MOOSE Project

- Three-part project
- Will upload input and output files to Moodle
- Will upload a written report, max of 10 pages (including figures)
- This is an individual project, but some collaboration is encouraged
- Write up with deliverables from Part 1, choice of materials, mesh, details therein, etc.
- Part 1 is due Feb. 28

MOOSE Project Part 1

- Fuel pellet dimensions listed
- This is a 1-D problem, but I want your geometry to be set up in 2-D RZ
- Assume reasonable values for material properties
- Outer cladding temperature is constant: 550 K
- Solve temperature profile for:
  - Steady-state: LHR = 350 W/cm^2
  - Compare against analytical solution
- Solve for centerline temperature vs time
  - Transient: LHR = 350*EXP(-((t-20)^2)/2)+350
  - for up to t=100
  - Get peak T value
- Use both a constant k and a temperature-dependent k