

MP#4 Near Term Actions

Digital I&C License Amendment Process

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Introduction

- The SRM-SECY-15-0106 stated as a high level principle that the “NRC requirements and guidance should not pose an unnecessary impediment to advancement in nuclear applications of digital technology.”
- MP#4 focuses on identifying and implementing the complete set of activities needed to provide near-term regulatory clarity and support industry confidence to perform digital I&C upgrades
- The NRC Digital Action Plan (SECY 16-0070) identified topics to be addressed by MP#4 (Appendix A to the plan):
 - Item (i), Improved Licensing Review Guidance for Digital I&C SystemsIndustry stakeholders believe that the level of technical detail submitted in license applications, license amendments, and licensing topical reports, as well as the timing and sequence of the technical information expected to be submitted for NRC evaluation during the review cycle should be reassessed and improved.

Near-Term Action on DI&C-ISG-06

- NEI believes that addressing improvements to DI&C-ISG-06 is an important task to meet MP#4 near-term objective 4.A.b (licensing guidance including evaluating lessons learned from review of license applications)
- Improving DI&C-ISG-06 will increase efficiency and effectiveness of license amendment request (LAR) reviews for plant adoption of digital technology
- NEI is proposing to combine the MP#4 near-term activity with actions on lessons learned from the DI&C-ISG-06 pilot project, since the Diablo Canyon SER has been issued

NEI Observations on DI&C-ISG-06

- Improvements could be made to DI&C-ISG-06 to reduce licensee burden without affecting the NRC ability to support safety conclusions
 - DI&C LAR experience shows inefficiencies in use of document submittals, since a large percentage are not cited in the SER
 - Technical basis for DI&C-ISG-06, which is based on review methods developed in 1993, is dated

DI&C-ISG-06 Guidance

- DI&C-ISG-06 defines content of LARs for digital I&C modifications
 - Identifies 27 categories of documents that must be provided with initial submittal of an LAR
 - Additional 18 categories of documents are identified to be provided at least 12 months prior to expected approval
 - Documentation requirements are summarized in Enclosure B of DI&C-ISG-06
 - Attempts have been made to use DI&C-ISG-06 for licensing topical reports
 - Significant interpretation is required for licensing topical reports

Principles to Use to Revise DI&C-ISG-06

- LAR content defined in DI&C-ISG-06 should be refocused on the four fundamental I&C design principles that are more tightly coupled to safety assurance:
 - Independence
 - Redundancy
 - Predictability and repeatability
 - Diversity and defense-in-depth
- Review guidance should also evaluate how simplicity has been considered in the digital I&C system design
- DSRSs for SMRs have already adopted this approach to regulatory reviews

Principles to Use to Revise DI&C-ISG-06

- Enclosure B of DI&C-ISG-06 should be re-assessed using the following criteria:
 - Is the document providing evidence to support the claim that a regulation is met?
 - Document is typically cited in main safety conclusions of the NRC safety evaluation report?
 - Is the document used to check a LAR summary claim (e.g., “[licensee] has a configuration management program that meets intent of RG 1.169”)?
 - SharePoint site should be used as an alternative to document submittal
- Approach mirrors new plant DCA/COLA and ITAAC stages and should result in fewer required document submittals

Graded Approach for DI&C-ISG-06

- In keeping with MP#1, evaluate a graded approach for LARs based on project scope and safety significance, including consideration of the likelihood of common cause failure and a risk-informed, consequence-based regulatory structure
- Baseline ISG-06 would define the minimum number of documents needed to make a safety case, however:
 - Changes to protection system architecture may result in a greater scope of information to be provided in the LAR
 - Use of a platform not previously approved will result in a greater scope of information to be provided

Other Factors to Consider for DI&C-ISG-06

- Look at Branch Technical Position 7-14 and other affected Standard Review Plan documents to update I&C review methods and align technical basis for DI&C-ISG-06
 - Important to note that Branch Technical Position 7-14 is the basis for DI&C-ISG-06
- Need to consider value of re-reviewing previously approved platforms to currently endorsed IEEE Standards

Summary

- NEI believes that addressing improvements to DI&C-ISG-06 is an important task to meet MP#4 near-term objective 4.A.b
- Improving DI&C-ISG-06 will increase efficiency and effectiveness of LAR reviews for the applications of digital technology
- Time is right to combine the MP#4 near-term activity with actions on lessons learned from the DI&C-ISG-06 pilot project and align with other comparable NRC guidance documents