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ND-19-1536  
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U.S. Nuclear Regulatory Commission  
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Southern Nuclear Operating Company  
Vogtle Electric Generating Plant Unit 3 and Unit 4  
Notice of Uncompleted ITAAC 225-days Prior to Initial Fuel Load  
Item 2.5.02.08b.ii [Index Number 543]

Ladies and Gentlemen:

Pursuant to 10 CFR 52.99(c)(3), Southern Nuclear Operating Company hereby notifies the NRC that as of December 18, 2019, Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4 Uncompleted Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.5.02.08b.ii [Index Number 543] has not been completed greater than 225-days prior to initial fuel load. The Enclosure describes the plan for completing this ITAAC. Southern Nuclear Operating Company will, at a later date, provide additional notifications for ITAAC that have not been completed 225-days prior to initial fuel load.

Southern Nuclear Operating Company (SNC) previously submitted Notice of Uncompleted ITAAC 225-days Prior to Initial Fuel Load for Item 2.5.02.08b.ii [Index Number 543] ND-19-1122 [ML19267A213], dated September 24, 2019. This resubmittal supersedes ND-19-1122 in its entirety.

This notification is informed by the guidance described in NEI-08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*, which was endorsed by the NRC in Regulatory Guide 1.215. In accordance with NEI 08-01, this notification includes ITAAC for which required inspections, tests, or analyses have not been performed or have been only partially completed. All ITAAC will be fully completed and all Section 52.99(c)(1) ITAAC Closure Notifications will be submitted to NRC to support the Commission finding that all acceptance criteria are met prior to plant operation, as required by 10 CFR 52.103(g).

This letter contains no new NRC regulatory commitments.

If there are any questions, please contact Tom Petrak at 706-848-1575.

Respectfully submitted,

  
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Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4  
Completion Plan for Uncompleted ITAAC 2.5.02.08b.ii [Index Number 543]

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**Southern Nuclear Operating Company  
ND-19-1536  
Enclosure**

**Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4  
Completion Plan for Uncompleted ITAAC 2.5.02.08b.ii [Index Number 543]**

## **ITAAC Statement**

### **Design Commitment**

8.b) The PMS provides for the transfer of control capability from the MCR to the RSW using multiple transfer switches. Each individual transfer switch is associated with only a single safety-related group or with nonsafety-related control capability.

### **Inspections/Tests/Analyses**

ii) An operational test of the as-built system will be performed to demonstrate the transfer of control capability from the MCR to the RSW.

### **Acceptance Criteria**

ii) Actuation of each transfer switch results in an alarm in the MCR and RSW, the activation of operator control capability from the RSW, and the deactivation of operator control capability from the MCR for the associated safety-related division and nonsafety-related control capability.

## **ITAAC Completion Description**

Multiple ITAAC are performed to ensure that the Protection and Safety Monitoring System (PMS) provides for the transfer of control capability from the Main Control Room (MCR) to the Remote Shutdown Workstation (RSW) using multiple transfer switches. Each individual transfer switch is associated with only a single safety-related group or with non-safety-related control capability. The subject ITAAC requires that an operational test of the as-built system will be performed to demonstrate the transfer of control capability from the MCR to the RSW.

This ITAAC is performed to verify, by testing, that activation of each PMS transfer switch results in an alarm in the MCR and RSW. This ITAAC also verifies the activation of the operator control capability from the RSW and the deactivation of the operator control capability from the MCR for the associated safety-related division and nonsafety-related control capability.

ITAAC 2.5.02.08b.ii is completed as a combination of:

- Factory Acceptance Test – Functional testing of the transfer of controls from the MCR to the RSW including operator control capability from the RSW and deactivation of control from the MCR
- Component Test – Testing of switches in the MCR, RSW, and MCR/RSW Transfer Panel to verify proper wiring and correct digital input is received
- Site software installation and regression test – Hardware and software integration verification and testing of post system delivery changes

The Factory Acceptance Testing (FAT) follows the guidance of NEI 08-01 Section 9.4 (Reference 36) for the as-built tests to be performed at other than the final installed location. The FAT was performed in accordance with PMS Software Program Manual WCAP-16096 (Reference 1), PMS Test Plan APP-PMS-T5-001 (Reference 2) and applicable Codes and

Standards described in Vogtle 3 and 4 Update Final Safety Analysis Report (UFSAR) Chapter 7 (Reference 26).

The FAT included testing of PMS inputs and outputs, logic, and functionality. During this test, the initial conditions for the test scenarios are established and process parameters are simulated to get the expected outputs.

The test initially confirms that an alarm signal is generated when process parameters are simulated for each transfer switch placed in the Remote Shutdown Room (RSR) ENABLE position. The test procedure used for this testing is PMS Miscellaneous Test Procedure SV3/4-PMS-T1P-034 (References 3 and 4). The results of the testing are documented in the FAT Test Report SV3/4-PMS-T2R-034 (References 5 and 6).

The test continues with all transfer switches simulated in the RSR ENABLED position. During this portion of the test, the process parameters are simulated to confirm the operator control capability is transferred from the MCR to the RSW and all MCR operator control capability is deactivated. The multiple test procedures that are used for this testing are PMS Channel Integration Test Procedures SV3/4-PMS-T1P-007 (References 7 and 8), SV3/4-PMS-T1P-008 (References 9 and 10), and SV3/4-PMS-T1P-018 (References 11 and 12). The results of the testing are documented in the FAT Test Reports SV3/4-PMS-T2R-007 (References 13 and 14), SV3/4-PMS-T2R-008 (References 15 and 16), and SV3/4-PMS-T2R-018 (References 17 and 18).

Site testing of each switch is performed to verify the switch is properly wired and the correct digital input is received. This test places each switch in the MCR, RSW, and MCR/RSW Transfer Panel in all switch positions and verifies proper indicating lights are received in computer cabinets. Unit 3 component test package work orders 1054772, 1058836, and 1060105 (References 20, 21, and 22) and Unit 4 component test package work orders SNCXXXXXX, SNCYYYYYY, and SNCZZZZZZ (References 23, 24, and 25) document completion of switch position testing portion of this ITAAC.

Additional hardware and software installation and associated inspections and testing are performed on-site to verify that the cabinets are intact and functional in accordance with Units 3 and 4 for applicable Field Change Notifications (FCNs) AP1000 Vogtle Unit 3 PMS Initial Software Installation - Software Release 8.7.0.1 and AP1000 Vogtle Unit 4 PMS Initial Software Installation - Software Release 8.7.0.1, and B-GEN-ITPCI-001 (References 27, 28, and 19). References 27, 28, and 19 include steps that confirm and document successful software load and further confirm the physical properties of the as-built PMS. The Field Change Notifications are implemented using Unit 3 component test package work order SNCAAAAAA and Unit 4 component test package work order SNCBBBBBB (References 29 and 30). A regression analysis (i.e., change evaluation) is performed post-delivery for hardware changes (references 31 and 32) and software changes (Reference 33) if additional testing is needed for the as-built system.

The completed Unit 3 and Unit 4 FAT (References 5, 6, and 13 through 18), switch testing (References 20 through 25), FCNs (References 27 through 30), B-GEN-ITPCI-001 (Reference 19), and regression test results (References 31 through 33) confirm actuation of each transfer switch results in an alarm in the MCR and RSW, the activation of operator control capability from the RSW, and the deactivation of operator control capability from the MCR for the associated safety-related division and nonsafety-related control capability.

References 5, 6, 13 through 18, and 20 through 25 are available for NRC inspection as part of the ITAAC 2.5.02.08b.ii Unit 3 and 4 Completion Packages (References 34 and 35).

### **List of ITAAC Findings**

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company (SNC) performed a review of all findings pertaining to the subject ITAAC and associated corrective actions. This review found there are no relevant ITAAC findings associated with this ITAAC.

### **References (available for NRC inspection)**

1. WCAP-16096 "Software Program Manual for Common Q Systems"
2. APP-PMS-T5-001 "AP1000 Protection and Safety Monitoring System Test Plan"
3. SV3-PMS-T1P-034, "AP1000 Protection and Safety Monitoring System Maintenance and Test Panel Miscellaneous Test Procedure"
4. SV4-PMS-T1P-034, "AP1000 Protection and Safety Monitoring System Maintenance and Test Panel Miscellaneous Test Procedure"
5. SV3-PMS-T2R-034, "AP1000 Protection and Safety Monitoring System Maintenance and Test Panel Miscellaneous Test Report"
6. SV4-PMS-T2R-034, "AP1000 Protection and Safety Monitoring System Maintenance and Test Panel Miscellaneous Test Report"
7. SV3-PMS-T1P-007, "AP1000 Protection and Safety Monitoring System Reactor Trip Channel Integration Test Procedure"
8. SV4-PMS-T1P-007, "AP1000 Protection and Safety Monitoring System Reactor Trip Channel Integration Test Procedure"
9. SV3-PMS-T1P-008 "AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Procedure"
10. SV4-PMS-T1P-008 "AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Procedure"
11. SV3-PMS-T1P-018 "AP1000 Protection and Safety Monitoring I/O Channel Accuracy Channel Integration Test Procedure"
12. SV4-PMS-T1P-018 "AP1000 Protection and Safety Monitoring I/O Channel Accuracy Channel Integration Test Procedure"
13. SV3-PMS-T2R-007, "AP1000 Protection and Safety Monitoring System Reactor Trip Channel Integration Test Report"
14. SV4-PMS-T2R-007, "AP1000 Protection and Safety Monitoring System Reactor Trip Channel Integration Test Report"
15. SV3-PMS-T2R-008 "AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Report"
16. SV4-PMS-T2R-008 "AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Report"
17. SV3-PMS-T2R-018 "AP1000 Protection and Safety Monitoring I/O Channel Accuracy Channel Integration Test Report"
18. SV4-PMS-T2R-018 "AP1000 Protection and Safety Monitoring I/O Channel Accuracy Channel Integration Test Report"
19. B-GEN-ITPCI-001, "PMS CABINETS"
20. 1054772, "Perform B-GEN-ITPCI-006 for the Main Control Room & Remote Shutdown Room"

21. 1058836, "MCR/RSR Transfer Panel"
22. 1060105, "Perform component test B-GEN-ITPCI-006 for DDS"
23. SNCXXXXXX
24. SNCYYYYYY
25. SNCZZZZZZ
26. Vogtle Electric Generating Plant (VEGP) Units 3 and 4 Updated Final Safety Analysis Report (UFSAR)
27. Unit 3 Field Change Notice "AP1000 Vogtle Unit 3 PMS Initial Software Installation - Software Release 8.7.0.1"
28. Unit 4 Field Change Notice "AP1000 Vogtle Unit 4 PMS Initial Software Installation - Software Release 8.7.0.1"
29. SNCAAAAAA
30. SNCBBBBBB
31. GIC-AP1000-HEDS-19-001, Rev. 0 "Regression Testing Analysis for Vogtle Unit 3 Protection and Safety Monitoring System (PMS) Baseline 8.2 to 8.4 Hardware Modifications Performed at Site"
32. GIC-AP1000-HEDS-YY-XXX, Rev. X "Regression Testing Analysis for Vogtle Unit 4 Protection and Safety Monitoring System (PMS) Baseline X.X to X.X Hardware Modifications Performed at Site" (YY-XXX is the Year-Letter #)
33. APP-PMS-T2R-050, "AP1000 Protection and Safety Monitoring System Channel Integration Test Integrated System Validation Test Report"
34. ITAAC 2.5.02.08b.ii-U3-CP-Rev0, "ITAAC Completion Package"
35. ITAAC 2.5.02.08b.ii-U4-CP-Rev0, "ITAAC Completion Package"
36. NEI 08-01, "Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52"