
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: 349-8440

SRP Section: 14.03.09 – Human Factors Engineering – Inspections, Tests, Analyses, and Acceptance Criteria

Application Section:

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Question No. 14.03.09-1

The industry and the staff agreed upon a standardized format for design certification ITAAC based upon best practices, standardization, and underlying First Principles (Draft NEI 15-02 "Industry Guideline for the Development of Tier 1 and ITAAC under 10 CFR Part 52). NEI 15-02 documents the standardized format for HFE ITAAC. The standard HFE acceptance criteria for the HFE ITAAC, H01, states that:

An Integrated System Validation Report exists and concludes that acceptance criteria associated with each test scenario are satisfied upon initial performance of the scenarios or upon remediation of failures.

The staff reviewed APR1400 DCD Tier 1, Table 2.9-1, "Human Factors Engineering ITAAC," row 1, and had the following concerns:

- The acceptance criteria does not state that a report will be provided. Therefore, the staff would not be able to verify that the acceptance criteria associated with each test scenario were satisfied.
- The Acceptance Criteria states that "all pass or fail criteria associated with each test scenario are passed either on initial performance of the scenarios or following remediation of failures." However, "all pass or fail" criteria does not have the same meaning as the "acceptance criteria" for the test scenarios will be satisfied.

Therefore, revise the table to state that "An Integrated System Validation Report exists and concludes that acceptance criteria associated with each test scenario are satisfied upon initial performance of the scenarios or upon remediation of failures." Or, provide the basis for the wording provided.

Response

The Acceptance Criteria for Item 1 in Table 2.9-1, "Human Factors Engineering ITAAC" for the Design ITAAC will be revised to specify that an Integrated System Validation Report exists and concludes that acceptance criteria associated with each test scenario are satisfied upon initial performance of the scenarios or upon remediation of failures.

Impact on DCD

The APR1400 DCD, Tier 1, Table 2.9-1 will be revised as indicated in the Attachment.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical, or Environmental Report.

APR1400 DCD TIER 1

Table 2.9-1

Human Factors Engineering ITAAC

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The control room design incorporates HFE principles that minimize the potential for operator error.	1. An Integrated System Validation Test will be performed in accordance with the Verification and Validation Implementation Plan. [Design ITAAC]	1. All pass or fail criteria associated with each test scenario are passed either on initial performance of the scenarios or following remediation of failures.
2. The as-built control room HSIs are consistent with the final validated design specifications.	2. An inspection of the as-built control room HSIs will be performed.	2. The as-built control room HSIs conform to the validated design with no configuration deviations.

An Integrated System Validation Report exists and concludes that acceptance criteria associated with each test scenario are satisfied upon initial performance of the scenarios or upon remediation of failures.