Example D41 – Safety Function Performed on Signal from PMS ITAAC Closure Notification

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: Completion of ITAAC 2.1.02.11b.i

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 2.1.02.11b.i to verify that the squib valves receive a signal from the Protection and Safety Monitoring System (PMS), at the valve electrical leads, that is capable of actuating the squib valve. The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1).

ITAAC Statement

Design Commitment:

11b) The valves identified in Table 2.1.2-1 as having PMS control perform an active safety function after receiving a signal from the PMS.

Inspections, Tests, Analyses:

i) Testing will be performed on the squib valves identified in Table 2.1.2-1 using real or simulated signals into the PMS without stroking the valve.

Acceptance Criteria:

i) The squib valves receive a signal at the valve electrical leads that is capable of actuating the squib valve

ITAAC Determination Basis

Multiple ITAAC are performed to verify that the valves identified in Table 2.1.2-1 as having PMS control perform an active safety function after receiving a signal from the PMS. The subject ITAAC performs testing on the squib valves listed in Table 2.1.2-1 (Attachment A).

Testing was performed in accordance with Preoperational Test Procedure XXX-PXS-T1P-501 (Reference 3). The squib valve igniters were replaced with test resistor fixtures. The squib

valves were armed using the Automatic Depressurization System (ADS) Stage 4 Manual Actuation Controls on the Primary Dedicated Safety Panel and actuated. A multimeter along with a Data Acquisition (DAQ) system was used to measure both firing current and voltage. Containment temperature was also measured at multiple locations multiple times to correct test resistance to the maximum resistance expected during accident conditions.

The minimum signal necessary to actuate the squib valves is specified in valve design information as at least 3.7 amps for 10 ms. A measurement uncertainty calculation was performed in XXX-PXS-T1P-501 (Reference 3) using inputs recorded during testing of temperature, voltage, and firing current to confirm that a sufficient test signal was received at the squib valve. This calculation, adjusted for measurement uncertainty, verifies that each squib valve received a signal from the PMS capable of actuating the squib valve.

The completed Preoperational Test Procedures XXX-PXS-T1P-501 (Reference 3) confirm that each squib valve received a signal at the valve electrical leads which is capable of actuating the squib valve to perform its active safety function.

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 2.1.02.11b.i (Reference 2) and available for NRC inspection.

ITAAC Completion Statement

Based on the above information, [Licensee] hereby notifies the NRC that ITAAC 2.1.02.11b.i was performed for Plant/Unit XYZ, and that the prescribed acceptance criteria are met.

Systems, structures and components verified as part 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 2.1.02.11b.i Completion Package
3. Approved Preoperational Test Procedure XXX-PXS-T1P-501, which includes the associated Test Results Report (TRR)

Attachment A

Partial Excerpt of AP1000 DCD Tier 1 Table 2.1.2-1

Equipment Name	Tag No.	Control PMS/ DAS
Fourth-stage ADS Squib Valve	RCS-PL-V004A	Yes/Yes
Fourth-stage ADS Squib Valve	RCS-PL-V004B	Yes/Yes
Fourth-stage ADS Squib Valve	RCS-PL-V004C	Yes/Yes
Fourth-stage ADS Squib Valve	RCS-PL-V004D	Yes/Yes