



Next Generation Nuclear Plant Licensing Strategy

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Energy Policy Act of 2005

- The NRC shall have licensing and regulatory authority....
- The DOE and NRC shall jointly submit ...a licensing strategy for the prototype nuclear reactor...
- Not later than September 2011, DOE shall select the technology for high temperature hydrogen production and initial design parameters for the prototype nuclear plant...
- Not later than September 2021, complete construction and begin operation...



Evaluation of Licensing Options

- DOE/NRC working group evaluated options, including:
 - Construction Permit/Operating License (Part 50)
 - Combined License (Part 52) with and without:
 - Design Certification (DC)
 - Early Site Permit (ESP)
- DOE/NRC jointly issued recommendations in August 2008
 - Recommended Combined License without DC/ESP
 - Recommended approach using deterministic engineering judgment and analysis complemented by PRA information



Licensing the Prototype Reactor

- Requires productive use of pre-application period (now to 2013)
- Dependent on meeting major milestones, including supporting research and code development
- Requires development of new regulatory infrastructure
- Prototype may include compensatory measures to address uncertainties in the design (e.g., caused by delayed demonstration testing)



Going Forward

- Assess gaps in regulations and guidance
- Identify and propose resolution of policy issues
- Identify and develop plans to resolve key technical issues
- Coordinate licensing and research programs



Policy & Key Technical Issues

- Containment vs. confinement
- Staffing requirements
- Security requirements
- Role of risk assessments in licensing
- NRC fee structure
- Emergency planning requirements



Policy & Key Technical Issues

- Source term
- Operating conditions
- System and facility interactions
- Prototype testing program
- Conditional licensing



Coordination of Licensing & Research

- Fuel performance and manufacturing
- Fission product behavior
- Materials qualification
- Separate effects and integrated tests
- Computer code development and validation
