

ISG-06 Alternate Review Process

Lessons Learned from Pre-Application Meetings

June 12, 2020

Key Messages

- ISG-06 outlines key topics that should be addressed in pre-application meetings
- Early pre-application meetings are essential to a high-quality application and efficient NRC licensing review
- The NRC should be engaged early for complex digital designs and/or first-of-a-kind technical approaches

Pre-Application Discussion Topics (ISG-06)

a. Selection of the appropriate review process

- justification for using the ARP
- overview of the replacement modification scope
- licensee project milestones
- ISG-06, Enclosure B

b. Key design concepts, including fundamental design principles

- comparison of the existing architecture and the proposed architecture

c. Significant deviations from current guidance

d. Significant deviations from referenced NRC-approved topical report

**ISG-06, Rev. 2,
Section C.3.1**

Pre-Application Discussion Topics (ISG-06)

e. Application of the selected system (platform) to the plant

- identification of the approved TR revision to be referenced
- licensee plans to address the TR plant specific action items

f. Definition of the portion of the plant system to be replaced, changes to the FSAR necessary to reflect the replacement, impact of the replacement on the plant, calibration, and surveillance testing

- strategy for changing TS and self-diagnostics
- impact on Accident Analyses (e.g., response time testing)
- proposed Licensee Commitments

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Section C.3.1**

Pre-Application Discussion Topics (ISG-06)

g. Identification of the level of licensee involvement in the modification project (Vendor Oversight)

- overview of the Vendor Oversight Plan
- licensee planned and completed vendor audits
- scope and depth of licensee vendor oversight reports
- licensee commitments to perform oversight activities

i. Unique or complex topics

- elimination of Surveillance Requirements
- human Factors considerations (control room changes)
- Secure Development and Operational Environment

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NRC Lessons Learned

The following topics have been shown to be important in early interactions:

- **Description of deviations from NRC guidance or the approved platform**
- **Details of the overall I&C systems architecture to demonstrate the fundamental I&C design principles of Redundancy, Independence, Diversity, and Determinism**
- **Approach for addressing potential CCF, such as the D3 strategy and D3 coping analysis**
- **Potential changes to Design Basis Accident Analyses (e.g., assumed response times)**
- **Approach for Equipment Qualification testing before and after LAR submittal**

NRC Lessons Learned

- **Scope and depth of Vendor Oversight Plan to be provided in the LAR**
 - Schedule of oversight activities/audits
 - Scope and depth of licensee vendor oversight reports

- **Self-Diagnostics and Surveillance Requirements in Technical Specifications**
 - Self-diagnostics of digital I&C safety-related systems can be credited to either reduce or eliminate I&C surveillance testing
 - Supporting FMEA should be provided as part of technical basis
 - Licensees will need to still perform periodic functionality checks of the self-diagnostics features