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New Nuclear Licensing

March 23, 2017
NND-17-0142
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 2.5.02.07d [Index No. 537]

Attachments: (1) 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 2.5.02.07d to verify that a report exists and concludes that the Protection and Safety Monitoring System (PMS) ensures the automatic safety function and the Class 1E manual controls both have priority over the non-Class 1E soft controls. 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:

7.d) *The PMS ensures that the automatic safety function and the Class 1E manual controls both have priority over the non-Class 1E soft controls.*

Inspections, Tests, Analyses:

Type tests, analyses, or a combination of type tests and analyses of the PMS manual control circuits and algorithms will be performed.

Acceptance Criteria:

A report exists and concludes that the automatic safety function and the Class 1E manual controls both have priority over the non-Class 1E soft controls.

ITAAC Determination Basis

Type testing of the PMS manual control circuits and algorithms was performed to demonstrate the automatic safety function and Class 1E manual controls both have priority over the non-Class 1E soft controls.

The PMS function of prioritizing Class 1E controls (both automatic and manual) over non-Class 1E soft controls is performed by the Component Interface Module (CIM), which arbitrates between PMS and the non-safety Instrumentation and Controls (I&C) system, Plant Control System (PLS), demands. CIM is an integral part of the PMS, and receives inputs from the safety (PMS) and non-safety (PLS) systems. The primary function of the CIM is to ensure safety actuations have priority over non-safety actuations and to provide the interface for the actuated devices.

The testing was performed with CIM fully integrated into the PMS cabinet. The safety actuation (automatic safety function and the Class 1E manual control signal) was generated by PMS. An Ovation suitcase was used to generate the external non-safety (non-Class 1E soft controls) signals as an input to the CIM. The testing was performed as part of PMS System Integration Test in a controlled environment, and is documented in the AP1000 PMS System Integrated Test CIM Priority Test Report (Reference 2).

The type testing performed on the selected CIMs included three different hardware configurations and eleven separate and independent test cases, which encompassed the entirety of the CIM priority logic to verify that safety signals have priority over non-safety signals. Specifically, the type tests showed that when a safety signal was present and a non-safety signal was actuated, the safety signal took priority; and the type tests showed that when a non-safety signal was present and a safety signal was actuated, the safety signal overrode the non-safety signal and took priority. During the test, the output of CIM was monitored to verify that the safety actuation signals continued to have priority over the non-safety signals. In all cases, the test results show that the Class 1E safety signals (both the automatic safety function and the Class 1E manual signals) have priority over non-safety signals (non-Class 1E soft controls) regardless of timing of the actuation.

The results of the PMS CIM priority logic testing are documented in Reference 2 and demonstrate that the PMS ensures that the automatic safety function and the Class 1E manual controls both have priority over the non-Class 1E soft controls.

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 2.5.02.07d (Reference 3) and available for NRC inspection.

ITAAC Completion Statement

Based on the above information, SCE&G hereby notifies the NRC that ITAAC 2.5.02.07d 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,



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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. APP-PMS-T2R-080, "AP1000 Protection and Safety Monitoring System System Integration Test CIM Priority Test Report"
3. ITAAC 2.5.02.07d Completion Package