```
!    fuel.mac
!    Computes the effective conductivity of the fuel region
!
!    arg1 = material set number
!
!    arg2 = mult for Helium conduction due to enhanced
!           pressurization in remaining canister region
!

!  Fuel region (in 100% helium)
!  (Zircaloy clad) FSAR: 392,572,752,932/8.28,8.76,9.60,10.44 Btu/ft-hr-F
!  (Zircaloy clad) FSAR: 409 lbm/ft^3, 0.0728 Btu/lbm-F
!  (Fuel) FSAR: 100,448,570,793/3.48,3.48,3.24,2.28 Btu/ft-hr-F
!  (Fuel) FSAR: 684 lbm/ft^3, 0.056 Btu/lbm-F
 *set,kxxfh
 *dim,kxxfh,table,7
 kxxfh(1,0)=212,302,392,482,572,662,752
 kxxfh(1,1)=0.0247,0.0297,0.0354,0.0421,0.0495,0.0578,0.0670

!  Fuel region (in vacuum)
 *set,kxxfv
 *dim,kxxfv,table,7
 kxxfv(1,0)=212,302,392,482,572,662,752
 kxxfv(1,1)=0.00786,0.01129,0.01563,0.02084,0.02706,0.03430,0.04265

!
pell_rat=(17*17*pi/4*0.3088**2)/(fuelwid*fuelwid)
clad_rat=(17*17*pi/4*(.36**2-.315**2))/(fuelwid*fuelwid)
heli_rat=1-pell_rat-clad_rat

mptemp
mpdel,kxx,arg1
mpdel,dens,arg1
mpdel,c,arg1
*do,itab,1,11
  curtem=(itab-1)*100
  mptemp,itab,curtem
  kfuel=arg2*(kxxfh(curtem)-kxxfv(curtem))+kxxfv(curtem)
  mpdata,kxx,arg1,itab,kfuel

  dens_hel=(4.00260*p_atm*fti**2/1545.3/(curtem+460))/(fti**3)
  den_fuel=684/fti**3*pell_rat+409/fti**3*clad_rat+dens_hel*heli_rat
  mpdata,dens,arg1,itab,den_fuel

*enddo

c_fuel=0.056*pell_rat+0.0728*clad_rat+1.24*heli_rat
mp,c,arg1,c_fuel
```

AB9