ORNL's GRSAC—Graphite Reactor Severe Accident Code—Is A Detailed Accident Modeling Code for Gas-Cooled Reactors

- GRSAC based on ~30 years of development at ORNL
  - Sponsored by NRC/DOE—(ORECA/MORECA codes)
- GRSAC features include
  - 3-D core thermal hydraulics (~3000 nodes)
  - Neutronics (point kinetics) for ATWS accidents
  - Graphite oxidation models for air ingress accidents
  - Fuel failure and fission product release input to a Puff weather code
  - Adaptations to GT–MHR, PBMR, and VHTR
- Extensive validation vs other codes and experiments
- User-friendly model building
  - Interactive screens for inputting design data, output graphics
  - Smart front end input checking; on-line help, documentation
  - Fast run times (~8000 X real time for non-ATWS accidents on PC)
- Example Output