

USNRC RIC

## RIC 2014

### Status of Risk-Informed Regulatory Reviews in NRR and Associated Challenges

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### Overview

- In 1995, the Commission issued Final Policy Statement, Use of Probabilistic Risk Assessment (PRA) Methods in Nuclear Regulatory Activities, 60 Fed. Reg. 42,622 (Aug. 16, 1995), which states in part:
  - Use of PRA should be increased in all regulatory matters to the extent supported by the state-of-the-art
  - PRA should be used to reduce unnecessary conservatism
  - PRA should be as realistic as possible and supported by publicly available data
- Since then, the NRC staff has issued a number of risk-informed regulations and supporting regulatory guidance
  - Many risk-informed applications have been submitted and approved by the staff

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### Integrated Decision Making



Consistent with Defense-in-Depth Philosophy

Maintains Sufficient Safety Margins

Acceptably Small Increases in CDF (if any)

Performance-Measurement Strategies Used to Monitor Change

Meets Current Regulations

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**Risk-Informed, Performance-Based Fire Protection (NFPA 805)**

- Two pilot License Amendment Requests (LARs) approved:
  - Shearon Harris
  - Oconee
- Three non-pilot LARs approved:
  - Duane Arnold
  - DC Cook
  - Callaway
- 22 LARs are currently under review:
  - 20 LARs are under technical review
  - 2 LARs are under acceptance review

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**“Pilot” Risk-Informed Applications**

- Risk-Informed Approach to Resolving GSI-191, Assessment of Debris Accumulation on PWR Sump Performance
  - LAR is currently under review
  - A multi-disciplinary review team has been formed with representatives from various NRC technical organizations
- 10 CFR 50.69, Risk-Informed Categorization and Treatment of SSCs for Nuclear Power Reactors
  - LAR is currently under review
  - Review is progressing on schedule
- Risk-Informed Technical Specifications Initiative 4b, RMTS Guidelines
  - LAR is currently under review
  - A site audit is scheduled for April 2014

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**Risk-Informed Technical Specifications**

- Diesel Generator completion time extension
  - 1 LAR was submitted in 2013 and Safety Evaluation completed
- TSTF-425, “Risk-Informed Justifications for the Relocation of Surveillance Frequency Requirements to a Licensee Controlled Program”
  - 5 LARs were submitted in 2013-2014
  - One review completed and 4 are currently under review
- TSTF-505, “Provide Risk-Informed Extended Completion Times”
  - 1 LAR is currently under review

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**Other Risk-Informed Applications**

- In-service Inspection
  - 7 LARs were submitted in 2013
  - 4 LAR reviews have been completed
  - 3 are under review
- Integrated Leak Rate Test Extension
  - 1 LAR is currently under review

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**Summary of Challenges**

- Lack of PRA resources
  - Limited number of NRC reviewers are available with PRA expertise
  - Limited number of PRA practitioners are available in the industry
  - Major PRA resources are devoted to NFPA 805 and Fukushima activities
- PRA Quality
  - PRAs do not always follow Regulatory Guide 1.200
  - Scope of PRAs not appropriate for some risk-informed applications
  - Some PRAs not maintained adequately since completion of IPE & IPEEE studies
- Quality of some risk-informed applications submitted for NRC review could be improved

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**Conclusions**

- Many risk-informed applications were submitted and approved by the NRC staff in 2013.
- PRA quality and scope should be improved, as necessary, to better support risk-informed applications.
- NRC and industry should continue working together to address current risk-informed regulatory and technical challenges.

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