

Draft

Request for Additional Information No. 78(958), Revision 0

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U. S. EPR Standard Design Certification

AREVA NP Inc.

Docket No. 52-020

SRP Section: 14.03.05 - Instrumentation and Controls - Inspections, Tests, Analyses, and Acceptance
Criteria

Application Section: 14.3

ICE1 Branch

QUESTIONS

14.03.05-1

Describe how each of the inspections, tests, analyses and acceptance criteria (ITAAC) listed in FSAR Tier 1 Section 2 for interlock systems important to safety adequately address the requirements for such systems in order to provide reasonable assurance that a proposed facility would be constructed and operated in conformity to the design certification.

10 CFR 52.47(b)(1) requires, in part, that the proposed ITAAC that are necessary and sufficient to provide reasonable assurance that, if the ITAAC are performed and the acceptance criteria met, a facility that incorporates the design certification has been constructed and will be operated in conformity to the design certification. FSAR Tier 1 Section 2, Tables 2.2.3-3, 2.2.6-3, 2.4.1-9, 2.4.2-2, 2.4.4-5, 2.4.5-2 and 2.4.10-1 ITAAC identifies ITAAC for interlock systems important to safety. However, the DC-FSAR does not discuss how completion of the ITAAC will demonstrate that the as-built interlock systems important to safety will be in compliance with the regulations.

14.03.05-2

Provide additional detail on how each of the software development life cycle phases listed in Tier 1, Tables 2.4.1-9, 2.4.2-2, 2.4.4-5, and 2.4.9-3 map to the life cycle phases in Standard Review Plan, Branch Technical Position (BTP) 7-14.

The ITAAC does not seem to fully address all aspects of a high quality software design process as described in BTP 7-14. For example, Table 2.4.1-9, "Protection System ITAAC," Commitment 4.14, is at a high level and it's not clear where/how ITAAC addresses specific planning documentation as well as each of the management, implementation, and resource characteristics shown in BTP 7-14. Provide additional detail to demonstrate how ITAAC fully addresses each of the life cycle phases for hardware and software development.

14.03.05-3

Demonstrate how ITAAC addresses the digital safety system security guidance provided in Rev. 2 of Regulatory Guide (RG) 1.152, "Criteria for Use of Computers in Safety Systems of Nuclear Power Plants."

ITAAC should verify that the application conforms with Regulatory Positions 2.1-2.9 in RG 1.152. How is ITAAC addressing security as described in above RG and cyber security in general?

14.03.05-4

Provide clarification on where and/or how all of the applicable criteria from IEEE 603-1991 is addressed in ITAAC.

Staff was unable to find a commitment statement in DC-FSAR Section 14.3 or supporting information in Section 2.4 to confirm compliance with all of the applicable criteria in IEEE 603-1991. Why is it that Section 14.3.5 does not specifically address compliance to IEEE 603 criteria?

Staff noted that Tables in FSAR Tier 1, Section 2, do not identify how the ITAAC demonstrates compliance with the regulations. Applicant needs to provide clarification on where/how ITAAC demonstrates compliance to regulations and an explanation of why 14.3.5 does not specifically address IEEE 603 criteria. The response needs to demonstrate compliance as described above.

14.03.05-5

Provide clarification regarding specific wording as it relates to style of ITAAC column 1 and 2.

Although the applicant is not totally restricted with the wording to be used for Columns 1 and 2, it's important that ITAAC is consistent with DC-FSAR Section 14.3 and to have wording that comes as close as possible to the design information in the COL application.

Specifically, FSAR Section 14.3.2.3 indicates that Column 1 is Titled "Design Commitment" and Column 2 "Inspections, Tests, and Analyses." However, Section 2.4 ITAAC has slightly different wording for both Column 1 and 2. Provide the exact correct wording to be used for ITAAC Columns 1 and 2.

14.03.05-6

Provide clarification on why DC-FSAR Section 14.3, Table 14.3-8, "ITAAC Screening Summary Sheet," seems to be inconsistent with FSAR Tier 1, Section 2.4.

Sheet 6 of 7 from Table 14.3-8 indicates that Tier 1 for Communication System has no ITAAC but when staff reviewed Tier 1 Section 2.4.21 it did have ITAAC. Also, on the same Sheet 6 of 7, the table indicates that Tier 1 for the Leak Detection System has ITAAC but when staff reviewed Tier 1, Section 2.4.8, it had no ITAAC. The last two sheets of Table 14.3-8 also list ITAAC for Main Control Room, Remote Shutdown Station, and Technical Support Center but none are discussed in Tier 1 Section 2.4.

Provide clarification on the ITAAC screening process and confirm which I&C systems will have ITAAC.