

Vogle PEmails

From: Hoellman, Jordan
Sent: Tuesday, August 01, 2017 11:10 AM
To: Vogle PEmails
Subject: Draft Licensee Actions to Verify AP1000 Design is Complete - Licensee Markup
Attachments: 2017-08-03 Draft Licensee Actions for a Complete Design_Licensee markup.docx

Attached is the licensee markup of the draft licensee actions to verify the AP1000 Design is complete for discussion during a public meeting scheduled for August 3, 2017.

The NRC staff's proposed draft licensee actions is available at [ML17202U733](#).

These licensee actions are for item 1.a, Specify licensee's actions for declaring a Plant-Referenced Simulator (PRS), of the charter referenced below.

- [ML17079A362](#) – Charter for Declaration of Plant-Referenced Simulators and Qualification of Commission-Approved Simulation Facilities to Support the Cold Operator Licensing Process

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Licensee Actions to Verify AP-1000 Design is Complete

1. The actions described below are the actions necessary by the Licensee to complete their I & C and HFE designs as described in their Safety Analysis Report (SAR) and upon which the NRC approval Safety Evaluation is based. Once the design is complete, the licensee can take the required actions leading to a declaration of a PRS (ANSI-3.5 testing).

a. Licensee's actions for completing the design.

- I. Complete the ~~Fuel Load~~ PRS Baseline for the instrumentation and controls (I&C) systems, including the Protection and Safety Monitoring System (PMS) and Plant Control System (PLS), which are the safety protection system and the non-safety plant control systems, respectively. PRS Baseline is defined as the I&C load used during the ISV retest.
- II. Complete the appropriate outstanding human factors engineering (HFE) verification and validation (V&V) design activities in accordance with the previously approved HFE implementation plans listed in Appendix C, Section 3.2, "Human Factors Engineering," of the plant combined license.

Specifically, human engineering discrepancy (HED) issue resolution and retesting need to be completed in accordance with APP-OCS-GEH-320, "AP1000 Human Factors Engineering Integrated System Validation Plan," and APP-OCS-GEH-420, "AP1000 Human Factors Engineering Discrepancy Resolution Process." The ~~Fuel Load~~ PRS Baseline must be incorporated into the simulator that is used for conducting HED retesting.

~~Alternatively, if issues are identified during the retest, the licensees can will perform an evaluation demonstrating that there are no significant differences between the I&C baseline currently modeled and the Fuel Load Baseline that could result in negative training. If an issue(s) resulting in negative training is identified, PRS declaration cannot be made until mitigating actions are established according to the licensee's program and procedures. To do so, the differences between the I&C baseline currently modeled and the Fuel Load Baseline would need to be known.~~ The NRC staff would inspect the evaluation method and results as part of ongoing inspection activities verifying the completion of this design activity.

- III. Because these HFE V&V activities are related to Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Nos. 3.2.00.01c.ii and 3.2.00.01d listed in Appendix C, Section 3.2, "Human Factors Engineering," of the plant combined license, NRC staff will confirm that the HFE V&V activities have been completed satisfactorily during inspections (i.e., review of ISV retest procedures and observation of ISV retest).

NRC staff will document conclusions regarding the completion of these V&V activities in an inspection report. Even though these activities are related to ITAAC, staff does not need the licensees to submit the ITAAC closure notifications ~~be submitted and~~

~~successfully closed in order for the licensee to proceed before proceeding~~ with the next actions to declare a PRS.

b. Licensee's actions once the design is complete.

The licensees shall confirm that simulators at the sites model the control room HFE design that were a result of the HFE V&V activities described in with APP-OCS-GEH-320 and APP-OCS-GEH-420 and the ~~Fuel Load~~ PRS Baseline, ~~as described above~~.

Complete simulator performance testing in accordance with Regulatory Guide 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Training, License Examinations, and Applicant Experience Requirements," and American National Standards Institute/American Nuclear Society (ANSI/ANS)-3.5, "Nuclear Power Plant Simulators for Use in Operator Training and Examination," ~~as specified in the UFSAR~~, to demonstrate fidelity of the simulator to the design that results from completion of the HFE V&V activities (~~i.e., ISV and HED resolution~~) and the ~~Fuel Load~~ PRS Baseline. ~~This testing shall define the specific safety system malfunctions applicable to AP1000 Reactor Plants. The licensees are committed to using the ANSI/ANS-3.5 guidance for the malfunctions applicable to simulator testing, which Regulatory Guide 1.149 endorses.~~ In accordance with existing regulation, following these actions the licensee may declare a PRS.

The licensees provide written notification to the Office Director, NRO and the Regional Administrator, Region II informing the NRC when they declare a PRS.

Following the PRS declaration the NRC may, at its discretion, perform a simulator inspection per IP-41502.

~~Design changes following PRS declaration will be evaluated for training impact per ANS 3.5. If significant differences or differences that could result in negative training are identified prior to fuel load, the simulator will be updated and licensed operators will be given gap training on such changes prior to fuel load. Otherwise design changes would be scheduled for incorporation into the PRS per ANS 3.5. The NRC staff would inspect the evaluation method, training impact evaluations and modifications of simulator hardware and software as part of ongoing inspection activities.~~

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