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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 4
ITAAC Closure Notification on Completion of Item 2.3.13.05.i [Index Number 462]

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 2.3.13.05.i [Index Number 462] to demonstrate that the Primary Sampling System (PSS) equipment identified as seismic Category I or Class 1E in the Combined License (COL) Appendix C, Table 2.3.13-1 is designed and constructed in accordance with applicable requirements.

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 was 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

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Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.3.13.05.i [Index Number 462]

JMC/JRB/sfr

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

Southern Nuclear Operating Company
ND-22-0869
Enclosure

Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.3.13.05.i [Index Number 462]

ITAAC Statement

Design Commitment

5. The seismic Category I equipment identified in Table 2.3.13-1 can withstand seismic design basis loads without loss of its safety function.

6.a) The Class 1E equipment identified in Tables 2.3.13-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of their safety function, for the time required to perform the safety function.

Inspections, Tests, Analyses

i) Inspection will be performed to verify that the seismic Category I equipment and valves identified in Table 2.3.13-1 are located on the Nuclear Island.

ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed.

iii) Inspection will be performed for the existence of a report verifying that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

i) Type tests, analyses, or a combination of type tests and analyses will be performed on Class 1E equipment located in a harsh environment.

ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.

Acceptance Criteria

i) The seismic Category I equipment identified in Table 2.3.13-1 is located on the Nuclear Island.

ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function.

iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

i) A report exists and concludes that the Class 1E equipment identified in Table 2.3.13-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of its safety function for the time required to perform the safety function.

ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.3.13-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

ITAAC Determination Basis

This ITAAC requires that inspections, tests, and analyses were performed and documented to ensure the Primary Sampling System (PSS) equipment identified as seismic Category I or Class 1E in the Combined License (COL) Appendix C, Table 2.3.13-1 (the Table) is designed and constructed in accordance with applicable requirements.

i) The seismic Category I equipment identified in Table 2.3.13-1 is located on the Nuclear Island.

To assure that seismic Category I equipment can withstand seismic design basis loads without loss of safety function, all the equipment in the Table is designed to be located on the seismic Category I Nuclear Island. In accordance with Equipment Qualification (EQ) Walkdown ITAAC Guideline and the EQ ITAAC As-built Installation Documentation Guideline (References 1 and 2), an inspection was conducted of the PSS to confirm the satisfactory installation of the seismically qualified equipment. The inspection includes verification of equipment make/model/serial number and verification of equipment location (Building, Elevation, Room). The EQ As-Built Reconciliation Report (EQRR) (Reference 3) identified in Attachment A documents the results of the inspection and concludes that the seismic Category I equipment is located on the Nuclear Island.

ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function.

Seismic Category I equipment in the Table require type tests and/or analyses to demonstrate structural integrity and operability. Structural integrity of the seismic Category I valves is demonstrated by analysis in accordance with American Society of Mechanical Engineers (ASME) Code Section III (Reference 4). Functionality of the subset of active safety-related valves under seismic loads is determined using the guidance of ASME QME-1-2007 (Reference 5).

Safety-related (Class 1E) electrical equipment in the Table is seismically qualified by type testing combined with analysis in accordance with Institute of Electrical and Electronics Engineers (IEEE) Standard 344-1987 (Reference 6). This equipment includes safety-related active valve accessories such as electric actuators, position switches, pilot solenoid valves and electrical connector assemblies. The specific qualification method (i.e., type testing, analysis, or combination) used for each piece of equipment in the Table is identified in Attachment A. Additional information about the methods used to qualify AP1000 safety-related equipment is provided in the Updated Final Safety Analysis Report (UFSAR) Appendix 3D (Reference 7). The EQ Reports (Reference 8) identified in Attachment A contain applicable test reports and associated documentation and conclude that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function.

iii) A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions.

An inspection (Reference 1 and 2) was conducted to confirm the satisfactory installation of the seismically qualified equipment in the Table. The inspection verified the equipment make/model/serial number, as-designed equipment mounting orientation, anchorage and clearances, and electrical and other interfaces. The documentation of installed configuration of

seismically qualified equipment includes photographs and/or sketches/drawings of equipment/mounting/interfaces.

As part of the seismic qualification program, consideration was given to the definition of the clearances needed around the equipment mounted in the plant to permit the equipment to move during a postulated seismic event without causing impact between adjacent pieces of safety-related equipment. When required, seismic testing by measuring the maximum dynamic relative displacement of the top and bottom of the equipment was performed. EQ Reports (Reference 8) identify the equipment mounting employed for qualification and establish interface requirements for assuring that subsequent in-plant installation does not degrade the established qualification. Interface requirements are defined based on the test configuration and other design requirements.

Attachment A identifies the EQRR (Reference 3) completed to verify that the as-built seismic Category I equipment listed in the Table, including anchorage, is seismically bounded by the tested or analyzed conditions, IEEE Standard 344-1987 (Reference 6), and NRC Regulatory Guide (RG) 1.100 (Reference 9).

i) A report exists and concludes that the Class 1E equipment identified in Table 2.3.13-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of its safety function for the time required to perform the safety function.

The harsh environment Class 1E equipment in the Table was qualified by type testing and/or analyses. Class 1E electrical equipment type testing was performed in accordance with IEEE Standard 323-1974 (Reference 10) and RG 1.89 (Reference 11), to meet the requirements of 10 CFR 50.49. Type testing of safety-related equipment meets the requirements of 10 CFR Part 50, Appendix A, General Design Criterion 4. Attachment A identifies the EQ program and specific qualification method for each piece of safety-related mechanical or Class 1E electrical equipment located in a harsh environment. Additional information about the methods used to qualify AP1000 safety-related equipment is provided in the UFSAR Appendix 3D (Reference 7). EQ Reports (Reference 8) identified in Attachment A contain applicable test reports and associated documentation and conclude that the equipment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.3.13-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

An inspection (Reference 1 and 2) was conducted of the PSS to confirm the satisfactory installation of the Class 1E equipment in the Table. The inspection verified the equipment location, make/model/serial number, as-designed equipment mounting, wiring, cables, and terminations, and confirms that the environmental conditions for the zone (Attachment A) in which the equipment is mounted are bounded by the tested and/or analyzed conditions. It also documents the installed configuration with photographs or sketches/drawings of equipment mounting and connections. The EQRR (Reference 3) identified in Attachment A documents this inspection and concludes that the as-built harsh environment Class 1E equipment and the associated wiring, cables, and terminations are bounded by the qualified configuration and IEEE Standard 323-1974 (Reference 10).

Together, these reports (References 3 and 8) provide evidence that the ITAAC Acceptance Criteria requirements are met:

- The seismic Category I equipment identified in Table 2.3.13-1 is located on the Nuclear Island;
- A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function;
- A report exists and concludes that the as-built equipment including anchorage is seismically bounded by the tested or analyzed conditions;
- A report exists and concludes that the Class 1E equipment identified in Table 2.3.13-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of its safety function for the time required to perform the safety function; and
- A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.3.13-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

References 3 and 8 are available for NRC inspection as part of the Unit 4 ITAAC 2.3.13.05.i Completion Package (Reference 12).

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company (SNC) performed a review of all ITAAC findings pertaining to the subject ITAAC and associated corrective actions. This finding review, which included now-consolidated ITAAC Indexes 463, 464, 465, and 466, found no relevant ITAAC finding associated with this ITAAC.

The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.3.13.05.i (Reference 12) and is available for NRC review.

ITAAC Completion Statement

Based on the above information, SNC hereby notifies the NRC that ITAAC 2.3.13.05.i was performed for VEGP Unit 4 and that 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. ND-RA-001-014, "EQ Walkdown ITAAC Guideline", Version 4.0

2. ND-RA-001-016, "EQ ITAAC As-built Installation Documentation Guideline", Version 1.0

3. EQ As-Built Reconciliation Report (EQRR) as identified in Attachment A for Unit 4

4. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section III, "Rules for Construction of Nuclear Power Plant Components," 1998 Edition with 2000 Addenda

5. ASME QME-1-2007, "Qualification of Active Mechanical Equipment Used in Nuclear Power Plants," The American Society of Mechanical Engineers, June 2007

6. IEEE Standard 344-1987, "IEEE Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations"

7. Vogtle 3&4 Updated Final Safety Analysis Report Appendix 3D, "Methodology for Qualifying AP1000 Safety-Related Electrical and Mechanical Equipment"

8. Equipment Qualification (EQ) Reports as identified in Attachment A

9. Regulatory Guide 1.100, Rev. 2, "Seismic Qualification of Electric and Mechanical Equipment for Nuclear Power Plants"

10. IEEE Standard 323-1974, "IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations"

11. Regulatory Guide 1.89, Rev 1, "Environmental Qualification of Certain Electric Equipment Important to Safety for Nuclear Power Plants"

12. 2.3.13.05.i-U4-CP-Rev0, "Completion Package for Unit 4 ITAAC 2.3.13.05.i [Index Number 462]"

13. NEI 08-01. "Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52"

Attachment A

System: Primary Sampling System (PSS)

Equipment Name [+]	Tag No. [+]	Seismic Cat. I [+]	Class 1E/ Qual. for Harsh Envir.[+]	Envir. Zone [1]	Envir Qual Program [2]	Type of Qual.	EQ Reports (Reference 8)	As-Built EQRR (Reference 3)
Containment Air Sample Containment Isolation Valve Inside Reactor Containment (IRC)	PSS-PL-V008	Yes	Yes/Yes	1	M E * S	Type Testing & Analysis	SV4-PV13-VBR-011 / SV4-PV13-VBR-012	2.3.13.05.i-U4-EQRR-PCD001
Liquid Sample Line Containment Isolation Valve IRC	PSS-PL-V010A	Yes	Yes/Yes	1	M E * S	Type Testing & Analysis	SV4-PV13-VBR-011 / SV4-PV13-VBR-012	2.3.13.05.i-U4-EQRR-PCD001
Liquid Sample Line Containment Isolation Valve IRC	PSS-PL-V010B	Yes	Yes/Yes	1	M E * S	Type Testing & Analysis	SV4-PV13-VBR-011 / SV4-PV13-VBR-012	2.3.13.05.i-U4-EQRR-PCD001
Liquid Sample Line Containment Isolation Valve Outside Reactor Containment (ORC)	PSS-PL-V011A	Yes	Yes/No	N/A	N/A	Type Testing & Analysis	SV4-PV17-VBR-002 / SV4-PV17-VBR-001	2.3.13.05.i-U4-EQRR-PCD001
Liquid Sample Line Containment Isolation Valve ORC	PSS-PL-V011B	Yes	Yes/No	N/A	N/A	Type Testing & Analysis	SV4-PV17-VBR-002 / SV4-PV17-VBR-001	2.3.13.05.i-U4-EQRR-PCD001
Sample Return Line Containment Isolation Valve ORC	PSS-PL-V023	Yes	Yes/No	N/A	N/A	Type Testing & Analysis	SV4-PV17-VBR-002 / SV4-PV17-VBR-001	2.3.13.05.i-U4-EQRR-PCD001
Sample Return Containment Isolation Valve IRC	PSS-PL-V024	Yes	Yes/Yes	1	M E * S	Type Testing & Analysis	SV4-PV13-VBR-011 / SV4-PV13-VBR-012	2.3.13.05.i-U4-EQRR-PCD001
Air Sample Line Containment Isolation Valve ORC	PSS-PL-V046	Yes	Yes/No	N/A	N/A	Type Testing & Analysis	SV4-PV17-VBR-002 / SV4-PV17-VBR-001	2.3.13.05.i-U4-EQRR-PCD001

Notes:

[+] Excerpt from COL Appendix C Table 2.3.13-1

1. See Table 3D.5-1 of UFSAR

2. E = Electrical Equipment Program (limit switch and the motor operator, squib operator, solenoid operator)
   M = Mechanical Equipment Program (valve)
   S = Qualified for submergence or operation with spray
   * = Harsh Environment