

## Vogle PEmails

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**From:** Hoellman, Jordan  
**Sent:** Wednesday, August 09, 2017 10:45 AM  
**To:** Vogle PEmails  
**Subject:** Revision to Draft Licensee Actions to Verify AP1000 Design is Complete  
**Attachments:** NRC Comments on Draft Licensee Actions for a Complete Design\_Licensee markup\_rev 2\_CLEAN.docx

Attached is a revision to the draft licensee actions to verify the AP1000 Design is complete for discussion during a public meeting scheduled for August 10, 2017. The revision is based on SNC's comments and markup.

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

SNC's markup of the staff's proposed licensee actions is available at [ML17213A255](#).

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 the instrumentation & controls (I&C) and human factors engineering (HFE) designs as described in the Safety Analysis Report (SAR) and upon which the NRC approval (i.e., the Safety Evaluation Report) is based. Once the designs are complete, as discussed below, the licensee can take the required actions leading to a declaration of a plant-referenced simulator (PRS) (e.g., ANSI-3.5 testing).

a. Licensee's actions for completing the design.

- I. Complete the activities associated with design ITAAC for the (I&C) systems. Specifically, complete the activities associated with ITAAC 519 (for the Diverse Actuation System), ITAAC 550 (for the PMS), and ITAAC 553 (for the Component Interface Module), with the exception of the plant installation phases.
- II. Complete the HFE verification and validation (V&V) activities associated with design ITAAC 742 and 743 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 I&C system(s) that result from completion of the activities associated with the I&C design ITAAC listed above must be incorporated into the simulator that is used for conducting HED retesting.

- III. Because the HFE V&V activities are related to Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) ITAAC 742 and 743, 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 (e.g., 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 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 results from completing the HFE V&V activities described in with APP-OCS-GEH-320 and APP-OCS-GEH-420.

If differences exist between the site simulators and the HFE design that results from the HFE V&V activities, then the licensees will perform an evaluation demonstrating that there are no significant differences between the site simulators and the HFE design that

results from the HFE V&V activities that could result in negative training, as defined in 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." If any issue resulting in negative training is identified, PRS declaration cannot be made until mitigating actions are established according to the licensee's SAT program and procedures. The NRC staff would inspect the evaluation method and results as part of ongoing inspection activities verifying the completion of this design activity.

Additionally, the licensees must 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). 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, and the site-specific procedures for simulator performance testing. 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 and the licensee's SAT program. 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.