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January 30, 2017  
NND-17-0033  
10 CFR 52.99(c)(1)

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Subject: Virgil C. Summer Nuclear Station (VCSNS) Unit 3  
Combined License No. NPF-94  
Docket Number 52-028  
ITAAC Closure Notification on Completion of ITAAC 2.2.01.11a.i  
[Index No. 114]

Attachments: (1) References  
(2) Equipment Qualification ITAAC Compliance Matrix for Motor-Operated Valves Excerpt from VCSNS COL Appendix C, Table 2.2.1-1

The purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) in accordance with 10 CFR 52.99(c)(1) of the completion of Virgil C. Summer Nuclear Station (VCSNS) Unit 3 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.2.01.11a.i for verifying that a test report exists and concludes each motor-operated valve changes position as indicated in Table 2.2.1-1 under design conditions. The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1), which was endorsed by the NRC in Regulatory Guide 1.215.

### **ITAAC Statement**

#### **Design Commitment:**

*11.a) The motor-operated and check valves identified in Table 2.2.1-1 perform an active safety-related function to change position as indicated in the table.*

#### **Inspections, Tests, Analyses:**

*i) Tests or type tests of motor-operated valves will be performed to demonstrate the capability of each valve to operate under design conditions.*

Acceptance Criteria:

- i) *A test report exists and concludes that each motor-operated valve changes position as indicated in Table 2.2.1-1 under design conditions.*

**ITAAC Determination Basis**

Multiple ITAAC are performed to demonstrate that the motor-operated valves and check valves identified in VCSNS Combined License (COL) Appendix C, Table 2.2.1-1 (Attachment 2) perform an active safety-related function to change position as indicated in the table. The subject ITAAC requires tests or type tests of motor-operated valves be performed to demonstrate the capability of the valve to operate under its design conditions.

The motor-operated valves identified in Table 2.2.1-1 have been qualified in accordance with the provisions of American Society of Mechanical Engineers (ASME) QME-1-2007, "Qualification of Active Mechanical Equipment Used in Nuclear Power Plants" (Reference 2).

Functional qualification was performed under the design conditions identified in the design specification for the valves (Reference 3) to demonstrate that each motor-operated valve assembly is qualified to perform its designated function when used in its intended service. In accordance with ASME QME-1-2007, qualification is substantiated by demonstrating the relationship between the service requirements and the type-testing and analysis that was conducted as part of this qualification program.

Type testing was performed, including natural frequency determination, side load static deflection testing, final static seat and stem leakage testing, steam testing, and water testing, for the ranges of the pressure, temperature, and flow for each valve and the maximum seat-sealing differential pressure. In accordance with ASME QME-1-2007, the functional qualification process for these motor-operated valve assemblies also included valve and actuator internal inspections and measurement, orientation requirements, seat and stem leakage limitations, diagnostic data collection and analysis methods, static and dynamic flow diagnostic testing, and pressure locking and thermal binding evaluations. The qualification also followed the provisions of ASME QME-1-2007 for the extrapolation of functional qualification to another valve assembly and demonstration of functional capability of production valve assemblies.

The results of the qualification are documented in the Equipment Qualification Data Package (EQDP) (Reference 4) and the Equipment Qualification Summary Report (EQSR) (Reference 5) which are identified in Attachment 2 for each applicable valve. The EQDP and EQSR summarize the applicable test methodology, environmental qualification, seismic qualification and ASME QME-1-2007 functional qualification and application reports that demonstrate that each motor-operated valve changes position as indicated in Table 2.2.1-1 under design conditions.

**ITAAC Finding Review**

In accordance with plant procedures for ITAAC completion, SCE&G performed a review of all findings pertaining to the subject ITAAC and associated corrective actions. This review found that there are no relevant ITAAC findings associated with this ITAAC. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.2.01.11a.i (Reference 6) and available for NRC inspection.

**ITAAC Completion Statement**

Based on the above information, SCE&G hereby notifies the NRC that ITAAC 2.2.01.11a.i was performed for VCSNS Unit 3 and that 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.

We request NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99(e)(1).

If there are any questions, please contact Ryder Thompson at (803) 941-9812.

Sincerely,



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**Attachment 1**

**References (available for NRC inspection):**

1. NEI 08-01, Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52
2. American Society of Mechanical Engineers (ASME) QME-1-2007, "Qualification of Active Mechanical Equipment Used in Nuclear Power Plants"
3. APP-PV11-Z0-001, Design Specification for Butterfly Valves, ASME Boiler and Pressure Vessel Code Section III, Class 2 and 3
4. APP-PV11-VBR-006, Equipment Qualification Data Package for Motor-Operated TRICENTRIC Butterfly Valves for Use in the AP1000 Plant
5. APP-PV11-VBR-005, Equipment Qualification Summary Report for Motor-Operated TRICENTRIC Butterfly Valves for Use in the AP1000 Plant
6. ITAAC 2.2.01.11a.i Completion Package

Attachment 2

EQUIPMENT QUALIFICATION ITAAC COMPLIANCE MATRIX FOR MOTOR-OPERATED VALVES  
EXCERPT FROM VCSNS COL APPENDIX C, TABLE 2.2.1-1

SYSTEM: CONTAINMENT SYSTEM

Equipment Name	Tag Number	Active Function	EQSR Report Number	EQDP Report Number
Component Cooling Water System (CCS) Containment Isolation Motor-operated Valve (MOV) – Inlet Line Outside Reactor Containment (ORC)	CCS-PL-V200	Transfer Closed	APP-PV11-VBR-005	APP-PV11-VBR-006
CCS Containment Isolation MOV – Outlet Line IRC	CCS-PL-V207	Transfer Closed	APP-PV11-VBR-005	APP-PV11-VBR-006
CCS Containment Isolation MOV – Outlet Line ORC	CCS-PL-V208	Transfer Closed	APP-PV11-VBR-005	APP-PV11-VBR-006
SFS Discharge Line Containment Isolation MOV – ORC	SFS-PL-V038	Transfer Closed	APP-PV11-VBR-005	APP-PV11-VBR-006
SFS Suction Line Containment Isolation MOV – IRC	SFS-PL-V034	Transfer Closed	APP-PV11-VBR-005	APP-PV11-VBR-006
SFS Suction Line Containment Isolation MOV – ORC	SFS-PL-V035	Transfer Closed	APP-PV11-VBR-005	APP-PV11-VBR-006
Vacuum Relief Containment Isolation A MOV – ORC	VFS-PL-V800A	Transfer Closed / Transfer Open	APP-PV11-VBR-005	APP-PV11-VBR-006
Vacuum Relief Containment Isolation B MOV – ORC	VFS-PL-V800B	Transfer Closed / Transfer Open	APP-PV11-VBR-005	APP-PV11-VBR-006