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Expanding RIPE Concept to Deal with Generic Issues

ACRS Meeting

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Introduction

- **Current Risk Informed Process for Evaluations (RIPE) is a significant step forward in risk informed decision making**
 - Focus industry and NRC resources on safety significant issues
- **Expansion of current process supports further reduction of resources on low risk significant issues**

Expanding RIPE Concept to Deal with Generic Issues

- Leverage RIPE concept of expedited review for low-risk significance
- Maximized applicability to generic evaluations
- Using bounding risk calculations for demonstrably low safety significant issues to support expedited NRC review and focus effort.
 - MSLB asymmetric cooling issue (dose timeline)
 - Looking for additional suitable examples
- PRA technical adequacy for some issues can be addressed via bounding assumptions and assessed via GAET (Generic Assessment Expert Team) and confirmed for plant specific applicability

Example of Low Safety Significance Issue

- **Asymmetric Natural Cooldown**
 - For low risk conditions, current cooldown practices may challenge offsite dose limits using current methodology/assumptions
- **Specific conditions**
 - Main Steamline Break (MSLB), faulted Steam Generator (SG), cooldown with 1 SG isolated
 - Offsite doses can be challenged if concurrent conditions occur (Design Basis)
 - EOP changes needed to address the condition focus on rapidly cooling down the plant to limit the calculated doses (success path)
 - More rapid cooldown imposes additional operator challenges
 - Increase error potential (more complicated cooldown strategies, including RCS opening) → increase frequency of failure path.
- **Non risk significant scenario**

Specific Conditions for Generic Risk Calculation

- **Boundary Conditions**
 - Faulted/un-isolated SG
 - Concurrent Loss of Offsite Power
 - Maximum allowable fuel leakage
 - Maximum allowable primary to secondary leakage
- **Assumptions**
 - Faulted SG/un-isolated SG with concurrent loss of offsite power = core damage
 - Conservative
 - Plant can be safe/stable with normal cooldown
 - Rapid asymmetrical cooldown limits total offsite dose

Generic assessment and Evaluation Team (IDP/GAET) Considerations

- **Generic Initiating Events (i.e., entry condition) frequency**
- **Fuel damage not allowed by the event**
- **Bounding Single Failure**
- **Fuel Leakage history**
- **Primary to secondary leakage history**
- **Conservatism in offsite dose analysis**
- **Plant-specific applicability**

Potential RIPE Enhancement

- **Some issues of generic very low safety significance**
 - Use generic bounding analysis (e.g., topical report) to determine safety significance
 - GAET may be able to replace plant specific IDP requirements
 - Streamlined NRC review of topical report
 - **Submittal process (topical)**
 - Risk-informed review of a topical report
 - Implement via 50.59
- Or
- Alternatively enabling simplified plant-specific submittal



Questions?