



RIC 2008
**Risk-Informed Applications:
Opportunities and Challenges**

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**Risk-Informed Applications:
Opportunities and Challenges**

- Industry Implementation of Risk-Informed Initiatives
- Regulatory Guide 1.200 and Risk-Informed Submittals

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**Risk-Informed Applications:
Opportunities and Challenges**

- Opportunity: Significant staff and industry resources have been expended over the past few years to make available new risk-informed initiatives:
 - Risk-informed Tech Specs
 - Initiative 1 – hot shutdown end state for TS actions (safety enhancement!)
 - Initiative 4B – risk managed TS or flexible AOTs
 - Initiative 5B – surveillance frequencies relocation to licensee control
 - Initiative 7B – hazard barriers treatment in TS
 - 10 CFR 50.69 Special Treatment
 - Topical reports for TS AOT/STI extensions

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Risk-Informed Applications: Opportunities and Challenges

- Challenge: Achieve wide industry adoption of these risk-informed initiatives
 - RITS Initiative 1
 - CLIP available for BWR and CE, only two BWR and no CE plants have submitted
 - Safety enhancement primarily – no industry interest?
 - RITS Initiative 4B
 - One of two pilots approved, second pilot has not resubmitted
 - Follow-on pilot delayed until 2009
 - RITS Initiative 5B
 - One pilot approved, second pilot being reviewed
 - CLIP to be available April 2008, anticipate significant industry participation

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Risk-Informed Applications: Opportunities and Challenges

- Challenge: Achieve wide industry adoption of these risk-informed initiatives (continued)
 - RITS Initiative 7B
 - One plant application approved
 - 10CFR 50.69
 - No pilot, no submittals, one topical report under review

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Risk-Informed Applications: Opportunities and Challenges

- Challenge: Achieve wide industry adoption of these risk-informed initiatives (continued)
 - NRC staff approval of these initiatives provides a significant level of flexibility to licensees to self-manage the safe operation of their nuclear plants
 - Anticipate widespread industry interest in adopting all of these applications as the PRA models are enhanced in scope and technical adequacy
 - Expect the demand for NOEDs, emergency/exigent TS changes, and individual TS AOT changes to be significantly lessened, freeing staff and industry resources

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Risk-Informed Applications: Opportunities and Challenges

- Opportunity: Regulatory Guide 1.200 stabilizes the PRA technical adequacy requirements for applications
 - Submittals utilizing RG 1.200 allow a lesser review of baseline PRA
 - Lowers industry/staff resources for reviews
 - Speeds schedules
 - Reduces uncertainties
 - Review scope dependent upon complexity of application and on state of PRA conformance to standards
 - PRA attributes and capability category are application-specific

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Risk-Informed Applications: Opportunities and Challenges

- Submittals not invoking RG 1.200
 - Consistent with the phase approach to PRA quality initiative (SECY-07-0042):
 - May be rejected unless submittal demonstrates PRA technical adequacy in equivalent manner
 - Will require more extensive staff review of baseline PRA
 - Will be lower priority than submittals using RG 1.200, and...
 - May not be completed on licensee schedule due to staff resources

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Risk-Informed Applications: Opportunities and Challenges

- Challenge: Improve efficiency of reviews of licensing actions by applying Regulatory Guide 1.200 and improving the quality of the requests and reviews

This can be achieved in various ways:

 - Perform up front complete gap assessment of the entire PRA against all supporting requirements of the endorsed standards
 - Technical adequacy justifications need only address those supporting requirements not meeting capability category II (or other application-specific category requirement)
 - Where endorsed standards are not available, a basis is still required when PRA scope includes fires, external events

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Risk-Informed Applications: Opportunities and Challenges

- Challenge (continued)
 - If full gap assessment not completed, amendment requests must identify and justify the subset of standards supporting requirements and the appropriate capability category for each specific application

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Risk-Informed Applications: Opportunities and Challenges

- Challenge (continued)
 - There may be efficiencies gained by developing generic application-specific guidance for PRA technical adequacy applying RG 1.200
 - RI-ISI
 - RITS 4B/5B
 - Common TS applications
 - Fires, external events, shutdown would still have to be addressed if applicable for an application.
 - NEI, OGS, pilot plants ready to lead...?

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Risk-Informed Applications: Opportunities and Challenges

- Challenge (continued)
 - Licensees need to assure adequate scope and quality of submittals:
 - Address RG 1.200 submittal requirements
 - Assure technical basis for the application-specific analyses are well defined and documented
 - RG 1.174 and 1.177 require consideration of all risk sources (fires, seismic, external events) applicable to a proposed action

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Risk-Informed Applications: Opportunities and Challenges

- Challenge (continued)
 - In some submittals, it was not clear to the staff that the appropriate quality treatment was applied to the application-specific evaluation as compared to the baseline PRA model
 - Application-specific analyses have requirements defined in RG 1.174 and RG 1.177 – all must be fully dispositioned
 - Staff RAI should be for clarification of submittal, not a request for submitting required information to begin review

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Risk-Informed Applications: Opportunities and Challenges

- Challenge (continued)
 - In support of this expectation of submittal quality, the staff is putting in place a more structured acceptance review process to ensure submittals are sufficient scope and technical adequacy
 - Support meaningful and timely staff reviews
 - Provide sufficient basis to reach conclusion of acceptability

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Risk-Informed Applications: Opportunities and Challenges

- Concluding Remarks
- Industry and NRC staff should move expeditiously to achieve the benefits of enhanced nuclear safety and efficiency of operations achievable by implementation of the risk-informed applications now available
 - Consistent with the Commission's phased approach to PRA quality, industry and NRC staff should embrace RG 1.200 and the endorsed PRA standards as the path more efficient and effective reviews of risk-informed applications.

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