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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 4
Completion of ITAAC E.3.8.05.01.01 [Index Number 844]

Ladies and Gentlemen:

In accordance with 10 CFR 52.99(c)(1), 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 E.3.8.05.01.01[Index Number 844], Waterproof Membrane Coefficient of Friction. 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.

ITAAC Statement

Design Commitment

The friction coefficient to resist sliding is 0.7 or higher.

Inspection/Test/Analysis

Testing will be performed to confirm that the mudmat-waterproofing-mudmat interface beneath the Nuclear Island basemat has a minimum coefficient of friction to resist sliding of 0.7.

Acceptance Criteria

A report exists and documents that the as-built waterproof system (mudmat-waterproofing-mudmat interface) has a minimum coefficient of friction of 0.7 as demonstrated through material qualification testing.

ITAAC Determination Basis

Testing was performed to demonstrate that the as-built waterproof system (mudmat-waterproofing-mudmat interface) has a minimum coefficient of friction (COF) of 0.7.

The Vogtle 3&4 Updated Final Safety Analysis Report (UFSAR) in Section 3.8.5.1.1, "Waterproof Membrane" (Reference 1) describes the waterproof membrane system and ITAAC requirements. Material qualification testing reported in References 2 and 3 demonstrate that the as-built mudmat-waterproofing-mudmat interface has a minimum COF of 0.7 to resist sliding. A report exists and documents that the as-built waterproof system (mudmat-waterproofing-mudmat interface) has a minimum COF of 0.7 as deomonstrated through material qualification testing (Reference 4).

Material qualification testing was performed at an offsite laboratory and at the Vogtle 3 & 4 site. Multiple blocks of the waterproof system were prepared for testing. These test blocks modeled different concrete surface finishes and joint configurations to determine the optimum configuration for field installation. The material qualification testing also addressed chemical and physical properties of the waterproofing, surface finish requirements of the lower concrete mudmat, and waterproof system installation procedures necessary to achieve the minimum COF of 0.7. Material qualification testing performed at the offsite laboratory substantiated that the average shear stress of 25.1 psi (Reference 5) required to be transferred through the Vogtle 3 & 4 mudmat and the waterproofing membrane was exceeded as evidenced by the results of material shear stress testing (~1400 psi). (Reference 6)

In each test configuration, the COF was tested by applying a nominal 8900 pound load normal (perpendicular) to the waterproof system and then measuring the resultant minimum horizontal load needed to move the upper concrete mudmat test block. Dividing the resultant horizontal load by the normal load resulted in the tested COF.

Field installation procedures, "Nuclear Island Waterproofing Membrane Installation (Reference 7) and "Nuclear Island Concrete Mudmat Installation" (Reference 8), were developed based on the material qualification testing results. These procedures were used to install the mudmat-waterproofing-mudmat interface beneath the Nuclear Island basemat as depicted in "Nuclear Island Mudmat drawing". (Reference 9)

Material qualification demonstrated that the as-built waterproof system (lower mudmat-waterproofing-upper mudmat interface) tests have coefficients of friction ranging from 0.70 to greater than 1.0. The testing results are documented in project technical report "VEGP Units 3 & 4 ESP Part 2, Section 3.8.5.1.1, Nuclear Island Waterproof Membrane ITAAC" (Reference 4).

Supplemental material qualification testing was performed both on-site and in a laboratory and bounds Unit 4 as-built conditions as documented in "Acceptance Verification Report For On-Site and Laboratory Testing of Integritank Waterproofing Membrane System" (Reference 3). The supplemental material qualification testing in conjunction with the initial testing demonstrates the as-built conditions meet the minimum COF of 0.7.

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 review found that there are no relevant ITAAC Findings. The ITAAC Finding review is documented in the ITAAC Completion Package for Vogtle Electric Generating Plant Unit 4 ITAAC E.3.8.05.01.01 (Reference 10) and is available for NRC inspection.

ITAAC Completion Statement

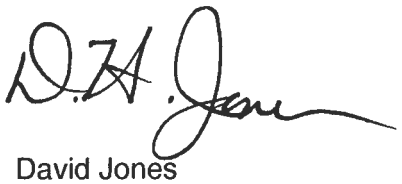
Based on the above information, SNC hereby notifies the NRC that ITAAC E.3.8.05.01.01 [Index Number 844] was performed for Vogtle Electric Generating Plant Unit 4, and the prescribed acceptance criteria are met.

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.

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 Jim Davis at 706-826-5544.

Sincerely,



David Jones

SNC Technical Compliance Vice President

References (available for NRC inspection)

1. Vogtle 3&4 Updated Final Safety Analysis Report (UFSAR), Revision 2.0
2. 132175-J800.09-00015, "Final Qualification Report for Laboratory Testing of Integritank Waterproofing Membrane System", Issue E
3. 132175-J800.09-00043, "Acceptance Verification Report For On-Site and Laboratory Testing of Integritank Waterproofing Membrane System", Issue C
4. SV0-AT01-ITR-800001, "VEGP Units 3 & 4 ESP Part 2, Section 3.8.5.1.1, Nuclear Island Waterproof Membrane ITAAC", Revision 6
5. Site Evaluation Report for an Early Site Permit (ESP) at the VEGP ESP Site, NUREG-1923 (Section 3.8.5.3.2.3)
6. 132175-J800.09.00047, "Acceptance Summary Report for Laboratory Testing of Field Samples of Integritank Waterproofing Membrane System for Vogtle Plant Unit 4", (NTS Test Report TR63501-11N DED-1, Revision 0, Table 11, 14_Q_4), Revision 0
7. SV0-AT01-Z0-800001, "Nuclear Island Waterproofing Membrane Installation", Revision 5
8. SV0-CC02-Z0-001, "Nuclear Island Concrete Mudmat Installation", Revision 4
9. Drawing, SV0-G100-XE-017, "Nuclear Island Mudmat", Revision 1
10. SVP_SV0_002002, Attachment 2, Vogtle Electric Generating Plant Unit 4 ITAAC E.3.8.05.01.01 (844) Completion Package

cc:

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