

ENCLOSURE 3

AP1000 Digital I&C Licensing Status NRC Meeting
(Public)

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Agenda

- Introductions and Opening Remarks
- Integrated I&C Overview
- Topics Covered / LAR Summary
- Inspections



Introductions / Opening Remarks

Purpose:

- Brief the NRC (Leadership, I&C Technical Branch, other related Branches, and Licensing PMs) on potential upcoming LAR/Topical Report submittals and the related technical matters.
- Technical details are being provided prior to LAR submittal to:
 - Share current information with the NRC staff
 - Identify topics needing follow-on discussions
 - Assist the NRC in determining resource needs

Information provided in this presentation is preliminary. Westinghouse, Licensees, and Applicants are in the process of finalizing the technical resolutions and potential NRC submittals.



Opening Remarks

- This meeting will provide:
 - ITAAC & Inspection Status for Overall System
 - Background of each upcoming licensing change
 - Status of issue resolution
 - Description of the potential technical changes and challenges
 - General description of the potential licensing impact
 - Estimated NRC submittal time

Integrated I&C Overview



Integration & Compliance Focus

- Integration Focus
 - Westinghouse Organizational Realignment – One organization responsible for AP1000 Licensing
 - Provide alignment between all organizations to identify cross-cutting issues
- Compliance Focus
 - Ensure compliance by reviewing activities from a holistic perspective – Licensing, Technical and Process Commitments
 - ITAAC Inspection Corrective Actions – Improved processes to drive overall compliance activities

Core I&C Systems

Protection and Safety Monitoring System (PMS)

- The aggregate of electrical and mechanical equipment which senses generating station conditions and generates the signals to actuate reactor trip and ESF, and which provides the equipment necessary to monitor plant safety-related functions during and following designated events.
 - Common Q:
 - Platform used for the PMS System.
 - Component Interface Module-Safety Remote Node Controller Sub-System (CIM):
 - A Field Programmable Gate Array-based PMS module that provides component control with prioritization for competing safety and non-safety commands. The CIM also interfaces with the ADS Blocking device that provides the permissive to allow PMS to perform ADS actuation.



Core I&C Systems

Diverse Actuation System (DAS)

- The diverse actuation system is a nonsafety-related, diverse system that provides an alternate means of initiating reactor trip and actuating selected engineered safety features, and providing plant information to the operator.
- Advanced Logic System (ALS) – Field programmable gate array (FPGA) based safety platform chosen as the operating platform for the DAS system.

Core I&C Systems

Distributed Control and Information System (DCIS)

- Ovation Based Systems
- Plant Control System (PLS)
- Turbine Control & Protection System (TCPS)
- Data Display Processing System (DDS)
- Operations and Control Centers (OCS)
- Digital Rod Control System (DRCS)
- Digital Rod Position Indication System (DRPI)



No potential licensing changes have been identified for any of the DCIS systems

Topics Covered / LAR Summary

- Protection & Safety Monitoring System
 - Common Q Software Program Manual and Topical Report Upgrade
 - PMS-PLS-PAM Changes (PLS – Plant Monitoring System, PAM – Post Accident Monitoring System)
 - IRWST Operability & SFS Flooding
 - Addition of In-containment Refueling Water Storage Tank (IRWST) Level Instrumentation
 - Miscellaneous Tier 1 Table Updates
 - Miscellaneous UFSAR Table 7.5-1 Updates
 - Flux Doubling Compliance to IEEE 603
 - Automatic Depressurization System (ADS) Blocker Changes

Topics Covered / LAR Summary

- Component Interface Module – Safety Remote Node Controller System
 - Planning Phase Compliance to IEEEs
- Diverse Actuation System
 - DAS Cabinet Move to Auxiliary Building
 - CIM/DAS Diversity
- Digital Instrumentation & Control Test Strategy
- Other Miscellaneous License Amendment Requests

LAR Summary – LAR Approvals and LARs Under Review

- Human Factors Engineering Planning (APP-OCS-GEH-120/220) – Approved for SNC, under NRC review for SCANA.
- Human Factors Engineering Planning (APP-OCS-GEH-320) – Approved for SNC, under NRC review for SCANA.
- Human Factors Engineering Planning (APP-OCS-GEH-420/520) – Approved for SNC, under NRC review for SCANA.
- CIM/DAS Human Diversity – under NRC review for SNC. LAR audit held week of June 9th.
- Tier 2* Reclassification for HFE Planning Documents – Under NRC review for SNC and SCANA.

Inspections

Instrumentation & Control ITAAC Summary

- Over 100 Total Instrumentation & Control ITAAC
- 31 ITAAC Completed by activities wholly performed at Westinghouse facilities
- One Digital I&C ITAAC Completed & Approved by NRC

ITAAC Licensee Inspections (Southern Nuclear) - Completed

- April/May 2012 – ITAAC 2.5.02.11b/12 (PMS Requirements)
- June 2013 - ITAAC 2.5.02.11b/12 NOV Corrective Action Inspection
- September 2013 – NOV Re-Inspection & NOV Close-Out

ITAAC Vendor Inspections - Conducted

- January 2014 – ITAAC 2.5.02.14a (CIM Planning - DAC), 2.5.02.11d (PMS Test), 2.5.01.04b (DAS Test)
- March 2014 – ITAAC 2.5.02.13 (Commercial Grade Dedication), 2.5.02.11d, 2.5.01.04b

ITAAC Vendor Inspections – Planned

- August 2014 – ITAAC 2.5.01.04a, b (DAS Development & Test), 3.2.00.01c.i, ii (ISV Pre-Requisites), 2.5.02.11d



Questions?

