

STATE-OF-THE-ART NUCLEAR FUEL BEHAVIOR

SOLVE THE MOST CHALLENGING NUCLEAR FUEL PROBLEMS OPTIMIZE FUEL PERFORMANCE

Spent fuel rod compression test simulation

In-core rodlet stress distribution





FUEL ROD PHENOMENA

Mechanical Interaction



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PEGASUS

FEATURES

- 2D and 3D finite element engine
- First-of-a-kind fuel-cladding gap thermo-mechanical contact algorithm
- Steady-state and transient fuel rod modeling
- Fully integrated Pellet Cladding Interaction (PCI) modeling
- Proprietary data segmentation and protection
- Robust numerical convergence

APPLICATIONS

- Advanced Technology and Accident Tolerant Fuels PWR, BWR, and SMR fuel types
- SRP Chapter 15 Accident Analysis
- SRP Chapter 4 Fuel Design
- Pellet Cladding Interaction/Missing Pellet Surface assessments for startup and flexible power operations
- Testing and experiment simulations for research
- Spent fuel integrity for storage and transportation

EXPERTISE

- Four decades of fuel behavior and NRC fuel licensing experience (ANATECH and SI)
- Developers of EPRI FALCON, FREY, and DEFECT fuel codes
- Support DOE fuel modeling initiatives through CASL and NEAMS programs
- Fuel vendor level knowledge and experience in all safety analysis disciplines

MINIMUM SYSTEM REQUIREMENTS

- Linux Operating System
- 3 GHz, 4 core processor
- 16 GB RAM
- 20 GB storage space

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