



September 7, 2016  
NND-16-0342  
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 2  
Combined License No. NPF-93  
Docket Number 52-027  
ITAAC Closure Notification on Completion of ITAAC 2.1.01.06.ii [Index  
No. 7]

Attachments: References

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 2 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.1.01.06.ii for verifying a report exists and concludes that the Refueling Machine (RM) and the Fuel Handling Machine (FHM) can withstand seismic design basis dynamic loads without the loss of load carrying or structural integrity functions. 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:**

*6. The RM and FHM are designed to maintain their load carrying and structural integrity functions during a safe shutdown earthquake.*

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

*ii) Type test, analysis, or a combination of type tests and analyses of the RM and FHM will be performed.*

#### **Acceptance Criteria:**

*ii) A report exists and concludes that the RM and FHM can withstand seismic design basis dynamic loads without loss of load carrying or structural integrity functions.*

### **ITAAC Determination Basis**

Multiple ITAAC are performed to demonstrate that the Refueling Machine (RM) and the Fuel Handling Machine (FHM) are designed to maintain their load carrying and structural integrity functions during a safe shutdown earthquake. The subject ITAAC requires that type tests, analysis, or a combination of type tests and analyses of the RM and FHM be performed to verify that the RM and FHM can withstand seismic design basis dynamic loads without loss of load carrying or structural integrity functions.

Seismic loads for the RM and FHM were established using the AP1000 Safe Shutdown Earthquake (SSE) floor response spectra. Seismic analysis of the RM and FHM were performed to demonstrate that the equipment can withstand design basis loads without loss of structural integrity functions. Additional analyses were also performed to show the RM and FHM can withstand seismic design basis loads without loss of load carrying function once the handling tools are engaged with a fuel assembly. For the RM, these analyses are documented in the AP1000 Refueling Machine Seismic Analysis Report (Reference 2). For the FHM, these analyses are documented in the AP1000 Fuel Handling Machine Seismic Analysis Report (Reference 3) and Stress Analysis Calculation Note for AP1000 Spent Fuel Assembly Handling Tool (Reference 4). Together, these documents conclude the RM and FHM can withstand seismic design basis dynamic loads without loss of load carrying or structural integrity functions.

### **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 2.1.01.06.ii (Reference 5) and available for NRC inspection.

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**ITAAC Completion Statement**


Based on the above information, SCE&G hereby notifies the NRC that ITAAC 2.1.01.06.ii was performed for VCSNS Unit 2 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,

  
April R. Rice  
Manager  
Nuclear Licensing  
New Nuclear Deployment

RT/AR/hz

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

1. NEI 08-01, Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52
2. APP-FH01-S2C-001, AP1000 Refueling Machine Seismic Analysis Report
3. APP-FH02-S2C-001, AP1000 Fuel Handling Machine Seismic Analysis Report
4. APP-FH52-Z0C-001, Stress Analysis Calculation Note for AP1000 Spent Fuel Assembly Handling Tool
5. ITAAC 2.1.01.06.ii Completion Package