Southern Nuclear

Jamie M. Coleman
Regulatory Affairs Director
Vogtle 3 & 4

7825 River Road
Waynesboro, GA 30830
706-848-6926 tel

April 13, 2023

Docket No.: 52-026

ND-23-0300
10 CFR 52.99(c)(1)

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 4
ITAAC Closure Notification on Completion of ITAAC 2.5.02.09d [Index Number 548]

Ladies and Gentlemen:

In accordance with 10 CFR 52.99(c)(1), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the completion of Vogtle Electric Generating Plant (VEGP) Unit 4 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.5.02.09d [Index Number 548] for verifying that the Protection and Safety Monitoring System (PMS) provides the interlock functions identified in Table 2.5.2-7. The closure process for this ITAAC is based on the guidance described in NEI 08-01, "Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52", which is endorsed by the NRC in Regulatory Guide 1.215.

This letter contains no new NRC regulatory commitments. Southern Nuclear Operating Company (SNC) requests NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact Kelli Roberts at 706-848-6991.

Respectfully submitted,

Jamie Coleman

Jamie M. Coleman
Regulatory Affairs Director Vogtle 3 & 4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.5.02.09d [Index Number 548]

JMC/KIK/sfr

cc: Regional Administrator, Region ll
Director, Office of Nuclear Reactor Regulation (NRR)
Director, Vogtle Project Office NRR
Senior Resident Inspector – Vogtle 3 & 4

Southern Nuclear Operating Company
ND-23-0300
Enclosure

Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.5.02.09d [Index Number 548]

ITAAC Statement

Design Commitment

9.d) The PMS provides the interlock functions identified in Table 2.5.2-7.

Inspections/Tests/Analyses

An operational test of the as-built PMS will be performed using real or simulated test signals.

Acceptance Criteria

Appropriate PMS output signals are generated as the interlock conditions are changed.

ITAAC Determination Basis

Testing was performed to verify that the Protection and Safety Monitoring System (PMS) provides interlock functions identified in Combined License Appendix C Table 2.5.2-7 (Attachment A).

ITAAC 2.5.02.09d is completed as a combination of:

- Factory Acceptance Test – Functional testing of interlocks
- Site software installation and regression test – Hardware and software integration verification and testing of post system delivery changes

The Factory Acceptance Testing (FAT) followed the guidance of NEI 08-01 (Reference 15) Section 9.4 for the as-built tests to be performed at other than the final installed location. The FAT was performed in accordance with the Software Program Manual for Common Q Systems WCAP-16096 (Reference 1), AP1000 Protection and Safety Monitoring System Test Plan (Reference 2), AP1000 Protection and Safety Monitoring System Qualified Data Processing System Channel Integration Test Procedures (References 4 and 5), and applicable Codes and Standards described in Vogtle 3 and 4 UFSAR Chapter 7 (Reference 3).

The FAT included testing of PMS inputs and outputs, logic, and functionality. During this test, the initial condition for the test scenarios was established and confirmed that the interlocks actuate as appropriate for the interlocks described in Vogtle 3 and 4 UFSAR Chapter 7, Section 7.6. During the test, the process parameters were simulated and adjusted to create applicable interlock conditions, PMS outputs were monitored, and it was confirmed that the interlocks work as designed, in accordance with PMS Channel Integration Test procedures SV4-PMS-T1P-008 and SV4-PMS-T1P-009 (References 4 and 5). The results of the testing are documented in the FAT test reports SV4-PMS-T2R-008 and SV4-PMS-T2R-009 (References 6 and 7).

Additional hardware and software installation and associated inspections and testing were performed on-site to verify that the cabinets were intact and functional in accordance with Field Change Notifications (FCNs) AP1000 Vogtle Unit 4 PMS Software Installation - Software Release 9.0.0.1 (Reference 9) and PMS Software Installation - Software Release 9.0.0.4 (Reference 10). These FCNs were implemented by work orders listed in ITAAC Technical Report SV4-PMS-Cabinet Software Loading-001 (Reference 8), and B-GEN-ITPCI-001 (Reference 14). SV4-PMS Cabinet Software Loading-001 (Reference 8) summarizes the software loading. SV4-PMS Cabinet Diagnostic Testing -001 (Reference 12) documents the performance of diagnostic testing, using individual WOs for each cabinet, and verified the diagnostics were satisfactory for each cabinet. References 8 and 12 include steps that confirm and document successful software load and further confirm the physical properties of the as-built PMS. A regression analysis (i.e., change evaluation) was performed for software changes (Reference 13) to determine if additional testing was needed for the as-built system.

The completed Unit 4 FAT (References 1 through 7), Software Installation (Reference 8), Regression test results (Reference 13) and Cabinet Diagnostics (Reference 12) confirm that appropriate PMS output signals are generated as the interlock conditions are changed.

References 1 through 14 are available for NRC inspection as part of the Unit 4 ITAAC 2.5.02.09d Completion Package (Reference 16).

ITAAC Finding Review

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. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.5.02.09d (Reference 16) and is available for NRC review.

ITAAC Completion Statement

Based on the above information, SNC hereby notifies the NRC that ITAAC 2.5.02.09d was performed for VEGP Unit 4 and the prescribed acceptance criteria were met.

Systems, structures, and components verified as part of this ITAAC are being maintained in their as-designed, ITAAC compliant condition, in accordance with approved plant programs and procedures.

References (available for NRC inspection)

1. WCAP-16096 “Software Program Manual for Common Q Systems” Revision 4A
2. APP-PMS-T5-001 “AP1000 Protection and Safety Monitoring System Test Plan”
3. Vogtle U3 and U4 UFSAR Rev 11.2 Chapter 7
4. SV4-PMS-T1P-008 “AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Procedure”
5. SV4-PMS-T1P-009 “AP1000 Protection and Safety Monitoring System Integrated Logic Processor Component Logic Channel Integration Test Procedure”
6. SV4-PMS-T2R-008, Rev. 0, “Vogtle Unit 4 AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Report”
7. SV4-PMS-T2R-009, Rev. 0, “AP1000 Protection and Safety Monitoring System Integrated Logic Processor Component Logic Channel Integration Test Report”
8. SV4-PMS Cabinet Software Loading-001, Rev 0, “Unit 4 Software Loading for PMS Cabinets for Multiple ITAACs: ITAAC 2.1.02.11a.ii [NRC Index No. 47], ITAAC 2.5.02.06a.ii [NRC Index No. 530], ITAAC 2.5.02.08a.ii [NRC Index No. 540], ITAAC 2.5.02.08b.ii [NRC Index No. 543], ITAAC 2.5.02.09d [NRC Index No. 548], ITAAC 2.5.04.02.i [NRC Index No. 557]”
9. SV4-GW-GCW-740, “AP1000 Vogtle 4 PMS Software Installation - Software Release 9.0.0.1”
10. SV4-GW-GCW-848, “AP1000 Vogtle 4 PMS Software Installation - Software Release 9.0.0.4”
11. B-GEN-ITPCI-001-011 Rev 2.1 “PMS CABINETS - Cabinet Diagnostics”
12. SV4-PMS Cabinet Diagnostic Testing-001, Rev 0, “Unit 4 PMS Cabinet Diagnostic Testing for Multiple ITAACs: ITAAC 2.1.02.11a.ii [NRC Index No. 47], ITAAC 2.5.02.06a.ii [NRC Index No. 530], ITAAC 2.5.02.08a.ii [NRC Index No. 540], ITAAC 2.5.02.08b.ii [NRC Index No. 543], ITAAC 2.5.02.09d [NRC Index No. 548], ITAAC 2.5.04.02.i [NRC Index No. 557]
13. SV4-PMS-T2R-050, Rev 1, “Vogtle AP1000 Protection and Safety Monitoring System Fuel Load Regression Test Report”
14. B-GEN-ITPCI-001, Rev. 4, “PMS CABINETS”
15. NEI 08-01, “Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52”
16. ITAAC 2.5.02.09d-U4-CP-Rev0, ITAAC Completion Package

Attachment A

COL Appendix C Table 2.5.2-7

Table 2.5.2-7 **PMS Interlocks**
RNS Suction Valves
PRHR Heat Exchanger Inlet Isolation Valve
CMT Cold Leg Balance Line Isolation Valves
Containment Vacuum Relief Isolation Valves