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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 3
ITAAC Closure Notification on Completion of ITAAC Item 3.3.00.10.ii [Index Number 816]

Ladies and Gentlemen:

In accordance with10 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 3 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 3.3.00.10.ii [Index Number 816]. This ITAAC verified that the as-built structural behavior (vertical elevation) of the Passive Containment Cooling System (PCS) storage tank exterior boundary and shield building including concrete surface cracking are acceptable under normal loads before and after filling. In addition, this ITAAC verified that there is no visible water leakage from the PCS storage tank. The closure process for this ITAAC is based on the guidance described in Nuclear Energy Institute (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 A. Roberts at 706-848-6991.

Respectfully submitted,

Michael J. Yox
Regulatory Affairs Director Vogtle 3 & 4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 3
Completion of ITAAC Item 3.3.00.10.ii [Index Number 816]

MJY/JFV/sfr

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**Southern Nuclear Operating Company**
**ND-21-0167**
**Enclosure**

**Vogtle Electric Generating Plant (VEGP) Unit 3**
**Completion of ITAAC Item 3.3.00.10.ii [Index Number 816]**

**ITAAC Statement**

Design Commitment

10. The shield building roof and PCS storage tank support and retain the PCS water sources. The PCS storage tank has a stainless steel liner which provides a barrier on the inside surfaces of the tank. Leak chase channels are provided on the tank boundary liner welds.

Inspections/Tests/Analyses

ii) An inspection of the PCS storage tank exterior tank boundary and shield building tension ring will be performed before and after filling of the PCS storage tank to the overflow level. The vertical elevation of the shield building roof will be measured at a location at the outer radius of the roof (tension ring) and at a location on the same azimuth at the outer radius of the PCS storage tank before and after filling the PCS storage tank.

iii) An inspection of the PCS storage tank exterior tank boundary and shield building tension ring will be performed before and after filling of the PCS storage tank to the overflow level. The boundaries of the PCS storage tank and the shield building roof above the tension ring will be inspected visually for excessive concrete cracking.

Acceptance Criteria

ii) A report exists and concludes that inspection and measurement of the PCS storage tank and the tension ring structure, before and after filling of the tank, shows structural behavior under normal loads to be acceptable.

iii) A report exists and concludes that there is no visible water leakage from the PCS storage tank through the concrete and that there is no visible excessive cracking in the boundaries of the PCS storage tank and the shield building roof above the tension ring.

**ITAAC Determination Basis**

Multiple ITAAC are performed to demonstrate that the shield building (SB) roof and Passive Containment Cooling System (PCS) storage tank support and retain the PCS water sources. The PCS storage tank has a stainless steel liner which provides a barrier on the inside surfaces of the tank. Leak chase channels are provided on the tank boundary liner welds.

The subject ITAAC requires that an inspection of the PCS storage tank exterior tank boundary and SB tension ring be performed before and after filling the PCS storage tank to the overflow level to demonstrate structural behavior under normal loads is acceptable. The vertical elevation of the SB roof is measured at a location at the outer radius of the roof (tension ring) and at a location on the same azimuth at the outer radius of the PCS storage tank before and after filling the PCS storage tank. The subject ITAAC also requires visual inspections before and after filling of the PCS storage tank to the overflow level to confirm there is no visible water leakage from the PCS storage tank through the concrete, and that there is no visible excessive cracking in the boundaries of the PCS storage tank and the SB roof above the tension ring. Inspections before and after tank filling were coordinated by Unit 3 preoperational test procedure 3-PCS-ITPP-502 (Reference 1).

For the inspection and measurement portion of the ITAAC, the vertical elevation of the SB roof was measured at two locations, at the outer radius of the roof (tension ring) and at the outer radius of the PCS storage tank on the same azimuth. The two measurements were performed before and after filling the PCS storage tank to the overflow level. The values at the selected measurement locations were obtained using survey equipment in accordance with site survey and measurement procedures (Reference 2).

The difference in the measured values corresponds to the vertical deflection at each location due to the filling of the tank. This difference was compared to the maximum acceptable deflection as documented in APP-GW-GER-127 (Reference 3). The maximum acceptable deflection was based on the greatest dimensional and material property tolerances of the roof structure consistent with the largest displacement at the measured points. The measured value was verified to be less than or equal to the maximum acceptable vertical deflection for the measurement locations. The results of the measurements and comparisons were documented in the Unit 3 principal closure document (Reference 4).

For the visual inspection and crack evaluation portion of the ITAAC, prior to the initial filling of the PCS storage tank, a crack map is developed of the boundaries of the PCS storage tank and the SB roof above the tension ring. The crack mapping included the exposed concrete surface of the PCS storage tank at several locations. A visual inspection was performed to obtain surface crack information. Crack evaluation and crack significance was assessed using Section 2.2 of American Concrete Institute (ACI) 224.1R-07 (Reference 5). The results of the inspection noted that there were no visible cracks.

Crack mapping was repeated after the filling of the PCS storage tank to the overflow level. The second crack mapping reviewed the exposed concrete surface at the same locations that were used for the crack mapping performed before the PCS storage tank was filled. Visual inspections were again performed to obtain surface crack information. The results of the inspection noted that there were no visible cracks.

Visual inspection of the PCS storage tank was also performed once the tank is filled to the overflow level to verify that there is no visible water leakage from the tank through the concrete.

The results of the inspections, measurements, and crack mapping were documented in the Unit 3 principal closure document (Reference 4) and concluded that inspection and measurement of the PCS storage tank and the tension ring structure, before and after filling the PCS storage tank to the overflow level, showed structural behavior under normal loads to be acceptable, and that there was no visible water leakage from the PCS storage tank through the concrete, and that there was no visible excessive cracking in the boundaries of the PCS storage tank and the SB roof above the tension ring.

References 1 thru 5 are available for NRC inspection as part of the Unit 3 ITAAC 3.3.00.10.ii Completion Packages (Reference 6).

**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 3.3.00.10.ii Completion Package (Reference 6) and is available for NRC review.

**ITAAC Completion Statement**

Based on the above information, SNC hereby notifies the NRC that ITAAC 3.3.00.10.ii was performed for VEGP Unit 3 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. 3-PCS-ITPP-502, "Passive Containment Cooling System PCCWST Preoperational Test Procedure"
2. 26139-000-4MP-T81C-N3201, Revision 7, "Construction Survey"
3. APP-GW-GER-127 Revision 1, "AP1000 PCCS Tank Measurement Acceptance Criteria for ITAAC 3.3.00.10.ii"
4. SV3-1278-ITR-800816, "PCS Storage Tank Structural Behavior Inspection Report, Unit 3 ITAAC 3.3.00.10.ii (BLDG PCS Storage Tank Structural Behavior) [NRC Index 816]"
5. ACI 224.1R-07 Causes, Evaluation and Repair of Cracks in Concrete Structures
6. 3.3.00.10.ii-U3-CP-Rev0, ITAAC Completion Package
7. NEI 08-01, "Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52"