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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 2.2.03.09a.ii [Index Number 202]

Ladies and Gentlemen:

Pursuant to 10 CFR 52.99(c)(3), Southern Nuclear Operating Company hereby notifies the NRC that as of April 6, 2018, Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4 Uncompleted Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.2.03.09a.ii [Index Number 202] 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,

Thomas J. Petrak for

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 2.2.03.09a.ii [Index Number 202]

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Southern Nuclear Operating Company
ND-18-0529
Enclosure

Vogtle Electric Generating Plant (VEGP) Unit 3 and Unit 4 Completion Plan for Uncompleted ITAAC 2.2.03.09a.ii [Index Number 202]

ITAAC Statement

Design Commitment

9.a) The PXS provides a function to cool the outside of the reactor vessel during a severe accident.

Inspections/Tests/Analyses

ii) Inspections of the as-built reactor vessel insulation will be performed.

Acceptance Criteria

ii) The combined total flow area of the water inlets is not less than 6 ft^2. The combined total flow area of the steam outlet(s) is not less than 12 ft^2. A report exists and concludes that the minimum flow area between the vessel insulation and reactor vessel for the flow path that vents steam is not less than 12 ft^2 considering the maximum deflection of the vessel insulation with a static pressure of 12.95 ft of water.

ITAAC Completion Description

Multiple ITAAC are performed to verify the Passive Core Cooling System (PXS) provides a function to cool the outside of the Reactor Vessel during a severe accident. The subject ITAAC requires that inspections of the as-built reactor vessel insulation be performed to verify that the combined total flow area of the water inlets is not less than 6 ft^2, that the combined total flow area of the steam outlet(s) is not less than 12 ft^2, and that a report exists and concludes that the minimum flow area between the vessel insulation and reactor vessel for the flow path that vents steam is not less than 12 ft^2 considering the maximum deflection of the vessel insulation with a static pressure of 12.95 ft of water.

Following fabrication, vendor and site personnel performed inspections to measure the inner diameter of the Unit 3 and Unit 4 reactor vessel insulation (RVI) and outer diameter of the reactor pressure vessel (RPV). The RPV inspections are performed onsite prior to installation in accordance with NEI-08-01, Section 9.5 "As-built Inspections" due to the impracticality of performing these measurements once the RPV is its final installed location. These inspections are conducted in accordance with the Unit 3 and Unit 4 RVI and RPV installation work packages (References 1 through 4). The installation work packages require measurements be taken of the RVI inner diameter following fabrication in its final location, RPV outer diameter prior to installation, and the final as-built centerline location of the RPV post installation. The as-built RPV centerline location is compared to the common reference point used to measure the as-built RVI inner diameter to ensure the accuracy of the calculated as built minimum flow area.

Additional inspections are performed of the RVI components, including water inlets, upper neutron shielding blocks, and steam outlets, following placement in their final location in accordance with the requirements of installation work packages (References 5, 6, and 7). These work packages identify the locations and frequency of inspection points for measuring the flow path area of the water inlet assemblies, steam outlets, and the inner diameter of the RVI components. Measurements are taken using survey equipment in accordance with site survey procedures. The as-built measurements of the RPV and the RVI are recorded and used

to calculate the total flow area of the water inlets, steam outlets, and the bounding minimum flow area in the annulus region that vents steam between the RPV and the RVI. The calculated as-built flow areas are verified to meet the acceptance criteria.

The maximum deflection of the RVI components with a static pressure of 12.95 ft of water is determined based upon the methodology described in subsection 5.3.5 of the Updated Final Safety Analysis Report (UFSAR) (Reference 8). A finite element structural analysis (Reference 9) is performed to determine the amount of deflection in the RVI components. The bounding load acting on the RVI components is derived based on the static pressure from 12.95 ft of water, and the dynamic oscillating pressure caused by the boiling of water between the reactor vessel and RVI. In addition, a thermal analysis (Reference 10) is performed to determine the expansion in the reactor vessel outer diameter and reduction of the RVI inner diameter. Together, these analyses demonstrate the minimum flow area between the RVI and RPV for the flow path that vents steam is not less than 12 ft^2 considering the maximum deflection of the vessel insulation with a static pressure of 12.95 ft of water.

The results of the as-built inspections are documented in the Unit 3 and Unit 4 Principal Closure Documents (References 11 and 12, respectively) and are shown in Attachment A which meets the ITAAC acceptance criteria.

References 1 thru 12 are available for NRC inspection as part of the Unit 3 and Unit 4 ITAAC 2.2.03.09a.ii Completion Packages (Reference 13 and 14, respectively).

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. Transco Work Package RV-50645-WP02 Rev 0, "Work Package & Inspection Records for MN20 RV Shell Support Ring, Insulation, and Flow Liner Installation at Vogtle 3"
2. Transco Work Package RV-50645-WP02 Rev 0, "Work Package & Inspection Records for MN20 RV Shell Support Ring, Insulation, and Flow Liner Installation at Vogtle 4"
3. WECTEC Work Package SV3-MV01-MHH-007 Rev X, "Upending and Installing Unit 3 Reactor Vessel"
4. WECTEC Work Package SV4-MV01-MHH-005 Rev 0, "Upending and Installing Unit 4 Reactor Vessel"
5. Transco Work Package SV3/4 RV-50645-WP03 Rev X, "MN20 RV Bottom Head Support Steel, Insulation, Lower Neutron Shielding and Flow Liner Installation"
6. Transco Work Package SV3/4 RV-50645-WP YYY, "RV Insulation Vent Panel Installation"
7. Transco Work Package SV3/4 RV-50645-WP ZZZ, "RV Upper Neutron Shielding Installation"
8. UFSAR Subsection 5.3.5, "Reactor Vessel Insulation"
9. APP-MN20-M3C-002 Rev 2, "Evaluation of Metallic Reflective Insulation Support Systems for the AP1000 Reactor Vessel"

10. APP-MN20-Z0C-003 Rev 0, "AP1000 Reactor Vessel Insulation System Steam/Water Annulus Flow Area during a Severe Accident"
11. Principal Closure Document (Unit 3)
12. Principal Closure Document (Unit 4)
13. 2.2.03.09a.ii U3-CP-Rev X, "Completion Package for the Unit 3 ITAAC 2.2.03.09a.ii [Index Number 202]"
14. 2.2.03.09a.ii U4-CP-Rev X, "Completion Package for the Unit 4 ITAAC 2.2.03.09a.ii [Index Number 202]"
15. NEI 08-01, "Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52"

Attachment A

As-built Flow area for the RVI water inlets, RVI steam outlets and flow path between RPV and RVI that vents steam

Location	Unit 3 as-built flow area (ft^2)	Unit 4 as-built flow area (ft^2)	Acceptance criteria
Water Inlets	x.x	x.x	not less than 6 ft^2
Steam outlets	y.y	y.y	not less than 12 ft^2
flow path between RPV and RVI that vents steam	z.z	z.z	not less than 12 ft^{2*}

*considering the maximum deflection of the vessel insulation with a static pressure of 12.95 ft of water.