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U.S. Nuclear Regulatory Commission
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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 4
ITAAC Closure Notification on Completion of ITAAC 2.5.02.11 [Index Number 550]

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 2.5.02.11 [Index Number 550], for verifying the Protection and Safety Monitoring System (PMS) Hardware and Software Design Process. 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 Tom Petrak at 706-848-1575.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Michael J. Yox", written over a light blue horizontal line.

Michael J. Yox
Regulatory Affairs Director Vogtle 3 & 4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 4 ITAAC Closure Notification on Completion of 2.5.02.11 [Index Number 550]

MJY/MAC/sfr

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**Southern Nuclear Operating Company
ND-19-1437
Enclosure**

**Vogtle Electric Generating Plant (VEGP) Unit 4
ITAAC Closure Notification on Completion of ITAAC 2.5.02.11 [Index Number 550]**

ITAAC Statement

Design Commitment

11. The PMS hardware and software is developed using a planned design process which provides for specific design documentation and reviews during the following life cycle stages:

- a) Not used
- b) System definition phase
- c) Hardware and software development phase, consisting of hardware and software design and implementation
- d) System integration and test phase
- e) Installation phase

Inspections/Tests/Analyses

Inspection will be performed of the process used to design the hardware and software.

Acceptance Criteria

A report exists and concludes that the process defines the organizational responsibilities, activities, and configuration management controls for the following:

- a) Not used.
- b) Specification of functional requirements.
- c) Documentation and review of hardware and software.
- d) Performance of system tests and the documentation of system test results, including a response time test performed under maximum CPU loading to demonstrate that the PMS can fulfill its response time criteria.
- e) Performance of installation tests and inspections.

ITAAC Determination Basis

An inspection was performed to verify that the Protection and Safety Monitoring System (PMS) hardware and software were developed using a planned design process that provided for specific design documentation and reviews during the following life cycle stages: System definition phase, hardware and software development phase (consisting of hardware and software design and implementation), system integration and test phase, and installation phase.

PMS was developed by the vendor using defined processes, activities and organizational responsibilities per WCAP-16096-P-A (Reference 1) as supplemented by WCAP-15927-P (Reference 2). The defined processes were further incorporated into the vendor's processes and procedures that include the software and hardware development life cycle (i.e., requirements, design, manufacturing, factory testing, independent verification and validation, and delivery).

An inspection of the vendor's processes and procedures used to design the hardware and software was performed, and it was concluded that the processes define the organizational responsibilities, activities, and configuration management controls for specification of functional requirements, documentation, and review of hardware and software, and performance of system tests and the documentation of system test results, including a response time test performed under maximum Central Processing Unit (CPU) loading to demonstrate that the PMS fulfills its response time criteria. Technical report APP-GW-GLR-620 "AP1000 Design Certification ITAAC 2.5.02.11: Protection and Safety Monitoring System Design Process Technical Report" (Reference 3) documented the results of the inspection and included references to vendor processes and procedures that define each of the Acceptance Criteria.

An inspection of processes used for the performance of installation tests and inspections was performed. The results of this inspection were documented in Reference 4. Hardware (e.g., PMS cabinets) was installed and inspected in accordance with 26139-000-4MP-T81C-N3301, "Electrical Equipment Installation" (Reference 5). Software installation and regression analysis were per SV3-GW-GCW-300 (Reference 6). Energization and post-installation tests were performed per the component test procedure B-GEN-ITPCI-001 (Reference 7).

The results of the above PMS inspections concluded that the process defined the organizational responsibilities, activities, and configuration management controls for the following: specification of functional requirements, documentation, and review of hardware and software, performance of system tests and the documentation of system test results, including a response time test performed under maximum CPU loading to demonstrate that the PMS fulfills its response time criteria and performance of installation tests and inspections.

References 1 through 7 are available for NRC inspection as part of the ITAAC 2.5.02.11 Unit 4 Completion Packages (Reference 8).

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 one (1) closed Violation associated with this ITAAC.

1. VIO 05200025/2012009-01 & 05200026/2012009-01 (Closed) – Contrary to the above, as of May 25, 2012, the licensee failed to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for the Protection and Safety Monitoring System, were correctly translated into specifications, drawings, procedures, and instructions.
 - a. The ITAAC completion review determined that all corrective actions associated with this finding are completed and closed. NRC closure of this finding is documented in NRC Inspection Report 05200025/2013-004 & 05200026/2013-004.

The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.5.02.11 (Reference 8) and available for NRC review.

ITAAC Completion Statement

Based on the above information, SNC hereby notifies the NRC that ITAAC 2.5.02.11 was performed for VEGP Unit 4 and that the prescribed acceptance criteria are 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-P-A, Rev. 5, "Software Program Manual"
2. WCAP-15927-P, Rev. 7, "Design Process for AP1000 Common Q Safety Systems"
3. APP-GW-GLR-620, Rev. 1, "AP1000 Design Certification ITAAC 2.5.02.11: Protection and Safety Monitoring System Design Process Technical Report"
4. 2.5.02.11-U4-SumRep-Rev. 0, "Unit 4 PMS Installation Tests and Inspections Process Summary Report"
5. 26139-000-4MP-T81C-N3301, "Electrical Equipment Installation"
6. SV3-GW-GCW-300, Rev. 0, "Vogtle Unit 3 AP1000 PMS Initial Software Installation – Software Release 8.7.0.1"
7. B-GEN-ITPCI-001, Rev. 2, "PMS Cabinets"
8. ITAAC 2.5.02.11-U4-CP-Rev0, "ITAAC Completion Package"