

Overview of the Role of Nuclear Regulatory Research



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RES Role in New Plant Licensing

- Leads NRC pre-application reviews of new non-light water reactors, such as the 4S liquid metal reactor
- Leads development of NRC longer range infrastructure needs for licensing new plant designs, technologies and safety review framework
- Supports NRR in reviewing an actual application, such as a 4S COL application

Pre-application Review Objectives

- Familiarize NRC with the design and technology
- Provide feedback to pre-applicant on the key design, technology and licensing issues
- Provide feedback to pre-applicant on their technology development program plans
- Provide input to NRC infrastructure development needs and plans

Potential Feedback and Infrastructure Development Areas

- Reactor and plant analysis codes
- Fuel performance analysis and qualification
- Materials performance analysis and qualification
- Structural design requirements
- Operational performance monitoring, inspection, testing
- Event selection, safety equipment classification
- Probabalistic risk assessment
- Licensing policy issues

Support the Licensing Review

- Assist in safety analysis code reviews
- Conduct confirmatory safety analyses
- Perform confirmatory testing
- Perform independent PRA studies
- Evaluate safety margins and uncertainties
- Provide input to safety evaluation report