



## REMARK™ Real-Time Simulation Multi-Group Core Model

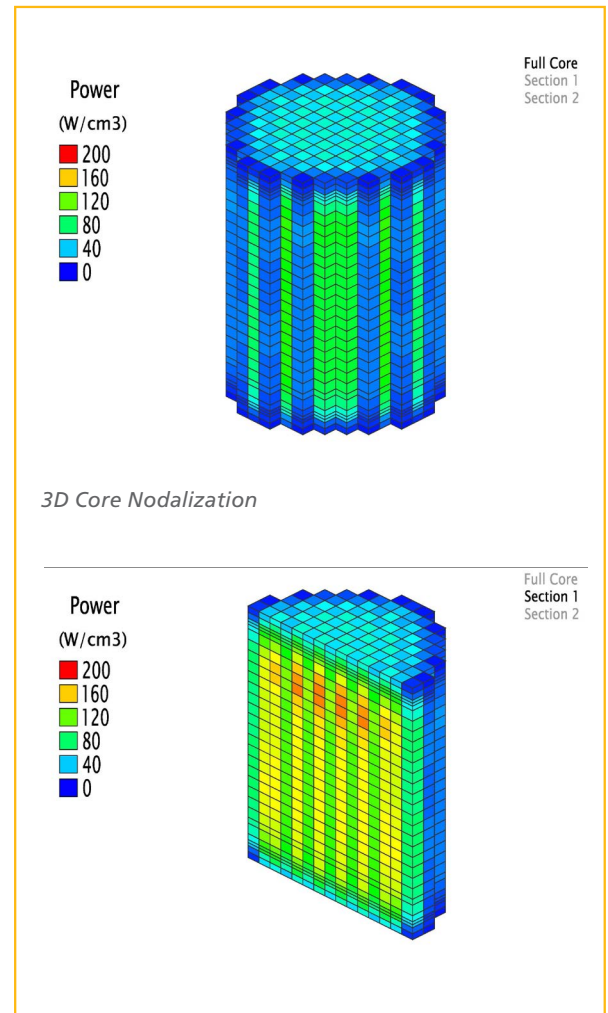
With REMARK, our Real-time Multi-group Advanced Reactor Kinetics model, GSE Systems has advanced neutronics modeling beyond single energy groups. By explicitly modeling both fast and thermal neutron energy groups, REMARK achieves significantly better power and flux response during fast and local transients. REMARK simulates normal and emergency operations with fidelity approaching fuel analysis codes.

REMARK's three-dimensional coarse-mesh topology simulates both BWR and PWR reactors and even handles advanced fuel assemblies. After refueling, you can use two-group cross-section data directly from lattice codes to reconfigure REMARK, greatly simplifying software maintenance.

### Features and Benefits

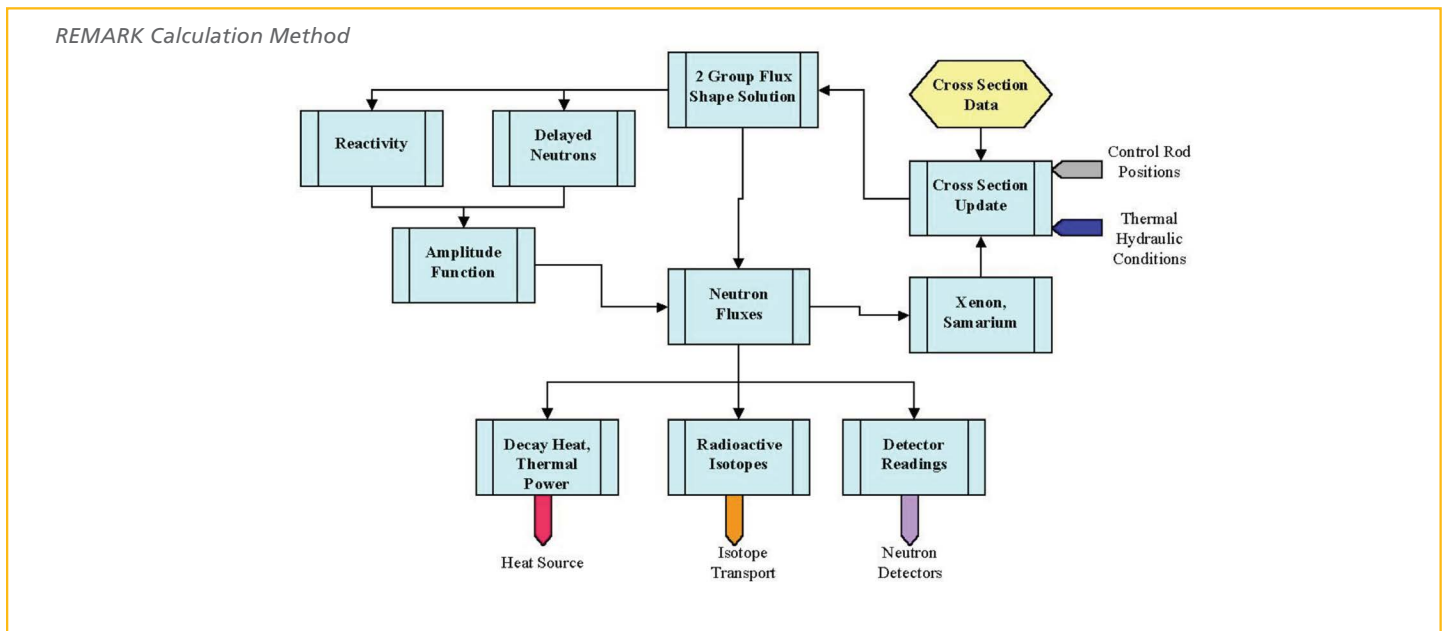
#### REMARK provides its users:

- True two-group time-dependent, three-dimensional diffusion equations that provide higher fidelity for fast and thermal flux distribution. No approximation is made on the thermal leakage term.
- Improved quasistatic approach provides detailed delayed neutron distribution and gives better neutron population distribution at low power and start-up conditions.



**Its many features include:**

- Extrapolates flux at core boundaries with consideration of reflector properties
- Neutron cross sections as input data
- Reactivity feedbacks through changes of cross sections based on core thermohydraulic conditions, neutron poison concentration, etc.
- Control rod worth is determined by control rod impact on cross sections
- Active core region is described as 3-D, coarse mesh geometry
- Xenon and samarium concentration is calculated in each mesh
- 23 group decay heat
- Delayed neutron population is calculated in each mesh
- Neutron instrumentation readings
- Automated boundary condition determination based on benchmark flux distribution to facilitate updates for future fuel reloads



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