

RIC 2020

U.S. NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment
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W29 Transformation through Risk-Informed Licensing Initiatives

Inspecting Risk-Informed Initiatives

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Background

- Many licensees are adopting risk-informed initiatives that provide flexibility to change programs using probabilistic risk assessment inputs.
- When properly implemented, risk-informed initiatives provide licensees with additional operational flexibility while maintaining safety.
- Independent verification by the NRC provides additional assurance that the risk-informed initiative is implemented correctly.





Inspection Key Principles





Inspection Key Principles (Cont.)

- Risk-informed initiatives—when implemented properly—appropriately focus NRC and licensee resources on areas of greatest safety significance.
- “Trust but verify”—the NRC expects/assumes that licensees are implementing risk-informed initiatives in accordance with current licensing bases, but performance-based inspection is needed to verify.
- Performance-based inspection—focus on those aspects of risk-informed initiatives that—if improperly implemented—could lead to increased plant risk.
 - Inspection is consistent with Reactor Oversight Process bases (both technical and policy).
 - The NRC ensures any changes to the inspection program promote efficiency without compromising safety.



Oversight and Inspection

Surveillance Testing

- Risk-informed samples (14–22/year).
- Verifies structures, systems, and components (SSCs) remain capable of performing their intended safety functions.

Risk-Informed Completion Times

- Risk-informed samples (14–24/year).
- Verifies that appropriate risk assessments, work controls, and risk management actions are implemented.

10 CFR 50.69

- One-time inspection of program implementation after NRC approval received.
- Risk-informed samples (8–10/year).
- Verifies SSCs remain capable of performing their intended safety functions.



Inspector Training

Surveillance Testing

- Developing inspector training in current NRC training platform.

Risk-Informed Completion Times

- Enhancing existing four-part module in current NRC training platform.
- Providing just-in-time training and high-level overview to regional staff.

10 CFR 50.69

- Providing just-in-time training and high-level overview to regional staff.
- Developing training module in current NRC training platform.

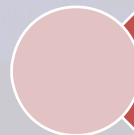


Inspection Insights

- 10 CFR 50.69 one-time inspection completed at Limerick
- Inspection procedures (IPs) updated and in use:
 - IP 71111.12, “Maintenance Effectiveness”
 - 10 CFR 50.69
 - IP 71111.13, “Maintenance Risk Assessments and Emergent Work Control”
 - Risk-Informed Completion Times
 - IP 71111.18, “Plant Modifications”
 - 10 CFR 50.69/Technical Specification (TS) Surveillance Frequency Control Program/Risk-Informed Completion Times
 - IP 71111.22, “Surveillance Testing”
 - TS Surveillance Frequency Control Program



Moving Forward



Increase use of risk information throughout the agency and for inspections.



Increase operational flexibility while maintaining and verifying safety.



Expand implementation and use of risk-informed initiatives.



References

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- "Final Safety Evaluation for Nuclear Energy Institute (NEI) Topical Report (TR) NEI 06-09, 'Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines,'" May 17, 2007 (ADAMS Accession No. ML071200238).
- SECY-98-144, "White Paper on Risk-Informed and Performance-Based Regulation," June 22, 1998.
- 10 CFR Part 50 Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power; Final Rule, November 22, 2004 (69 FR 68047).
- SECY-18-0060, "Achieving Modern Risk-Informed Regulation," May 23, 2018 (ADAMS Accession No. ML18110A187).
- Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities; Final Policy Statement, August 16, 1995 (60 FR 42622).
- Inspection Procedure 71111.12, "Maintenance Effectiveness," January 7, 2020 (ADAMS Accession No. ML19353C418).
- Inspection Procedure 71111.13, "Maintenance Risk Assessments and Emergent Work Control," November 13, 2019 (ADAMS Accession No. ML19197A096).
- Inspection Procedures 71111.18, "Plant Modifications," November 26, 2019 (ADAMS Accession No. ML19197A103).
- Inspection Procedure 71111.22, "Surveillance Testing," December 20, 2019 (ADAMS Accession No. ML19197A106).