



## Regulatory Information Conference

Risk Assessment at the NRC: Emerging Challenges and Opportunities

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## Overview of Risk Assessment Activities for New and Advanced Reactors

Lynn Mrowca

U.S. Nuclear Regulatory Commission

Office of New Reactors

3/13/2012

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## New Reactor Reviews

- Accomplishments
  - AP1000 DC amendment
  - Vogtle and V.C. Summer COL safety evaluations
  - ESBWR DC rulemaking safety evaluations
- Status
  - AP1000 COLs
  - U.S. EPR DC and COLs
  - US-APWR DC and COLs
  - ESBWR COL
  - ABWR

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### New Reactor Reviews (cont.)

- Next Steps
  - Complete ongoing technical reviews
  - Prepare for license amendments
  - Prepare for construction inspection (i.e., activities related to PRA)
  - APR-1400 DC application submittal

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### Advanced Reactor Reviews

- Accomplishments
  - Policy papers
  - NuScale PRA pre-application audit
- Status
  - Policy papers (e.g., risk-informed Standard Review Plan, advanced reactor pilot study)
- Next Steps
  - SMR DC application submittals
  - TVA Clinch River construction permit (mPower design) application submittal

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### Infrastructure Activities: Risk-Informed Regulatory Guidance for New Reactors

- Accomplishments
  - Summary of tabletops and staff recommendations provided to ACRS
  - ACRS Reliability and PRA Subcommittee meeting
- Status
  - Provide final staff recommendations to Commission
- Next Steps
  - Await Commission direction

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### Infrastructure Activities: Staff Technical Reviews

- Status
  - Standard Review Plan revision
  - Design Specific Review Standards development (advanced reactors)
  - Interim Staff Guidance development to address PRA Standards for new reactors
- Next Steps
  - Engage with stakeholders on draft regulatory guidance

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### Infrastructure Activities: Staffing

- Status
  - PRA Knowledge Management
  - Developing and maintaining PRA staff expertise

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### Emerging Challenges and Opportunities

- SPAR model development
- Risk management task force results
- Post-Fukushima activities (e.g., NTTF Recommendations 1.0, 2.1, 2.3, 4.1, 8)

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## Acronyms

- ACRS - Advisory Committee on Reactor Safeguards
- CCF - Common Cause Failure
- CDF - Core Damage Frequency
- COL - Combined License
- DC - Design Certification
- I&C - Instrumentation and Control
- LERF - Large Early Release Frequency
- LPSD - Low Power Shut Down
- NTTF - Near Term Task Force
- SMR - Small Modular Reactor
- SPAR - Standardized Plant Analysis Risk

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