

Revised Example D33 – Type Test/Analysis to Verify Electrical Isolation ITAAC Closure Notification

XX/YY/ZZZZ (Date)

To: NRC

From: {Name of Licensee}
{Site Name and Unit #}
{Docket #}

Subject: Completion of ITAAC 2.5.02.07a

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 {Site Name and Unit #} Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.5.02.07a to verify that ~~a report exists and concludes that the~~ isolation devices prevent credible faults from propagating into the Protection and Safety Monitoring System (PMS). The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1).

ITAAC Statement

Design Commitment:

The PMS provides process signals to the PLS through isolation devices.

Inspections, Tests, Analyses:

Type tests, analyses, or a combination of type tests and analyses of the isolation devices will be performed.

Acceptance Criteria:

A report exists and concludes that the isolation devices prevent credible faults from propagating into the PMS.

ITAAC Determination Basis

Type testing and analysis of isolation devices ~~was-were~~ performed to verify that devices prevent credible faults from propagating into the PMS from the Plant Control System (PLS).

The type testing, governed by IEEE 384-1981(Reference 3), was performed on isolation barrier components (relay isolation and inductive isolation (transformer coupled)) to qualify the barrier components and the barrier component protection utilized in the isolation barrier assemblies.

The testing demonstrated that the most severe credible faults injected into the non-Class 1E side of the isolation barrier did not degrade the intended safety function ~~below an acceptable level~~. This was accomplished by completing the prescribed tests where the non-Class 1E side of the isolation barrier

November 1, 2012

device is exposed to credible faults in the form of 580 VAC and 300VDC common-mode and differential faults, while the Class 1E side of the isolation barrier device was monitored for perturbations.

Analysis was performed for fiber-optic communication media, which provides a high level of electrical isolation. Electrical faults that occur on one end of the fiber-optic link cannot be transmitted into the equipment on the other end. This maintains the independence of the inter-connected system components by preventing faults from propagating into multiple components and leading to a loss of safety function. Due to the inherent properties of fiber optic cable, fault testing is not necessary.

The results of the tests and analysis are documented in EQLR-235-APP, “Class1E/Non-Class 1E Test Report for Fault Testing of AP1000 Isolation Barriers” (Reference 4) and conclude that the isolation devices prevent credible faults from propagating into the PMS.:

ITAAC Finding Review

In accordance with XXX-XXX-XXX (project specific procedure for ITAAC completion), {Licensee} 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 associated with this ITAAC. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.5.02.07a (Reference 2) and available for NRC inspection.

ITAAC Completion Statement

Based on the above information, [Licensee] hereby notifies the NRC that ITAAC 2.5.02.07a was performed for Plant/Unit XYZ, 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.

If there are any questions, please contact XXX at xxx-xxx-xxxx.

Sincerely,

{Signature of Licensee Representative}
{Typed Name of Licensee Representative}
{Title of Licensee Representative}

References (available for NRC inspection)

1. NEI 08-01, Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52.
2. ITAAC 2.5.02.07a Completion Package
3. IEEE 384-1981, IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits
4. EQLR-235-APP, Class 1E/Non-Class 1E Test Report for Fault Testing of AP1000 Isolation Barriers

November 1, 2012