



RIC 2014
**The Promises and Perils of Risk-Informed Decision Making:
Challenges in Risk-Informed
Significance Determination Process Implementation**

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OUTLINE

- Background
- Process Overview
- Roles of the Division of Risk Assessment
- Challenges
- Conclusions

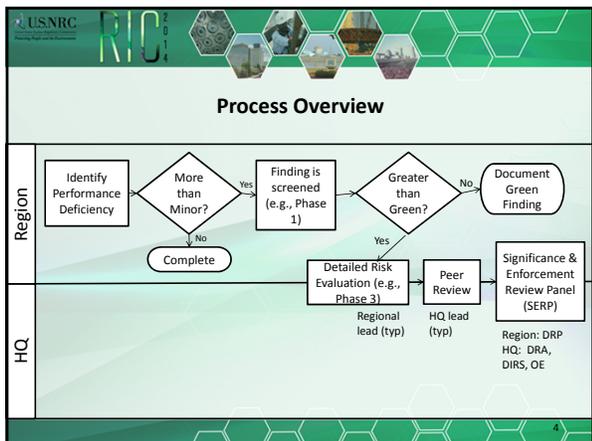
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Background

- Weaknesses of Systematic Assessment of Licensee Performance (SALP) Process
 - Not focused on most significant issues
 - Subjective
- Establishment of Risk-Informed ROP
 - SECY-99-007, SECY-99-007a, SECY-00-0049
- Seven Cornerstones of ROP
 - Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Security, Occupational Radiation Safety

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- Role of the Division of Risk Assessment**
- Peer review Phase 3 risk analyses performed by regional Senior Reactor Analysts
 - Perform complex risk analysis to support regional Senior Reactor Analysts
 - Develop or Enhance Risk Assessment Technical Guidance
 - Secure Support from the Office of Nuclear Regulatory Research to Enhance Technical Guidance, Enhance/Develop Tools
 - Support NOEDs, MD 8.3 Evaluations
 - Support Safety Culture Inspections

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- Challenge: Enhancing Current ROP Practice More Risk-Informed vs. Risk-Based**
- Current practice would benefit from appropriate integration of qualitative measures (IMC 609 Appendix M) and quantitative measures.
 - Qualitative Guidance (Appendix M) can be enhanced to reduce subjectivity.

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Challenge: Making the Process Risk-Informed vs. Risk-Based

Example: NRC identified performance deficiency associated with external flooding protective actions.

- Failure to maintain adequate flood procedure
- Necessary flood protection activities could not be completed within timeframe credited in design basis



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Challenge: Different Expectations on Quality/Timeliness

- NRC uses the outcome of SDP to decide whether supplemental inspections are warranted (40 hours for WHITE findings).
- The impact on licensees from any Greater Than Green finding may be significant (e.g., Preparing for inspections, Public perceptions on performance).

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Challenge: Uniqueness of Technical Issues

- Evaluation of many findings require the analyst to modify the PRA models.
- Evaluation of some findings require the analyst to develop methods and/or make informed assumptions.

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Challenge: Uniqueness of Technical Issues

Example: Missing Flood Seals



Three Mile Island-1
All Island Turbine
Circumferential Seal Housing with open drain ports
August 10, 2012

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USNRC RIG

Challenge: Evolving Methods and Models

- Human Reliability Analysis
- Risks from External Events
- Assessing Risks from Events at Power

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USNRC RIG

Conclusions

- Risk-Informed ROP is significantly superior to the SALP assessment with respect to objectivity, and predictability of outcomes.
- Risk-Informed ROP encourages NRC and the licensee to focus efforts on issues most important to safety.
- NRC continues to evaluate ROP tools, methods, and data to enhance the governing guidance.

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