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NRC's Advanced Reactor Review Strategy:
Safety Focused Review
and Core Team Approach

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Session T1
Advanced Reactors: NRC's Readiness

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Outline

- Continuous improvement
- Safety Focused Review
 - Light-Water Small Modular Reactors
 - Non-Light-Water Reactors
- Non-LWR Core Team Approach

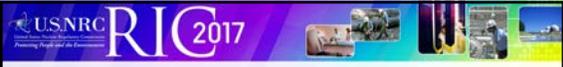
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Continuous Improvement

- To be effective and efficient in our reviews, we need to ...
 - Incorporate lessons learned from previous reviews
 - Consider new strategies for future reviews

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**Safety Focused Review:
Light-Water Reactors**

- Enhanced safety focused review
 - Align the review focus and resources to risk-significant structures, systems, and components and other aspects of the design that contribute most to safety
 - Standard Review Plan, NUREG-0800, Introduction – Part 2, Light-Water Small Module Reactors (issued January 2014)
 - Design Specific Review Standards (DSRSs)

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**Safety Focused Review:
Light-Water Reactors**

- DSRS incorporates current SRP sections or includes new review sections based on:
 - Technology differences
 - Risk information
 - Lessons learned from previous reviews
 - Interim staff guidance
- NuScale DSRS sections issued August 2016

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**Enhanced Safety Focused Review:
Graded Approach**

- **Safety-significance** of a structure, system or component (SSC) is determined by safety-related classification **and** risk-significance
- Safety-significance, along with other key considerations, guide the scope and depth of the review

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Enhanced Safety Focused Review

Key Review Considerations

Safety significance	Regulatory compliance	Novel design	Shared structures, systems, and components	Licensing approach
Safety margin	Defense in-depth	Operational programs	Impact on safety functions	Additional risk insights
				Other considerations

Review Tool

Output: Scope and Depth of Review

- Provide supplemental approaches for implementation of NUREG-0800, Introduction - Part 2 and Design Specific Review. Standard reviews
- Systematic thought process applicable to non-structure, system, or component and programmatic reviews

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- Safety Focused Review: Non-Light-Water Reactors**
- Enhance best practices from light-water small modular reactor reviews
 - Use review tools to help focus pre-application activities
 - Consider additional process improvements

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Non-LWR Core Team Approach

- Objectives
 - Provide stable and consistent NRC staff interactions with the pre-applicant, ensuring effectiveness of pre-application activities
 - Ensure efficient use of NRC resources
- Stability and consistency to be achieved through the use of selected NRC staff assigned to the team

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Non-LWR Core Team Approach

- Team to include a project manager, technical reviewers, and support staff
- Core team approach ensures cohesion among members and integration of pre-application interactions

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Summary

- NRC staff is implementing strategies to achieve more effective and efficient regulatory reviews
- NRC is committed to focus resources on safety-significant aspects of the non-light-water reactor reviews

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