Southern Nuclear

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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 C.2.5.04.04a [Index Number 561]

Ladies and Gentlemen:

Pursuant to 10 CFR 52.99(c)(3), Southern Nuclear Operating Company hereby notifies the NRC that as of April 10, 2019, Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4 Uncompleted Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item C.2.5.04.04a [Index Number 561] 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.

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,

Michael J. Yox
Regulatory Affairs Director Vogtle 3 & 4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4
Completion Plan for Uncompleted ITAAC C.2.5.04.04a [Index Number 561]

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Southern Nuclear Operating Company
ND-19-0387
Enclosure

Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4
Completion Plan for Uncompleted ITAAC C.2.5.04.04a [Index Number 561]

ITAAC Statement

Design Commitment

4. The plant calorimetric uncertainty and plant instrumentation performance is bounded by the 1% calorimetric uncertainty value assumed for the initial reactor power in the safety analysis.

Inspections, Tests, Analyses:
Inspection will be performed of the plant operating instrumentation installed for feedwater flow measurement, its associated power calorimetric uncertainty calculation, and the calculated calorimetric values.

Acceptance Criteria:

a) The as-built system takes input for feedwater flow measurement from a Caldon [Cameron] LEFM CheckPlus™ System;

b) The power calorimetric uncertainty calculation documented for that instrumentation is based on an accepted Westinghouse methodology and the uncertainty values for that instrumentation are not lower than those for the actual installed instrumentation; and

c) The calculated calorimetric power uncertainty measurement values are bounded by the 1% uncertainty value assumed for the initial reactor power in the safety analysis.

ITAAC Completion Description:

Inspections are performed of the plant operating instrumentation installed for feedwater flow measurement, its associated power calorimetric uncertainty calculation, and the calculated calorimetric values to demonstrate the plant calorimetric uncertainty and plant instrumentation performance is bounded by the 1% calorimetric uncertainty value assumed for the initial reactor power in the safety analysis.

a) The as-built system takes input for feedwater flow measurement from a Caldon [Cameron] LEFM CheckPlus™ System;

VEGP 3 & 4 operating instrumentation selected for feedwater flow measurement is the Caldon [Cameron] Leading Edge Flow Meter (LEFM) CheckPlus™ System. The Caldon [Cameron] LEFM CheckPlus™ System is installed in accordance with the Unit 3 and Unit 4 construction work packages (Reference 1 and 2, respectively). The construction work packages include inspections to verify that the flow meters are properly installed and that the Caldon [Cameron] LEFM CheckPlus™ System output is connected to the Data Display and Processing System (DDS) in accordance with the design documentation, thus providing the input to the as-built DDS for the feedwater flow measurement.

Inspection documentation contained in References 1 and 2, confirm that the as-built system takes input for feedwater flow measurement from a Caldon [Cameron] LEFM CheckPlus™ System.

b) The power calorimetric uncertainty calculation documented for that instrumentation is based on an accepted Westinghouse methodology and the uncertainty values for that instrumentation are not lower than those for the actual installed instrumentation;

Westinghouse has created a methodology to determine the overall power uncertainty based upon the inputs of individual sensor uncertainties. APP-GW-GL-046 "AP1000 Power Calorimetric Uncertainty Methodology Assuming a Generic Flow Measurement" (Reference 3), describes the Westinghouse methodology for performing instrument uncertainty calculations to confirm the secondary side power calorimetric uncertainty is less than 1.0% Rated Thermal Power (RTP), and references previous NRC acceptance of its use in calorimetric uncertainty calculations.

The Caldon [Cameron] LEFM CheckPlus™ System is calibrated in a certified laboratory using a piping configuration representative of the plant piping design prior to installation. A Unit 3 and Unit 4 Quality Assurance Data Package (QADP) (Reference 4 and 5, respectively) for the Caldon [Cameron] LEFM CheckPlus™ System is prepared by the flow meter vendor at the factory and reviewed prior to shipping release. The QADP verifies that the flow meter characteristics meet or exceed the requirements listed on the flow meter data sheet. The QADP provides confirmation of flow meter vendor, type, and model.

The power calorimetric uncertainty calculation documented for that instrumentation is based on an accepted Westinghouse methodology and the uncertainty values for that instrumentation are not lower than those for the actual installed instrumentation.

c) The calculated calorimetric power uncertainty measurement values are bounded by the 1% uncertainty value assumed for the initial reactor power in the safety analysis.

Reference 3 documents an accepted Westinghouse calorimetric uncertainty methodology based upon generic sensor uncertainty values and assumed environmental factors. Using the generic values and assumptions, Reference 3 proves the ability to bound the calorimetric uncertainty value to the 1% assumed in the safety analyses.

An inspection of Reference 4 and Reference 5 is performed to verify uncertainty values for the Caldon [Cameron] LEFM CheckPlus ™ System. Review of these documents verify system accuracy is bounded by the assumed 1% calorimetric error, and demonstrate that the safety analyses remain valid. The Caldon [Cameron] LEFM CheckPlus ™ System Commissioning procedure requires plant power level to be above 95%. Data obtained during commissioning shall be used to confirm the installation meets the site uncertainty analysis.

Inspection of Reference 4 and Reference 5 confirms that the calculated calorimetric power uncertainty measurement values are bounded by the 1% uncertainty value assumed for the initial reactor power in the safety analysis.

Together, References 1, 2, 3, 4, and 5 provide evidence that the ITAAC Acceptance Criteria requirements are met:

- The as-built system takes input for feedwater flow measurement from a Caldon [Cameron] LEFM CheckPlus™ System;

- The power calorimetric uncertainty calculation documented for that instrumentation is based on an accepted Westinghouse methodology and the uncertainty values for that instrumentation are not lower than those for the actual installed instrumentation; and

- The calculated calorimetric power uncertainty measurement values are bounded by the 1% uncertainty value assumed for the initial reactor power in the safety analyses.

References 1, 2, 3, 4, and 5 are available for NRC inspection as part of the Unit 3 and Unit 4 ITAAC C.2.5.04.04a Completion Package (Reference 6 and 7, respectively).

List of ITAAC Findings:

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

References (available for NRC inspection)

1. SV3-XXX-XXX-XXX, Unit 3 Construction Installation Work Package

2. SV4-XXX-XXX-XXX, Unit 4 Construction Installation Work Package

3. APP-GW-GL-046 "AP1000 Power Calorimetric Uncertainty Methodology Assuming a Generic Flow Measurement"

4. SV3-JE25-VQQ-001, "Quality Release & Data Package for JE25 SV3"

5. SV4-JE25-VQQ-001, "Quality Release and Certificate of Conformance"

6. C.2.5.04.04a-U3-CP-Rev 0, ITAAC Completion Package

7. C.2.5.04.04a-U4-CP-Rev 0, ITAAC Completion Package

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