 3.2825 151.8 -151.8
CYLINDER 5 3.3 151.8 -151.8
CYLINDER 6 3.5 151.8 -151.8
CYLINDER 7 3.5 55.6 48.1
CYLINDER 8 3.5 -48.1 -55.6
CYLINDER 9 3.5 -151.8 -157.8
CYLINDER 10 3.5 163.5 -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5 -4 -3 -2 -1 -7 -8
```

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MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT  4
COM=!ADDITIONAL ABSORBER!
CYLINDER  1 2.2 178.75 -178.75
CYLINDER  2 2.5 182.5 -182.5
CYLINDER  3 2.65 175. -175.
CYLINDER  4 2.95 175. -175.
CYLINDER  5 2.95 182.5 -182.5
MEDIA 0 1 1
MEDIA 10 1 2 -1
MEDIA 0  1 3 -2
MEDIA 11 1 4 -3
MEDIA 0  1 5 -4 -3 -2 -1
BOUNDARY 5
UNIT  5
COM=!GRAPHITE BLOCK!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID    4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  6
COM=!GRAPHITE BLOCK AND ADDITIONAL ABSORBER!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID    4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5 2.95 182.5 -182.5
HOLE 4 5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY  4
UNIT  7
```

```
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5  3.5 163.5 -157.8
HOLE  3   5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
GLOBAL UNIT 8  COM=!CRIT STEND A2!
CUBOID  1 225 -225 225 -225 205.8 -204.2
CYLINDER  2  4.95  225.  -225.  ORIGIN  Z=-25. ROTATE  A1=90. A2=90.
MEDIA 0 1 2
ARRAY 1 1 -2  PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 79*5 5 18*5 2*2 14*5 3*2 5 2*2 11*5 3*2 6 3*2 11*5
   2*2 5 3*2 5 2 9*5 2*2 6 3*2 6 2*2 9*5 2 5 3*2 5 2*2 5
   5 9*5 3*2 6 3*2 11*5 2*2 5 3*2 14*5 2*2 18*5 7 62*5
END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A1, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=1000 LPI=10
'NCH=!     UNIT  X-Y VIEW END PLT1                    !
'END PLOT
END DATA
END
```

A.18 A7-12

```
=CSAS26   PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS , A7-12
27GROUPNDF4   LATTICECELL
UO2   1 DEN=10.059566 1.0 293 92234 .02 92235 2.00045 92236 .1  92238 97.87945 END
B4C          2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O          3  1.0  293 END
```

```
ARBM-GR280-B 1.69 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.6 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 10.059566 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027
9.09 20000 9.09 42000 4.55 15031 9.09 1 0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=1000 NPG=1000 NSK=100 RUN=YES
PLT=YES WRS=35 RES=100 END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER   1  0.576 173 -173
CYLINDER   2  0.585 173 -187.5
CYLINDER   3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER   1  0.325 174 -191
CYLINDER   2  0.75 174 -191
CYLINDER   3 4.  205.8 -204.2
CYLINDER   4 4.4 205.8 -204.2
CYLINDER   5 4.45 205.8 -204.2
CYLINDER   6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER   7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER   8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER   9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
```

```
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
CYLINDER  26  3.94  -191   -192.
CYLINDER  27  3.8   171    170.63
CYLINDER  28  3.8   135    134.63
CYLINDER  29  3.8    99    98.63
CYLINDER  30  3.8    63    62.63
CYLINDER  31  3.8    27    26.63
CYLINDER  32  3.8    -9    -9.37
CYLINDER  33  3.8   -45    -45.37
CYLINDER  34  3.8   -81    -81.37
CYLINDER  35  3.8  -117   -117.37
CYLINDER  36  3.8  -153   -153.37
CYLINDER  37  4.0  205.8   174.8
MEDIA 3 1 1
MEDIA 8 1 2 -1
MEDIA 3 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19  -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6   ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8      y=1.38564
HOLE  1   8   ORIGIN x=-0.8     y=1.38564
HOLE  1   9   ORIGIN x=-1.6
HOLE  1  10   ORIGIN x=-0.8     y=-1.38564
HOLE  1  11   ORIGIN x=0.8      y=-1.38564
HOLE  1  12   ORIGIN x=2.99437  y=0.80234
HOLE  1  13   ORIGIN x=2.19203  y=2.19203
HOLE  1  14   ORIGIN x=0.80234  y=2.99437
HOLE  1  15   ORIGIN x=-0.80234 y=2.99437
HOLE  1  16   ORIGIN x=-2.19203 y=2.19203
HOLE  1  17   ORIGIN x=-2.99437 y=0.80234
HOLE  1  18   ORIGIN x=-2.99437 y=-0.80234
```

```
HOLE 1 19 ORIGIN x=-2.19203 y=-2.19203
HOLE 1 20 ORIGIN x=-0.80234 y=-2.99437
HOLE 1 21 ORIGIN x=0.80234 y=-2.99437
HOLE 1 22 ORIGIN x=2.19203 y=-2.19203
HOLE 1 23 ORIGIN x=2.99437 y=-0.80234
MEDIA 8 1 25 -2 -37
MEDIA 8 1 26 -2
MEDIA 9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 4 1 24 -5
BOUNDARY 24
UNIT 3
COM=!CONTROL ROD!
CYLINDER 1 2.3 151.8 -151.8
CYLINDER 2 2.5 151.8 -151.8
CYLINDER 3 2.5225 151.8 -151.8
CYLINDER 4 3.2825 151.8 -151.8
CYLINDER 5 3.3 151.8 -151.8
CYLINDER 6 3.5 151.8 -151.8
CYLINDER 7 3.5 55.6 48.1
CYLINDER 8 3.5 -48.1 -55.6
CYLINDER 9 3.5 -151.8 -157.8
CYLINDER 10 3.5 163.5 -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT 4
COM=!ADDITIONAL ABSORBER!
```

```
CYLINDER  1 2.2 178.75 -178.75
CYLINDER  2 2.5 182.5 -182.5
CYLINDER  3 2.65 175. -175.
CYLINDER  4 2.95 175. -175.
CYLINDER  5 2.95 182.5 -182.5
MEDIA 0 1 1
MEDIA 10 1 2 -1
MEDIA 0  1 3 -2
MEDIA 11 1 4 -3
MEDIA 0  1 5 -4 -3 -2 -1
BOUNDARY 5
UNIT  5
COM=!GRAPHITE BLOCK!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID    4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  6
COM=!GRAPHITE BLOCK AND ADDITIONAL ABSORBER!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID    4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5 2.95 182.5 -182.5
HOLE 4 5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY  4
UNIT  7
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID    4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5  3.5 163.5 -157.8
HOLE  3   5
MEDIA 0 1 1 -5
```

```
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
GLOBAL UNIT 8  COM=!CRIT STEND A2!
CUBOID  1 225 -225 225 -225 205.8 -204.2
CYLINDER  2  4.95  225.  -225.  ORIGIN  Z=-25. ROTATE  A1=90. A2=90.
MEDIA 0 1 2
ARRAY 1 1 -2  PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 79*5 7 18*5 2*2 14*5 3*2 5 2*2 11*5 3*2 6 3*2 11*5
   2*2 5 3*2 5 2 9*5 2*2 6 3*2 6 2*2 9*5 2 5 3*2 5 2*2 5
   5 9*5 3*2 6 3*2 11*5 2*2 5 3*2 14*5 2*2 18*5 7 62*5
END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A1, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=1000 LPI=10
'NCH=!     UNIT  X-Y VIEW END PLT1                    !
'END PLOT
END DATA
END
```

A.19 A7-13

```
=CSAS26   PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS , A7-13
27GROUPNDF4   LATTICECELL
UO2   1 DEN=10.059566 1.0 293 92234 .02 92235 2.00045 92236 .1  92238 97.87945 END
B4C          2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O          3  1.0  293 END
ARBM-GR280-B 1.69 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
```

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8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.6 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 10.059566 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027
9.09 20000 9.09 42000 4.55 15031 9.09 1 0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=1000 NPG=1000 NSK=100 RUN=YES
PLT=YES WRS=35 RES=100 END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER  1  0.576 173 -173
CYLINDER  2  0.585 173 -187.5
CYLINDER  3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
```

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CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID    24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
CYLINDER  26  3.94  -191   -192.
CYLINDER  27  3.8   171    170.63
CYLINDER  28  3.8   135    134.63
CYLINDER  29  3.8    99     98.63
CYLINDER  30  3.8    63     62.63
CYLINDER  31  3.8    27     26.63
CYLINDER  32  3.8    -9     -9.37
CYLINDER  33  3.8   -45    -45.37
CYLINDER  34  3.8   -81    -81.37
CYLINDER  35  3.8  -117   -117.37
CYLINDER  36  3.8  -153   -153.37
CYLINDER  37  4.0  205.8   174.8
MEDIA 3 1 1
MEDIA 8 1 2 -1
MEDIA 3 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6   ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8     y=1.38564
HOLE  1   8   ORIGIN x=-0.8    y=1.38564
HOLE  1   9   ORIGIN x=-1.6
HOLE  1  10   ORIGIN x=-0.8    y=-1.38564
HOLE  1  11   ORIGIN x=0.8     y=-1.38564
HOLE  1  12   ORIGIN x=2.99437  y=0.80234
HOLE  1  13   ORIGIN x=2.19203  y=2.19203
HOLE  1  14   ORIGIN x=0.80234  y=2.99437
HOLE  1  15   ORIGIN x=-0.80234 y=2.99437
HOLE  1  16   ORIGIN x=-2.19203 y=2.19203
HOLE  1  17   ORIGIN x=-2.99437 y=0.80234
HOLE  1  18   ORIGIN x=-2.99437 y=-0.80234
HOLE  1  19   ORIGIN x=-2.19203 y=-2.19203
HOLE  1  20   ORIGIN x=-0.80234 y=-2.99437
HOLE  1  21   ORIGIN x=0.80234  y=-2.99437
HOLE  1  22   ORIGIN x=2.19203  y=-2.19203
HOLE  1  23   ORIGIN x=2.99437  y=-0.80234
MEDIA  8 1 25 -2 -37
MEDIA  8 1 26 -2
MEDIA  9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
```

```
MEDIA  9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  4 1 24 -5
BOUNDARY 24
UNIT  3
COM=!CONTROL ROD!
CYLINDER  1  2.3 151.8 -151.8
CYLINDER  2  2.5 151.8 -151.8
CYLINDER  3  2.5225  151.8 -151.8
CYLINDER  4  3.2825  151.8 -151.8
CYLINDER  5  3.3 151.8 -151.8
CYLINDER  6  3.5 151.8 -151.8
CYLINDER  7  3.5 55.6 48.1
CYLINDER  8  3.5 -48.1 -55.6
CYLINDER  9  3.5 -151.8 -157.8
CYLINDER  10  3.5 163.5  -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5  -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT  4
COM=!ADDITIONAL ABSORBER!
CYLINDER  1 2.2 178.75 -178.75
CYLINDER  2 2.5 182.5 -182.5
CYLINDER  3 2.65 175. -175.
CYLINDER  4 2.95 175. -175.
CYLINDER  5 2.95 182.5 -182.5
MEDIA 0 1 1
MEDIA 10 1 2 -1
MEDIA 0  1 3 -2
```

```
MEDIA 11 1 4 -3
MEDIA 0  1 5 -4 -3 -2 -1
BOUNDARY 5
UNIT  5
COM=!GRAPHITE BLOCK!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  6
COM=!GRAPHITE BLOCK AND ADDITIONAL ABSORBER!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5 2.95 182.5 -182.5
HOLE 4 5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY  4
UNIT  7
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5  3.5 163.5 -157.8
HOLE  3   5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
GLOBAL UNIT 8  COM=!CRIT STEND A2!
CUBOID  1 225 -225 225 -225 205.8 -204.2
CYLINDER  2  4.95  225.  -225.  ORIGIN  Z=-25. ROTATE  A1=90. A2=90.
MEDIA 0 1 2
```

```
ARRAY 1 1 -2  PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 79*5 7 18*5 2*2 14*5 3*2 5 2*2 11*5 3*2 6 3*2 11*5
   2*2 5 3*2 5 2 9*5 2*2 6 3*2 6 2*2 9*5 2 5 3*2 5 2*2 5
   7 9*5 3*2 6 3*2 11*5 2*2 5 3*2 14*5 2*2 18*5 7 62*5
END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A1, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=1000 LPI=10
'NCH=!     UNIT  X-Y VIEW END PLT1                    !
'END PLOT
END DATA
END
```

A.20 A7-21

```
=CSAS26   PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS , A7-21
27GROUPNDF4  LATTICECELL
UO2   1 DEN=10.059566 1.0 293 92234 .02 92235 2.00045 92236 .1  92238 97.87945 END
B4C          2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O          3  1.0  293 END
ARBM-GR280-B 1.69 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.6 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 10.059566 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027
9.09 20000 9.09 42000 4.55 15031 9.09 1 0.0022 293 END
END COMP
```

```
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=1000 NPG=1000 NSK=100 RUN=YES
PLT=YES WRS=35 RES=100 END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER   1  0.576 173 -173
CYLINDER   2  0.585 173 -187.5
CYLINDER   3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER   1  0.325 174 -191
CYLINDER   2  0.75 174 -191
CYLINDER   3 4.  205.8 -204.2
CYLINDER   4 4.4 205.8 -204.2
CYLINDER   5 4.45 205.8 -204.2
CYLINDER   6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER   7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER   8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER   9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID    24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
CYLINDER  26  3.94  -191   -192.
CYLINDER  27  3.8   171    170.63
CYLINDER  28  3.8   135    134.63
CYLINDER  29  3.8    99     98.63
```

```
CYLINDER 30 3.8   63    62.63
CYLINDER 31 3.8   27    26.63
CYLINDER 32 3.8   -9    -9.37
CYLINDER 33 3.8  -45   -45.37
CYLINDER 34 3.8  -81   -81.37
CYLINDER 35 3.8 -117  -117.37
CYLINDER 36 3.8 -153  -153.37
CYLINDER 37 4.0 205.8  174.8
MEDIA 3 1 1
MEDIA 8 1 2 -1
MEDIA 3 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1  6   ORIGIN x=1.6
HOLE  1  7   ORIGIN x=0.8     y=1.38564
HOLE  1  8   ORIGIN x=-0.8    y=1.38564
HOLE  1  9   ORIGIN x=-1.6
HOLE  1  10  ORIGIN x=-0.8    y=-1.38564
HOLE  1  11  ORIGIN x=0.8     y=-1.38564
HOLE  1  12  ORIGIN x=2.99437  y=0.80234
HOLE  1  13  ORIGIN x=2.19203  y=2.19203
HOLE  1  14  ORIGIN x=0.80234  y=2.99437
HOLE  1  15  ORIGIN x=-0.80234 y=2.99437
HOLE  1  16  ORIGIN x=-2.19203 y=2.19203
HOLE  1  17  ORIGIN x=-2.99437 y=0.80234
HOLE  1  18  ORIGIN x=-2.99437 y=-0.80234
HOLE  1  19  ORIGIN x=-2.19203 y=-2.19203
HOLE  1  20  ORIGIN x=-0.80234 y=-2.99437
HOLE  1  21  ORIGIN x=0.80234  y=-2.99437
HOLE  1  22  ORIGIN x=2.19203  y=-2.19203
HOLE  1  23  ORIGIN x=2.99437  y=-0.80234
MEDIA  8 1 25 -2 -37
MEDIA  8 1 26 -2
MEDIA  9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
```

```
MEDIA  9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  4 1 24 -5
BOUNDARY 24
UNIT  3
COM=!CONTROL ROD!
CYLINDER  1  2.3 151.8 -151.8
CYLINDER  2  2.5 151.8 -151.8
CYLINDER  3  2.5225  151.8 -151.8
CYLINDER  4  3.2825  151.8 -151.8
CYLINDER  5  3.3 151.8 -151.8
CYLINDER  6  3.5 151.8 -151.8
CYLINDER  7  3.5 55.6 48.1
CYLINDER  8  3.5 -48.1 -55.6
CYLINDER  9  3.5 -151.8 -157.8
CYLINDER  10  3.5 163.5  -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5  -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT  4
COM=!ADDITIONAL ABSORBER!
CYLINDER  1 2.2 178.75 -178.75
CYLINDER  2 2.5 182.5 -182.5
CYLINDER  3 2.65 175. -175.
CYLINDER  4 2.95 175. -175.
CYLINDER  5 2.95 182.5 -182.5
MEDIA 0 1 1
MEDIA 10 1 2 -1
MEDIA 0  1 3 -2
MEDIA 11 1 4 -3
MEDIA 0  1 5 -4 -3 -2 -1
BOUNDARY 5
UNIT  5
COM=!GRAPHITE BLOCK!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
```

```
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  6
COM=!GRAPHITE BLOCK AND ADDITIONAL ABSORBER!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5 2.95 182.5 -182.5
HOLE 4 5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY  4
UNIT  7
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5  3.5 163.5 -157.8
HOLE  3   5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
GLOBAL UNIT 8  COM=!CRIT STEND A2!
CUBOID  1 225 -225 225 -225 205.8 -204.2
CYLINDER  2  4.95  225.  -225.  ORIGIN  Z=-25. ROTATE  A1=90. A2=90.
MEDIA 0 1 2
ARRAY 1 1 -2  PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 79*5 5 18*5 2*2 14*5 3*2 7 2*2 11*5 3*2 6 3*2 11*5
   2*2 5 3*2 5 2 9*5 2*2 6 3*2 6 2*2 9*5 2 5 3*2 5 2*2 5
   5 9*5 3*2 6 3*2 11*5 2*2 5 3*2 14*5 2*2 18*5 5 62*5
END FILL END ARRAY
```

```
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A1, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=1000 LPI=10
'NCH=!    UNIT  X-Y VIEW END PLT1                    !
'END PLOT
END DATA
END
```

A.21 A7-22

```
=CSAS26   PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS , A7-22
27GROUPNDF4  LATTICECELL
UO2   1 DEN=10.059566 1.0 293 92234 .02 92235 2.00045 92236 .1  92238 97.87945 END
B4C        2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O        3  0.0001  293 END
ARBM-GR280-B 1.69 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.6 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 10.059566 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027
9.09 20000 9.09 42000 4.55 15031 9.09 1 0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=1000 NPG=1000 NSK=100 RUN=YES
PLT=YES WRS=35 RES=100 END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER   1  0.576 173 -173
CYLINDER   2  0.585 173 -187.5
```

```
CYLINDER  3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8    y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8    y=-1.38564
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
CYLINDER  26  3.94  -191   -192.
CYLINDER  27  3.8   171    170.63
CYLINDER  28  3.8   135    134.63
CYLINDER  29  3.8    99    98.63
CYLINDER  30  3.8    63    62.63
CYLINDER  31  3.8    27    26.63
CYLINDER  32  3.8    -9    -9.37
CYLINDER  33  3.8   -45    -45.37
CYLINDER  34  3.8   -81    -81.37
CYLINDER  35  3.8  -117    -117.37
CYLINDER  36  3.8  -153    -153.37
CYLINDER  37  4.0  205.8   174.8
```

```
MEDIA 3 1 1
MEDIA 8 1 2 -1
MEDIA 3 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1  6   ORIGIN x=1.6
HOLE  1  7  ORIGIN x=0.8     y=1.38564
HOLE  1  8  ORIGIN x=-0.8    y=1.38564
HOLE  1  9  ORIGIN x=-1.6
HOLE  1  10  ORIGIN x=-0.8    y=-1.38564
HOLE  1  11  ORIGIN x=0.8     y=-1.38564
HOLE  1  12  ORIGIN x=2.99437  y=0.80234
HOLE  1  13  ORIGIN x=2.19203  y=2.19203
HOLE  1  14  ORIGIN x=0.80234  y=2.99437
HOLE  1  15  ORIGIN x=-0.80234 y=2.99437
HOLE  1  16  ORIGIN x=-2.19203 y=2.19203
HOLE  1  17  ORIGIN x=-2.99437 y=0.80234
HOLE  1  18  ORIGIN x=-2.99437 y=-0.80234
HOLE  1  19  ORIGIN x=-2.19203 y=-2.19203
HOLE  1  20  ORIGIN x=-0.80234 y=-2.99437
HOLE  1  21  ORIGIN x=0.80234  y=-2.99437
HOLE  1  22  ORIGIN x=2.19203  y=-2.19203
HOLE  1  23  ORIGIN x=2.99437  y=-0.80234
MEDIA  8 1 25 -2 -37
MEDIA  8 1 26 -2
MEDIA  9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  4 1 24 -5
BOUNDARY 24
UNIT  3
COM=!CONTROL ROD!
CYLINDER   1  2.3 151.8 -151.8
CYLINDER   2  2.5 151.8 -151.8
CYLINDER   3  2.5225  151.8 -151.8
```

```
CYLINDER  4  3.2825  151.8 -151.8
CYLINDER  5  3.3 151.8 -151.8
CYLINDER  6  3.5 151.8 -151.8
CYLINDER  7  3.5 55.6 48.1
CYLINDER  8  3.5 -48.1 -55.6
CYLINDER  9  3.5 -151.8 -157.8
CYLINDER 10  3.5 163.5  -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5  -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT  4
COM=!ADDITIONAL ABSORBER!
CYLINDER  1 2.2 178.75 -178.75
CYLINDER  2 2.5 182.5 -182.5
CYLINDER  3 2.65 175. -175.
CYLINDER  4 2.95 175. -175.
CYLINDER  5 2.95 182.5 -182.5
MEDIA 0 1 1
MEDIA 10 1 2 -1
MEDIA 0  1 3 -2
MEDIA 11 1 4 -3
MEDIA 0  1 5 -4 -3 -2 -1
BOUNDARY 5
UNIT  5
COM=!GRAPHITE BLOCK!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  6
COM=!GRAPHITE BLOCK AND ADDITIONAL ABSORBER!
```

```
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5 2.95 182.5 -182.5
HOLE 4 5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY  4
UNIT  7
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5  3.5 163.5 -157.8
HOLE  3   5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
GLOBAL UNIT 8  COM=!CRIT STEND A2!
CUBOID  1 225 -225 225 -225 205.8 -204.2
CYLINDER  2  4.95  225.  -225.  ORIGIN  Z=-25. ROTATE  A1=90. A2=90.
MEDIA 0 1 2
ARRAY 1 1 -2  PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 79*5 5 18*5 2*2 14*5 3*2 5 2*2 11*5 3*2 6 3*2 11*5
   2*2 5 3*2 5 2 9*5 2*2 6 3*2 6 2*2 9*5 2 5 3*2 5 2*2 5
   5 9*5 3*2 6 3*2 11*5 2*2 5 3*2 14*5 2*2 18*5 5 62*5
END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A1, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=1000 LPI=10
'NCH=!     UNIT  X-Y VIEW END PLT1                    !
```

```
'END PLOT
END DATA
END
```

A.22 A8-1

```
=CSAS26   PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS , A8-1
27GROUPNDF4  LATTICECELL
UO2  1 DEN=10.057469 1.0 293 92234 .02 92235 2.00055 92236 .1  92238 97.87945 END
B4C        2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O        3  1.0  293 END
ARBM-GR280-B 1.69 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.6 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 10.045061 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027
9.09 20000 9.09 42000 4.55 15031 9.09 1 0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=1000 NPG=1000 NSK=100 RUN=YES
WRS=35 RES=100 PLT=YES END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER   1  0.576 173 -173
CYLINDER   2  0.585 173 -187.5
CYLINDER   3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER   1  0.325 174 -191
```

```
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER 10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER 11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER 12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER 13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER 14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER 15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER 16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER 17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER 18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER 19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER 20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER 21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER 22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER 23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 25  3.94   174.8  174
CYLINDER 26  3.94  -191   -192.
CYLINDER 27  3.8   171    170.63
CYLINDER 28  3.8   135    134.63
CYLINDER 29  3.8    99     98.63
CYLINDER 30  3.8    63     62.63
CYLINDER 31  3.8    27     26.63
CYLINDER 32  3.8    -9     -9.37
CYLINDER 33  3.8   -45    -45.37
CYLINDER 34  3.8   -81    -81.37
CYLINDER 35  3.8  -117   -117.37
CYLINDER 36  3.8  -153   -153.37
CYLINDER 37  4.0  205.8   174.8
MEDIA 3 1 1
MEDIA 8 1 2 -1
MEDIA 3 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6   ORIGIN x=1.6
```

```
HOLE 1 7 ORIGIN x=0.8 y=1.38564
HOLE 1 8 ORIGIN x=-0.8 y=1.38564
HOLE 1 9 ORIGIN x=-1.6
HOLE 1 10 ORIGIN x=-0.8 y=-1.38564
HOLE 1 11 ORIGIN x=0.8 y=-1.38564
HOLE 1 12 ORIGIN x=2.99437 y=0.80234
HOLE 1 13 ORIGIN x=2.19203 y=2.19203
HOLE 1 14 ORIGIN x=0.80234 y=2.99437
HOLE 1 15 ORIGIN x=-0.80234 y=2.99437
HOLE 1 16 ORIGIN x=-2.19203 y=2.19203
HOLE 1 17 ORIGIN x=-2.99437 y=0.80234
HOLE 1 18 ORIGIN x=-2.99437 y=-0.80234
HOLE 1 19 ORIGIN x=-2.19203 y=-2.19203
HOLE 1 20 ORIGIN x=-0.80234 y=-2.99437
HOLE 1 21 ORIGIN x=0.80234 y=-2.99437
HOLE 1 22 ORIGIN x=2.19203 y=-2.19203
HOLE 1 23 ORIGIN x=2.99437 y=-0.80234
MEDIA 8 1 25 -2 -37
MEDIA 8 1 26 -2
MEDIA 9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 4 1 24 -5
BOUNDARY 24
UNIT 3
COM=!CONTROL ROD!
CYLINDER 1 2.3 151.8 -151.8
CYLINDER 2 2.5 151.8 -151.8
CYLINDER 3 2.5225 151.8 -151.8
CYLINDER 4 3.2825 151.8 -151.8
CYLINDER 5 3.3 151.8 -151.8
CYLINDER 6 3.5 151.8 -151.8
CYLINDER 7 3.5 55.6 48.1
CYLINDER 8 3.5 -48.1 -55.6
CYLINDER 9 3.5 -151.8 -157.8
CYLINDER 10 3.5 163.5 -157.8
MEDIA 0 1 1 -7 -8
```

```
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5  -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT  4
COM=!ADDITIONAL ABSORBER!
CYLINDER  1 2.2 178.75 -178.75
CYLINDER  2 2.5 182.5 -182.5
CYLINDER  3 2.65 175. -175.
CYLINDER  4 2.95 175. -175.
CYLINDER  5 2.95 182.5 -182.5
MEDIA 0 1 1
MEDIA 10 1 2 -1
MEDIA 0  1 3 -2
MEDIA 11 1 4 -3
MEDIA 0  1 5 -4 -3 -2 -1
BOUNDARY 5
UNIT  5
COM=!GRAPHITE BLOCK!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  6
COM=!GRAPHITE BLOCK AND ADDITIONAL ABSORBER!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5 2.95 182.5 -182.5
HOLE 4 5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
```

```
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT 7
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER 1 4. 205.8 -204.2
CYLINDER 2 4.4 205.8 -204.2
CYLINDER 3 4.45 205.8 -204.2
CUBOID 4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 5 3.5 163.5 -157.8
HOLE 3 5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
GLOBAL UNIT 8 COM=!CRIT STEND A8!
CUBOID 1 225 -225 225 -225 205.8 -204.2
CYLINDER 2 4.95 225. -225. ORIGIN Z=-25. ROTATE A1=90. A2=90.
MEDIA 0 1 2
ARRAY 1 1 -2 PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 80*5 2*2 12*5 2*2 6 3*2 6 2*2 9*5 2 5 3*2 5 3*2 9*5 6
   3*2 6 3*2 6 2 8*5 3*2 5 3*2 5 2*2 7*5 3*2 6 3*2 6 3*2
   7*5 2*2 5 3*2 5 3*2 8*5 2 6 3*2 6 3*2 6 9*5 3*2 5 3*2
   5 2 9*5 2*2 6 3*2 6 2*2 12*5 2*2 5 62*5
END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A8, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=1000 LPI=10
'NCH=!    UNIT  X-Y VIEW END PLT1                    !
'TTL=!TOTAL VIEW OF CRITICAL STAND A8, X-Z PLOT! SCR=YES PIC=UNIT
'XUL=-25. YUL=75. ZUL=50. XLR=0. YLR=50. ZLR=50. UAX=1 VAX=0
'WAX=0 UDN=0 WDN=0 VDN=-1 NAX=500 LPI=10
'NCH=!    UNIT  X-Y VIEW END PLT2                    !
END PLOT
END DATA
END
```

A.23 A8-2

```
=CSAS26   PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS , A8-2
27GROUPNDF4  LATTICECELL
UO2  1 DEN=10.057469 1.0 293 92234 .02 92235 2.00055 92236 .1  92238 97.87945 END
B4C        2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O        3  1.0  293 END
ARBM-GR280-B 1.69 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.6 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 10.045061 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82 24000 4.55 13027
9.09 20000 9.09 42000 4.55 15031 9.09 1 0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=1000 NPG=1000 NSK=100 RUN=YES
WRS=35 RES=100 PLT=YES END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER  1  0.576 173 -173
CYLINDER  2  0.585 173 -187.5
CYLINDER  3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
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```
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER 10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER 11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER 12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER 13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER 14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER 15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER 16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER 17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER 18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER 19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER 20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER 21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER 22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER 23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 25  3.94   174.8  174
CYLINDER 26  3.94  -191   -192.
CYLINDER 27  3.8   171    170.63
CYLINDER 28  3.8   135    134.63
CYLINDER 29  3.8    99     98.63
CYLINDER 30  3.8    63     62.63
CYLINDER 31  3.8    27     26.63
CYLINDER 32  3.8    -9     -9.37
CYLINDER 33  3.8   -45    -45.37
CYLINDER 34  3.8   -81    -81.37
CYLINDER 35  3.8  -117   -117.37
CYLINDER 36  3.8  -153   -153.37
CYLINDER 37  4.0  205.8   174.8
MEDIA 0 1 1
MEDIA 8 1 2 -1
MEDIA 0 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6   ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8     y=1.38564
HOLE  1   8   ORIGIN x=-0.8    y=1.38564
HOLE  1   9   ORIGIN x=-1.6
HOLE  1  10   ORIGIN x=-0.8    y=-1.38564
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```
HOLE 1 11  ORIGIN x=0.8     y=-1.38564
HOLE 1 12  ORIGIN x=2.99437  y=0.80234
HOLE 1 13  ORIGIN x=2.19203  y=2.19203
HOLE 1 14  ORIGIN x=0.80234  y=2.99437
HOLE 1 15  ORIGIN x=-0.80234 y=2.99437
HOLE 1 16  ORIGIN x=-2.19203 y=2.19203
HOLE 1 17  ORIGIN x=-2.99437 y=0.80234
HOLE 1 18  ORIGIN x=-2.99437 y=-0.80234
HOLE 1 19  ORIGIN x=-2.19203 y=-2.19203
HOLE 1 20  ORIGIN x=-0.80234 y=-2.99437
HOLE 1 21  ORIGIN x=0.80234  y=-2.99437
HOLE 1 22  ORIGIN x=2.19203  y=-2.19203
HOLE 1 23  ORIGIN x=2.99437  y=-0.80234
MEDIA 8 1 25 -2 -37
MEDIA 8 1 26 -2
MEDIA 9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 4 1 24 -5
BOUNDARY 24
UNIT 3
COM=!CONTROL ROD!
CYLINDER  1  2.3 151.8 -151.8
CYLINDER  2  2.5 151.8 -151.8
CYLINDER  3  2.5225  151.8 -151.8
CYLINDER  4  3.2825  151.8 -151.8
CYLINDER  5  3.3 151.8 -151.8
CYLINDER  6  3.5 151.8 -151.8
CYLINDER  7  3.5 55.6 48.1
CYLINDER  8  3.5 -48.1 -55.6
CYLINDER  9  3.5 -151.8 -157.8
CYLINDER  10  3.5 163.5  -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5  -4 -3 -2 -1 -7 -8
```

```
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT 4
COM=!ADDITIONAL ABSORBER!
CYLINDER 1 2.2 178.75 -178.75
CYLINDER 2 2.5 182.5 -182.5
CYLINDER 3 2.65 175. -175.
CYLINDER 4 2.95 175. -175.
CYLINDER 5 2.95 182.5 -182.5
MEDIA 0 1 1
MEDIA 10 1 2 -1
MEDIA 0 1 3 -2
MEDIA 11 1 4 -3
MEDIA 0 1 5 -4 -3 -2 -1
BOUNDARY 5
UNIT 5
COM=!GRAPHITE BLOCK!
CYLINDER 1 4. 205.8 -204.2
CYLINDER 2 4.4 205.8 -204.2
CYLINDER 3 4.45 205.8 -204.2
CUBOID 4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT 6
COM=!GRAPHITE BLOCK AND ADDITIONAL ABSORBER!
CYLINDER 1 4. 205.8 -204.2
CYLINDER 2 4.4 205.8 -204.2
CYLINDER 3 4.45 205.8 -204.2
CUBOID 4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 5 2.95 182.5 -182.5
HOLE 4 5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT 7
```

```
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID    4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5  3.5 163.5 -157.8
HOLE  3   5
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
GLOBAL UNIT 8  COM=!CRIT STEND A8!
CUBOID  1 225 -225 225 -225 205.8 -204.2
CYLINDER  2  4.95  225.  -225.  ORIGIN  Z=-25. ROTATE  A1=90. A2=90.
MEDIA 0 1 2
ARRAY 1 1 -2  PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 80*5 2*2 12*5 2*2 6 3*2 6 2*2 9*5 2 5 3*2 5 3*2 9*5 6
   3*2 6 3*2 6 2 8*5 3*2 5 3*2 5 2*2 7*5 3*2 6 3*2 6 3*2
   7*5 2*2 5 3*2 5 3*2 8*5 2 6 3*2 6 3*2 6 9*5 3*2 5 3*2
   5 2 9*5 2*2 6 3*2 6 2*2 12*5 2*2 7 62*5
END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A8, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=1000 LPI=10
'NCH=!     UNIT  X-Y VIEW END PLT1                    !
'TTL=!TOTAL VIEW OF CRITICAL STAND A8, X-Z PLOT! SCR=YES PIC=UNIT
'XUL=-25. YUL=75. ZUL=50. XLR=0. YLR=50. ZLR=50. UAX=1 VAX=0
'WAX=0 UDN=0 WDN=0 VDN=-1 NAX=500 LPI=10
'NCH=!     UNIT  X-Y VIEW END PLT2                    !
END PLOT
END DATA
END
```

A.24 A10-0

```
=CSAS26    PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS , A10-0
27GROUPNDF4  LATTICECELL
UO2  1 DEN=9.7369582 1.0 293 92234 .02 92235 1.79122 92236 .1 92238 98.08878 END
B4C        2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O        3  0.998 293 END
ARBM-GR280-B 1.7 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.8 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 9.7369582 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82
24000 4.55 13027 9.09 20000 9.09 42000 4.55 15031 9.09 1  0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=1000 NPG=1000 NSK=100 RUN=YES  RES=25 WRS=35
END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER  1  0.576 173 -173
CYLINDER  2  0.585 173 -187.5
CYLINDER  3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
```

```
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
CYLINDER  26  3.94  -191   -192.
CYLINDER  27  3.8   171    170.63
CYLINDER  28  3.8   135    134.63
CYLINDER  29  3.8    99     98.63
CYLINDER  30  3.8    63     62.63
CYLINDER  31  3.8    27     26.63
CYLINDER  32  3.8    -9     -9.37
CYLINDER  33  3.8   -45    -45.37
CYLINDER  34  3.8   -81    -81.37
CYLINDER  35  3.8  -117   -117.37
CYLINDER  36  3.8  -153   -153.37
CYLINDER  37  4.0  205.8   174.8
MEDIA 3 1 1
MEDIA 8 1 2 -1
MEDIA 3 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6    ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8     y=1.38564
HOLE  1   8   ORIGIN x=-0.8    y=1.38564
HOLE  1   9   ORIGIN x=-1.6
HOLE  1  10   ORIGIN x=-0.8    y=-1.38564
```

```
HOLE 1 11 ORIGIN x=0.8     y=-1.38564
HOLE 1 12 ORIGIN x=2.99437 y=0.80234
HOLE 1 13 ORIGIN x=2.19203 y=2.19203
HOLE 1 14 ORIGIN x=0.80234 y=2.99437
HOLE 1 15 ORIGIN x=-0.80234 y=2.99437
HOLE 1 16 ORIGIN x=-2.19203 y=2.19203
HOLE 1 17 ORIGIN x=-2.99437 y=0.80234
HOLE 1 18 ORIGIN x=-2.99437 y=-0.80234
HOLE 1 19 ORIGIN x=-2.19203 y=-2.19203
HOLE 1 20 ORIGIN x=-0.80234 y=-2.99437
HOLE 1 21 ORIGIN x=0.80234 y=-2.99437
HOLE 1 22 ORIGIN x=2.19203 y=-2.19203
HOLE 1 23 ORIGIN x=2.99437 y=-0.80234
MEDIA 8 1 25 -2 -37
MEDIA 8 1 26 -2
MEDIA 9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 4 1 24 -5
BOUNDARY 24
UNIT 3
COM=!CONTROL ROD!
CYLINDER 1 2.3 151.8 -151.8
CYLINDER 2 2.5 151.8 -151.8
CYLINDER 3 2.5225 151.8 -151.8
CYLINDER 4 3.2825 151.8 -151.8
CYLINDER 5 3.3 151.8 -151.8
CYLINDER 6 3.5 151.8 -151.8
CYLINDER 7 3.5 55.6 48.1
CYLINDER 8 3.5 -48.1 -55.6
CYLINDER 9 3.5 -151.8 -157.8
CYLINDER 10 3.5 163.5 -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5 -4 -3 -2 -1 -7 -8
```

```
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT 4
COM=!GRAPHITE BLOCK!
CYLINDER 1 4. 205.8 -204.2
CYLINDER 2 4.4 205.8 -204.2
CYLINDER 3 4.45 205.8 -204.2
CUBOID 4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT 5
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER 1 4. 205.8 -204.2
CYLINDER 2 4.4 205.8 -204.2
CYLINDER 3 4.45 205.8 -204.2
CUBOID 4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 5 3.5 163.5 -157.8 ORIGIN z=55.6
HOLE 3 5 ORIGIN z=55.6
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT 6
COM=!FUEL PIN!
CYLINDER 1 0.576 173 -173
CYLINDER 2 0.585 173 -187.5
CYLINDER 3 0.6815 173.8 -190.2
MEDIA 1 1 1
MEDIA 0 1 2 -1
MEDIA 7 1 3 -2 -1
BOUNDARY 3
UNIT 7
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER 1 0.325 174 -191
CYLINDER 2 0.75 174 -191
CYLINDER 3 4. 205.8 -204.2
```

```
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER  10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER  11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER  12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER  13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER  14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER  15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER  16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER  17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER  18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER  19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER  20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER  21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER  22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER  23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  25  3.94   174.8  174
CYLINDER  26  3.94  -191   -192.
CYLINDER  27  3.8   171    170.63
CYLINDER  28  3.8   135    134.63
CYLINDER  29  3.8    99    98.63
CYLINDER  30  3.8    63    62.63
CYLINDER  31  3.8    27    26.63
CYLINDER  32  3.8    -9    -9.37
CYLINDER  33  3.8   -45    -45.37
CYLINDER  34  3.8   -81    -81.37
CYLINDER  35  3.8  -117   -117.37
CYLINDER  36  3.8  -153   -153.37
CYLINDER  37  4.0  205.8   174.8
MEDIA 0 1 1
MEDIA 8 1 2 -1
MEDIA 0 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6   ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8     y=1.38564
HOLE  1   8   ORIGIN x=-0.8    y=1.38564
```

```
HOLE 1 9 ORIGIN x=-1.6
HOLE 1 10 ORIGIN x=-0.8 y=-1.38564
HOLE 1 11 ORIGIN x=0.8 y=-1.38564
HOLE 1 12 ORIGIN x=2.99437 y=0.80234
HOLE 1 13 ORIGIN x=2.19203 y=2.19203
HOLE 1 14 ORIGIN x=0.80234 y=2.99437
HOLE 1 15 ORIGIN x=-0.80234 y=2.99437
HOLE 1 16 ORIGIN x=-2.19203 y=2.19203
HOLE 1 17 ORIGIN x=-2.99437 y=0.80234
HOLE 1 18 ORIGIN x=-2.99437 y=-0.80234
HOLE 1 19 ORIGIN x=-2.19203 y=-2.19203
HOLE 1 20 ORIGIN x=-0.80234 y=-2.99437
HOLE 1 21 ORIGIN x=0.80234 y=-2.99437
HOLE 1 22 ORIGIN x=2.19203 y=-2.19203
HOLE 1 23 ORIGIN x=2.99437 y=-0.80234
MEDIA 8 1 25 -2 -37
MEDIA 8 1 26 -2
MEDIA 9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 4 1 24 -5
BOUNDARY 24
GLOBAL UNIT 8 COM=!CRIT STEND A10!
CUBOID 1 225. -225. 225. -225. 205.8 -204.2
CYLINDER 2 4.95 225. -225. ORIGIN Z=-25. ROTATE A1=90. A2=90.
MEDIA 0 1 2
ARRAY 1 1 -2 PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 96*4 5 5*4 5 12*4 5*2 13*4 5*2 13*4 5*2 13*4 5*2 14*4 7 3*2
 12*4 5 5*4 5 113*4 END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
 END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A1, X-Y PLOT! SCR=YES PIC=UNIT
```

```
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=400 LPI=10
'NCH=!     UNIT  X-Y VIEW                    !
'END PLOT
END DATA
END
```

A.25 A10-1

```
=CSAS26    PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS , A10-1
27GROUPNDF4   LATTICECELL
UO2  1 DEN=9.7369582 1.0 293 92234 .02 92235 1.79122 92236 .1 92238 98.08878 END
B4C          2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O          3  0.998 293 END
ARBM-GR280-B 1.7 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.8 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 9.7369582 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82
24000 4.55 13027 9.09 20000 9.09 42000 4.55 15031 9.09 1  0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=1000 NPG=1000 NSK=100 RUN=YES END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER   1  0.576 173 -173
CYLINDER   2  0.585 173 -187.5
CYLINDER   3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
```

```
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER 10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER 11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER 12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER 13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER 14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER 15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER 16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER 17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER 18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER 19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER 20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER 21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER 22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER 23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 25  3.94   174.8  174
CYLINDER 26  3.94  -191   -192.
CYLINDER 27  3.8   171    170.63
CYLINDER 28  3.8   135    134.63
CYLINDER 29  3.8    99    98.63
CYLINDER 30  3.8    63    62.63
CYLINDER 31  3.8    27    26.63
CYLINDER 32  3.8    -9    -9.37
CYLINDER 33  3.8   -45    -45.37
CYLINDER 34  3.8   -81    -81.37
CYLINDER 35  3.8  -117   -117.37
CYLINDER 36  3.8  -153   -153.37
CYLINDER 37  4.0  205.8   174.8
MEDIA 3 1 1
MEDIA 8 1 2 -1
MEDIA 3 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
```

```
MEDIA  0 1 5 -4
HOLE  1  6   ORIGIN x=1.6
HOLE  1  7  ORIGIN x=0.8     y=1.38564
HOLE  1  8  ORIGIN x=-0.8    y=1.38564
HOLE  1  9  ORIGIN x=-1.6
HOLE  1  10  ORIGIN x=-0.8    y=-1.38564
HOLE  1  11  ORIGIN x=0.8     y=-1.38564
HOLE  1  12  ORIGIN x=2.99437  y=0.80234
HOLE  1  13  ORIGIN x=2.19203  y=2.19203
HOLE  1  14  ORIGIN x=0.80234  y=2.99437
HOLE  1  15  ORIGIN x=-0.80234 y=2.99437
HOLE  1  16  ORIGIN x=-2.19203 y=2.19203
HOLE  1  17  ORIGIN x=-2.99437 y=0.80234
HOLE  1  18  ORIGIN x=-2.99437 y=-0.80234
HOLE  1  19  ORIGIN x=-2.19203 y=-2.19203
HOLE  1  20  ORIGIN x=-0.80234 y=-2.99437
HOLE  1  21  ORIGIN x=0.80234  y=-2.99437
HOLE  1  22  ORIGIN x=2.19203  y=-2.19203
HOLE  1  23  ORIGIN x=2.99437  y=-0.80234
MEDIA  8 1 25 -2 -37
MEDIA  8 1 26 -2
MEDIA  9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  4 1 24 -5
BOUNDARY 24
UNIT  3
COM=!CONTROL ROD!
CYLINDER  1  2.3 151.8 -151.8
CYLINDER  2  2.5 151.8 -151.8
CYLINDER  3  2.5225  151.8 -151.8
CYLINDER  4  3.2825  151.8 -151.8
CYLINDER  5  3.3 151.8 -151.8
CYLINDER  6  3.5 151.8 -151.8
CYLINDER  7  3.5 55.6 48.1
CYLINDER  8  3.5 -48.1 -55.6
CYLINDER  9  3.5 -151.8 -157.8
```

```
CYLINDER  10  3.5 163.5  -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5  -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT  4
COM=!GRAPHITE BLOCK!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  5
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5  3.5 163.5 -157.8  ORIGIN  z=55.6
HOLE  3   5              ORIGIN z=55.6
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  6
COM=!FUEL PIN!
CYLINDER   1  0.576 173 -173
CYLINDER   2  0.585 173 -187.5
CYLINDER   3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
```

```
BOUNDARY 3
UNIT 7
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER 10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER 11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER 12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER 13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER 14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER 15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER 16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER 17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER 18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER 19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER 20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER 21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER 22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER 23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 25  3.94   174.8  174
CYLINDER 26  3.94  -191   -192.
CYLINDER 27  3.8   171    170.63
CYLINDER 28  3.8   135    134.63
CYLINDER 29  3.8    99    98.63
CYLINDER 30  3.8    63    62.63
CYLINDER 31  3.8    27    26.63
CYLINDER 32  3.8    -9    -9.37
CYLINDER 33  3.8   -45    -45.37
CYLINDER 34  3.8   -81    -81.37
CYLINDER 35  3.8  -117   -117.37
CYLINDER 36  3.8  -153   -153.37
CYLINDER 37  4.0  205.8   174.8
MEDIA 0 1 1
MEDIA 8 1 2 -1
MEDIA 0 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
```

```
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6   ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8     y=1.38564
HOLE  1   8   ORIGIN x=-0.8    y=1.38564
HOLE  1   9   ORIGIN x=-1.6
HOLE  1  10   ORIGIN x=-0.8    y=-1.38564
HOLE  1  11   ORIGIN x=0.8     y=-1.38564
HOLE  1  12   ORIGIN x=2.99437  y=0.80234
HOLE  1  13   ORIGIN x=2.19203  y=2.19203
HOLE  1  14   ORIGIN x=0.80234  y=2.99437
HOLE  1  15   ORIGIN x=-0.80234 y=2.99437
HOLE  1  16   ORIGIN x=-2.19203 y=2.19203
HOLE  1  17   ORIGIN x=-2.99437 y=0.80234
HOLE  1  18   ORIGIN x=-2.99437 y=-0.80234
HOLE  1  19   ORIGIN x=-2.19203 y=-2.19203
HOLE  1  20   ORIGIN x=-0.80234 y=-2.99437
HOLE  1  21   ORIGIN x=0.80234  y=-2.99437
HOLE  1  22   ORIGIN x=2.19203  y=-2.19203
HOLE  1  23   ORIGIN x=2.99437  y=-0.80234
MEDIA  8 1 25 -2 -37
MEDIA  8 1 26 -2
MEDIA  9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  4 1 24 -5
BOUNDARY 24
GLOBAL UNIT 8  COM=!CRIT STEND A10!
CUBOID  1  225. -225.  225.  -225.  205.8 -204.2
CYLINDER  2  4.95  225.  -225.  ORIGIN  Z=-25. ROTATE  A1=90. A2=90.
MEDIA 0 1 2
ARRAY 1 1 -2  PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 96*4 5 5*4 5 12*4 5*2 13*4 5*2 13*4 5*2 13*4 5*2 14*4 4 3*2
```

```
 12*4 5 5*4 5 113*4 END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
  END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A1, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=400 LPI=10
'NCH=!     UNIT  X-Y VIEW                    !
'END PLOT
END DATA
END
```

A.26 A10-2

```
=CSAS26    PARM=SIZE=1500000
RBMK CRITICAL EXPERIMENTS , A10-2
27GROUPNDF4  LATTICECELL
UO2  1 DEN=9.7369582 1.0 293 92234 .02 92235 1.79122 92236 .1 92238 98.08878 END
B4C          2  DEN=1.65 1.0 293 5010 19.9 5011 80.1 END
H2O          3  1.0 293 END
ARBM-GR280-B 1.7 7  0 0 1  6012 99.9958 1001 .0011 8016 .0018 14000 .0007 7014 .0004 24000
.0001 20000 .0001 4 1.0 293 END
ARBM-AL-CAB6 2.15 7  0 0 1  12000 .6 14000 .8 29000 .9 25055 .3  26000 .3 22000 .1  13027 97.
5  1.0 293 END
ARBM-AL-CAB1 2.7 4  0 0 1  12000 .5 14000 1 29000 .1 13027 98.4 6  1.0 293 END
ARBM-ZR110 6.55 6  0 0 1  72000 .04 41093 1 26000 .018 28000 .011 13027 .0048 40000 98.9262
7  1.0 293 END
ARBM-ZR125 6.55 6  0 0 1  72000 .04 41093 2.5 26000 .018 28000 .011 13027 .0046 40000 97.4264
8  1.0 293 END
ARBM-CT06X18H10T 7.8 5  0 0 1  6012 .06 24000 18 28000 10 22000 1 26000 70.94 9  1.0 293 END
ARBM-CT12X18H10T 7.8 5  0 0 1  6012 .12 24000 18 28000 10 22000 1 26000 70.88 10  1.0 293 END
ARBM-CT-CBJ2 7.8 7  1 0 1  5000 2 24000 18.7 28000 34 6012 .009 13027 2.25 14000 2.55 26000
40.491 11  1.0 293 5010 19.9 5011 80.1 END
ARBM-PRIM1 9.7369582 9  0 0 1  7014 9.09 26000 36.36 14000 11.36 28000 6.82
24000 4.55 13027 9.09 20000 9.09 42000 4.55 15031 9.09 1  0.0022 293 END
END COMP
SQUAREPITCH 25 4.9 1  4  8.9  3  5.093 7  END
READ PARAM TME=9000 TBA=90 GEN=500 NPG=1000 NSK=50 RUN=YES END PARAM
READ GEOM
UNIT  1
COM=!FUEL PIN!
CYLINDER   1  0.576 173 -173
CYLINDER   2  0.585 173 -187.5
```

```
CYLINDER  3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  2
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER 10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER 11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER 12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER 13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER 14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER 15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER 16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER 17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER 18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER 19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER 20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER 21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER 22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER 23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 25  3.94   174.8  174
CYLINDER 26  3.94  -191   -192.
CYLINDER 27  3.8   171    170.63
CYLINDER 28  3.8   135    134.63
CYLINDER 29  3.8    99    98.63
CYLINDER 30  3.8    63    62.63
CYLINDER 31  3.8    27    26.63
CYLINDER 32  3.8    -9    -9.37
CYLINDER 33  3.8   -45    -45.37
CYLINDER 34  3.8   -81    -81.37
CYLINDER 35  3.8  -117   -117.37
CYLINDER 36  3.8  -153   -153.37
CYLINDER 37  4.0  205.8   174.8
```

```
MEDIA 3 1 1
MEDIA 8 1 2 -1
MEDIA 3 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA  0 1 37 3
MEDIA  5 1 4 -3
MEDIA  0 1 5 -4
HOLE  1   6    ORIGIN x=1.6
HOLE  1   7   ORIGIN x=0.8      y=1.38564
HOLE  1   8   ORIGIN x=-0.8     y=1.38564
HOLE  1   9   ORIGIN x=-1.6
HOLE  1  10   ORIGIN x=-0.8     y=-1.38564
HOLE  1  11   ORIGIN x=0.8      y=-1.38564
HOLE  1  12   ORIGIN x=2.99437  y=0.80234
HOLE  1  13   ORIGIN x=2.19203  y=2.19203
HOLE  1  14   ORIGIN x=0.80234  y=2.99437
HOLE  1  15   ORIGIN x=-0.80234 y=2.99437
HOLE  1  16   ORIGIN x=-2.19203 y=2.19203
HOLE  1  17   ORIGIN x=-2.99437 y=0.80234
HOLE  1  18   ORIGIN x=-2.99437 y=-0.80234
HOLE  1  19   ORIGIN x=-2.19203 y=-2.19203
HOLE  1  20   ORIGIN x=-0.80234 y=-2.99437
HOLE  1  21   ORIGIN x=0.80234  y=-2.99437
HOLE  1  22   ORIGIN x=2.19203  y=-2.19203
HOLE  1  23   ORIGIN x=2.99437  y=-0.80234
MEDIA  8 1 25 -2 -37
MEDIA  8 1 26 -2
MEDIA  9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA  4 1 24 -5
BOUNDARY 24
UNIT  3
COM=!CONTROL ROD!
CYLINDER   1  2.3 151.8 -151.8
CYLINDER   2  2.5 151.8 -151.8
CYLINDER   3  2.5225  151.8 -151.8
```

```
CYLINDER  4  3.2825  151.8 -151.8
CYLINDER  5  3.3 151.8 -151.8
CYLINDER  6  3.5 151.8 -151.8
CYLINDER  7  3.5 55.6 48.1
CYLINDER  8  3.5 -48.1 -55.6
CYLINDER  9  3.5 -151.8 -157.8
CYLINDER  10  3.5 163.5  -157.8
MEDIA 0 1 1 -7 -8
MEDIA 6 1 2 -1 -7 -8
MEDIA 0 1 3 -2 -1 -7 -8
MEDIA 2 1 4 -3 -2 -1 -7 -8
MEDIA 0 1 5  -4 -3 -2 -1 -7 -8
MEDIA 6 1 6 -5 -4 -3 -2 -1 -7 -8
MEDIA 6 1 7
MEDIA 6 1 8
MEDIA 6 1 9 -6 -5 -4 -3 -2 -1
MEDIA 6 1 10 -9 -8 -7 -6 -5 -4 -3 -2 -1
BOUNDARY 10
UNIT  4
COM=!GRAPHITE BLOCK!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
MEDIA 0 1 1
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  5
COM=!GRAPHITE BLOCK AND CHANNEL WITH CONTROL ROD!
CYLINDER  1 4.  205.8 -204.2
CYLINDER  2 4.4 205.8 -204.2
CYLINDER  3 4.45 205.8 -204.2
CUBOID   4 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER  5  3.5 163.5 -157.8  ORIGIN  z=55.6
HOLE  3   5              ORIGIN z=55.6
MEDIA 0 1 1 -5
MEDIA 5 1 2 -1
MEDIA 0 1 3 -2 -1
MEDIA 4 1 4 -3 -2 -1
BOUNDARY 4
UNIT  6
COM=!FUEL PIN!
```

```
CYLINDER  1  0.576 173 -173
CYLINDER  2  0.585 173 -187.5
CYLINDER  3  0.6815 173.8 -190.2
MEDIA  1 1 1
MEDIA  0 1 2 -1
MEDIA  7 1 3 -2 -1
BOUNDARY 3
UNIT  7
COM=!GRAPHITE BLOCK AND CHANNEL WITH FUEL ASSEMBLY!
CYLINDER  1  0.325 174 -191
CYLINDER  2  0.75 174 -191
CYLINDER  3 4.  205.8 -204.2
CYLINDER  4 4.4 205.8 -204.2
CYLINDER  5 4.45 205.8 -204.2
CYLINDER  6 .6815 173.8 -190.2  ORIGIN x=1.6
CYLINDER  7 .6815 173.8 -190.2  ORIGIN x=0.8     y=1.38564
CYLINDER  8 .6815 173.8 -190.2  ORIGIN x=-0.8    y=1.38564
CYLINDER  9 .6815 173.8 -190.2  ORIGIN x=-1.6
CYLINDER 10 .6815 173.8 -190.2  ORIGIN x=-0.8    y=-1.38564
CYLINDER 11 .6815 173.8 -190.2  ORIGIN x=0.8     y=-1.38564
CYLINDER 12 .6815 173.8 -190.2  ORIGIN x=2.99437  y=0.80234
CYLINDER 13 .6815 173.8 -190.2  ORIGIN x=2.19203  y=2.19203
CYLINDER 14 .6815 173.8 -190.2  ORIGIN x=0.80234  y=2.99437
CYLINDER 15 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=2.99437
CYLINDER 16 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=2.19203
CYLINDER 17 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=0.80234
CYLINDER 18 .6815 173.8 -190.2  ORIGIN x=-2.99437 y=-0.80234
CYLINDER 19 .6815 173.8 -190.2  ORIGIN x=-2.19203 y=-2.19203
CYLINDER 20 .6815 173.8 -190.2  ORIGIN x=-0.80234 y=-2.99437
CYLINDER 21 .6815 173.8 -190.2  ORIGIN x=0.80234  y=-2.99437
CYLINDER 22 .6815 173.8 -190.2  ORIGIN x=2.19203  y=-2.19203
CYLINDER 23 .6815 173.8 -190.2  ORIGIN x=2.99437  y=-0.80234
CUBOID   24 12.5 -12.5 12.5 -12.5 205.8 -204.2
CYLINDER 25  3.94   174.8  174
CYLINDER 26  3.94  -191   -192.
CYLINDER 27  3.8   171    170.63
CYLINDER 28  3.8   135    134.63
CYLINDER 29  3.8    99    98.63
CYLINDER 30  3.8    63    62.63
CYLINDER 31  3.8    27    26.63
CYLINDER 32  3.8    -9    -9.37
CYLINDER 33  3.8   -45    -45.37
CYLINDER 34  3.8   -81    -81.37
CYLINDER 35  3.8  -117   -117.37
```

```
CYLINDER 36 3.8 -153 -153.37
CYLINDER 37 4.0 205.8 174.8
MEDIA 0 1 1
MEDIA 8 1 2 -1
MEDIA 0 1 3 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -25 -26 -27 -28 -29
-30 -31 -32 -33 -34 -35 -36 -37
MEDIA 0 1 37 3
MEDIA 5 1 4 -3
MEDIA 0 1 5 -4
HOLE 1 6 ORIGIN x=1.6
HOLE 1 7 ORIGIN x=0.8 y=1.38564
HOLE 1 8 ORIGIN x=-0.8 y=1.38564
HOLE 1 9 ORIGIN x=-1.6
HOLE 1 10 ORIGIN x=-0.8 y=-1.38564
HOLE 1 11 ORIGIN x=0.8 y=-1.38564
HOLE 1 12 ORIGIN x=2.99437 y=0.80234
HOLE 1 13 ORIGIN x=2.19203 y=2.19203
HOLE 1 14 ORIGIN x=0.80234 y=2.99437
HOLE 1 15 ORIGIN x=-0.80234 y=2.99437
HOLE 1 16 ORIGIN x=-2.19203 y=2.19203
HOLE 1 17 ORIGIN x=-2.99437 y=0.80234
HOLE 1 18 ORIGIN x=-2.99437 y=-0.80234
HOLE 1 19 ORIGIN x=-2.19203 y=-2.19203
HOLE 1 20 ORIGIN x=-0.80234 y=-2.99437
HOLE 1 21 ORIGIN x=0.80234 y=-2.99437
HOLE 1 22 ORIGIN x=2.19203 y=-2.19203
HOLE 1 23 ORIGIN x=2.99437 y=-0.80234
MEDIA 8 1 25 -2 -37
MEDIA 8 1 26 -2
MEDIA 9 1 27 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 28 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 29 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 30 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 31 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 32 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 33 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 34 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 35 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 9 1 36 -2 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23
MEDIA 4 1 24 -5
BOUNDARY 24
GLOBAL UNIT 8 COM=!CRIT STEND A10!
CUBOID 1 225. -225. 225. -225. 205.8 -204.2
CYLINDER 2 4.95 225. -225. ORIGIN Z=-25. ROTATE A1=90. A2=90.
```

```
MEDIA 0 1 2
ARRAY 1 1 -2  PLACE 1 1 1 -212.5 -212.5 0
BOUNDARY 1
END GEOM
READ ARRAY ARA=1 NUX=18 NUY=18 NUZ=1
FILL 96*4 4 5*4 4 12*4 5*2 13*4 5*2 13*4 5*2 13*4 5*2 14*4 4 3*2
 12*4 4 5*4 4 113*4 END FILL END ARRAY
READ BNDS +XB=VACUUM -XB=VACUUM +YB=VACUUM -YB=VACUUM +ZB=VACUUM -
ZB=VACUUM
  END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND A1, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-225 YUL=225 ZUL=0. XLR=225 YLR=-225 ZLR=0 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=400 LPI=10
'NCH=!     UNIT  X-Y VIEW                    !
'END PLOT
END DATA
END
```

Appendix B

SCALE Input File Listing for VVER-1000 Critical Facility LR-0 Calculation

Appendix B

SCALE Input File Listing for VVER-1000 Critical Facility LR-0 Calculation

B.1 Three-dimensional multiplication factor calculation

```
=CSAS26
LR-0 - 3D model
27GROUPNDF4  LATTICECELL
UO2  1 DEN=10.330 1. 293 92234 .01 92235 2. 92236 .1 92238 97.89 END
UO2  2 DEN=10.330 1. 293 92234 .01 92235 3. 92236 .1 92238 96.89 END
UO2  3 DEN=10.330 1. 293 92234 .01 92235 3.3 92236 .1 92238 96.59 END
B4C  5 DEN=1.6 1.0 293 5010 19.8 5011 80.2 END
H2O  6 DEN=0.998 1.0 293 END
H2O  7 DEN=0.998 1.0 293 END
ARBM-ZR+NB+HF 6.44 3 0 0 1 40000 98.97 41093 1 72000 0.03 4 1.0 293 END
ARBM-H3B03 0.0045 3  1 1 1  5000 1 1001 3 8016 3 7 0.998 293 5010 18.3022 5011 81.6978 END
ARBM-H3B03 0.0045 3  1 1 1  5000 1 1001 3 8016 3 6 0.998 293 5010 18.3022 5011 81.6978 END
ARBM-ST3 0.1  9  0 0 1  6012 .11 25055 1.9 14000 .9 24000 18.5 28000 9.5 22000 6. 15031 .04 16000
.03 26000 63.02 6 1.0 293 END
ARBM10TP 7.9 15  0 0 1  6012 .06 25055 1.46 14000 .48 15031 .008 16000 .005 29000 .04 28000 10.2
24000 17.95 22000 .5 27059 .018 7014 .013 42000 .03 23051 .06 74186 .06 26000 69.116 8  1.0 293
END
ARBM10T 7.9 9  0 0 1  6012 .07 22000 .6 24000 18 28000 10 25055 1.8 15031 .03 14000 .7 16000 .015
26000 68.785 9  1.0 293 END
ARBM-ST3 7.65 9  0 0 1  6012 .11 25055 1.9 14000 .9 24000 18.5 28000 9.5 22000 6. 15031 .04 16000
.03 26000 63.02 10  1.0 293 END
END COMP
TRIANGPITCH 1.275 .753 1  6  .915 9  .771 0  END
MORE DATA  RES=2 CYLINDER .3765 DAN(2)=2.46885E-01 RES=3 CYLINDER .3765
DAN(3)=2.46885E-01 END
READ PARAM TME=90000 TBA=15000 NPG=1000 GEN=1000 RUN=YES PLT=YES NSK=150
WTA=0.26 NBK=5000 LNG=2300000  RES=50 WRS=35 END PARAM
READ GEOM
UNIT 1  COM=! FUEL PIN 2.0% FOR FA 1,8 !
CYLINDER 1  .07   125. 0.
CYLINDER 2  .3765 125. 0.
CYLINDER 3  .3855 125. 0.
CYLINDER 4  .4575 128.3 -3.3
```

```
HEXPRISM 5  .6375 128.3 -3.3
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 2  COM=! FUEL PIN 3.0% FOR FA 18,24 !
CYLINDER 1  .07   125. 0.
CYLINDER 2  .3765 125. 0.
CYLINDER 3  .3855 125. 0.
CYLINDER 4  .4575 128.3 -3.3
HEXPRISM 5  .6375 128.3 -3.3
MEDIA  0 1 1
MEDIA  2 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 3  COM=! FUEL PIN 3.3% FOR FA 9,17 !
CYLINDER 1  .07   125. 0.
CYLINDER 2  .3765 125. 0.
CYLINDER 3  .3855 125. 0.
CYLINDER 4  .4575 128.3 -3.3
HEXPRISM 5  .6375 128.3 -3.3
MEDIA  0 1 1
MEDIA  3 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 5  COM=! CENTRAL FA TUBE !
CYLINDER  1 0.44  128.3 -3.3
CYLINDER  2 0.515 128.3 -3.3
HEXPRISM  3 .6375 128.3 -3.3
MEDIA  7 1 1
MEDIA  4 1 2 -1
MEDIA  7 1 3 -2
BOUNDARY 3
UNIT 6  COM=! CR TUBE !
CYLINDER  1 0.55  128.3 -3.3
CYLINDER  2 0.63  128.3 -3.3
HEXPRISM  3 .6375 128.3 -3.3
MEDIA  7  1 1
```

```
MEDIA  10 1 2 -1
MEDIA  6  1 3 -2
BOUNDARY 3
UNIT 7  COM=! CR TUBE with CR !
CYLINDER  1 0.35  128.3 78.
CYLINDER  2 0.41  128.3 78.
CYLINDER  3 0.55  128.3 -3.3
CYLINDER  4 0.63  128.3 -3.3
HEXPRISM  5 .6375 128.3 -3.3
MEDIA  5  1 1
MEDIA  10 1 2 -1
MEDIA  7  1 3 -2
MEDIA  10 1 4 -3
MEDIA  6  1 5 -4
BOUNDARY 5

UNIT 8  COM=! WATER ELEMENT !
HEXPRISM  1  .6375  128.3 -3.3
MEDIA  7 1 1
BOUNDARY 1
UNIT 16 COM=!FUEL ASS. 2.0% IN GENERAL!
HEXPRISM  1  11.8  128.3 -3.3   ROTATE A1=30
ARRAY 1 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 17 COM=!FUEL ASS. 3.0% IN GENERAL!
HEXPRISM  1  11.8  128.3 -3.3   ROTATE A1=30
ARRAY 2 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 18  COM=!FUEL ASS. 3.3% IN GENERAL!
HEXPRISM  1  11.8  128.3 -3.3   ROTATE A1=30
ARRAY 3 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 19 COM=! FUEL ASS. 2.0% N 27 !
CYLINDER  1 3.4   128.3 -3.3
CYLINDER  2 3.65  128.3 -3.3
HEXPRISM  3  11.8  128.3 -3.3   ROTATE A1=30
MEDIA  0  1 1
MEDIA  9  1 2 -1
ARRAY 4 3 -2  PLACE 13 13 1 0 0 0
BOUNDARY 3
UNIT 13  COM=!WATER REFLECTOR ASS. ELEMENT!
HEXPRISM  1  11.8  128.3 -3.3
MEDIA  7 1 1
BOUNDARY 1
```

```
UNIT 14  COM=!CORE THERMAL SHIELDING ASS. ELEMENT N105!
HEXPRISM  1  11.8  128.3 -3.3
MEDIA  8 1 1
BOUNDARY 1
UNIT 15  COM=!CORE THERMAL SHIELDING ASS. ELEMENT N106!
CYLINDER  1 6.5  128.3 -3.3  ORIGIN X=1.8 Y=-3.117
HEXPRISM  2  11.8  128.3 -3.3
MEDIA  7 1 1
MEDIA  8 1 2 -1
BOUNDARY 2
UNIT 20  COM=!CORE THERMAL SHIELDING ASS. ELEMENT N100!
CYLINDER  1 3.5 128.3 -3.3  ORIGIN X=4.45 Y=6.07
HEXPRISM  2  11.8  128.3 -3.3
MEDIA  7 1 1
MEDIA  8 1 2 -1
BOUNDARY 2
UNIT 21  COM=!CORE THERMAL SHIELDING ASS. ELEMENT N101!
CYLINDER  1 3.5 128.3 -3.3  ORIGIN X=-3.03 Y=-6.8928
CYLINDER  2 3.5 128.3 -3.3  ORIGIN X=4.45 Y=6.07
CYLINDER  3 3.5 128.3 -3.3  ORIGIN X=4.45 Y=-2.57
HEXPRISM  4  11.8  128.3 -3.3
MEDIA  7 1 1
MEDIA  7 1 2
MEDIA  7 1 3
MEDIA  8 1 4 -3 -2 -1
BOUNDARY 4
UNIT 22  COM=!CORE THERMAL SHIELDING ASS. ELEMENT N102!
CYLINDER  1 3.5 128.3 -3.3  ORIGIN X=-3.03 Y=-6.8928
CYLINDER  2 3.5 128.3 -3.3  ORIGIN X=4.45 Y=6.07
CYLINDER  3 3.5 128.3 -3.3  ORIGIN X=4.45 Y=-2.57
CYLINDER  4 3.5 128.3 -3.3  ORIGIN X=-3.03 Y=1.7472
HEXPRISM  5  11.8  128.3 -3.3
MEDIA  7 1 1
MEDIA  7 1 2
MEDIA  7 1 3
MEDIA  7 1 4
MEDIA  8 1 5 -4 -3 -2 -1
BOUNDARY 5
UNIT 23  COM=!CORE THERMAL SHIELDING ASS. ELEMENT N104!
CYLINDER  1 3.5 128.3 -3.3  ORIGIN X=-3.03 Y=-6.8928
CYLINDER  2 3.5 128.3 -3.3  ORIGIN X=4.45 Y=-2.57
HEXPRISM  3  11.8  128.3 -3.3
MEDIA  7 1 1
MEDIA  7 1 2
```

```
MEDIA  8 1 3 -2 -1
BOUNDARY 3
UNIT 24  COM=!CORE THERMAL SHIELDING ASS. ELEMENT N100r!
HEXPRISM  2  11.8  128.3 -3.3
HOLE 20 2 ORIGIN Z=125 ROTATE A1=-120 A2=180
BOUNDARY 2
UNIT 25 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N101r!
HEXPRISM  4  11.8  128.3 -3.3
HOLE 21 4 ORIGIN Z=125  ROTATE A1=-120 A2=180
BOUNDARY 4
UNIT 26  COM=!CORE THERMAL SHIELDING ASS. ELEMENT N102r!
HEXPRISM  5  11.8  128.3 -3.3
HOLE 22 5 ORIGIN Z=125  ROTATE A1=-120 A2=180
BOUNDARY 5
UNIT 27  COM=!CORE THERMAL SHIELDING ASS. ELEMENT N104r!
HEXPRISM  3  11.8  128.3 -3.3
HOLE 23 3 ORIGIN Z=125  ROTATE A1=-120 A2=180
BOUNDARY 3
UNIT 31 COM=!FUEL ASS. 2.0% IN GENERAL!
HEXPRISM  1  11.8  128.3 -3.3   ROTATE A1=30
ARRAY 5 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 33 COM=!FUEL ASS. 2.0% IN GENERAL!
HEXPRISM  1  11.8  128.3 -3.3   ROTATE A1=30
ARRAY 6 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 35 COM=!FUEL ASS. 2.0% IN GENERAL!
HEXPRISM  1  11.8  128.3 -3.3   ROTATE A1=30
ARRAY 7 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 37 COM=!FUEL ASS. 2.0% IN GENERAL!
HEXPRISM  1  11.8  128.3 -3.3   ROTATE A1=30
ARRAY 8 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 39 COM=!FUEL ASS. 2.0% IN GENERAL!
HEXPRISM  1  11.8  128.3 -3.3   ROTATE A1=30
ARRAY 9 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 41 COM=!FUEL ASS. 2.0% IN GENERAL!
HEXPRISM  1  11.8  128.3 -3.3   ROTATE A1=30
ARRAY 10 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 43 COM=!FUEL ASS. 2.0% N19 WITH CR!
HEXPRISM  1  11.8 128.3 -3.3   ROTATE A1=30
```

```
ARRAY 11 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 45 COM=!FUEL ASS. 2.0% N23 WITH CR!
HEXPRISM  1  11.8 128.3 -3.3   ROTATE A1=30
ARRAY 12 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 28  COM=!ARRAY LR-0 IN GENERAL!
HEXPRISM  1  11.8  128.3 -3.3  ORIGIN X=-165.2 Y=40.8764
HEXPRISM  2  11.8  128.3 -3.3  ORIGIN X=-118.  Y=40.8764
HEXPRISM  3  11.8  128.3 -3.3  ORIGIN X=-94.4  Y=40.8764
HEXPRISM  4  11.8  128.3 -3.3  ORIGIN X=-70.8  Y=40.8764
HEXPRISM  5  11.8  128.3 -3.3  ORIGIN X=-47.2  Y=40.8764
HEXPRISM  6  11.8  128.3 -3.3  ORIGIN X=-153.4 Y=61.3146
HEXPRISM  7  11.8  128.3 -3.3  ORIGIN X=-129.8 Y=61.3146
HEXPRISM  8  11.8  128.3 -3.3  ORIGIN X=-106.2 Y=61.3146
HEXPRISM  9  11.8  128.3 -3.3  ORIGIN X=-82.6  Y=61.3146
HEXPRISM  10 11.8  128.3 -3.3  ORIGIN X=-59.   Y=61.3146
HEXPRISM  11 11.8  128.3 -3.3  ORIGIN X=-35.4  Y=61.3146
HEXPRISM  12 11.8  128.3 -3.3  ORIGIN X=-11.8  Y=61.3146
HEXPRISM  13 11.8  128.3 -3.3  ORIGIN X=-165.2 Y=81.7528
HEXPRISM  14 11.8  128.3 -3.3  ORIGIN X=-141.6 Y=81.7528
HEXPRISM  15 11.8  128.3 -3.3  ORIGIN X=-118   Y=81.7528
HEXPRISM  16 11.8  128.3 -3.3  ORIGIN X=-94.4  Y=81.7528
HEXPRISM  17 11.8  128.3 -3.3  ORIGIN X=-70.8  Y=81.7528
HEXPRISM  18 11.8  128.3 -3.3  ORIGIN X=-47.2  Y=81.7528
HEXPRISM  19 11.8  128.3 -3.3  ORIGIN X=-23.6  Y=81.7528
HEXPRISM  20 11.8  128.3 -3.3  ORIGIN        Y=81.7528
HEXPRISM  21 11.8  128.3 -3.3  ORIGIN X=-153.4 Y=102.191
HEXPRISM  22 11.8  128.3 -3.3  ORIGIN X=-129.8 Y=102.191
HEXPRISM  23 11.8  128.3 -3.3  ORIGIN X=-106.2 Y=102.191
HEXPRISM  24 11.8  128.3 -3.3  ORIGIN X=-82.6  Y=102.191
HEXPRISM  25 11.8  128.3 -3.3  ORIGIN X=-59.   Y=102.191
HEXPRISM  26 11.8  128.3 -3.3  ORIGIN X=-35.4  Y=102.191
HEXPRISM  27 11.8  128.3 -3.3  ORIGIN X=-11.8  Y=102.191
HEXPRISM  28 11.8  128.3 -3.3  ORIGIN X=11.8   Y=102.191
HEXPRISM  29 11.8  128.3 -3.3  ORIGIN X=-118.  Y=122.6292
HEXPRISM  30 11.8  128.3 -3.3  ORIGIN X=-94.4  Y=122.6292
HEXPRISM  31 11.8  128.3 -3.3  ORIGIN X=-70.8  Y=122.6292
HEXPRISM  32 11.8  128.3 -3.3  ORIGIN X=-47.2  Y=122.6292
HEXPRISM  33 11.8  128.3 -3.3  ORIGIN X=-23.6  Y=122.6292
HEXPRISM  34 11.8  128.3 -3.3  ORIGIN        Y=122.6292
HEXPRISM  35 11.8  128.3 -3.3  ORIGIN X=23.6   Y=122.6292
HEXPRISM  36 11.8  128.3 -3.3  ORIGIN X=-106.2 Y=143.0674
HEXPRISM  37 11.8  128.3 -3.3  ORIGIN X=-82.6  Y=143.0674
```

```
HEXPRISM 38 11.8 128.3 -3.3 ORIGIN X=-59.  Y=143.0674
HEXPRISM 39 11.8 128.3 -3.3 ORIGIN X=-35.4 Y=143.0674
HEXPRISM 40 11.8 128.3 -3.3 ORIGIN X=-11.8 Y=143.0674
HEXPRISM 41 11.8 128.3 -3.3 ORIGIN X=11.8  Y=143.0674
HEXPRISM 42 11.8 128.3 -3.3 ORIGIN X=-94.4 Y=163.5056
HEXPRISM 43 11.8 128.3 -3.3 ORIGIN X=-70.8 Y=163.5056
HEXPRISM 44 11.8 128.3 -3.3 ORIGIN X=-47.2 Y=163.5056
HEXPRISM 45 11.8 128.3 -3.3 ORIGIN X=-23.6 Y=163.5056
HEXPRISM 46 11.8 128.3 -3.3 ORIGIN         Y=163.5056
HEXPRISM 47 11.8 128.3 -3.3 ORIGIN X=23.6  Y=163.5056
HEXPRISM 48 11.8 128.3 -3.3 ORIGIN X=47.2  Y=163.5056
HEXPRISM 49 11.8 128.3 -3.3 ORIGIN X=-11.8 Y=183.9438
HEXPRISM 50 11.8 128.3 -3.3 ORIGIN X=11.8  Y=183.9438
CYLINDER 51 173.55 128.3 -3.3
MEDIA 7 1 51 -1 -2 -3 -4 -5 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -24 -25
-26 -27 -28 -29 -30 -31 -32 -33 -34 -35 -36 -37 -38 -39 -40 -41 -42 -43 -44 -45 -46 -47 -48 -49 -50
HOLE 20 1              ORIGIN X=-165.2 Y=40.8764
HOLE 18 2  ROTATE A1=-30  ORIGIN X=-118.  Y=40.8764
HOLE 17 3  ROTATE A1=-30  ORIGIN X=-94.4  Y=40.8764
HOLE 17 4  ROTATE A1=-30  ORIGIN X=-70.8  Y=40.8764
HOLE 17 5  ROTATE A1=-30  ORIGIN X=-47.2  Y=40.8764
HOLE 21 6              ORIGIN X=-153.4 Y=61.3146
HOLE 16 7  ROTATE A1=-30  ORIGIN X=-129.8 Y=61.3146
HOLE 16 8  ROTATE A1=-30  ORIGIN X=-106.2 Y=61.3146
HOLE 45 9  ROTATE A1=-30  ORIGIN X=-82.6  Y=61.3146
HOLE 16 10 ROTATE A1=-30  ORIGIN X=-59.   Y=61.3146
HOLE 31 11 ROTATE A1=-30  ORIGIN X=-35.4  Y=61.3146
HOLE 17 12 ROTATE A1=-30  ORIGIN X=-11.8  Y=61.3146
HOLE 14 13             ORIGIN X=-165.2 Y=81.7528
HOLE 22 14             ORIGIN X=-141.6 Y=81.7528
HOLE 16 15 ROTATE A1=-30  ORIGIN X=-118.  Y=81.7528
HOLE 16 16 ROTATE A1=-30  ORIGIN X=-94.4  Y=81.7528
HOLE 16 17 ROTATE A1=-30  ORIGIN X=-70.8  Y=81.7528
HOLE 19 18 ROTATE A1=-30  ORIGIN X=-47.2  Y=81.7528
HOLE 16 19 ROTATE A1=-30  ORIGIN X=-23.6  Y=81.7528
HOLE 17 20 ROTATE A1=-30  ORIGIN           Y=81.7528
HOLE 14 21             ORIGIN X=-153.4 Y=102.191
HOLE 21 22             ORIGIN X=-129.8 Y=102.191
HOLE 41 23 ROTATE A1=-30  ORIGIN X=-106.2 Y=102.191
HOLE 37 24 ROTATE A1=-30  ORIGIN X=-82.6  Y=102.191
HOLE 33 25 ROTATE A1=-30  ORIGIN X=-59.   Y=102.191
HOLE 16 26 ROTATE A1=-30  ORIGIN X=-35.4  Y=102.191
HOLE 43 27 ROTATE A1=-30  ORIGIN X=-11.8  Y=102.191
HOLE 17 28 ROTATE A1=-30  ORIGIN X=11.8   Y=102.191
```

```
HOLE 23 29            ORIGIN X=-118.  Y=122.6292
HOLE 39 30  ROTATE A1=-30   ORIGIN X=-94.4  Y=122.6292
HOLE 35 31  ROTATE A1=-30   ORIGIN X=-70.8  Y=122.6292
HOLE 37 32  ROTATE A1=-30   ORIGIN X=-47.2  Y=122.6292
HOLE 16 33  ROTATE A1=-30   ORIGIN X=-23.6  Y=122.6292
HOLE 16 34  ROTATE A1=-30   ORIGIN        Y=122.6292
HOLE 18 35  ROTATE A1=-30   ORIGIN X=23.6   Y=122.6292
HOLE 14 36            ORIGIN X=-106.2 Y=143.0674
HOLE 15 37            ORIGIN X=-82.6  Y=143.0674
HOLE 39 38  ROTATE A1=-30   ORIGIN X=-59.   Y=143.0674
HOLE 41 39  ROTATE A1=-30   ORIGIN X=-35.4  Y=143.0674
HOLE 16 40  ROTATE A1=-30   ORIGIN X=-11.8  Y=143.0674
HOLE 16 41  ROTATE A1=-30   ORIGIN X=11.8   Y=143.0674
HOLE 14 42            ORIGIN X=-94.4  Y=163.5056
HOLE 14 43            ORIGIN X=-70.8  Y=163.5056
HOLE 27 44            ORIGIN X=-47.2  Y=163.5056
HOLE 25 45            ORIGIN X=-23.6  Y=163.5056
HOLE 26 46            ORIGIN        Y=163.5056
HOLE 25 47            ORIGIN X=23.6   Y=163.5056
HOLE 24 48            ORIGIN X=47.2   Y=163.5056
HOLE 14 49            ORIGIN X=-11.8  Y=183.9438
HOLE 14 50            ORIGIN X=11.8   Y=183.9438
BOUNDARY 51
GLOBAL UNIT 29  COM=!LR-0 IN GENERAL!
CYLINDER 4 173.55 128.3 -3.3   ROTATE A1=-30.
CYLINDER 5 174.8 128.3 -3.3
CYLINDER 2 180.8 128.3 -3.3
CYLINDER 6 180.8 128.8 -5
CYLINDER 7 180.8 131.3 -15.8
CYLINDER 8 180.8 133.1 -22.8
CUBOID 3 180. -180. 240. 5. 133.1 -22.8
HOLE 28 4  ROTATE A1=-30.
MEDIA 7 1 5 -4
MEDIA 10 1 2 -5
MEDIA 8 1 6 -2
MEDIA 7 1 7 -6
MEDIA 8 1 8 -7
MEDIA 7 1 3 -8
BOUNDARY 3
END GEOM

READ ARRAY
ARA=1 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8   1 1 1 1 1 1 1 1 1 1 1 13*8
```

```
      1 1 1 1 1 1 1 1 1 1 1 1 12*8
     1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
   1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 6 1 1 1 1 4*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
1 1 1 1 1 1 1 1 1 1 1 1 1 13*8
1 1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL
ARA=2 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 F2 A74 13*8 A99 12*8 A124 11*8 A149 10*8 A163 6 A166 6 A169 6 A174 9*8 A199 8*8
A224 7*8 A235 6 A238 6 A241 6 A244 6 A249 6*8 A274 5*8 A299 4*8 A307 6 A310 6 A313 5 A316 6
A324 4*8 A319 6 A348 5*8 A372 6*8 A382 6 A385 6 A388 6 A391 6 A396 7*8 A420 8*8 A444 9*8
A457 6 A460 6 A463 6 A468 10*8 A492 11*8 A516 12*8 A540 13*8 A564 F8 T  END FILL
ARA=3 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 F3 A74 13*8 A99 12*8 A124 11*8 A149 10*8 A163 3 A166 6 A169 3 A188 6 A193 6 A174
9*8 A199 8*8 A224 7*8 A235 6 A240 6 A244 6 A249 6*8 A262 6 A274 5*8 A291 6 A299 4*8 A307 3
A308 6 A310 3 A313 5 A316 3 A324 4*8 A318 6 A348 5*8 A335 6 A364 6 A372 6*8 A382 6 A386 6
A388 3 A391 6 A396 7*8 A420 8*8 A444 9*8 A433 6 A438 6 A457 3 A460 6 A463 3 A468 10*8 A492
11*8 A516 12*8 A540 13*8 A564 F8 T  END FILL
ARA=4 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8  1 1 1 1 1 1 1 1 1 1 1 13*8
      1 1 1 1 1 1 1 1 1 1 1 1 12*8
     1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
   1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
1 1 1 1 6 1 1 8 8 8 8 1 1 6 1 1 1 1 6*8
1 1 1 1 1 1 1 8 8 8 8 8 1 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 8 8 8 8 8 8 1 1 1 1 1 1 1 4*8
1 1 1 1 6 1 1 8 8 8 8 8 8 8 1 1 6 1 1 1 1 4*8
1 1 1 1 1 1 1 8 8 8 8 8 8 1 1 1 1 1 1 1 5*8
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  1 1 1 1 1 1 1 8 8 8 8 8 1 1 1 1 1 1 1 6*8
   1 1 1 1 6 1 1 8 8 8 8 1 1 6 1 1 1 1 7*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
     1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
      1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
        1 1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
         1 1 1 1 1 1 1 1 1 1 1 1 1 13*8
          1 1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL
ARA=5 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8   1 1 1 1 1 1 1 1 1 1 1 13*8
         1 1 1 1 1 1 1 1 1 1 1 1 12*8
        1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
      1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
     1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
   1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 6 1 1 1 1 4*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
   1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
     1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
      1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
        1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
         1 1 1 1 1 1 1 1 1 1 1 1 13*8
          1 1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL
ARA=6 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8   1 1 1 1 1 1 1 1 1 1 1 13*8
         1 1 1 1 1 1 1 1 1 1 1 1 12*8
        1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
      1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
     1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
   1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 6 1 1 1 1 4*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
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 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
   1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
     1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
        1 1 1 1 1 1 1 1 1 1 1 1 1 13*8
         1 1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL
ARA=7 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8  1 1 1 1 1 1 1 1 1 1 1 13*8
        1 1 1 1 1 1 1 1 1 1 1 1 12*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
     1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
   1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 6 1 1 1 1 4*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
   1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
     1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
        1 1 1 1 1 1 1 1 1 1 1 1 1 13*8
         1 1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL
ARA=8 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8  1 1 1 1 1 1 1 1 1 1 1 13*8
        1 1 1 1 1 1 1 1 1 1 1 1 12*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
     1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
   1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 6 1 1 1 1 4*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
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  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 13*8
  1 1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL
ARA=9 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8  1 1 1 1 1 1 1 1 1 1 1 13*8
  1 1 1 1 1 1 1 1 1 1 1 1 12*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
  1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 6 1 1 1 1 4*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 13*8
  1 1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL
ARA=10 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8  1 1 1 1 1 1 1 1 1 1 1 13*8
  1 1 1 1 1 1 1 1 1 1 1 1 12*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
  1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 6 1 1 1 1 4*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
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 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
   1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
     1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
        1 1 1 1 1 1 1 1 1 1 1 1 13*8
         1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL
ARA=11 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8   1 1 1 1 1 1 1 1 1 1 1 13*8
        1 1 1 1 1 1 1 1 1 1 1 12*8
       1 1 1 1 1 1 1 1 1 1 1 1 11*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
     1 1 1 1 7 1 1 6 1 1 6 1 1 1 1 9*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
   1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 7 1 1 1 1 4*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
   1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
     1 1 1 1 7 1 1 6 1 1 6 1 1 1 1 10*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
        1 1 1 1 1 1 1 1 1 1 1 1 13*8
         1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL
ARA=12 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8   1 1 1 1 1 1 1 1 1 1 1 13*8
        1 1 1 1 1 1 1 1 1 1 1 12*8
       1 1 1 1 1 1 1 1 1 1 1 1 11*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
     1 1 1 1 6 1 1 6 1 1 7 1 1 1 1 9*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
   1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
1 1 1 1 7 1 1 6 1 1 5 1 1 6 1 1 6 1 1 1 1 4*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
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  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 1 7*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
  1 1 1 1 6 1 1 6 1 1 7 1 1 1 1 1 10*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 13*8
  1 1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL   END ARRAY
READ BNDS ALL=WATER END BNDS
READ PLOT
TTL=!MIXT DISTRIBUTION X-Z PLOT! SCR=YES PIC=MIXTURE NAX=1000 LPI=10
XUL=-60 YUL=94.4 ZUL=150 XLR=60 YLR=94.4 ZLR=-50 UAX=1 WDN=-1  END
'TTL=!TOTAL VIEW OF CRITICAL STAND UNIT, X-Y PLOT! SCR=YES PIC=MIX
'XUL=-100 YUL=180 ZUL=110. XLR=100 YLR=40 ZLR=110 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=2000 LPI=10 END
'TTL=!TOTAL VIEW OF CRITICAL STAND MIXT, X-Y PLOT! SCR=YES PIC=MIXT
'XUL=-180 YUL=180 ZUL=110. XLR=180 YLR=-180 ZLR=110 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=400 LPI=10 END
END PLOT
END DATA
END
```

B.2 Two Dimensional Relative Power Distribution Calculation

```
=CSAS26    PARM=SIZE=2800000
LR-0 made by HOLEs operator
27GROUPNDF4  LATTICECELL
UO2  1 DEN=10.330 1. 293 92234 .01 92235 2. 92236 .1 92238 97.89 END
UO2  2 DEN=10.330 1. 293 92234 .01 92235 3. 92236 .1 92238 96.89 END
UO2  3 DEN=10.330 1. 293 92234 .01 92235 3.3 92236 .1 92238 96.59 END
H2O  6 DEN=0.998 1.0 293 END
H2O  7 DEN=0.998 1.0 293 END
ARBM-ZR+NB+HF 6.44 3 0 0 1 40000 98.97 41093 1 72000 0.03 4 1.0 293 END
ARBM-H3B03 0.0045 3  1 1 1  5000 1 1001 3 8016 3 7 0.998 293 5010 18.3022 5011 81.6978 END
ARBM-H3B03 0.0045 3  1 1 1  5000 1 1001 3 8016 3 6 0.998 293 5010 18.3022 5011 81.6978 END
ARBM10TP 7.9 15  0 0 1  6012 .06 25055 1.46 14000 .48 15031 .008 16000 .005 29000 .04 28000 10.2
24000 17.95 22000 .5 27059 .018 7014 .013 42000 .03 23051 .06 74186 .06 26000 69.116 8  1.0 293
END
ARBM10T 7.9 9  0 0 1  6012 .07 22000 .6 24000 18 28000 10 25055 1.8 15031 .03 14000 .7 16000 .015
26000 68.785 9  1.0 293 END
ARBM-ST3 7.65 9  0 0 1  6012 .11 25055 1.9 14000 .9 24000 18.5 28000 9.5 22000 6. 15031 .04 16000
.03 26000 63.02 10  1.0 293 END
END COMP
```

```
TRIANGPITCH 1.275 .753 1  7  .915 9  .771 0  END
MORE DATA  RES=2 CYLINDER .3765 DAN(2)=2.46885E-01 RES=3 CYLINDER .3765
DAN(3)=2.46885E-01 DAB=10000 END
READ PARAM TME=90000 TBA=15000 NPG=15000 GEN=2000 RUN=YES PLT=YES NSK=200
FDN=YES MKU=YES WTA=0.26 LNG=2300000 RES=50 WRS=35 NB8=5000 END PARAM
READ GEOM
UNIT 1  COM=! FUEL PIN 2.0% FOR FA 1,8 !
CYLINDER 1  .07   10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 2  COM=! FUEL PIN 3.0% FOR FA 18,24 !
CYLINDER 1  .07   10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  2 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 3  COM=! FUEL PIN 3.3% FOR FA 9,17 !
CYLINDER 1  .07   10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  3 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 5  COM=! CENTRAL FA TUBE !
CYLINDER  1 0.45  10. 0.
```

```
CYLINDER 2 0.515 10. 0.
HEXPRISM 3 .6375 10. 0.
MEDIA 7 1 1
MEDIA 4 1 2 -1
MEDIA 7 1 3 -2
BOUNDARY 3
UNIT 6 COM=! CR TUBE !
CYLINDER 1 0.55 10. 0.
CYLINDER 2 0.63 10. 0.
HEXPRISM 3 .6375 10. 0.
MEDIA 7 1 1
MEDIA 10 1 2 -1
MEDIA 6 1 3 -2
BOUNDARY 3
UNIT 7 COM=! CR TUBE with CR !
CYLINDER 1 0.35 10 0.
CYLINDER 2 0.41 10 0.
CYLINDER 3 0.55 10 0.
CYLINDER 4 0.63 10 0.
HEXPRISM 5 .6375 10 0.
MEDIA 7 1 1
MEDIA 7 1 2 -1
MEDIA 7 1 3 -2 -1
MEDIA 10 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5

UNIT 8 COM=! WATER ELEMENT !
HEXPRISM 1 .6375 10. 0.
MEDIA 7 1 1
BOUNDARY 1
UNIT 16 COM=!FUEL ASS. 2.0% IN GENERAL!
HEXPRISM 1 11.8 10. 0. ROTATE A1=30
ARRAY 1 1 PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 17 COM=!FUEL ASS. 3.0% IN GENERAL!
HEXPRISM 1 11.8 10. 0. ROTATE A1=30
ARRAY 2 1 PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 18 COM=!FUEL ASS. 3.3% IN GENERAL!
HEXPRISM 1 11.8 10. 0. ROTATE A1=30
ARRAY 3 1 PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 19 COM=! FUEL ASS. 2.0% N 27 !
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```
CYLINDER 1 3.4  10. 0.
CYLINDER 2 3.65 10. 0.
HEXPRISM 3 11.8 10. 0. ROTATE A1=30
MEDIA 0 1 1
MEDIA 9 1 2 -1
ARRAY 4 3 -2 PLACE 13 13 1 0 0 0
BOUNDARY 3
UNIT 13 COM=!WATER REFLECTOR ASS. ELEMENT!
HEXPRISM 1 11.8 10. 0.
MEDIA 7 1 1
BOUNDARY 1
UNIT 14 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N105!
HEXPRISM 1 11.8 10. 0.
MEDIA 8 1 1
BOUNDARY 1
UNIT 15 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N106!
CYLINDER 1 6.5 10. 0. ORIGIN X=1.8 Y=-3.117
HEXPRISM 2 11.8 10. 0.
MEDIA 7 1 1
MEDIA 8 1 2 -1
BOUNDARY 2
UNIT 20 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N100!
CYLINDER 1 3.5  10. 0. ORIGIN X=4.45 Y=6.07
HEXPRISM 2 11.8 10. 0.
MEDIA 7 1 1
MEDIA 8 1 2 -1
BOUNDARY 2
UNIT 21 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N101!
CYLINDER 1 3.5 10. 0. ORIGIN X=-3.03 Y=-6.8928
CYLINDER 2 3.5 10. 0. ORIGIN X=4.45 Y=6.07
CYLINDER 3 3.5 10. 0. ORIGIN X=4.45 Y=-2.57
HEXPRISM 4 11.8 10. 0.
MEDIA 7 1 1
MEDIA 7 1 2
MEDIA 7 1 3
MEDIA 8 1 4 -3 -2 -1
BOUNDARY 4
UNIT 22 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N102!
CYLINDER 1 3.5 10. 0. ORIGIN X=-3.03 Y=-6.8928
CYLINDER 2 3.5 10. 0. ORIGIN X=4.45 Y=6.07
CYLINDER 3 3.5 10. 0. ORIGIN X=4.45 Y=-2.57
CYLINDER 4 3.5 10. 0. ORIGIN X=-3.03 Y=1.7472
HEXPRISM 5 11.8 10. 0.
MEDIA 7 1 1
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MEDIA 7 1 2
MEDIA 7 1 3
MEDIA 7 1 4
MEDIA 8 1 5 -4 -3 -2 -1
BOUNDARY 5
UNIT 23 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N104!
CYLINDER 1 3.5 10. 0. ORIGIN X=-3.03 Y=-6.8928
CYLINDER 2 3.5 10. 0. ORIGIN X=4.45 Y=-2.57
HEXPRISM 3 11.8 10. 0.
MEDIA 7 1 1
MEDIA 7 1 2
MEDIA 8 1 3 -2 -1
BOUNDARY 3
UNIT 24 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N100r!
HEXPRISM 2 11.8 10. 0.
HOLE 20 2 ORIGIN Z=10 ROTATE A1=-120 A2=180
BOUNDARY 2
UNIT 25 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N101r!
HEXPRISM 4 11.8 10. 0.
HOLE 21 4 ORIGIN Z=10 ROTATE A1=-120 A2=180
BOUNDARY 4
UNIT 26 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N102r!
HEXPRISM 5 11.8 10. 0.
HOLE 22 5 ORIGIN Z=10 ROTATE A1=-120 A2=180
BOUNDARY 5
UNIT 27 COM=!CORE THERMAL SHIELDING ASS. ELEMENT N104r!
HEXPRISM 3 11.8 10. 0.
HOLE 23 3 ORIGIN Z=10 ROTATE A1=-120 A2=180
BOUNDARY 3
UNIT 31 COM=!ь31!
HEXPRISM 1 11.8 10. 0. ROTATE A1=30
ARRAY 5 1 PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 33 COM=!ь21!
HEXPRISM 1 11.8 10. 0. ROTATE A1=30
ARRAY 6 1 PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 35 COM=!ь13!
HEXPRISM 1 11.8 10. 0. ROTATE A1=30
ARRAY 7 1 PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 37 COM=!ь14!
HEXPRISM 1 11.8 10. 0. ROTATE A1=30
ARRAY 8 1 PLACE 13 13 1 0 0 0
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BOUNDARY 1
UNIT 38 COM=!ь12!
HEXPRISM  1  11.8  10.  0.  ROTATE A1=30
HOLE 37 1  ORIGIN Z=10 ROTATE A1=-60 A2=180
BOUNDARY 1
UNIT 39 COM=!ь5!
HEXPRISM  1  11.8  10.  0.  ROTATE A1=30
ARRAY 9 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 40 COM=!ь4!
HEXPRISM  1  11.8  10.  0.  ROTATE A1=30
HOLE 39 1 ORIGIN Z=10 ROTATE A1=-60 A2=180
BOUNDARY 1
UNIT 41 COM=!ь6!
HEXPRISM  1  11.8  10.  0.  ROTATE A1=30
ARRAY 10 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 42 COM=!ь3!
HEXPRISM  1  11.8  10.  0.  ROTATE A1=30
HOLE 41 1 ORIGIN Z=10 ROTATE A1=-60 A2=180
BOUNDARY 1

UNIT 43 COM=!ь19, 23!
HEXPRISM  1  11.8  10.  0.  ROTATE A1=30
ARRAY 11 1  PLACE 13 13 1 0 0 0
BOUNDARY 1
UNIT 45 COM=!ь19!
HEXPRISM  1  11.8  10  0.  ROTATE A1=30
HOLE 43 1  ROTATE A1=-60
BOUNDARY 1

UNIT 28  COM=!ARRAY LR-0 IN GENERAL!
HEXPRISM  1  11.8  10.  0. ORIGIN X=-165.2 Y=40.8764
HEXPRISM  2  11.8  10.  0. ORIGIN X=-118.  Y=40.8764
HEXPRISM  3  11.8  10.  0. ORIGIN X=-94.4  Y=40.8764
HEXPRISM  4  11.8  10.  0. ORIGIN X=-70.8  Y=40.8764
HEXPRISM  5  11.8  10.  0. ORIGIN X=-47.2  Y=40.8764
HEXPRISM  6  11.8  10.  0. ORIGIN X=-153.4 Y=61.3146
HEXPRISM  7  11.8  10.  0. ORIGIN X=-129.8 Y=61.3146
HEXPRISM  8  11.8  10.  0. ORIGIN X=-106.2 Y=61.3146
HEXPRISM  9  11.8  10.  0. ORIGIN X=-82.6  Y=61.3146
HEXPRISM  10 11.8  10.  0. ORIGIN X=-59.   Y=61.3146
HEXPRISM  11 11.8  10.  0. ORIGIN X=-35.4  Y=61.3146
HEXPRISM  12 11.8  10.  0. ORIGIN X=-11.8  Y=61.3146
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HEXPRISM 13 11.8 10. 0. ORIGIN X=-165.2 Y=81.7528
HEXPRISM 14 11.8 10. 0. ORIGIN X=-141.6 Y=81.7528
HEXPRISM 15 11.8 10. 0. ORIGIN X=-118   Y=81.7528
HEXPRISM 16 11.8 10. 0. ORIGIN X=-94.4  Y=81.7528
HEXPRISM 17 11.8 10. 0. ORIGIN X=-70.8  Y=81.7528
HEXPRISM 18 11.8 10. 0. ORIGIN X=-47.2  Y=81.7528
HEXPRISM 19 11.8 10. 0. ORIGIN X=-23.6  Y=81.7528
HEXPRISM 20 11.8 10. 0. ORIGIN          Y=81.7528
HEXPRISM 21 11.8 10. 0. ORIGIN X=-153.4 Y=102.191
HEXPRISM 22 11.8 10. 0. ORIGIN X=-129.8 Y=102.191
HEXPRISM 23 11.8 10. 0. ORIGIN X=-106.2 Y=102.191
HEXPRISM 24 11.8 10. 0. ORIGIN X=-82.6  Y=102.191
HEXPRISM 25 11.8 10. 0. ORIGIN X=-59.   Y=102.191
HEXPRISM 26 11.8 10. 0. ORIGIN X=-35.4  Y=102.191
HEXPRISM 27 11.8 10. 0. ORIGIN X=-11.8  Y=102.191
HEXPRISM 28 11.8 10. 0. ORIGIN X=11.8   Y=102.191
HEXPRISM 29 11.8 10. 0. ORIGIN X=-118.  Y=122.6292
HEXPRISM 30 11.8 10. 0. ORIGIN X=-94.4  Y=122.6292
HEXPRISM 31 11.8 10. 0. ORIGIN X=-70.8  Y=122.6292
HEXPRISM 32 11.8 10. 0. ORIGIN X=-47.2  Y=122.6292
HEXPRISM 33 11.8 10. 0. ORIGIN X=-23.6  Y=122.6292
HEXPRISM 34 11.8 10. 0. ORIGIN          Y=122.6292
HEXPRISM 35 11.8 10. 0. ORIGIN X=23.6   Y=122.6292
HEXPRISM 36 11.8 10. 0. ORIGIN X=-106.2 Y=143.0674
HEXPRISM 37 11.8 10. 0. ORIGIN X=-82.6  Y=143.0674
HEXPRISM 38 11.8 10. 0. ORIGIN X=-59.   Y=143.0674
HEXPRISM 39 11.8 10. 0. ORIGIN X=-35.4  Y=143.0674
HEXPRISM 40 11.8 10. 0. ORIGIN X=-11.8  Y=143.0674
HEXPRISM 41 11.8 10. 0. ORIGIN X=11.8   Y=143.0674
HEXPRISM 42 11.8 10. 0. ORIGIN X=-94.4  Y=163.5056
HEXPRISM 43 11.8 10. 0. ORIGIN X=-70.8  Y=163.5056
HEXPRISM 44 11.8 10. 0. ORIGIN X=-47.2  Y=163.5056
HEXPRISM 45 11.8 10. 0. ORIGIN X=-23.6  Y=163.5056
HEXPRISM 46 11.8 10. 0. ORIGIN          Y=163.5056
HEXPRISM 47 11.8 10. 0. ORIGIN X=23.6   Y=163.5056
HEXPRISM 48 11.8 10. 0. ORIGIN X=47.2   Y=163.5056
HEXPRISM 49 11.8 10. 0. ORIGIN X=-11.8  Y=183.9438
HEXPRISM 50 11.8 10. 0. ORIGIN X=11.8   Y=183.9438
CYLINDER 51 173.55 10. 0.
MEDIA 7 1 51 -1 -2 -3 -4 -5 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -24 -25
-26 -27 -28 -29 -30 -31 -32 -33 -34 -35 -36 -37 -38 -39 -40 -41 -42 -43 -44 -45 -46 -47 -48 -49 -50
HOLE 20 1              ORIGIN X=-165.2 Y=40.8764
HOLE 18 2  ROTATE A1=-30  ORIGIN X=-118.  Y=40.8764
HOLE 17 3  ROTATE A1=-30  ORIGIN X=-94.4  Y=40.8764
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HOLE 17 4  ROTATE A1=-30  ORIGIN X=-70.8  Y=40.8764
HOLE 17 5  ROTATE A1=-30  ORIGIN X=-47.2  Y=40.8764
HOLE 21 6            ORIGIN X=-153.4 Y=61.3146
HOLE 16 7  ROTATE A1=-30  ORIGIN X=-129.8 Y=61.3146
HOLE 16 8  ROTATE A1=-30  ORIGIN X=-106.2 Y=61.3146
HOLE 45 9  ROTATE A1=-30  ORIGIN X=-82.6  Y=61.3146
HOLE 16 10 ROTATE A1=-30  ORIGIN X=-59.   Y=61.3146
HOLE 31 11 ROTATE A1=-30  ORIGIN X=-35.4  Y=61.3146
HOLE 17 12 ROTATE A1=-30  ORIGIN X=-11.8  Y=61.3146
HOLE 14 13           ORIGIN X=-165.2 Y=81.7528
HOLE 22 14           ORIGIN X=-141.6 Y=81.7528
HOLE 16 15 ROTATE A1=-30  ORIGIN X=-118.  Y=81.7528
HOLE 16 16 ROTATE A1=-30  ORIGIN X=-94.4  Y=81.7528
HOLE 16 17 ROTATE A1=-30  ORIGIN X=-70.8  Y=81.7528
HOLE 19 18 ROTATE A1=-30  ORIGIN X=-47.2  Y=81.7528
HOLE 16 19 ROTATE A1=-30  ORIGIN X=-23.6  Y=81.7528
HOLE 17 20 ROTATE A1=-30  ORIGIN       Y=81.7528
HOLE 14 21           ORIGIN X=-153.4 Y=102.191
HOLE 21 22           ORIGIN X=-129.8 Y=102.191
HOLE 42 23 ROTATE A1=-30  ORIGIN X=-106.2 Y=102.191
HOLE 38 24 ROTATE A1=-30  ORIGIN X=-82.6  Y=102.191
HOLE 33 25 ROTATE A1=-30  ORIGIN X=-59.   Y=102.191
HOLE 16 26 ROTATE A1=-30  ORIGIN X=-35.4  Y=102.191
HOLE 43 27 ROTATE A1=-30  ORIGIN X=-11.8  Y=102.191
HOLE 17 28 ROTATE A1=-30  ORIGIN X=11.8   Y=102.191
HOLE 23 29           ORIGIN X=-118.  Y=122.6292
HOLE 40 30 ROTATE A1=-30  ORIGIN X=-94.4  Y=122.6292
HOLE 35 31 ROTATE A1=-30  ORIGIN X=-70.8  Y=122.6292
HOLE 37 32 ROTATE A1=-30  ORIGIN X=-47.2  Y=122.6292
HOLE 16 33 ROTATE A1=-30  ORIGIN X=-23.6  Y=122.6292
HOLE 16 34 ROTATE A1=-30  ORIGIN       Y=122.6292
HOLE 18 35 ROTATE A1=-30  ORIGIN X=23.6   Y=122.6292
HOLE 14 36           ORIGIN X=-106.2 Y=143.0674
HOLE 15 37           ORIGIN X=-82.6  Y=143.0674
HOLE 39 38 ROTATE A1=-30  ORIGIN X=-59.   Y=143.0674
HOLE 41 39 ROTATE A1=-30  ORIGIN X=-35.4  Y=143.0674
HOLE 16 40 ROTATE A1=-30  ORIGIN X=-11.8  Y=143.0674
HOLE 16 41 ROTATE A1=-30  ORIGIN X=11.8   Y=143.0674
HOLE 14 42           ORIGIN X=-94.4  Y=163.5056
HOLE 14 43           ORIGIN X=-70.8  Y=163.5056
HOLE 27 44           ORIGIN X=-47.2  Y=163.5056
HOLE 25 45           ORIGIN X=-23.6  Y=163.5056
HOLE 26 46           ORIGIN       Y=163.5056
HOLE 25 47           ORIGIN X=23.6   Y=163.5056
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HOLE 24 48          ORIGIN X=47.2  Y=163.5056
HOLE 14 49          ORIGIN X=-11.8 Y=183.9438
HOLE 14 50          ORIGIN X=11.8  Y=183.9438
BOUNDARY 51
GLOBAL UNIT 29  COM=!LR-0 IN GENERAL!
CYLINDER 4  173.55  10.  0.  ROTATE A1=-30.
CYLINDER 5  174.8  10.  0.
CYLINDER 2  180.8  10.  0.
CYLINDER 6  180.8  10.  0.
CYLINDER 7  180.8  10.  0.
CYLINDER 8  180.8  10.  0.
CUBOID 3  180. -180. 240. 5.  10.  0.
HOLE 28  4  ROTATE A1=-30.
MEDIA 7  1 5 -4
MEDIA 10  1 2 -5
MEDIA 8  1 6 -2
MEDIA 7  1 7 -6
MEDIA 8  1 8 -7
MEDIA 7  1 3 -8
BOUNDARY 3

UNIT 50
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 51
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 52
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 53
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 54
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 55
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 56
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 57
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 58
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 59
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 60
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 61
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 62
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 63
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 64
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 65
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 66
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
'UNIT 67 COM='Unused unit'
'CYLINDER 1  .07    10. 0.
'CYLINDER 2  .3765  10. 0.
'CYLINDER 3  .3855  10. 0.
'CYLINDER 4  .4575  10. 0.
'HEXPRISM 5  .6375  10. 0.
'MEDIA  0 1 1
'MEDIA  1 1 2 -1
'MEDIA  0 1 3 -2
'MEDIA  4 1 4 -3
'MEDIA  6 1 5 -4
'BOUNDARY 5
UNIT 68
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
'UNIT 69 COM='Unused unit'
'CYLINDER 1  .07    10. 0.
'CYLINDER 2  .3765  10. 0.
'CYLINDER 3  .3855  10. 0.
'CYLINDER 4  .4575  10. 0.
'HEXPRISM 5  .6375  10. 0.
'MEDIA  0 1 1
'MEDIA  1 1 2 -1
'MEDIA  0 1 3 -2
'MEDIA  4 1 4 -3
'MEDIA  6 1 5 -4
'BOUNDARY 5
UNIT 70
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
'UNIT 71 COM='Unused unit'
'CYLINDER 1  .07    10. 0.
'CYLINDER 2  .3765  10. 0.
'CYLINDER 3  .3855  10. 0.
'CYLINDER 4  .4575  10. 0.
'HEXPRISM 5  .6375  10. 0.
'MEDIA  0 1 1
'MEDIA  1 1 2 -1
'MEDIA  0 1 3 -2
'MEDIA  4 1 4 -3
'MEDIA  6 1 5 -4
'BOUNDARY 5
UNIT 72
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
'UNIT 73 COM='Unused unit'
'CYLINDER 1  .07    10. 0.
'CYLINDER 2  .3765  10. 0.
'CYLINDER 3  .3855  10. 0.
'CYLINDER 4  .4575  10. 0.
'HEXPRISM 5  .6375  10. 0.
'MEDIA  0 1 1
'MEDIA  1 1 2 -1
'MEDIA  0 1 3 -2
'MEDIA  4 1 4 -3
'MEDIA  6 1 5 -4
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'BOUNDARY 5
UNIT 74
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
'UNIT 75 COM='Unused unit'
'CYLINDER 1  .07    10. 0.
'CYLINDER 2  .3765  10. 0.
'CYLINDER 3  .3855  10. 0.
'CYLINDER 4  .4575  10. 0.
'HEXPRISM 5  .6375  10. 0.
'MEDIA  0 1 1
'MEDIA  1 1 2 -1
'MEDIA  0 1 3 -2
'MEDIA  4 1 4 -3
'MEDIA  6 1 5 -4
'BOUNDARY 5
UNIT 76
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 77
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
'UNIT 78 COM='Unused unit'
'CYLINDER 1  .07    10. 0.
'CYLINDER 2  .3765  10. 0.
'CYLINDER 3  .3855  10. 0.
'CYLINDER 4  .4575  10. 0.
'HEXPRISM 5  .6375  10. 0.
'MEDIA  0 1 1
'MEDIA  1 1 2 -1
'MEDIA  0 1 3 -2
'MEDIA  4 1 4 -3
'MEDIA  6 1 5 -4
'BOUNDARY 5
UNIT 79
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 80
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 81
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 82
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
'UNIT 83 COM='Unused unit'
'CYLINDER 1  .07    10. 0.
'CYLINDER 2  .3765  10. 0.
'CYLINDER 3  .3855  10. 0.
'CYLINDER 4  .4575  10. 0.
'HEXPRISM 5  .6375  10. 0.
'MEDIA  0 1 1
'MEDIA  1 1 2 -1
'MEDIA  0 1 3 -2
'MEDIA  4 1 4 -3
'MEDIA  6 1 5 -4
'BOUNDARY 5
UNIT 84
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 85
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
'UNIT 86 COM='Unused unit'
'CYLINDER 1  .07    10. 0.
'CYLINDER 2  .3765  10. 0.
'CYLINDER 3  .3855  10. 0.
'CYLINDER 4  .4575  10. 0.
'HEXPRISM 5  .6375  10. 0.
'MEDIA  0 1 1
'MEDIA  1 1 2 -1
'MEDIA  0 1 3 -2
'MEDIA  4 1 4 -3
'MEDIA  6 1 5 -4
'BOUNDARY 5
UNIT 87
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 88
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 89
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 90
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 91
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 92
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 93
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 94
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 95
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 96
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 97
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 98
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 99
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 110
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 111
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 112
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 113
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 114
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 115
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 116
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 117
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 118
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 119
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 120
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 121
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 122
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 123
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 124
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 125
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 126
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 127
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
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BOUNDARY 5
UNIT 128
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 129
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 130
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 131
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 132
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 133
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 134
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 135
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 136
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 137
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 138
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 139
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 140
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 141
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 142
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 143
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 144
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 145
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 146
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 147
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 148
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 149
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
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BOUNDARY 5
UNIT 150
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 151
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 152
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 153
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 154
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 155
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 156
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 157
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 158
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 159
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 160
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
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BOUNDARY 5
UNIT 161
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 162
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 163
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 164
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 165
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 166
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 167
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 168
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 169
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 170
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 171
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
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BOUNDARY 5
UNIT 172
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 173
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 174
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 175
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 176
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 177
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 178
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 179
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 180
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 181
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 182
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 183
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 184
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 185
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 186
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 187
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 188
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 189
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 190
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 191
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 192
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 193
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 194
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 195
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 196
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 197
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 198
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 199
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 200
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 201
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 202
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 203
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 204
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 205
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 206
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 207
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 208
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 209
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 210
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 211
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 212
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 213
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 214
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 215
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
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BOUNDARY 5
UNIT 216
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 217
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 218
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 219
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 220
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 221
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 222
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 223
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 224
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 225
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 226
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
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BOUNDARY 5
UNIT 227
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 228
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 229
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 230
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 231
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 232
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 233
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 234
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3 .3855  10. 0.
CYLINDER 4 .4575  10. 0.
HEXPRISM 5 .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 235
CYLINDER 1 .07    10. 0.
CYLINDER 2 .3765  10. 0.
CYLINDER 3 .3855  10. 0.
CYLINDER 4 .4575  10. 0.
HEXPRISM 5 .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 236
CYLINDER 1 .07    10. 0.
CYLINDER 2 .3765  10. 0.
CYLINDER 3 .3855  10. 0.
CYLINDER 4 .4575  10. 0.
HEXPRISM 5 .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 237
CYLINDER 1 .07    10. 0.
CYLINDER 2 .3765  10. 0.
CYLINDER 3 .3855  10. 0.
CYLINDER 4 .4575  10. 0.
HEXPRISM 5 .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 238
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 239
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 240
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 241
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 242
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 243
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 244
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 245
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 246
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 247
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 248
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 249
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 250
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 251
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 252
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 253
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 254
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 255
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 256
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 257
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 258
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 259
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 260
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 261
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 262
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 263
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 264
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 265
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 266
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 267
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 268
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 269
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 270
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 271
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 272
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 273
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 274
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 275
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 276
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 277
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 278
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 279
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 280
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 281
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 282
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 283
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 284
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 285
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 286
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 287
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 288
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 289
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 290
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 291
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 292
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 293
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 294
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 295
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 296
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 297
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 298
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 299
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 300
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 301
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 302
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
BOUNDARY 5
UNIT 303
CYLINDER 1 .07 10. 0.
CYLINDER 2 .3765 10. 0.
CYLINDER 3 .3855 10. 0.
CYLINDER 4 .4575 10. 0.
HEXPRISM 5 .6375 10. 0.
MEDIA 0 1 1
MEDIA 1 1 2 -1
MEDIA 0 1 3 -2
MEDIA 4 1 4 -3
MEDIA 6 1 5 -4
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BOUNDARY 5
UNIT 304
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 305
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 306
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 307
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 308
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 309
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 310
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 311
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 312
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 313
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 314
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
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BOUNDARY 5
UNIT 315
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 316
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 317
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 318
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
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MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 319
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 320
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 321
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 322
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
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CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 323
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 324
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 325
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
```

```
BOUNDARY 5
UNIT 326
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 327
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5
UNIT 328
CYLINDER 1  .07    10. 0.
CYLINDER 2  .3765  10. 0.
CYLINDER 3  .3855  10. 0.
CYLINDER 4  .4575  10. 0.
HEXPRISM 5  .6375  10. 0.
MEDIA  0 1 1
MEDIA  1 1 2 -1
MEDIA  0 1 3 -2
MEDIA  4 1 4 -3
MEDIA  6 1 5 -4
BOUNDARY 5

END GEOM
READ ARRAY
ARA=1 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 F1 A74 13*8 A99 12*8 A124 11*8 A149 10*8 A163 6 A166 6 A169 6 A174 9*8 A199 8*8
A224 7*8 A235 6 A238 6 A241 6 A244 6 A249 6*8 A274 5*8 A299 4*8 A307 6 A310 6 A313 5 A316
```

6 A324 4*8 A319 6 A348 5*8 A372 6*8 A382 6 A385 6 A388 6 A391 6 A396 7*8 A420 8*8 A444 9*8 A457 6 A460 6 A463 6 A468 10*8 A492 11*8 A516 12*8 A540 13*8 A564 F8 T END FILL
ARA=2 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 F2 A74 13*8 A99 12*8 A124 11*8 A149 10*8 A163 6 A166 6 A169 6 A174 9*8 A199 8*8 A224 7*8 A235 6 A238 6 A241 6 A244 6 A249 6*8 A274 5*8 A299 4*8 A307 6 A310 6 A313 5 A316 6 A324 4*8 A319 6 A348 5*8 A372 6*8 A382 6 A385 6 A388 6 A391 6 A396 7*8 A420 8*8 A444 9*8 A457 6 A460 6 A463 6 A468 10*8 A492 11*8 A516 12*8 A540 13*8 A564 F8 T END FILL
ARA=3 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 F3 A74 13*8 A99 12*8 A124 11*8 A149 10*8 A163 3 A166 6 A169 3 A188 6 A193 6 A174 9*8 A199 8*8 A224 7*8 A235 6 A240 6 A244 6 A249 6*8 A262 6 A274 5*8 A291 6 A299 4*8 A307 3 A308 6 A310 3 A313 5 A316 3 A324 4*8 A318 6 A348 5*8 A335 6 A364 6 A372 6*8 A382 6 A386 6 A388 3 A391 6 A396 7*8 A420 8*8 A444 9*8 A433 6 A438 6 A457 3 A460 6 A463 3 A468 10*8 A492 11*8 A516 12*8 A540 13*8 A564 F8 T END FILL

'ь27
ARA=4 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 60 1 1 1 1 1 1 1 1 1 1 13*8
1 1 1 1 1 1 1 1 1 1 1 1 12*8
1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
74 1 1 1 1 1 1 1 1 1 1 1 1 1 1 61 8*8
1 1 1 1 1 1 1 1 1 1 1 1 1 62 1 1 7*8
1 1 1 1 6 1 1 8 8 8 8 1 1 6 1 1 1 1 6*8
1 1 1 1 1 1 1 8 8 8 8 8 63 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 8 8 8 8 8 8 1 1 1 1 1 1 1 4*8
68 1 1 1 6 1 1 8 8 8 8 8 8 8 1 1 6 1 1 1 1 4*8
1 1 1 1 1 1 1 8 8 8 8 8 8 1 1 1 1 1 1 1 5*8
70 1 1 72 1 1 64 8 8 8 8 8 1 1 1 1 1 1 1 6*8
1 1 1 1 6 1 1 8 8 8 8 1 1 6 1 1 1 1 7*8
1 1 65 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
66 1 1 72 1 1 1 1 1 1 1 1 1 1 1 1 9*8
1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
70 1 1 1 1 1 1 1 1 1 1 1 1 12*8
1 1 1 1 1 1 1 1 1 1 1 1 13*8
68 1 1 1 1 74 1 1 1 1 60 F8 T END FILL

'ь31
ARA=5 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 55 1 1 1 1 1 1 1 1 1 1 13*8
1 1 1 1 1 1 1 1 1 1 1 1 12*8
1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8

```
   1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 50 8*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 51 1 1 7*8
1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
1 1 1 1 1 1 1 1 1 1 1 52 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 1 1 1 1 53 1 1 1 1 1 1 1 1 4*8
1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 6 1 1 1 1 4*8
1 1 1 1 1 1 1 1 56 1 1 1 1 1 1 1 1 1 1 1 5*8
1 1 1 1 1 1 57 1 1 1 1 1 1 1 1 1 1 1 1 6*8
1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
1 1 58 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
59 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
1 1 1 1 1 1 1 1 1 1 1 1 1 13*8
1 1 1 1 1 1 1 1 1 1 55 F8 T  END FILL

'ь21
ARA=6 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 89 1 1 1 1 1 1 1 1 1 1 13*8
1 1 1 1 1 1 1 1 1 1 1 1 12*8
1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
1 1 1 90 1 1 1 1 1 1 1 1 1 1 10*8
1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
1 1 1 1 1 91 1 1 1 1 1 1 1 1 1 87 8*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 88 1 1 7*8
1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
1 1 1 1 82 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 1 1 85 1 84 1 1 1 1 1 1 1 1 4*8
1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 6 1 1 1 1 4*8
1 1 1 1 1 1 1 1 80 1 85 1 1 1 1 1 1 1 1 1 5*8
77 1 1 1 1 1 81 1 1 1 1 1 1 1 1 1 1 1 1 6*8
1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
1 1 79 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
76 1 1 1 1 1 1 1 1 1 91 1 1 1 1 1 9*8
1 1 1 1 6 1 82 6 1 1 6 1 1 1 1 10*8
1 1 1 1 1 1 1 1 1 1 90 1 1 1 11*8
77 1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
1 1 1 1 1 1 1 1 1 1 1 1 1 13*8
1 1 1 1 1 1 1 1 1 1 89 F8 T  END FILL
```

```
'ь13
ARA=7 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL                62*8  153 1 1 1 1 160 1 1 1 1 163 13*8
                   148   1 1 1 1 1 1 1 1 1 1 1 12*8
                  1   1   1 1 1 1 1 1 1 1 1 1 1 11*8
              141  142   1 154 1 1 1  158 1 1 161 1 1 1 10*8
            137   1  143   1   6 1 1 6 1 1 6 1 1 1 1 9*8
           1   1   1    1 149   1 1 1 1 1 159 1 1 1 1 164 8*8
         1  129   1 140  144   1   1 1 1 1 1 1 1 1 162 1 1 7*8
      121 123    1 132   6  145 150   6 1 1 6 1 1 6 1 1 1 1 6*8
    114   1   1  128 133 139    1 151   1 1 1 1 157 1 1 1 1 1 1 5*8
  113   1   1 124  127   1 138    1   1 155 1 156 1 1 1 1 1 1 1 1 4*8
97 112 115 120   6  126 136   6  146 152   5 1 1 6 1 159 6 161 1 1 163 4*8
 96 111   1 119 122  131 134   1  147 152 155 1 1 1 1 1 1 1 1 1 5*8
 95 110 116   1 125  130 135   1  146   1   1 1 1 1 1 1 1 1 1 6*8
  94  99   1 118   6  130 134   6    1 151   6 1 1 6 158 1 1 1 7*8
   93  98 117 118 125  131 136 138    1 150   1 1 1 1 1 1 1 8*8
    92  98   1   1 122  126   1 139  145   1   1 1 1 1 1 160 9*8
     93  99 116 119   6  127 133   6  144 149   6 1 1 1 1 10*8
      94 110   1 120 124  128 132 140    1   1 154 1 1 1 11*8
       95 111 115   1   1    1   1   1  143   1   1 1 1 12*8
        96 112   1   1 123  129   1   1  142   1   1 1 13*8
         97 113 114 121   1    1 137 141    1 148 153 F8 T  END FILL

'ь14, 12
ARA=8 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 1 1 1 1 1 1 1 1 1 1 1 13*8
       192 1 1 1 1 1 1 1 1 1 1 1 12*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
     193 1 194 1 1 1 1 1 1 1 1 1 1 10*8
    1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
   1 195 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
  196 1 197 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
 1 1 1 198 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
1 199 1 1 1 1 200 1 1 1 1 1 1 1 1 1 1 1 1 5*8
201 1 1 1 202 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
203 1 204 205 6 1 206 6 1 207 5 1 1 6 1 1 6 1 1 1 1 4*8
208 1 1 209 1 1 210 1 211 1 1 1 1 1 1 1 1 1 1 1 5*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
 212 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
  1 213 214 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
  1 1 215 1 1 1 216 1 1 1 1 1 1 1 1 1 9*8
   1 1 1 217 6 1 1 6 1 1 6 1 1 1 1 10*8
    218 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
```

```
      1 1 1 1 1 1 219 1 1 1 1 1 1 12*8
      1 1 1 1 1 1 1 1 220 1 1 1 13*8
       221 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL

'ь5, 4
ARA=9 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 222 223 224 225 1 1 226 1 227 1 1 13*8
       228 229 1 1 230 1 1 231 1 1 232 233 12*8
      234 1 235 1 1 1 1 1 1 236 1 1 1 11*8
     237 238 1 239 240 241 242 1 243 1 244 1 1 1 10*8
    245 1 1 1 6 1 1 6 1 1 6 1 246 1 1 9*8
   247 248 249 1 250 251 1 1 1 252 253 254 1 1 255 256 8*8
  257 1 1 258 259 1 1 260 261 1 1 1 1 1 1 1 1 7*8
 262 263 1 1 6 1 264 6 1 1 6 1 265 6 1 1 1 1 6*8
266 1 267 1 268 269 1 270 1 1 1 1 1 1 271 1 1 272 1 5*8
273 274 1 275 276 1 1 1 1 277 1 278 1 1 1 1 1 1 1 1 4*8
279 1 1 280 6 1 281 6 1 282 5 1 1 6 1 1 6 1 1 1 1 4*8
283 284 1 285 286 287 288 1 1 1 289 1 1 1 1 290 1 1 328 1 5*8
291 1 1 1 1 1 292 1 1 1 293 294 1 1 295 1 1 1 1 6*8
296 297 1 298 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
299 1 300 1 1 1 301 1 1 1 302 1 1 1 1 303 1 8*8
304 305 1 306 1 307 1 1 1 1 308 309 1 1 1 310 9*8
311 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
312 313 1 1 1 1 314 1 1 1 1 1 1 1 11*8
315 1 1 1 1 1 1 316 1 1 317 1 1 12*8
318 319 1 1 1 1 1 1 1 1 1 320 13*8
321 322 1 323 1 324 1 325 1 326 327 F8 T  END FILL

'ь6, 3
ARA=10 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8 1 1 1 1 1 1 1 1 1 1 1 13*8
       165 1 1 1 1 1 1 1 1 1 1 1 12*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
     1 1 166 1 1 1 1 1 1 1 1 1 1 1 10*8
    1 167 1 1 6 1 1 6 1 1 6 1 1 1 1 9*8
   168 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
  1 169 170 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
 1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
1 1 1 1 171 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
172 1 1 1 173 1 174 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
175 1 176 1 6 177 1 6 178 179 5 1 1 6 1 1 6 1 1 1 1 4*8
180 1 1 181 1 1 182 1 183 1 1 1 1 1 1 1 1 1 1 1 5*8
1 184 1 1 185 1 186 1 1 1 1 1 1 1 1 1 1 1 1 6*8
187 1 188 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
```

```
 189 1 190 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
 191 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 1 1 10*8
   1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
     1 1 1 1 1 1 1 1 1 1 1 1 1 13*8
      1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL

'ь19, 23
ARA=11 TYP=TRIANGULAR NUX=25 NUY=25 NUZ=1
FILL 62*8   1 1 1 1 1 1 1 1 1 1 1 13*8
        1 1 1 1 1 1 1 1 1 1 1 1 12*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
      1 1 1 1 1 1 1 1 1 1 1 1 1 1 10*8
     1 1 1 1 7 1 1 6 1 1 6 1 1 1 1 9*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
   1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 7*8
  1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 6*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4*8
1 1 1 1 6 1 1 6 1 1 5 1 1 6 1 1 7 1 1 1 1 4*8
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 5*8
  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 6*8
   1 1 1 1 6 1 1 6 1 1 6 1 1 6 1 1 1 1 7*8
    1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 8*8
     1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 9*8
      1 1 1 1 7 1 1 6 1 1 6 1 1 1 1 10*8
       1 1 1 1 1 1 1 1 1 1 1 1 1 1 11*8
        1 1 1 1 1 1 1 1 1 1 1 1 1 12*8
         1 1 1 1 1 1 1 1 1 1 1 1 13*8
          1 1 1 1 1 1 1 1 1 1 1 F8 T  END FILL

END ARRAY
READ BNDS XYF=WATER ZFC=REFLECT END BNDS
'READ PLOT
'TTL=!TOTAL VIEW OF CRITICAL STAND UNIT, X-Y PLOT! SCR=YES PIC=UNIT
'XUL=-180 YUL=180 ZUL=110. XLR=180 YLR=-180 ZLR=110 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=1000 LPI=10 END
'TTL=!TOTAL VIEW OF CRITICAL STAND MIXT, X-Y PLOT! SCR=YES PIC=MIXT
'XUL=-60 YUL=180 ZUL=5. XLR=60 YLR=100 ZLR=5 UAX=1 VAX=0
'WAX=0 UDN=0 VDN=-1 WDN=0 NAX=1000 LPI=10 END
'END PLOT
END DATA
END
```

NRC FORM 335
(2-89)
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10. SUPPLEMENTARY NOTES

G. Fowler, Jr., NRC Project Manager

11. ABSTRACT *(200 words or less)*

This report describes the input data and results from numerical modeling of critical experiments with fuel assemblies typical of RBMK-1000 and VVER-1000 reactors. The primary purpose for performing these benchmark analyses was to check how the accuracy of calculation results for the multiplication factor and power distribution for these experimental assemblies varies with the different multi-group libraries included in the SCALE standard code package, as well as the extent to which that accuracy depends on different ways of preparing the working libraries. This benchmarking activity establishes the calculational bias that can be expected when using the SCALE code package to evaluate fuel assemblies for the VVER-1000 and RBMK-1000 reactors and the safety analysis of actions at the Chornobyl Shelter.

12. KEY WORDS/DESCRIPTORS *(List words or phrases that will assist researchers in locating the report.)*

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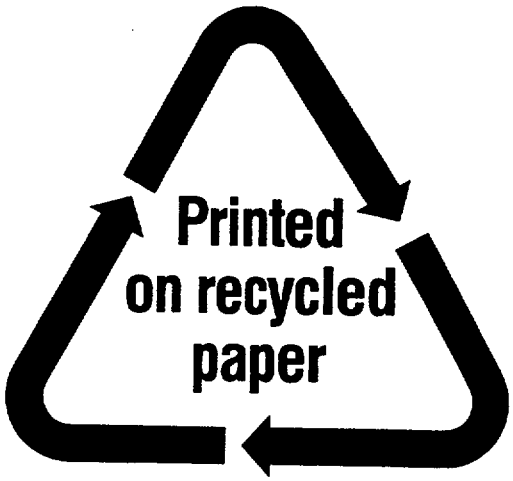

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