NEI 08-01 [Revision 5 - Corrected]

Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52

June 2014

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Nuclear Energy Institute

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EXECUTIVE SUMMARY

NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*, Revision 5, provides generic guidance for the inspections, tests, analyses and acceptance criteria (ITAAC) program for new nuclear plants licensed under 10 CFR Part 52. The document reflects the discussions at Nuclear Regulatory Commission (NRC) public workshops during 2007-2013 concerning the development of the NRC's construction inspection program for new plants.

ITAAC closure guidance contained in Revision 3 of NEI 08-01 was endorsed by the NRC in Regulatory Guide 1.215, *Guidance for ITAAC Closure Under 10 CFR Part 52*. Revision 4 of NEI 08-01 includes guidance on maintaining the validity of ITAAC conclusions following submittal of ITAAC Closure Notifications in support of the final ITAAC finding required by 10 CFR 52.103(g) that all ITAAC are met. NRC published RG 1.215, Revision 1, endorsing NEI 08-01, Revision 4, in May 2012. Revision 5 reflects additional requirements related to ITAAC Maintenance codified in August 2012, lessons learned from simulated ITAAC implementation, and other enhancements, and is expected to be endorsed in a future revision of RG 1.215.

A main objective of this guideline is to provide all stakeholders a common framework and understanding of the Part 52 ITAAC closure and maintenance process. NEI 08-01 provides guidance for meeting NRC notification requirements concerning ITAAC closure and includes numerous examples of the required notifications based on that guidance. These examples are intended to be used by licensees as a guide when developing the actual notifications required by 10 CFR 52.99.

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1 INTRODUCTION

This guideline documents an approach that Combined License (COL) holders may use to satisfy NRC regulatory requirements under 10 CFR 52.99 related to the completion and closure of Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) for new nuclear power plants. Some activities relating to ITAAC may be conducted before the COL is granted. Therefore, portions of the guidance in this document would apply both to COL applicants performing construction-related activities and to COL holders ("licensees") performing construction-related activities.

This guidance has been developed based on a series of public workshops at which NRC Staff and industry representatives have discussed implementation of the ITAAC inspection and closure process for plants licensed and built under 10 CFR Part 52. In 2009, the NRC endorsed ITAAC closure guidance contained in Revision 3 of NEI 08-01 in Regulatory Guide 1.215. In a 2012 revision of RG 1.215, NRC endorsed ITAAC maintenance guidance contained in NEI 08-01, Revision 4.

NRC requirements in 10 CFR 52.99 for ITAAC Closure Notifications were promulgated in 2007 (72 FR 49352), and requirements for ITAAC Post-closure Notifications were added to Section 52.99 in 2012 (77 FR 51880).

1.1 PURPOSE AND SCOPE

The purpose of this guidance is to provide a logical, consistent, and workable framework for ITAAC closure and maintenance that will maximize the efficiency of this process while ensuring that NRC requirements are fully met. A description of the purpose of ITAAC is provided below to provide context for this guidance.

The role of ITAAC in the new-plant licensing process is established by the Atomic Energy Act of 1954, as amended (AEA). AEA Section 185.b., 42 U.S. C. § 2235, provides that:

> *After holding a public hearing under Section 189a.(1)(A), the Commission shall issue to the applicant a combined construction and operating license if the application contains sufficient information to support the issuance of a combined license and the Commission determines that there is reasonable assurance that the facility will be constructed and will operate in conformity with the license, the provisions of this Act, and the Commission's rules and regulations. The Commission shall identify within the combined license the inspections, tests, and analyses, including those applicable to emergency planning, that the licensee shall perform, and the acceptance criteria that, if met, are necessary and sufficient to provide reasonable assurance that the facility has been constructed and will be operated in conformity with the license, the provisions of this Act, and the Commission's rules and regulations. Following issuance of the combined license, the Commission shall ensure that the prescribed inspections, tests, and*

> *analyses are performed and, prior to operation of the facility, shall find that the prescribed acceptance criteria are met. Any finding made under this subsection shall not require a hearing except as provided in section 189a.(1)(B). and NOTE. [footnote omitted].*

NRC regulations implement the AEA's provisions. In particular, the Commission findings that must be made in connection with the issuance of a COL are set forth in 10 CFR 52.97. The Commission will identify within the COL the inspections, tests and analyses that the licensee shall perform, and the acceptance criteria that, if met, "are necessary and sufficient to provide reasonable assurance that the facility has been constructed and will be operated in conformity with" the license, the AEA, and NRC regulations. See 10 CFR 52.97(b). The licensee verifies that the plant has been built according to the COL, the Atomic Energy Act and the Commission's regulations by performing ITAAC that are part of the COL.

The acceptance criteria of the ITAAC are carefully selected during the design certification and licensing process to ensure that their completion by the licensee will provide reasonable assurance that the plant will operate safely as designed. ITAAC, in turn, verify that specific acceptance criteria are met prior to fuel load. Additional, non-ITAAC NRC inspection activities will be performed to verify that operational programs, start-up testing, training, quality assurance, corrective action, and other important aspects of plant construction and operation are in accordance with licensee commitments, license conditions, and applicable regulations for plant construction and operation.

This document provides guidance on the major aspects of the ITAAC closure process, including:

- Summary of the Part 52 ITAAC process
- Schedule considerations for ITAAC-related activities
- Licensee process for review and preparation of ITAAC Closure Notifications
- Guidance for ITAAC Closure Notification content
- Guidance for the Uncompleted ITAAC Notification
- Guidance for post-closure maintenance of ITAAC conclusions and thresholds for submittal of ITAAC Post-closure Notifications
- Guidance on topics related to ITAAC closure and maintenance
- Guidance for All ITAAC Complete Notification

2 DEFINITIONS[1]

Acceptance criteria refers to the performance, physical condition, or analysis result for a structure, system, or component (SSC) or program, which demonstrates that the design requirement/commitment is met.

All ITAAC Complete Notification is the letter the licensee sends the NRC in accordance with 10 CFR 52.99(c)(4) to confirm that all inspections, tests, and analyses have been performed; all acceptance criteria are met; and all ITAAC conclusions are being maintained.

Analysis means a calculation, mathematical computation, or engineering/technical evaluation.

As-built means the physical properties of a structure, system, or component following the completion of its installation or construction activities at its final location at the plant site. In cases where it is technically justifiable, determination of physical properties of the as-built structure, system, or component may be based on measurements, inspections, or tests that occur prior to installation, provided that subsequent fabrication, handling, installation, and testing do not alter the properties.

Combined License ("COL") means a combined construction permit and operating license with conditions for a nuclear power facility, issued under 10 CFR Part 52. See 10 CFR 52.1(a).

Condition means the existence, occurrence or observation of a situation that requires further review, evaluation or action for resolution. [NEI 08-02]

Design Acceptance Criteria (*DAC*) are a set of prescribed limits, parameters, procedures, and attributes upon which the NRC relies, in a limited number of technical areas, in making a final safety determination to support a design certification. See SECY-92-053, page 3.

Design Commitment means that portion of the Design Description that is verified by ITAAC.

Design Description means that portion of the design that is certified.

Determination Report is a narrative provided in the ITAAC completion package describing how the licensee determined that the ITAAC acceptance criteria are met. This report will be summarized in the ITAAC Closure Notification.

[1] These definitions are intended to apply only within the context of this guidance document, and are not meant to replace or modify existing definitions in NRC regulations. In cases where a term's definition in a final design certification document (DCD) or COL does not match the definition provided in this guidance document, licensees should utilize the applicable DCD or COL definition.

Inspect or inspection means visual observations, physical examinations, or reviews of records based on visual observation or physical examination that compare a) the structure, system, or component condition to one or more design commitments or b) the program implementation elements to one or more program commitments, as applicable. Examples include walkdowns, configuration checks, measurements of dimensions, or nondestructive examinations (NDEs). The terms, inspect and inspection, also apply to the review of Emergency Planning ITAAC requirements to determine whether ITAAC acceptance criteria are met.

Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) are those inspections, tests, analyses, and acceptance criteria identified in the combined license that if met by the licensee are necessary and sufficient to provide reasonable assurance that the facility has been constructed and will operate in conformity with the license, the provisions of the Atomic Energy Act, as amended, and the Commission's rules and regulations. [IMC-2506]

ITAAC Closure Verification comprises the NRC staff activities to determine that inspections, tests, and analyses are successfully completed and the acceptance criteria are met for each ITAAC.

ITAAC Closure Notification (previously known as ITAAC Closure Letter) is the letter the licensee sends to notify the NRC that an ITAAC is complete in accordance with 10 CFR 52.99(c)(1).

ITAAC Completion Package refers to the information and records documenting the work performed to complete an ITAAC. Once completed, the ITAAC completion package will be available for NRC inspection at the plant site.

ITAAC Completion comprises the licensee activities to perform the inspections, tests and analyses and meet the prescribed acceptance criteria for each ITAAC, including documentation.

ITAAC Completion Plan (also known as ITAAC Closure Plan) refers to the plans that licensees may develop for execution and documentation of each ITAAC, including the methods to be used to perform required inspections, tests and analyses, and the documentation necessary to demonstrate that specified acceptance criteria are met.

ITAAC Determination Basis is the information provided in the ITAAC Closure Notification that summarizes the methodology for conducting the inspections, tests and analyses, and the results that demonstrate the acceptance criteria are met.

ITAAC Finding is a technical finding that is associated with a specific ITAAC and is material to the ITAAC acceptance criteria. [IMC-2506]

ITAAC Post-Closure Notification is the letter the licensee sends in accordance with 10 CFR 52.99(c)(2) to notify the NRC of new information that materially alters the bases for determining that either inspections, tests, or analyses were performed as required, or that acceptance criteria are met. The letter should identify what changed, why the change occurred and the basis for concluding that closure of the ITAAC remains valid.

Principal Closure Documents are documents cited in the ITAAC Determination Basis and directly support the conclusion that acceptance criteria are met.

Program Commitment means that portion of the program description that is verified by ITAAC. The bracketed, alphanumerical designations included in the emergency planning ITAAC identify the evaluation criteria (i.e., program elements) from NUREG-0654/FEMA-REP-1 Planning Standards that were used to develop the specific generic ITAAC in NUREG-0800, Table 14.3.10-1.

Test means actuation or operation, or establishment, of specified conditions to evaluate the performance or integrity of as-built SSCs, unless explicitly stated otherwise, to determine whether an ITAAC acceptance criterion is met.

Type Test means a test on one or more sample components of the same type and manufacturer to qualify other components of the same type and manufacturer. A type test is not necessarily a test of the as-built structures, systems, or components.

Uncompleted ITAAC Notification is the letter the licensee sends, by the date 225-days before the scheduled date for initial loading of fuel, notifying the NRC that the prescribed inspections, tests, or analyses for all uncompleted ITAAC will be performed and that the prescribed acceptance criteria will be met prior to operation.

3 GENERAL DESCRIPTION OF 10 CFR PART 52 AND ITAAC PROCESSES

This section provides an overview of NRC regulations related to ITAAC. The NRC Standard Review Plan (NUREG-0800 *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants*, Section 14.3, Inspections, Tests, Analyses, and Acceptance Criteria), describes the purpose of ITAAC as follows:

> *The purpose of the ITAAC is to verify that an as-built facility conforms to the approved plant design and applicable regulations. When coupled in a COL with the ITAAC for site-specific portions of the design, they constitute the verification activities for a facility that should be successfully met prior to fuel load. If the licensee demonstrates that the ITAAC are met and the NRC agrees that they are successfully met, then the licensee will be permitted to load fuel. Once completion of ITAAC and the supporting design information demonstrate that the facility has been properly constructed, it then becomes the function of existing programs such as the technical specifications, the in-service inspection and in-service testing program, the quality assurance program, and the maintenance program, to demonstrate that the facility continues to operate in accordance with the certified design and the license.*

3.1 ROLE OF ITAAC IN PART 52 PROCESS

ITAAC establish a set of actions and criteria that “are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will be operated in conformity with the combined license, the provisions of the Act, and the Commission's rules and regulations.” See 10 CFR 52.80(a). The licensee must complete all ITAAC, the NRC staff verifies successful ITAAC completion, and the Commission must find that all ITAAC are met before the licensee may operate the facility. See 10 CFR 52.103(g). See also NRC Inspection Manual Chapter 2503.

After the Commission makes the finding required by Section 52.103(g), “the ITAAC do not, by virtue of their inclusion in the combined license, constitute regulatory requirements either for licensees or for renewal of the license; except for the specific ITAAC for which the Commission has granted a hearing under [52.103(a)], all ITAAC expire upon final Commission action in the proceeding.” 10 CFR 52.103(h).

Licensee programs (including but not limited to the technical specifications, the in-service inspection and in-service testing program, the quality assurance program, and the maintenance program) as well as the Commission’s continuing regulatory oversight, continue to assure that the facility is operated in accordance with the license and NRC regulations.

3.1.1 Relationship of ITAAC to Engineering Design Verification Process

ITAAC are used to demonstrate that as-built conditions and performance characteristics of SSCs meet established acceptance criteria. The purpose of Engineering Design Verification (EDV), on the other hand, is to enable the NRC to verify that the NRC-approved design has been properly translated into drawings, specifications, and other design information used to procure materials and equipment and to construct the plant. EDV may be conducted before or after the design certification is granted and continued through the COL application phase and into the early stages of construction. EDV is intended to gather necessary information on the licensee's first of a kind engineering for the standard plant, site-specific design, and related design information. While EDV efforts are aimed at verifying the proper translation of the approved design, such activities are not a prerequisite for design certification or COL issuance. The NRC staff's ITAAC closure verification process will focus on assuring SSCs meet ITAAC acceptance criteria consistent with the approved design.

The NRC performs EDV inspections under its Construction Inspection Program when the applicant (design certification or COL), licensee, or its contractor has sufficient drawings, purchase specifications, or other construction documentation to support inspections. Post-COL EDV inspections are expected to be completed early in the construction phase.

Among the areas the NRC may inspect as part of EDV are applicant/licensee design control programs used to ensure that procurement and construction documents reflect risk insights and key assumptions of the plant design. Rather than perform duplicate inspections, the NRC staff may credit applicable portions of EDV inspection results for verification of Design Reliability Assurance Program (D-RAP) ITAAC closure, performing supplemental D-RAP inspection(s) as necessary. The wording of D-RAP ITAAC varies across design centers, and the EDV inspection plans of NRC may vary as well. As such, licensees should discuss plans for documenting completion of D-RAP ITAAC with the NRC staff in advance to align expectations concerning D-RAP ITAAC closure and EDV inspection planning.

The NRC is expected to apply the design centered review approach to EDV, i.e., perform a confirmatory review only, for subsequent applicants/licensees that use the same detailed design information that was previously reviewed by the staff.

3.1.2 Role of the Quality Assurance Program

The role of the Quality Assurance Program (QAP) is the same under 10 CFR Part 52 as for existing plants licensed under 10 CFR Part 50. The QAP is the continuous licensee process of assuring that design and construction activities are performed in accordance with the license, NRC regulations and applicable codes and standards, and that SSCs will perform their intended functions.

The quality assurance requirements of Part 50 Appendix B are applicable to plants licensed under Part 52. Section 52.79(a)(25) requires information concerning the licensee's QAP and how the QAP meets the requirements of Part 50 Appendix B to be submitted with each COL application. The COL applicant's description of the QAP is reviewed and approved by the NRC as part of COL issuance. QAP implementation by the licensee should assure that quality-related activities associated with plant design, procurement, fabrication, construction, testing and operation are implemented properly and in accordance with licensee procedures, applicable codes and standards and NRC regulations. QA/QC deficiencies will be handled by the normal process for licensee operational programs (e.g. NRC regulatory oversight, NRC inspection findings, and 10 CFR 2.206 petitions). See Section 3.2.1 below.

The role of ITAAC is different from the role of the QAP. While the QAP assures the proper implementation of quality-related construction activities, ITAAC focus on verifying that as-built SSCs satisfy the top level design and performance standards specified in the COL. Additionally, ITAAC play a special role under Part 52 in defining the scope of the post-construction hearing opportunity.

As reflected in NUREG 1789, *10 CFR Part 52 Construction Inspection Program Framework Document*, the QA requirements of Appendix B to Part 50 apply to all safety-related activities being conducted by the licensee during the design, construction, and operations phase, including those safety-related activities performed to satisfy ITAAC. However, there are ITAAC activities that are not safety-related but that play a significant role in the verification of the design integrity of the as-built facility. All ITAAC, including ITAAC for SSCs that are not safety-related, will be implemented using written procedures or instructions.

QAP requirements governing licensee procurement, fabrication, construction, inspection and test activities for SSCs covered by ITAAC are specified in accordance with the safety classification and/or safety significance of the SSCs involved. For example, licensees apply QAP requirements in a selected manner to non-safety-related SSCs and related activities that are significant contributors to plant safety. ITAAC encompass SSCs of varying safety significance and safety classification, including safety-related and non-safety-related SSCs. Because ITAAC have special regulatory significance under Part 52, licensees should document ITAAC completion under their QAP. Licensee and vendor processes and planning to support ITAAC execution, such as development of ITAAC Completion Plans as discussed in Section 5.1.2, need not be performed under their QAP.

The NRC staff has determined that a QA/QC deficiency may be considered in determining whether an ITAAC has been successfully completed. If a QA/QC deficiency is determined to be material to the ITAAC acceptance criteria, it will be documented by the NRC as an ITAAC Finding. Based on the resolution of the ITAAC Finding, the NRC will determine whether there is a reasonable basis for concluding that the relevant aspect of the ITAAC has been successfully completed.

There may be programmatic QA/QC deficiencies that are not relevant to one or more aspects of a given ITAAC under review and, therefore, should not be relevant to or considered in the NRC's determination as to whether that ITAAC has been successfully completed. Similarly, individual QA/QC deficiencies unrelated to an aspect of the ITAAC in question would not form the basis for an NRC determination that an ITAAC has not been met. NUREG-1789, p. C-6.

3.1.3 Sampling Based Construction Inspection Program

While the scope of NRC's Construction Inspection Program (CIP) is comprehensive, the NRC program generally does not inspect 100% of ITAAC related activities. Consistent with historical practice, NRC will employ a sampling based inspection program. For plants licensed under Part 52, the inspection targets for the NRC's baseline inspection program will be selected based on a process that identifies those ITAAC having a higher inspection value. For subsequent construction projects, the NRC's baseline inspection scope may be adjusted based on prior inspection experience. For more information about the NRC's sampling based CIP for new plants. See SECY-07-0047, SECY-08-0117, and Inspection Manual Chapter-2503, *Construction Inspection Program: Inspections of Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC).*

As identified in SECY-08-0117, all Emergency Planning and Physical Security ITAAC will be inspected. The decision to inspect all Emergency Planning and Physical Security ITAAC was based on the high relative importance, qualitative nature, and small number of these ITAAC.

Regardless of the set of ITAAC selected for inspection by the NRC, the licensee is responsible for ensuring that applicable quality requirements are implemented for all quality related SSCs and all ITAAC.

3.1.4 ITAAC Performance by Licensees and Verification by NRC

A licensee must complete each ITAAC before plant operation (including initial fuel load) can begin. The ITAAC may be satisfied at any time prior to fuel load, including prior to issuance of a combined license. (The NRC may find that certain ITAAC are met at the time of issuing the COL and exclude those from the 10 CFR 52.103(g) finding; See Section 3.2.3.) It is the licensee's responsibility to ensure that the action in each ITAAC is performed and that the established acceptance criteria are met. To accomplish this, the licensee establishes a process for completing ITAAC. The licensee will also maintain auditable records that provide the basis for the licensee's conclusion that ITAAC have been successfully completed. See Section 5.1.3 on guidance for developing ITAAC completion packages.

Many ITAAC require verification of “as-built” SSCs. However, some of these ITAAC will involve measurements and/or testing that can only be conducted at the vendor site due to the configuration of equipment or modules or the nature of the test (e.g., measurements of reactor vessel internals). For these specific items where access to the component for inspection or test is impractical after installation in the plant, the ITAAC completion documentation (e.g., test or inspection record) will be generated at the vendor site and provided to the licensee. Onsite activities for these ITAAC will likely be limited to receipt and placement of the component/module in its final location. Closure Notifications for such ITAAC would not be submitted to the NRC until after the component/module is installed in its final location.

An ITAAC Closure Notification relying on inspections or tests at the vendor site should reflect consideration of issues documented during subsequent fabrication, handling, installation, and testing. A licensee intending to rely upon a vendor inspection or test to satisfy an ITAAC requirement must take care that such reliance is consistent with the applicable DCD or COL, including the DCD or COL definitions of relevant terms, such as “inspection,” “test,” and “as-built.” As discussed in Section 4 of this document, the licensee will provide schedule information to the NRC, including plans to perform certain ITAAC activities in vendor shops, so the staff can plan their inspection and ITAAC verification resources accordingly. Additional guidance concerning ITAAC performed at other than the final installed location is provided in Section 9.

The licensee is responsible for notifying the NRC under Section 52.99(c)(1)when a completed ITAAC is ready for verification by the NRC. Before the licensee submits an ITAAC Closure Notification to the NRC, it will have resolved any identified ITAAC Findings that would otherwise preclude NRC Staff from determining that the ITAAC are met.

The NRC’s determination of successful ITAAC completion is based on a combination of inspection results and a review of the information contained in or referenced by ITAAC Closure Notifications submitted by the licensee. The ITAAC verification inspection, as described in IMC-2503, Section 07.04, may include:

- Inspection related to the specific ITAAC;
- Inspection results from direct inspection of similar ITAAC within an ITAAC family; and
- Inspection results from direct inspection of processes related to that specific ITAAC.

The NRC plans to perform closure verification of the licensee’s ITAAC Closure Notifications and review NRC inspection records to confirm that all planned inspections for the given ITAAC were completed and that any associated ITAAC Findings are satisfactorily resolved. At its discretion (i.e., depending on the nature of the ITAAC and the licensee’s performance in completing similar ITAAC), however, the NRC may elect to inspect the licensee's ITAAC completion package or perform specific inspections related to its contents.

The NRC may, if necessary, delay its closure verification for a non-targeted ITAAC until at least some ITAAC inspections have been completed for targeted ITAAC in a particular ITAAC family to confirm that the licensee's performance within that ITAAC family is satisfactory.

After verifying that the prescribed inspections, tests, and analyses in the ITAAC have been performed and the acceptance criteria met, the NRC will issue notices of its verification of the successful completion of those inspections, tests, and analyses "at appropriate intervals." See 10 CFR 52.99(e)(1). These notices are published in the *Federal Register*.

The NRC will make publicly available the licensee notifications submitted under Section 52.99(c). See 10 CFR 52.99(e)(2). If the NRC verifies after an ITAAC Closure Notification has been submitted that an ITAAC was, in fact, not met, the licensee would be subject to an ITAAC Finding if verified by subsequent NRC inspections.

After an ITAAC Closure Notification is submitted, licensees must maintain the validity of ITAAC conclusions in support of the Section 52.103(g) finding that the acceptance criteria in the COL are met. In accordance with Section 52.99(c)(2), ITAAC post-closure notifications are submitted when the licensee identifies new information that materially alters the bases for determining that ITAAC were performed as required or that the acceptance criteria are met. The process for determining whether such issues require NRC notification is discussed in Section 8.2 of this document.

3.2 ITAAC CLOSURE PROCESS

3.2.1 Section 52.99 Process

10 CFR 52.99, "Inspection During Construction," sets forth the requirements to support the NRC's inspections during nuclear plant construction. It establishes the regulatory process for ensuring that ITAAC are performed so that the NRC may make the necessary finding under 10 CFR 52.103(g) that the acceptance criteria in the COL are met. See 77 Fed. Reg. 51880, 51886 (Aug. 28, 2012). Appendix A to this document includes the text of Section 52.99.[2]

(a) Licensee schedule for completing inspections, tests, or analyses. The licensee shall submit to the NRC, no later than 1 year after issuance of the combined license or at the start of construction as defined in 10 CFR 50.10(a), whichever is later, its schedule for completing the inspections, tests, or analyses in the ITAAC.

[2] The major elements of the 10 CFR 52.99 process are also reflected in Section IX of each of the design certification rules. See 72 Fed. Reg. 49,352, 49,450 (Aug. 28, 2007).

The licensee shall submit updates to the ITAAC schedules every 6 months thereafter and, within 1 year of its scheduled date for initial loading of fuel, the licensee shall submit updates to the ITAAC schedule every 30 days until the final notification is provided to the NRC under paragraph (c)(1) of this section.

The NRC added this provision to Section 52.99 so that the NRC Staff would have information on the ITAAC completion schedule that could be used in developing NRC inspections and activities necessary to support the required finding that all of the ITAAC are met prior to the licensee's scheduled date for fuel load. Even in the case where there are no changes to a licensee's ITAAC schedule during an update cycle, the NRC expects licensees to so notify NRC. 77 Fed. Reg. 51886. See also Section 4.2 below.

(b) Licensee and applicant conduct of activities subject to ITAAC. With respect to activities subject to an ITAAC, an applicant for a combined license may proceed at its own risk with design and procurement activities, and a licensee may proceed at its own risk with design, procurement, construction, and pre-operational activities, even though the NRC may not have found that any one of the prescribed acceptance criteria are met.

(c)(1) Licensee notifications. ITAAC closure notification. The licensee shall notify the NRC that the prescribed inspections, tests, and analyses have been performed and that the prescribed acceptance criteria are met. The notification must contain sufficient information to demonstrate that the prescribed inspections, tests, and analyses have been performed and that the prescribed acceptance criteria are met.

(c)(2) ITAAC post-closure notifications. Following the licensee's ITAAC closure notifications under paragraph (c)(1) of this section until the Commission makes the finding under 10 CFR 52.103(g), the licensee shall notify the NRC, in a timely manner, of new information that materially alters the bases for determining that either inspections, tests, or analyses were performed as required, or that acceptance criteria are met. The notification must contain sufficient information to demonstrate that, notwithstanding the new information, the prescribed inspections, tests, or analyses have been performed as required, and the prescribed acceptance criteria are met.

(c)(3) Uncompleted ITAAC notification. If the licensee has not provided, by the date 225-days before the scheduled date for initial loading of fuel, the notification required by paragraph (c)(1) of this section for all ITAAC, then the licensee shall notify the NRC that the prescribed inspections, tests, or analyses for all uncompleted ITAAC will be performed and that the prescribed acceptance criteria will be met prior to operation. The notification must be provided no later than the date 225-days before the scheduled date for initial loading of fuel, and must provide sufficient information to demonstrate that the prescribed inspections, tests, or analyses will be performed and the prescribed acceptance criteria for the uncompleted ITAAC will be met, including, but not limited to, a

description of the specific procedures and analytical methods to be used for performing the prescribed inspections, tests, and analyses and determining that the prescribed acceptance criteria are met.

(c)(4) All ITAAC complete notification. The licensee shall notify the NRC that all ITAAC are complete.

Section 52.99(c) specifies notification requirements for licensees concerning completion of ITAAC. The overall purpose of each notification is to ensure that the COL holder provides the NRC with sufficient publicly available information to summarize the basis for the conclusion that ITAAC are met (or will be met before initial operation) and to support the Section 52.103 ITAAC hearing opportunity. See 77 Fed. Reg. 51887.

Section 52.99(c)(1) requires the licensee to notify the NRC when prescribed inspections, tests and analyses have been performed and the prescribed acceptance criteria are met. In the discussion accompanying the 2012 final rule amending 10 CFR Part 52, NRC provided guidance as to what constitutes "sufficient information" under Section 52.99(c)(1) to demonstrate that the acceptance criteria are met:

> It is the licensee's burden to demonstrate compliance with the ITAAC and the NRC expects the information submitted under paragraph (c)(1) to contain more than just a simple statement that the licensee believes the ITAAC has been completed and the acceptance criteria met. The NRC expects the notification to be sufficiently complete and detailed for a reasonable person to understand the bases for the licensee's representation that the inspections, tests, and analyses have been successfully completed and the acceptance criteria have been met. The term 'sufficient information' requires, at a minimum, a summary description of the bases for the licensee's conclusion that the inspections, tests, or analyses have been performed and that the prescribed acceptance criteria have been met. 77 Fed. Reg. 51,887; See also 72 Fed. Reg. at 49,366.

Following submittal of ITAAC Closure Notifications, Section 52.99(c)(2) requires licensees to submit ITAAC Post-closure Notifications to formally notify NRC when new information is identified that materially alters the ITAAC Determination Basis summarized in the initial ITAAC Closure Notification, and to assure a complete and accurate public record of information pertinent to ITAAC closure.

The notification must contain sufficient information to demonstrate that, notwithstanding the new information, the prescribed inspections, tests, or analyses have been performed as required, and the prescribed acceptance criteria continue to be met. Like ITAAC Closure Notifications, ITAAC post-closure notifications under Section 52.99(c)(2) will be made publically available in accordance with

Section 52.99(e)(2). Thresholds for determining when an ITAAC Post-closure Notification should be submitted to the NRC are discussed in Section 8.2. Section 8.2 also provides guidance on promptly notifying the NRC when a notification threshold is exceeded.

Records related to ITAAC closure and maintenance, including the results of evaluations to determine if conditions warrant an ITAAC Post-closure Notification under Section 52.99(c)(2), should be retained in accordance with the licensee's QAP.

Section 52.99(c)(3) imposes an additional notification requirement on the licensee if it has not made a Section 52.99(c)(1) ITAAC completion notice for all ITAAC by 225-days before scheduled initial fuel load. Under this provision, licensees must notify the NRC and affirmatively represent that the prescribed inspections, tests, or analyses for all uncompleted ITAAC *will be performed* and that the prescribed acceptance criteria *will be met* prior to plant operation.

Note that the rule language in Section 52.99(c)(3) differs somewhat from the language in Section 52.99(c)(1) as to what constitutes "sufficient information" (e.g., "including but not limited to" a description of the specific procedures and analytical methods to be used). In the discussion accompanying the 2012 Part 52 final rule, NRC stated that it expects notifications under Section 52.99(c)(3) "to be sufficiently detailed such that the NRC can determine what activities it will need to undertake to determine if the acceptance criteria for each of the uncompleted ITAAC have been met, once the licensee notifies the NRC that those ITAAC have been successfully completed and their acceptance criteria met." See 77 Fed. Reg. 51887.

In accordance with existing NRC regulations, ITAAC closure notifications to the NRC must be complete and accurate in all material respects. 10 CFR 52.6(a). Licensees should seek to provide the appropriate level of detail for "completeness." In the case of ITAAC closure notifications, reliance on routine programs (e.g., quality assurance program, corrective action program) to provide assurance that the ITAAC are completed successfully should be expected. Information on these programs is not required in this context unless a program inadequacy calls into question the successful completion of ITAAC. Challenges to the adequacy of program implementation of routine programs may be made under a 10 CFR 2.206 petition to modify the terms and conditions of the COL.

In its 2007 amendment of Part 52, NRC explained that: "Inasmuch as the ITAAC themselves have already been approved by the NRC and their adequacy may not be challenged except under the provisions of 10 CFR 52.103(f), a contention which alleges the deficiency of the ITAAC is not admissible under 10 CFR 52.103(b)." 72 Fed. Reg. 49,352, 49,367, note 3. NRC further stated that the agency expects that any proposed contentions regarding uncompleted ITAAC would "focus on any inadequacies of the specific procedures and analytical methods described by the licensee under [Section 52.99(c)(3)], in the context of the findings called for by 10 CFR 52.103(b)(2).” 72 Fed. Reg. at 49,367. This refers to inadequacies in the specific procedures and analytical methods (described by the COL holder’s Section 52.99(c)(3) notification) “to be used for performing the prescribed inspections, tests, and analysis and determining that the prescribed acceptance criteria have been met.” 10 CFR 52.99(c)(3). See also 10 CFR 52.103(b)(1)-(2), which sets forth requirements that requests for an ITAAC hearing must meet.

The licensee will continue to submit notification letters under Section 52.99 (c)(1) after submitting the (c)(3) notification, as 52.99(c)(3) does not relieve the licensee from the requirements of 52.99(c)(1) during this late period of construction.

Section 52.99(c)(4) requires licensees to formally notify the NRC when all ITAAC are complete. The purpose of this letter is to confirm that all ITAAC have been performed, all acceptance criteria are met, and all ITAAC conclusions are being maintained. The letter is also intended to facilitate the Staff’s recommendation to the Commission concerning the completed status of all ITAAC in support of the 10 CFR 52.103(g) ITAAC finding. Additional guidance related to the “All ITAAC Complete Notification” is provided in Section 8.3.

(d)(1) Licensee determination of noncompliance with ITAAC. In the event that an activity is subject to an ITAAC derived from a referenced standard design certification and the licensee has not demonstrated that the ITAAC has been met, the licensee may take corrective actions to successfully complete that ITAAC or request an exemption from the standard design certification ITAAC, as applicable. A request for an exemption must also be accompanied by a request for a license amendment under § 52.98(f).

(d)(2) In the event that an activity is subject to an ITAAC not derived from a referenced standard design certification and the licensee has not demonstrated that the ITAAC has been met, the licensee may take corrective actions to successfully complete that ITAAC or request a license amendment under § 52.98(f).

This sub-section addresses two options for the licensee if it is determined that any ITAAC acceptance criteria are not met. Section 52.99 (d)(1) refers to activities subject to an ITAAC derived from a referenced certified design, for which the ITAAC are not shown to be met. In this case, because the ITAAC are the subject of a rule, the licensee may take corrective actions to successfully complete the ITAAC or request an exemption from the rule (which must be accompanied by a request for a license amendment). Paragraph (d)(2) refers to an activity subject to an ITAAC not derived from a referenced certified design (and so not the subject of a rule). In this case, the licensee may take corrective action to successfully complete the ITAAC or request a license amendment. See 77 Fed. Reg. 51888.

(e) NRC inspection, publication of notices, and availability of licensee notifications. The NRC shall ensure that the prescribed inspections, tests, and analyses in the ITAAC are performed.

(e)(1) At appropriate intervals until the last date for submission of requests for hearing under § 52.103(a), the NRC shall publish notices in the Federal Register of the NRC Staff's determination of the successful completion of inspections, tests, and analyses.

(e)(2) The NRC shall make publicly available the licensee notifications under paragraph (c) of this section. The NRC shall, no later than the date of publication of the notice of intended operation required by10 CFR 52.103(a), make publicly available those licensee notifications that have been submitted to the NRC at least seven (7) days before that notice.

This sub-section imposes requirements on the NRC to ensure that the ITAAC are successfully completed. Section 52.99 (e)(1) requires the NRC to publish in the Federal Register the Staff's determination of the successful completion of ITAAC, up to the last date for submission of requests for hearing under 10 CFR 52.103(a). Section 52.99(e)(2) requires that the NRC make publicly available the licensee notifications submitted under Section 52.99(c). Regarding the latter provision, the 2012 Part 52 final rule Supplementary Information states: "In general, the NRC expects to make the paragraph (c) notifications available shortly after the NRC has received the notifications and concluded that they are complete." 77 Fed. Reg. 51,885. In addition, the rule requires that "NRC shall, no later than the date of publication of the notice of intended operation required by 10 CFR 52.103(a), make publicly available those licensee notifications under paragraph (c) of this section that have been submitted to the NRC at least seven (7) days before that notice."

3.2.2 ITAAC Closure Continues Until All ITAAC Are Closed

After the NRC ceases to publish the Federal Register notices as required by Section 52.99(e)(1), the licensee continues to submit the notifications required by Section 52.99(c)(1) until all ITAAC are considered completed. The NRC Staff will continue to review licensee notifications of completed ITAAC and, as necessary, continue to conduct audits or inspections of the facility and the licensee's records.

As discussed in the previous sections, licensees must maintain the validity of ITAAC conclusions in support of the Section 52.103(g) finding that the acceptance criteria in the COL are met. Section 52.99(c)(2) requires licensees to submit supplemental post-closure ITAAC notifications when new information is identified that materially alters the bases summarized in the Section 52.99(c)(1) notification for determining that ITAAC are met. The process for determining whether such issues require submittal to NRC of an ITAAC Post-closure Notification is discussed in Section 8.2 of this document.

To facilitate an NRC staff recommendation to the Commission that all ITAAC are met and the process leading to the Section 52.103(g) finding, licensees must submit the All ITAAC Complete Notification required by Section 52.99(c)(4). The purpose of this letter is to affirm that all ITAAC are met and that ITAAC conclusions stated in individual ITAAC Closure Notifications are being maintained. Additional discussion of the All ITAAC Complete Notification is provided in Section 8.3, and a template for the All ITAAC Complete Notification is provided in Appendix F.

Although the rules do not require completion of all ITAAC by a certain time prior to the licensee's scheduled fuel load date, the NRC noted in the 2007 rulemaking that licensees should "structure their construction schedules" to take into account: (1) the time needed to complete NRC review once the licensee submits its ITAAC completion notification; and (2) the time needed for the Commission to review the Staff's conclusions regarding the ITAAC and Staff recommendations concerning the finding under Section 52.103(g). See 72 Fed. Reg. at 49,367 and 49,450. Because these final steps of the ITAAC process are likely to occur in a short period just prior to fuel load, effective communication and coordination will be necessary to assure these steps can be completed to support the scheduled fuel load date.

3.2.3 ITAAC May be Closed at Time of COL Issuance Under 10 CFR 52.97(a)(2)

The NRC may find, at the time it issues the COL, that certain acceptance criteria in one or more ITAAC in a referenced early site permit (ESP) or standard design certification have been met. See 10 CFR 52.97(a)(2). Such a finding means that those acceptance criteria will be deemed to be excluded from the COL and findings under 10 CFR 52.103(g).

For example, a Design Acceptance Criteria (DAC) ITAAC found in the applicable design certification rules could be closed at the time of COL issuance. DAC set forth processes and criteria for completing certain design information, such as information about the digital instrumentation and control system. 10 CFR 52.97(a)(2) would allow the Commission to make a finding of successful completion of DAC ITAAC when a combined license is issued, if the combined license applicant demonstrates that the DAC have been successfully resolved.

3.2.4 Certain ITAAC-Related Changes Require a License Amendment

10 CFR 52.98(f), "Finality of Combined Licenses; Information Requests," states that any modification to, addition to, or deletion from the inspections, tests, analyses, and acceptance criteria (ITAAC) contained in the license is a proposed amendment to the license. In the event that these types of changes occur or are proposed, the licensee must submit an application for a license amendment, in accordance with 10 CFR 50.90. In addition to a license amendment request, the licensee must also request an exemption from the applicable standard design certification rule before making any changes to ITAAC contained in the license

that are within the scope of the referenced design certification rule. [10 CFR 52.63(b)(1).]

These requirements are applicable from the time the license is issued until the NRC makes the Section 52.103(g) finding that the acceptance criteria in the combined license are met. During this period, the licensee must evaluate ITAAC-related facility changes to ensure the changes are consistent with the associated ITAAC.

In particular, the following conditions would require the licensee to submit an amendment request in accordance with 10 CFR 52.98(f) which would serve to notify the NRC of a change in the ITAAC requirements. As stated above, an exemption request would also be necessary for any changes to design certification ITAAC contained in the license.

a. If following a significant event or unplanned activity, SSCs are not restored to their pre-work, as-designed condition, consistent with ITAAC requirements, a license amendment request would be necessary.

b. If a proposed design change would cause original ITAAC requirements to no longer be met, a license amendment request would be necessary (e.g., an engineering change results in the need for different acceptance criteria).

c. If a proposed design change requires additional ITAAC, a license amendment request would be necessary.

If new ITAAC requirements are approved in connection with such license amendments, the licensee would submit a new ITAAC Closure Notification in accordance with Section 52.99.

3.3 GENERAL DESCRIPTION OF PUBLIC HEARING OPPORTUNITY

In addition to the public meetings that the NRC conducts throughout its review of COL applications, the public potentially impacted by an action is afforded certain specific opportunities for involvement in the Part 52 processes. For example, for a standard design certification rule, a public comment period is provided. For an ESP or COL application, there will be an opportunity for the affected public to petition to intervene in the hearing and file proposed contentions. If any contentions are admitted by the presiding officer, a contested licensing hearing on those contentions will be held, and the NRC Atomic Safety and Licensing Board or other presiding officer will issue a decision ruling on the contentions litigated.

The Atomic Energy Act and NRC regulations also provide for public involvement at the end of construction, when not later than 180 days before scheduled fuel load, the NRC will publish a notice of intended operation of the facility providing that any person whose interest may be affected by operation of the plant may, within 60 days of the notice, request a hearing on whether the facility, as-constructed, complies, or will comply, with the acceptance criteria in the COL. 10 CFR 52.103(a).

Congress limited this pre-operation public hearing opportunity (the so-called "ITAAC hearing") by setting a high standard for the admission of contentions. Specifically, for admission of a contention the petitioner must show, *prima facie*, that (1) one or more acceptance criteria of the ITAAC in the combined license have not been met or will not be met; and (2) "the specific operational consequences of nonconformance that would be contrary to providing reasonable assurance of adequate protection of public health and safety." 10 CFR 52.103(b). These provisions are designed to accord finality to the Commission's earlier decisions regarding design of the facility and to ensure that any proceeding is focused on ITAAC completion.

Acting as the presiding officer, the Commission itself will determine whether to grant or deny requests for an ITAAC hearing, in accordance with existing NRC requirements in 10 CFR 2.309. Those provisions require petitioners to support their proposed contentions with reasonable specificity and basis. A proposed contention asserting that an acceptance criterion is not met or will not be met must identify the specific portions of the Section 52.99(c) report that are "inaccurate, incorrect, or incomplete." 72 Fed. Reg. 49,413.

If it grants the hearing request, the Commission, acting as the presiding officer, "shall determine whether during a period of interim operation there will be reasonable assurance of adequate protection to the public health and safety. The Commission's determination must consider the petitioner's *prima facie* showing and any answers thereto. If the Commission determines there is such reasonable assurance, it shall allow operation during an interim period under the combined license." 10 CFR 52.103(c). See 72 Fed. Reg. 49, 451.

The hearing opportunity described in the NRC notice of intended operation issued under 10 CFR 52.103(a) will include the ITAAC that have been completed or are still being completed. (See Appendix A for the text of 10 CFR 52.103). Thus, a petitioner has an opportunity to address in an ITAAC hearing both the Section 52.99(c)(1) notifications and the Section 52.99(c)(3) notification(s).

3.3.1 Opportunity for Late Filed Contentions

The NRC expects requests for ITAAC hearings to be filed within the allowed 60-day period provided by the notice under 10 CFR 52.103(a). The Part 52 rule does not explicitly address the applicability of the standards for admissibility of late-filed contentions submitted subsequently. On this point, Section 52.103(c) does state, inter alia, that the Commission, acting as the presiding officer, will determine whether to grant or deny the request for hearing "in accordance with the applicable requirements of 10 CFR 2.309." The 2007 final rule amending Part 52 did not revise or otherwise limit the applicability of 10 CFR 2.309, which addresses the standard for admissibility of late-filed contentions.

To minimize the potential for late-filed ITAAC contentions being admitted, it is important that the Section 52.99(c) notifications provide sufficient information as discussed in Section 3.2.1.

3.3.2 Opportunity to Request Action

10 CFR 52.103(f) provides that NRC will process any petition to modify the terms and conditions of the COL (including the content of the ITAAC) as a request for action under 10 CFR 2.206. (Section 2.206 allows any person to file a request to institute a proceeding under 10 CFR 2.202, "Orders," to "modify, suspend, or revoke a license, or for any other action as may be proper.") Note that a Section 2.206 petition is a separate and independent request for action that is not related to the opportunity to request an ITAAC hearing under 10 CFR 52.103.

Section 52.103(f) further provides that if a Section 2.206 petition is filed, "the Commission shall determine whether any immediate action is required" before the licensed activity allegedly affected by the petition (fuel loading, low power testing, etc.) commences. If the NRC grants the Section 2.206 petition, then an appropriate order will be issued concerning the need for any immediate action. Importantly, fuel loading and operation under the combined license will not be affected by the granting of the petition unless the Commission issues an order and makes it immediately effective. See 72 Fed. Reg. 49,452.

3.4 SUMMARY DESCRIPTION OF SECTION 52.103 PROCESS AND FUEL LOAD AUTHORIZATION PROCESS

The Atomic Energy Act and NRC regulations require a timely Commission decision on issues raised in any hearing requests under 10 CFR 52.103. See 10 CFR 52.103(e). In addition to deciding whether to grant or deny a request for an ITAAC hearing, the Commission will determine the appropriate hearing procedures, whether informal or formal, to be applied in any ITAAC hearing held. While the procedures to be used for any ITAAC hearing have not yet been established, the Commission has clear authority under the Atomic Energy Act and NRC regulations to use less formal procedures. See 72 Fed. Reg. 49,451.

In terms of schedule, the Commission will, to the maximum possible extent, render a decision on issues raised by the hearing request within 180 days of the publication of the 10 CFR 52.103(a) notice or by the anticipated date for initial loading of fuel into the reactor, whichever is later. 10 CFR 52.103(e).

The Commission's decision to grant or deny a hearing, and its decision regarding procedures, may not be the subject of an appeal under 10 CFR 2.311. 10 CFR 2.309.

If it grants a hearing request under Section 52.103, the Commission also will determine whether to allow interim operation during the hearing, on the basis that there will be reasonable assurance of adequate protection to the public health and safety notwithstanding the pending hearing. See Section 52.103(c). This provision to authorize interim operation during resolution of contested hearing issues is based on Section 189.a.(1)(B)(iii) of the Atomic Energy Act of 1954, as amended.

If the NRC staff agrees with the representation in the licensee's "All ITAAC Complete Notification", it will make a recommendation to the Commission regarding the Section 52.103(g) finding that all ITAAC are met. To facilitate this staff recommendation, the licensee needs to ensure that all ITAAC were verified to be met at one time, and that the ITAAC determination bases have been maintained and the ITAAC continue to be met. These criteria will be considered to be met provided conditions do not exist that would cross one of the thresholds discussed in Section 8.2 requiring an ITAAC Post-closure Notification. As indicated by these considerations, the state of SSCs being out-of-service does not necessarily invalidate prior ITAAC conclusions; ITAAC continue to be met and are being maintained. Thus, SSCs may be out-of service for maintenance or other reason at the time of the Section 52.103(g) finding.

For ITAAC that are the subject of an ITAAC hearing, the presiding officer will issue an initial decision under 10 CFR 52.103(g) with respect to whether acceptance criteria have been or will be met. See 10 CFR 2.340(c). This initial decision is immediately effective upon issuance, unless there is good cause that it should not be immediately effective. See 10 CFR 2.340(f). For the final finding under 10 CFR 2.340(j), the Commission or its delegate will make a finding within 10 days from the date of issuance of the initial decision, if 1) the Commission or its delegate can find that the acceptance criteria not within the scope of the initial decision are met, and 2) the presiding officer has issued a decision that the contested acceptance criteria have been met or will be met, and the Commission or its delegate can thereafter find that the acceptance criteria are met, and 3) notwithstanding the pendency of a petition for reconsideration or review, or motion for stay, or filing of a petition for action to modify, suspend, or revoke a license. Provided the licensee has satisfied other applicable license conditions and technical specifications, issuance of the required finding that all acceptance criteria are met would allow the licensee to begin operation/initial fuel loading.

4 SCHEDULE CONSIDERATIONS FOR ITAAC-RELATED ACTIVITIES AND COORDINATION TO SUPPORT NRC INSPECTION PLANNING

The NRC Construction Inspection Program (NRC/CIP) performs its regulatory functions with respect to construction inspection oversight activities through careful planning and scheduling of NRC inspection activities. To accomplish this, NRC/CIP needs access to construction scheduling information maintained by COL applicants and licensees for inspection planning and scheduling purposes. This section provides guidance for communicating schedule related information for ITAAC activities, including DAC, from the project to the NRC.

10 CFR 52.99 "Inspection during construction" requires that:

> *(a) The licensee shall submit to the NRC, no later than 1 year after issuance of the combined license or at the start of construction as defined in 10 CFR 50.10(a), whichever is later, its schedule for completing the inspections, tests, or analyses in the ITAAC. The licensee shall submit updates to the ITAAC schedules every 6 months thereafter and, within 1 year of its scheduled date for initial loading of fuel, the licensee shall submit updates to the ITAAC schedule every 30 days until the final notification is provided to the NRC under paragraph (c)(1) of this section.*

This schedule may be provided in letter form, tabular form, etc., and should be sent to the document control desk in accordance with 10 CFR 52.3, *Written Communications*.

4.1 PROPRIETARY CONSTRUCTION SCHEDULE INFORMATION

In the discussion accompanying the Part 52 amendments, NRC recognized that licensees may consider construction schedule information to be proprietary and request that such information be protected from public disclosure under 10 CFR 2.390. On this point, the NRC states: "If an applicant claims that its construction schedule information submitted to the NRC is proprietary, and requests that the NRC withhold that information under the Freedom of Information Act (FOIA), the NRC will consider that request under the existing rules governing FOIA disclosure in 10 CFR 2.309(a)(4)." See 72 Fed. Reg. 49,352, 49,366. Consistent with this NRC statement, COL holders may assume that ITAAC completion schedules marked by the licensee as "Proprietary" and submitted to NRC in accordance with 10 CFR 2.390 will be handled by the NRC in accordance with the regulation. This applies to schedule information provided in accordance with Section 52.99(a) or otherwise shared to support early inspection.

As described in SECY 06-0114, "Description of the Construction Inspection Program for Plants Licensed under Part 52", licensees may submit a single affidavit to request that schedule information be held as proprietary under 10 CFR 2.390. SECY 06-0114 states, "[B]ecause the nature of the information would not change from initial submittal to update, no additional proprietary determinations would be needed and routine schedule updates from the licensee would be considered proprietary and would be withheld from the public without further evaluation. This approach would allow for a single proprietary determination, limited to the schedule and its updates, that would apply to an entire construction project."

4.2 LICENSEE SCHEDULE COORDINATION

There will be a licensee project scheduler that provides NRC with a Level 3 schedule for ITAAC-related activities on site and off site (in vendor shops). A Level 3 schedule is considered an intermediate project schedule that establishes a project plan that (1) integrates and relates activities performed by participants in support of project milestones and deliverables, (2) embodies a critical path, resource loaded network that defines activity interfaces and dependencies, and (3) provides the basis for activities and logic in detailed execution schedules. This Applicant/Licensee Project Scheduling Point of Contact may be a Senior Scheduling Manager, a Licensing Manager, or Project

Management Representative, or other individual as best fits each project organization. Additional information will be made available as the NRC Scheduler determines a need and makes a request through the Project Scheduling Point of Contact. As schedules are updated, the licensee scheduler will assure that updated schedules are made available to the NRC.

To facilitate planning, tracking and communication, the schedule information for ITAAC-related activities provided to the NRC should uniquely identify all ITAAC for the project, including design certification and plant-specific ITAAC. Schedule information provided to NRC related to DAC should include the schedule for completing the additional design information necessary to implement design ITAAC, and subsequent DAC close-out following issuance of the applicable NRC inspection report.

Prior to the time Level 3 schedule information is made available to the NRC, applicants and licensees should inform their NRC Project Manager on an ad hoc basis regarding long lead procurement of SSCs and other early activities subject to ITAAC. Vendor manufacturing or fabrication of long lead components may commence well before the issuance of the COL; therefore, schedule coordination for inspection activities will likely be required significantly in advance of license receipt.

As early as practicable, licensees should discuss specific technical justifications with the NRC for “as-built” inspections, tests or analyses to be performed at other than the final installed location of SSCs that are not covered by the generic technical justifications discussed in Sections 9.1 – 9.6. This communication is important to allow the NRC to identify any questions or concerns with the licensee’s plans.

5 LICENSEE PROCESS FOR REVIEW AND PREPARATION OF ITAAC CLOSURE NOTIFICATIONS

ITAAC Closure Notifications notify the NRC that specific ITAAC have been completed. (The role of these notifications in the regulatory process is discussed in Section 3, above.) The licensee’s process for executing and documenting that ITAAC are met is described in this section. Additional information describing common processes used by licensees to perform ITAAC activities is provided in Appendix C to this document.

5.1 GUIDANCE FOR OVERSIGHT OF ITAAC COMPLETION ACTIVITIES AND COMPILATION OF RECORDS

5.1.1 ITAAC Completion Team

The licensee should establish an ITAAC completion team for the site. This team ensures that sufficient resources are available for:

- Establishing Completion Plans for each ITAAC;
- Executing the ITAAC Completion Plan;

- Compiling and maintaining the documentation required for each ITAAC completion package;
- Developing the ITAAC Closure Notification for each ITAAC; and
- Developing the Uncompleted ITAAC Notification(s), where applicable.

The licensee may delegate the responsibility for establishing and executing the ITAAC Completion Plan, including compiling and maintaining the documentation required for ITAAC completion packages.

5.1.2 ITAAC Completion Plan

The licensee and its vendors (e.g., reactor vendor, constructor, balance of plant designer, etc.) should establish a Completion Plan for each ITAAC, including:

- The activities to be conducted to perform the required inspections, tests, and analyses, and demonstrate that acceptance criteria are met; and
- The documentation to be compiled into the ITAAC Completion Package including Principal Closure Documents to be referenced in the ITAAC Determination Basis provided in the ITAAC Closure Notification.

Licensees may choose to include other information, e.g., preliminary ITAAC Determination Basis, in ITAAC Completion Plans to facilitate the ITAAC completion process. Licensees may also want to discuss or share the Completion Plan, including the expected content of ITAAC Completion Packages, with the NRC to support effective inspection planning and alignment of expectations concerning ITAAC closure.

The ITAAC Completion Plan is not an ITAAC closure document, therefore licensees may choose whether or not to develop the Plans under 10 CFR Part 50, Appendix B. ITAAC closure methods and documents may differ from those described in ITAAC Completion Plans, provided that ITAAC closure documents describe ITAAC closure activities as they were actually performed and that acceptance criteria are met.

5.1.3 ITAAC Completion Package

The ITAAC Completion Package documents how the licensee’s activities related to the ITAAC acceptance criteria were accomplished.

Documents referenced in the ITAAC Determination Basis of the ITAAC Closure Notification should be listed in the ITAAC Completion Package. A determination report should also be provided in the ITAAC Completion Package to document how the licensee determined that the acceptance criteria are met. The Determination Report provides the basis for the ITAAC Closure Notification. If a Technical Justification is necessary per Section 9.7 of this document for an ITAAC inspection, test or analysis (ITA) performed for an SSC at other than its final installed location, the Technical Justification should be provided in the Determination Report.

The ITAAC completion package should also provide a list of Corrective Action Program (CAP) items that were identified as material to the specific ITAAC acceptance criteria, including their status (which should be complete/closed). This list would be added to the package upon completion of the ITAAC, to document that there were no outstanding items in the CAP that are material to the ITAAC conclusion on the date the licensee completed the ITAAC. ITAAC completion is not affected by outstanding CAP items that are not material to the ITAAC conclusion. In addition, the ITAAC completion package should contain references for the documentation associated with each ITAAC finding, including the final resolution of these findings.

The licensee should establish a mechanism to permit the required documentation to be captured into the ITAAC Completion Package as those documents become available. This is important to avoid significant delays in schedule. The construction schedule may identify ITAAC-related activities to ensure that ITAAC-related information is flagged and sent to the ITAAC Completion Team.

The documents listed in the ITAAC Completion Package should be carefully reviewed to assure completeness and accuracy of the technical information. The documents should also be reviewed administratively to ensure, for example, that the documentation is appropriately signed, all of the pages provided, and appropriate revisions provided.

Documentation necessary to support the conclusion that ITAAC are met, including the results of evaluations that determine that conditions warrant an ITAAC Post-closure Notification under Section 52.99(c)(2), should be available on-site to permit the licensee to develop the ITAAC closure or post-closure notification, and to facilitate NRC ITAAC inspection. Results of screenings/evaluations that conclude that an ITAAC Post-closure Notification under Section 52.99(c)(2) is *not* required should be documented in accordance with the licensee's QAP. Documents may be stored electronically. While documentation necessary to verify completion should be available on site, supporting information (such as vendor calculations or analyses, vendor type testing documentation, personnel training records or fabrication records) may be available at locations other than the site. The ITAAC Completion Package should indicate where such information may be inspected or audited, if necessary. ITAAC Completion Packages containing records related to ITAAC closure and maintenance should be maintained in accordance with the licensee's QAP.

The ITAAC Completion Package may be compiled in an electronic or hard-copy format. If an electronic format is utilized, the documentation would be most useful in a format that is consistent with the latest NRC standards for electronic documents. Licensees should ensure that documentation contained in ITAAC Completion Packages is available to support efficient NRC ITAAC inspections.

The ITAAC Completion Package should not constitute the "official" copy of the documentation contained therein. Rather, the official copy of the documentation in the ITAAC completion package should be maintained by the licensee's records organization.

5.2 FORMAT FOR ITAAC COMPLETION PACKAGES

ITAAC Completion Packages should generally follow the format and content identified below:

1. Cover page, including ITAAC #, title, and approval signatures.
2. If applicable, ITAAC Process Review Checklist(s). [This is an optional checklist for licensees to use to document the readiness of an ITAAC for closure.]
3. Determination Report, including ITAAC Statement, ITAAC Determination Basis, Technical Justification (if necessary per Section 9.7) for ITA performed at other than final installed location, ITAAC Finding Review, and ITAAC Completion statement to be included in the ITAAC Closure Notification.
4. List of ITAAC Findings (if any), including information indicating the resolution of the findings.
5. List of Licensee CAP items (if any) material to the ITAAC acceptance criteria, including an indication of the status (which should be complete/closed to support closure of the ITAAC).
6. List of Principal Closure Documents (Engineering Reports, ASME Code Reports, completed Procedures, completed Inspection Reports, etc.).
7. ITAAC Closure Notification.
8. ITAAC Post-closure Notification(s), if any, and associated documentation.

5.3 LICENSEE CORRECTIVE ACTION PROCESSES

The purpose of the licensee's corrective action processes is to identify, correct, and prevent recurrence of deficiencies related to the performance of ITAAC and other quality related construction activities. For more information, see NEI 08-02, "*Corrective Action Processes for New Nuclear Power Plants During Construction*."

6 GUIDANCE ON SUFFICIENT INFORMATION FOR ITAAC CLOSURE NOTIFICATIONS

The information contained in the ITAAC Closure Notifications plays an important role in the NRC ITAAC hearing process. The Closure Notifications mandated by 10 CFR 52.99(c)(1) must include sufficient information so that interested persons will have information on completed ITAAC at a level of detail sufficient to address the Atomic Energy Act of 1954, Section 189.a(1)(B), threshold for requesting a hearing on whether the acceptance criteria have been, or will be, met. Through a series of public workshops with the NRC Staff, the industry has developed a generic template for a standard ITAAC Closure Notification format that should be used by all applicants. The template is provided in Appendix D-1 to this document.

Discussions of the generic template and numerous examples (also contained in Appendix D) determined that meeting the Section 52.99(c)(1) standard calls for ICNs to describe the methodology and key steps used in performing the ITA and determining that acceptance criteria are met. Accordingly, as discussed in Section 7, following the template guidance and examples for ICNs will meet both the Section 52.99(c)(1) standard for ICNs, and the differing standard for Section 52.99(c)(3) uncompleted ITAAC notification (UIN).

The Section 52.99 notifications should provide a narrative description, using plain language, of the process followed to close the ITAAC. Including adequate description in the ICN will ensure that a reasonable person can understand the basis for closure of the ITAAC. The ICN should explain how key steps of the ITA were performed and how each element of the AC was met. ICNs should be written for an individual with knowledge, education and/or experience concerning technical/engineering concepts underlying nuclear power, including the inspections, tests, or analyses used to demonstrate that acceptance criteria are met. The ICN should also be written with the expectation that the reader is someone who is appropriately informed about and familiar with applicable NRC regulations, licensing requirements and technical and/or engineering concepts related to ITAAC. The expectation that this informed reader understand the bases for the licensee's representation that certain inspections, tests, and analyses have been successfully completed and the acceptance criteria are met does not mean that the reader would have necessarily reached the same conclusion as the COL holder. Rather, it means that an informed reader understands the underlying bases for the conclusion.

The template approach promotes general consistency for all ITAAC Closure Notifications, which will benefit all stakeholders as well as the NRC Staff. To illustrate the information outlined in the template, a set of examples was developed by industry and reviewed by an NRC panel representing the Staff stakeholders in the ITAAC process. Feedback from the NRC panel on the specific ITAAC examples was provided to the industry in a series of public workshops and incorporated into the examples. These examples are set forth in Appendix D to this document. The examples are intended to illustrate use of the generic template and reinforce the guidance of NEI 08-01. In developing a specific ITAAC Closure Notification, licensees should consider the example(s) provided that are most similar or relevant and ensure that plant-specific information is reflected as appropriate (including any differences in the wording or unique aspects of the ITAAC). Where none of the examples is similar to the required ITAAC Closure Notification, the examples provide a guide with respect to the level of detail generally expected to be provided.

The Appendix D-1 template provides for including the following in the ITAAC Closure Notifications:

ITAAC Statement – restates the ITAAC (including the design or program commitment, inspection, test or analysis, and acceptance criteria)
ITAAC Determination Basis – describes the methodology and key steps used in performing the ITA and determining that acceptance criteria are met. If the ITAAC Determination Basis references non-public documents, it should include a brief summary of the salient information included in those documents.
ITAAC Findings –Technical findings material to specific ITAAC acceptance criteria with an indication of closure of the findings
ITAAC Completion Statement – confirmation that the ITAAC has been completed with the signature of someone with the authority to make this statement for the licensee
List of References – The list of references should include Principal Closure Documents referenced or summarized in the ITAAC Determination Basis and available for NRC review at the site, including non-public documents

The ITAAC Closure Notification provides the basis for the licensee's conclusion that ITAAC acceptance criteria are met as of a given date. Since plant construction will take place over a period of years, it is likely that an ITAAC that was closed early in the process will require a corrective action or preventive maintenance at a future point in time prior to fuel load. As discussed in Section 8.1, licensee programs should assure that these activities do not invalidate the licensee's ITAAC completion determination.

Section 9 describes the ITAAC Closure Notification documentation for ITA performed at a location other than the SSCs final installed location.

Licensees may submit multiple ITAAC closure notifications with a single (e.g., periodic) transmittal to NRC. The notifications should be attachments to a single transmittal letter.

Licensees should, to the extent possible, exclude from ITAAC closure notifications sensitive or proprietary information that would otherwise be withheld under 10 CFR 2.390. If it is necessary to include such information, both public and non-public versions of the notification should be submitted.

Generally, an ICN is required for each individual ITAAC. When an ITAAC can be partitioned into distinct parts for which licensees can demonstrate satisfaction earlier rather than waiting for closure of the entire ITAAC, they may submit partial ICNs for those portions completed early. These partial ICN submittals would follow the same format as the 10 CFR 52.99(c)(1) notifications and should identify what has been completed and what has not been completed. The partial submittals will not close the entire ITAAC but instead will lessen the burden of verifying ITAAC that have been completed over a long period of time. A partial ITAAC closure notification should clearly state that it is only a partial ICN in a watermark or equivalent on each of its pages. Each partial submittal of a complex ITAAC should describe relevant ITAAC completion activities performed to date and reference any previous partial submittals submitted to the NRC. The final closure notification should be a stand-alone 10 CFR 52.99(c)(1) notification that comprises the information previously submitted in the partial closure notifications. If the final stand-alone ICN has not been submitted by the time the licensee submits the UIN, the ITAAC is considered only partially complete and should be included in the UIN, as discussed in Section 7.

7 GUIDANCE ON SUFFICIENT INFORMATION FOR THE UNCOMPLETED ITAAC NOTIFICATION

As explained in Section 3.2.1 of this document, no later than 225-days prior to scheduled fuel load 10 CFR 52.99(c)(3) requires the licensee to notify the NRC regarding the status of any uncompleted ITAAC. Licensees may provide the uncompleted ITAAC notification (UIN) in connection with or shortly after the 270 day notice of scheduled fuel loading required by 10 CFR 52.103(a).

The UIN must indicate that the inspections, tests or analyses for all uncompleted ITAAC will be performed and that the acceptance criteria will be met prior to plant operation. These notifications are similar to the ITAAC Closure Notification submitted under 10 CFR 52.99(c)(1) in terms of the level of technical detail required to describe ITAAC completion activities. The Uncompleted ITAAC Notification mandated by 10 CFR 52.99(c)(3) must include sufficient information so that interested persons will have information on uncompleted ITAAC at a level of detail sufficient to address the Atomic Energy Act of 1954, Section 189.a(1)(B), threshold for requesting a hearing on whether the accepted criteria have been, or will be, met. See 77 *Fed. Reg.* 51886 and 77 *Fed. Reg.* 81887. Required information includes, but is not limited to, a description of the specific procedures and analytical methods that will be used for performing the inspections, tests, and analyses and determining that the prescribed acceptance criteria are met. 10 CFR 52.99(c)(3).

While the Section 52.99(c)(3) requirement that UINs describe “specific procedures and analytical methods …” differs from Section 52.99(c)(1), discussions of both ICNs and UINs indicate there is no practical difference in the expected content of these notifications. This is because discussion of numerous examples with the NRC staff made clear that ICNs are expected to describe specific procedures and methods, i.e., meet the content standard for UINs. As a result of these discussions, NEI 08-01 calls for ICNs to summarize the purpose and scope of the ITAAC with respect to demonstrating the Design Commitment, the methodology and key steps for conducting the ITA, and the results that demonstrate that the acceptance criteria are met. This guidance is repeated in the ICN template in Appendix D-1, and the examples presented in Appendix D were developed based on this standard. Thus, ITAAC notifications based on NEI 08-01 guidance, including description of methodology and key steps for performing the ITA and determining that the AC are met, will meet both the 52.99(c)(1) standard for ICNs), and the differing standard for 52.99(c)(3) uncompleted ITAAC notifications (UIN).

ITAAC are considered uncompleted until all the activities within its scope are completed. Therefore, the UIN should cover ITAAC for which required inspections, tests or analyses have not yet been performed, as well as ITAAC for which ITA have been only partially completed. For partially completed ITAAC, the UIN does not need to specify which

ITAAC activities have been completed versus which have not. For all ITAAC covered by the Section 52.99(c)(3) notification, licensees are required subsequently to submit Section 52.99(c)(1) ITAAC Closure Notifications, and these notifications are made publicly available by the NRC. These notifications, together with the “All ITAAC Complete” notification required by Section 52.99(c)(4), provide confirmation that all ITAAC are successfully completed.

The target reader for the Uncompleted ITAAC Notification is the same as described in Section 6 of this document, i.e., someone who is appropriately informed about and familiar with applicable NRC regulations, licensing requirements and technical and/or engineering concepts related to ITAAC.

The UIN will describe plans for completing multiple ITAAC. Therefore, the licensee may provide a signed cover letter explaining the purpose of the notification and include one or more attachments covering the uncompleted ITAAC. To ease administrative burden for all stakeholders, a licensee may choose to provide the Uncompleted ITAAC Notification in two or more parts, each covering a portion of the uncompleted ITAAC. For example, partial UINs may be organized by system, by type of ITAAC (e.g., system hydro testing), or by the expected timing of ITAAC completion. Use of a phased approach to send a portion of the notifications to the NRC in advance of the due date could ease the burden of processing.

Similar to the approach for the ITAAC Closure Notifications, the industry has developed generic templates for the cover letter and the ITAAC-specific attachments as shown in Appendices E-1 and E-2. To illustrate the use of the template for ITAAC-specific attachments, an example of an Uncompleted ITAAC Notification for specific ITAAC is provided in Appendix E-3. The templates and the example were developed by industry and reviewed during public workshops by an NRC panel representing the NRC staff stakeholders in the ITAAC process, similar to the ITAAC Closure Notification review discussed in Section 6.

As illustrated in Appendix E-3, ITAAC-specific attachments to the UIN should describe in the passive present tense (e.g., “the valve is tested …”) the ITAAC closure activities to be completed and described in ITAAC Closure Notifications. Because both the UIN and ITAAC Closure Notifications require a similar description of ITAAC completion activities (one prospectively, in passive present tense, the other after the fact), licensees may refer to the ITAAC Closure Notification examples in Appendix D for guidance on the level of detail to include in the UIN. As with developing ITAAC Closure Notifications, licensees should consider the example(s) provided that are most similar or relevant and ensure that plant-specific information is reflected as appropriate.

The template for the ITAAC-specific attachments to the UIN(s) provides for the following items:

- ITAAC statement – restates the ITAAC, including the design or COL commitment, inspection, test or analysis; and acceptance criteria.

- ITAAC Completion Description – similar to the Determination Basis in an ITAAC Closure Notification; describes sufficient information including the specific procedures and analytical methods to be used in performing the ITA and to demonstrate that the acceptance criteria will be met. This description is equivalent to that provided for Section 52.99(c)(1) ICNs based on the guidance in Section 6 and the generic ICN template presented in Appendix D-1.
- List of ITAAC Findings – the UIN shall list applicable ITAAC findings by number and, if closed, a reference to the closure of the finding. To the extent there are findings that are not closed by the time of the UIN, the UIN should include a statement that, before submission of the ICN, corrective actions will be completed for all relevant ITAAC findings identified prior to ICN submission.
- List of references – primary references that will be available for NRC review at the site.

8 ITAAC MAINTENANCE

The licensee will complete ITAAC over an extended period. ITAAC Closure Notifications will be submitted by the licensee to establish closure in accordance with 10 CFR 52.99(c)(1), as discussed in SECY-06-0114, *Description of the Construction Inspection Program for Plants Licensed Under 10 CFR Part 52*, May 13, 2006. Following licensee submittal of an ITAAC Closure Notification, significant time may elapse before the finding is made that all ITAAC acceptance criteria are met in accordance with 10 CFR 52.103(g).

Until the time all ITAAC are met and the Commission makes its 10 CFR 52.103(g) ITAAC finding, licensees will use established programs (e.g., quality assurance, corrective action, design/configuration control, and construction/maintenance programs) to maintain the validity of prior ITAAC conclusions. This is known as ITAAC maintenance or maintaining ITAAC. The licensee should ensure that the following activities do not invalidate ITAAC determinations:

- Normal maintenance and repairs on SSCs associated with ITAAC.
- Incidents or findings (e.g., damage from other nearby construction work, or a failure to maintain training qualifications of emergency response organization personnel) that create or identify potential non-compliances or non-conformances that may be corrected under the licensee's Corrective Action Processes.
- Changes to SSCs or programs associated with ITAAC that may be permitted to be made by the licensee without prior NRC approval in accordance with applicable change control requirements.

In addition to maintaining the validity of ITAAC conclusions as described above, 10 CFR 52.99(c)(2) requires licensees to submit ITAAC Post-closure Notifications to formally notify NRC when new information is identified that materially alters the ITAAC Determination Bases summarized in the initial ITAAC Closure Notification, and to assure a complete and accurate public record of information pertinent to ITAAC closure.

The notification must contain sufficient information to demonstrate that, notwithstanding the new information, the prescribed inspections, tests, or analyses were performed as required, and the prescribed acceptance criteria are met. Such notifications may also facilitate the Staff's ITAAC inspection activities and enhance the transparency of the ITAAC closure process. The thresholds for making these notifications are discussed in Section 8.2.

In addition to Section 52.99(c)(2) notifications, routine interactions such as daily meetings are important to facilitate communication with NRC Resident Inspectors regarding activities affecting closed ITAAC. As discussed in Section 8.2, licensees should use the template provided in Appendix G to identify to the NRC conditions that exceed notification thresholds upon determining that such conditions exist.

8.1 Attributes of Licensee Programs for Maintaining ITAAC

The licensee should maintain the validity of ITAAC determinations through proper implementation of its Quality Assurance, Corrective Action, Design/Configuration Control, and Construction/Maintenance Programs. During the ITAAC maintenance period, these programs should include the following attributes to ensure the validity of ITAAC determinations is maintained.

- Quality Assurance Program (QAP)

  QAP requirements governing licensee procurement, fabrication, construction, inspection and test activities for SSCs covered by ITAAC are specified in accordance with the safety classification and/or safety significance of the SSCs involved. ITAAC encompass SSCs of varying safety significance and safety classification, including safety-related and non-safety-related SSCs. Because ITAAC have special regulatory significance under Part 52, licensees should document ITAAC closure and ITAAC Maintenance under their Quality Assurance Program.

- Construction Corrective Action Processes

  Construction corrective action processes should be used to ensure that any identified ITAAC related deficiencies are processed and resolved and that the ITAAC acceptance criteria continue to be met

  Attributes to be included to maintain ITAAC closure:
  - Conditions will be screened for impact on ITAAC.
  - Conditions material to ITAAC will be specifically flagged in the Corrective Action Program (CAP).
  - Conditions will be corrected, documented, etc., in accordance with NEI 08-02.
  - The licensee will determine whether the NRC needs to be notified in accordance with Section 52.99(c)(2) and the guidance in Section 8.2.
  - ITAAC Closure Package will be supplemented as appropriate.

- Design/Configuration Control Program

The Design/Configuration Control Program should ensure that changes to SSCs or programs will not affect compliance with ITAAC requirements and ensure that ITAAC acceptance criteria continue to be met. Note: the license cannot alter the wording of an ITAAC without obtaining NRC review and approval as discussed in Section 3.2.4.

Attributes to be included to maintain ITAAC closure:

- o Design Changes will be screened for impact on ITAAC, including an assessment to confirm that affected ITAAC are still valid and that SSCs continue to meet the Tier 1 Design/Program Commitment.
- o The licensee will determine whether design changes require a license amendment or if NRC needs to be notified in accordance with Section 52.99(c)(2) and Section 8.2 of this document.
- o ITAAC Completion Package will be supplemented as appropriate.

- Construction/Maintenance Programs

The Construction/Maintenance Program should ensure that the acceptance criteria of closed ITAAC continue to be met after maintenance or repairs are complete.

Attributes to be included to maintain ITAAC closure:

- o Construction/Maintenance activities will be screened for impact on ITAAC.
- o Post Work Verification will be performed as appropriate to maintain the validity of ITAAC conclusions.
- o The licensee will determine whether NRC needs to be notified in accordance with Section 52.99(c)(2) and the guidance in Section 8.2.
- o ITAAC Completion Package will be supplemented as appropriate.

Each of these programs is subject to NRC inspection, and the NRC staff may assess the licensee’s maintenance of ITAAC conclusions as one element of these inspections. NRC inspectors may also assess the licensee’s maintenance of ITAAC conclusions as part of inspections under IP-40600, *Licensee Program for ITAAC Management*. Provided licensee programs restore SSCs to their ITAAC compliant condition following maintenance, prior ITAAC conclusions remain valid. Licensees will use these same or similar programs to maintain plant SSCs for the life of the plant after the 10 CFR 52.103(g) ITAAC finding is made.

These program attributes should be implemented as needed to support ITAAC closure and maintenance.

To support the Section 52.103(g) finding, the licensee is responsible for ensuring that these programs, and others as applicable, maintain the validity of prior ITAAC conclusions before, during and after systems and buildings are turned over to the operations staff.

8.2 ITAAC Post-Closure Notifications to NRC

This section provides guidance for determining when to notify the NRC in accordance with Section 52.99(c)(2) of new information that arises after the submission of an ITAAC Closure Notification.

If subsequent licensee activities materially alter statements made in the ITAAC Determination Basis summarized in the original ITAAC Closure Notification, or if the original notification is determined to contain a material error or omission, licensees should submit an ITAAC Post-closure Notification to notify the NRC of the new/corrected information or conditions. Conditions that exceed one or more of the notification thresholds below require an ITAAC Post-closure Notification. Alternatively, if a licensee re-performs an ITA (e.g., post-maintenance) and the numerical result differs from that provided in the ICN, no Post-Closure ITAAC Notification is required provided the Acceptance Criteria are still met and none of the notification thresholds are exceeded.

Upon determining the need to submit an ITAAC Post-Closure Notification, the licensee should notify the NRC Operations Center within seven days. Licensees should use Appendix G to notify the NRC of such conditions. ITAAC Post-closure Notifications required by 10 CFR 52.99(c)(2) should be prepared and submitted within 30 days following (1) determination that a submitted ITAAC Closure Notification contains a material error or omission, or (2) completion of work to resolve the issue that prompted the notification. The ITAAC Post-closure Notification should explain why it is being submitted (e.g., correction or new information) and contain sufficient information to demonstrate that, notwithstanding the new or corrected information, the ITA were performed as required and the acceptance criteria are met. As explained in the Statements of Consideration for the 2012 Part 52 rule (77 Fed. Reg. 51880), the information provided in the notification should be at a level of detail comparable to the ITAAC closure notification under 10 CFR 52.99(c)(1). A template for and examples of ITAAC Post-closure Notifications are provided in Appendix I.

The term “materially alter” refers to situations in which there is information not contained in the 10 CFR 52.99(c)(1) notification that “has a natural tendency or capability to influence an agency decision maker” in either determining whether the prescribed inspection, test, or analysis was performed as required, or finding that the prescribed acceptance criterion is met (76 Fed. Reg. 27,931; 77 Fed. Reg. 51887).

In accordance with 10 CFR 52.99(e)(2), the NRC will make publicly available all licensee notifications provided under Section 52.99(c), including ITAAC post-closure notifications provided under Section 52.99(c)(2).

<u>ITAAC Post-Closure Notification Thresholds:</u>

1. *Material Error or Omission: Is there a material error or omission in the original ITAAC Closure Notification?* If a material error or omission is discovered in an ITAAC Closure Notification and the ITAAC continues to be met, an ITAAC Post-Closure Notification should be submitted that corrects the error or provides the

missing information.

In most cases, it is not necessary to submit a separate notification to withdraw an inaccurate or incomplete ITAAC Closure Notification; submittal of an ITAAC Post-Closure Notification that explains the reasons for the new notification and provides the corrected or missing information is sufficient. A licensee should submit a request to withdraw an original ITAAC Closure Notification if it is determined that the ITAAC cannot be completed without relief from the terms of the original ITAAC. In such cases, the request to withdraw the ITAAC Closure Notification may be included in the License Amendment Request associated with changing the terms of the ITAAC. In addition, in the event an error or omission is discovered soon after an ITAAC Closure Notification is submitted, a licensee should consider requesting withdrawal of the original notification prior to the next NRC *Federal Register* Notice of completed ITAAC.

2. *Post Work Verification (PWV): Will the PWV use a significantly different approach than the original performance of the ITA as described in the original ITAAC Closure Notification?* Example: The AC states that 300 gpm flow passes through an MOV. The MOV is replaced and water cannot be flowed through the valve (due to plant configuration/conditions) as part of the PWV to verify the AC continues to be met. Instead, the valve is stroked and an engineering analysis that verifies 300 gpm flow under required conditions is performed to validate the AC. This would be an acceptable means to meet the AC, after maintenance, if completion of construction activities no longer allows flow to be measured through this valve. However, post maintenance analysis should not be used for testing convenience. This condition requires an ITAAC Post-closure Notification because an engineering analysis was created to verify that stroke timing of the replacement valve is sufficient to validate the same requirements as the original ITAAC testing.

3. *Engineering Change: Will an engineering change be made that materially alters the determination that the acceptance criteria are met?* Example: A design change is required to add pipe snubbers to ASME piping to address water hammer damage to a support that occurred during pre-op testing. This condition requires an ITAAC Post-closure Notification because an engineering design change is required to address the issue of water hammer, and the design change is material to the determination that the acceptance criterion is met, i.e., that ASME piping can withstand combined normal and seismic loads.

4. *Additional Items to be Verified: Will there be additional items that need to be verified through the ITAAC?* Example: ASME piping is damaged and base metal repairs are made. The ASME Code Report is revised to add more welds from the base metal repair information. This condition requires an ITAAC Post-closure Notification because the scope of the ITAAC determination basis was increased with the addition of more welds that are reviewed as part of the updated ASME Code Report.

5. *Complete and Valid ITAAC Closure Representation: Will any other licensee activities materially alter the ITAAC determination basis?* Example: An addition or

correction is made to a seismic report that was cited in the ITAAC Closure Notification. If the addition or correction is material to the ITAAC Determination Basis, an ITAAC Post-closure Notification is required to update the ITAAC determination basis to reflect the corrected or supplemented seismic report.

Additional examples of conditions that would meet these thresholds are provided in Appendix H.

Licensees should supplement their ITAAC Closure Packages to reflect:

- An ITAAC Post-closure Notification submitted to the NRC
- Replacement of ITAAC-verified components
- Updates to documents referenced in the ITAAC Closure Notification.
- Supplemental information regarding post work verification (PWV) – If PWV is significantly different from the original ITAAC, the ITAAC Closure Package should be supplemented with an engineering justification that explains why the PWV is appropriate to the situation and provides the basis for the conclusion that ITAAC acceptance criteria continue to be met.

The information in ITAAC Closure Packages will be available for NRC inspection at the plant site.

8.3 All ITAAC Complete Notification to Support the 10 CFR 52.103(g) ITAAC Finding

Prior to the Commission's 10 CFR 52.103(g) ITAAC finding that the ITAAC acceptance criteria in the COL are met, licensees must have completed all ITAAC, submitted all required 10 CFR 52.99(c)(1) notifications, and must be maintaining all ITAAC conclusions.

Following completion of the last ITAAC, 10 CFR 52.99(c)(4) requires licensees to notify NRC that all ITAAC are complete. The purpose of the All ITAAC Complete Notification is to confirm that all ITAAC have been performed, all acceptance criteria are met, and all ITAAC conclusions are being maintained. The letter is also intended to facilitate the Staff's recommendation to the Commission concerning the completed status of all ITAAC in support of the 10 CFR 52.103(g) ITAAC finding.

Licensees may consider all ITAAC complete and submit the All ITAAC Complete Notification to the NRC even if maintenance activities are in progress on ITAAC components provided the activities do not exceed the notification thresholds identified in Section 8.2. The state of being out-of-service pending restoration in accordance with licensee programs and procedures does not necessarily invalidate prior ITAAC conclusions. Components out of service for corrective maintenance, including components associated with ITAAC, will be tracked via appropriate corrective action processes.

Following submittal of the All ITAAC Complete Notification, if the licensee determines that a condition exceeds one of the thresholds discussed in Section 8.2 for an ITAAC Post-closure Notification, the licensee should notify the NRC within 24 hours of such a determination.

Licensees should evaluate new information or conditions expeditiously to determine if a notification threshold is exceeded. Licensees should use Appendix G to notify the NRC of such conditions. As identified in NEI 08-02, conditions determined to be material to a conclusion in an ITAAC Closure Notification previously submitted to the NRC should be entered into the Corrective Action Program.

The ITAAC Post-closure Notification should be submitted to NRC after work to resolve the issue is complete. The licensee may request the NRC staff to proceed with the Section 52.103(g) finding recommendation to the Commission; however, the NRC may not make the Section 52.103(g) finding until conditions exceeding the Section 8.2 notification thresholds are corrected and any associated ITAAC Post-closure Notifications are received.

9 GUIDANCE FOR INSPECTIONS, TESTS OR ANALYSES PERFORMED AT OTHER THAN FINAL INSTALLED LOCATION

Some ITAAC specify that inspections, tests or analyses (ITA) are to be performed on "as-built" systems, structures, or components. Such ITAAC are known as "as-built ITAAC." From Section 2, the definition of "as-built" is as follows:

> **As-built** means the physical properties of a structure, system, or component following completion of its installation or construction activities at its final location at the plant site. In cases where it is technically justifiable, determination of physical properties of the as-built structure, system, or component may be based on measurements, inspections, or tests that occur prior to installation, provided that subsequent fabrication, handling, installation, and testing do not alter the properties.

Sections 9.1-9.6, below, provide guidance on as-built ITAAC for which it is technically justified to perform ITA on a structure, system, or component (SSC) at other than its final installed location. As discussed in these subsections, a range of inspections and tests of engineered components is performed at the manufacturing, fabrication or testing facility. Customer purchase orders typically require supplier certification documentation that specified inspection and/or test requirements were met before shipment. Many of these inspections/tests correspond to those required by as-built ITAAC and include, but are not limited to dimensional inspections, non-destructive examination, hydrostatic testing, type testing, seismic testing, and functional testing. For these ITAAC, "as-built" physical properties of the completed engineered component may be determined via ITA performed in the manufacturing facility. After installation or construction in the final location, ITAAC associated with verifying the installed configuration and system or integrated system inspection/testing may be performed. Licensees should not submit ITAAC Closure Notifications for as-built ITAAC until after the component/module is installed in its final location.

Licensees may identify and perform other types of tests/inspections/analyses at other than the final installed location, that are not discussed in Sections 9.1—9.6 below. Section 9.7 provides guidance for these situations.

When inspections or tests are to be performed at other than the final installed location, a determination should be made regarding whether additional measures for shipping, handling and installation should be implemented to ensure that installed SSCs are intact and that inspection/test results obtained at other than the final installed location remain valid. If additional measures are to be implemented to ensure installed SSCs are intact after transportation/placement, the information should be included in procurement or other documentation that is referenced in the ITAAC Completion Package.

ITAAC Closure Notifications include a reference to NEI 08-01 as a source of guidance and generic technical justifications for as-built ITA performed at other than the final installed location. As discussed in Section 5.1.3, the ITAAC Completion Package documents ITA performed in accordance with NEI 08-01, including those performed at other than the final installed location. The ITAAC Completion Package and the ITAAC Closure Notification description of as-built ITA performed on SSCs at other than the final installed location should identify the applicable generic technical justification(s) provided in Sections 9.1 - 9.6. If the as-built ITA was performed at other than the final installed location and none of the generic technical justifications apply, the technical justification should be documented in the ITAAC Completion Package and summarized in the ITAAC Closure Notification as described in Section 9.7.

As indicated in Section 4.2, "Licensee Schedule Coordination", the licensee will provide NRC with a schedule for ITAAC-related activities performed both on site and off site (in vendor shops). Prior to the initial sharing of ITAAC schedule information, applicants and licensees should inform their NRC Project Manager regarding long lead procurement of SSCs and other early activities subject to ITAAC.

The following subsections address the various types of "as-built" ITAAC and provide guidance on when ITA may be performed at other than the final installed location.

Appendix D-1 provides a template for ITAAC Closure Notifications. Appendices D-16 and D-17 are example ITAAC Closure Notifications with as-built ITA performed on SSCs at other than their final location at the plant site.

The guidance in this section concerning documentation of technical justifications and submittal of ICNs applies only to "as-built" ITAAC. Other ITAAC may call for ITA that are performed at other than the final installed location, but are not "as-built ITAAC." These ITAAC do not require licensees to document technical justifications, and ICNs for these ITAAC may be submitted to NRC prior to installation of SSCs. Appendices D-50 and Demo-1 provide examples of such ITAAC.

9.1 Testing of "As-built" Systems

When an ITAAC specifies testing of an as-built system, the test is typically intended to be performed at the completion of construction activities and system installation at its final location at the plant site.

ITAAC for some plant designs may call for systems to be tested at a module fabrication or other manufacturing facility.

9.2 "As-built" Structure or Component Testing

When the location of as-built ITAAC testing is not prescribed, such tests should be performed with the structure or component installed in its final location at the plant site. However, testing of structures or components may be performed at other than the final installed location provided that doing so is in accordance with standard industry practice and specified in procurement specifications, or in accordance with NRC regulatory guidance. Examples include hydrostatic testing; seismic or harsh environment type testing; active safety component testing specified in the procurement documents; or functional tests specified in the procurement documents. System testing and integrated system testing should follow the Section 9.1 guidance for completed as-built systems.

9.3 "As-built" Inspection of Type-Tested Components

Certain ITAAC use terminology indicating that the as-built construction should be bounded by ITA performed at other than the final installed location (e.g., Type Testing, such as seismic, harsh environment, or active safety component testing). Such ITAAC may include a requirement to verify the installed component configuration in its final location at the plant site, or this verification may be accomplished by a separate ITAAC.

9.4 "As-built" Code Requirements

If ITA are performed at locations separate from the plant site in accordance with the provisions of the ASME, IEEE or other Code, it is "technically justifiable" not to repeat the ITA at the final in-plant location as long as the ITAAC acceptance criteria were met in the manufacturing, fabrication or other facility. An example of this would be non-destruction examination of ASME Code components.

9.5 "As-built" Inspections

In cases where it is clear that an inspection can only be performed on an as-built component at a location other than the plant site, it is "technically justifiable" to document that inspection as the record of the related ITAAC completion in the ITAAC Completion Package. An example of this would be inspection of an internal component dimension that is not accessible for measurement after installation.

In addition, inspections of structures or components may be performed at other than the final installed location provided that doing so is standard industry practice and specified in procurement specifications, or in accordance with NRC regulatory guidance. The record of the inspection performed at the manufacturing, fabrication or other facility may serve as the record of the related ITAAC completion in the ITAAC Completion Package. The licensee need not document a separate Technical Justification in the ITAAC Completion Package.

Inspecting structures or components in manufacturing, fabrication or similar facilities prior to final installation has become standard industry practice in order to ensure that the components have been verified to meet specified requirements prior to shipping. There are many advantages to performing inspections in a manufacturing environment versus under field construction conditions. Examples include availability of specialized inspection equipment in the manufacturing facility and better access to components for inspection, in alignment with industrial safety considerations.

9.6 "As-built" Analysis

Where the as-built ITAAC prescribes analyses of as-built construction, it is "technically justifiable" for such analyses to be performed prior to construction completion, as long as there is supporting evidence (e.g., design change reconciliation, installation inspections, post-installation inspections/tests) that the final construction was not in variance with analytical assumptions or conclusions.

9.7 Technical Justifications for Other Tests/Inspections at Other than the Final Installed Location

Licensees may identify and perform other types of inspection/tests/analyses for as-built ITAAC at other than the final installed location that are not discussed above in Sections 9.1–9.6. Technical justification for performing ITA of SSCs at other than their final installed location in a manner other than that described in Sections 9.1–9.6 should be documented in the ITAAC Completion Package and summarized in the ITAAC Closure Notification. The Technical Justification should consist of the basis for concluding that it is appropriate to perform ITA at other than the final installed location and the basis for concluding that acceptance criteria continue to be met after SSCs are installed in the plant.

To assure coordination with NRC inspectors, the licensee should identify plans to perform tests or inspections at other than the final installed location to NRC resident/regional inspectors as early as practical. One means of identifying such plans and technical justifications is in connection with regular licensee interactions related to ITAAC completion plans/schedules as discussed in Section 4.2.

10 SPECIAL ITAAC CLOSURE TOPICS

10.1 DESIGN ACCEPTANCE CRITERIA

Design Acceptance Criteria (DAC) are a special type of ITAAC that may be included in design certifications. DAC set forth the processes and acceptance criteria for completing portions of a certified design, e.g. portions of the digital instrumentation and control system design. Verification of completed DAC is accomplished through as-built ITAAC.

DAC are established in areas of rapidly changing technology where it may be inappropriate to prematurely freeze the design, or in areas where the information is dependent on as-built or as-procured information. To date, DAC have been approved in design certifications in four areas: digital instrumentation and control (digital I&C), piping, human factors engineering (main control room and remote shutdown system design), and radiation shielding. Use of DAC in design certifications requires Commission approval.

NRC provides regulatory guidance regarding DAC implementation in RG 1.206, “Combined License Applications for Nuclear Power Plants (LWR Edition)”, Section C.III.5. Licensees may refer to this guidance regarding NRC expectations on the level of detail and design elements for DAC closure.

10.1.1 DAC Closure Options

There are three options to close DAC, all of which involve essentially the same level of design detail. The design information necessary to close DAC should be that level which would have been provided during design certification review if DAC had not been used. Regardless of the option used to close DAC, NRC closure of DAC embodies a determination that the design has been completed in accordance with the design certification. The three options for DAC closure are:

- *Closure through amendment of design certification rule* – Under this option, the design certification applicant would submit an amendment with design information that implements the DAC. Completed DAC would be deleted from the set of design certification ITAAC; however, the ITAAC on the as-built SSCs would remain (or be modified, as necessary) to demonstrate that the as-built facility conforms to the completed DAC. The NRC would review the amendment request, issue a safety evaluation, and conduct rulemaking to amend the design certification rule.

- *Closure through the COLA review process* – Under this option, the COL application contains the additional design information needed to implement the DAC. The NRC reviews the design and includes the results of its review in the safety evaluation for the COL. The COL should reflect that the DAC have been completed. The as-built ITAAC would remain (or be modified as part of the NRC review of the COLA, as necessary) to demonstrate that the as-built facility conforms to the completed DAC.

- *Closure after COL issuance* – Under this option, the COL is issued with DAC. When the necessary additional design information is available, the licensee’s DAC implementation is inspected by the NRC. Closure of DAC is accomplished via the ITAAC closure process described in this document (e.g., close-out is initiated by a licensee’s ITAAC Closure Notification to NRC). A sample ITAAC Closure Notification for DAC is provided in Appendix D-20.

10.1.2 Actions Following DAC Closure

Following DAC closure by the licensee and NRC, the licensee should assess the extent to which any changes to the licensing basis are necessary. For example, if actual DAC implementation is inconsistent with the FSAR, the FSAR should be updated to conform to the actual DAC implementation. Also, the FSAR will need to be updated, in accordance with 10 CFR 50.71(e), to appropriately reflect the design information generated in closing out the DAC. If the licensee determines that FSAR, technical specification or other changes are necessary or appropriate to reflect actual DAC implementation, changes should be evaluated and implemented via the design certification or other applicable change process, and a license amendment requested, if required.

10 CFR 52.99(c)(2) ITAAC Maintenance requirements apply to DAC in the same manner as other ITAAC. An ITAAC Post-closure Notification would be required in accordance with 10 CFR 52.99(c)(2) for discovery of a material error or omission in an DAC Closure Notification, just like any other ITAAC. Likewise, a material addition or correction to a Principal Closure Document for the DAC may require an ITAAC Post-closure Notification.

However, post-ITAAC closure activities generally will not affect the basis for determining that the DAC is met such that NRC notification is required. Design changes controlled by the same methodology used in the initial design do not materially alter the determination that the acceptance criteria are met. Therefore, no supplemental notification would be required for such changes. If the licensee departs from the DAC methodology used, an ITAAC Post-closure Notification is required. As-built ITAAC will confirm that the facility was constructed in accordance with the design verified in the DAC.

Major changes to the methodology utilized in the initial design or significant changes in the scope of the design (i.e., a new piping subsystem) would require a License Amendment Request. Licensees may include in such LARs the information required by Section 52.99(c), and may indicate that submittal of the LAR also satisfies the requirement to submit an ITAAC post-closure notification.

10.1.3 DAC Closure for Subsequent COL Projects

DAC closure via the design certification amendment process resolves DAC with finality for all COL applications referencing that certified design.

Closure of DAC via the COL or post-COL processes applies only to a single licensee. However, it is expected that subsequent licensees will implement DAC using the standard design information approved for the licensee who first implemented the DAC with the exception of site-specific parameters. As discussed in Section C.III.5 of RG 1.206, the NRC staff is expected, in turn, to use the NRC's design-centered review approach, i.e., perform a confirmatory review only, to approve DAC implementation for licensees that reference standard design DAC information approved previously by the staff. The licensee and NRC would similarly use the design-centered review approach to document closure of the DAC.

Use of the design centered review approach supports the goal of standardization for at least a cohort of plants before technology advances to a point where a different approach may be employed. If DAC implementation is modified for subsequent licensees, e.g., to reflect evolving technology, the NRC may inspect the modified DAC implementation as it did for the first licensee to implement the DAC.

10.2 Subsequent COL ITAAC Closure

The NRC has adopted a design-centered review approach for COL and DCD reviews that is described in detail in SECY-06-0019. This process allows the staff to use a "one issue-one review-one position" strategy as practical for items that are identical in the DCD and COLA or identical in the reference COLA and subsequent COLAs. This design-centered approach may also be appropriate for ITAAC verification associated with common design reports or other data that is not site-specific.

For ITAAC that are common to each licensee of a particular design, ITAAC Closure Notifications may reference identical information, for example the same type test or reactor vendor design report. ITAAC completion by subsequent licensees based on identical information will facilitate the use of the design-centered approach by the NRC for their review and confirmation that the ITAAC is closed. Similar to what is described for the review of DAC in Section 10.1.3 of this document, this approach will enable the staff to close ITAAC via a confirmatory review. This approach would not apply to those portions of ITAAC acceptance criteria that require field activities.

In addition to the examples in Appendices D and E, licensees may use plant-specific ITAAC Closure Notifications previously submitted to and accepted by the NRC for another licensee as a guide for developing their own ITAAC Closure Notifications on corresponding ITAAC.

Some ITAAC are identified as applicable to the "First Plant Only" or "First Three Plants Only." Each COL applicant must address all ITAAC in a referenced design certification; however, for ITAAC applicable only to the first, or first three, plants of a given design, subsequent applicants may reference the ITAAC closure(s) from the previous project(s) and request those ITAAC be considered resolved for purposes of additional COL proceedings.

10.3 Non-ITAAC Systems

The ITAAC for existing design certifications cover all of the structures and systems within the scope of each design certification. The level-of-detail (amount of design description) for a particular ITAAC is commensurate with the safety significance of that structure or system. Some systems with very little or no safety significance only contain the system title and the statement "no entry for this system." These systems do not have any design commitments to be verified. Two examples of such systems are the AP1000 Potable Water System and Waste Water System. Such systems are known as non-ITAAC systems. Design certifications may employ various conventions for identifying non-ITAAC systems in Tier 1.

In some cases, a system identified as a non-ITAAC system refers to design commitments in another ITAAC. Two examples of such systems are the AP1000 Main Steam System and the Steam Generator Blowdown System.

The NRC may inspect any construction-related activities it chooses as part of its Construction Inspection Program, including SSCs that are part of a non-ITAAC system. However, the notification requirements in 10 CFR 52.99 apply only to ITAAC that have, or refer to, design commitments to be verified.

10.4 DESIGN RELIABILITY ASSURANCE PROGRAM ITAAC CLOSURE

The design reliability assurance program (D-RAP) consists of that portion of reliability assurance activities that occur prior to initial fuel load. After initial fuel load, reliability assurance activities are expected to be integrated into operational programs, including the Maintenance Rule and Quality Assurance Programs. The objective of the D-RAP is to ensure that the facility is designed and constructed consistent with the key assumptions (including reliability and availability assumptions in the PRA, when applicable) and risk insights for the SSCs within its scope. Licensees may achieve this objective by:

(1) Applying the essential elements of D-RAP (i.e., organization, design control, procedures and instructions, records, corrective actions, and audit plans), including assurance that the list of SSCs within the scope of the RAP (RAP SSCs)is appropriately developed, maintained, and communicated to the appropriate organizations; and

(2) Implementing the appropriate quality assurance (QA) controls related to design and construction (e.g., design, procurement, fabrication, construction, inspection, and testing activities) to provide control over activities affecting the quality of the within-scope SSCs, including both safety-related and non-safety-related SSCs

10.4.1 ITAAC for D-RAP

DC and COL applications specify an ITAAC for the D-RAP to ensure that appropriate controls are applied to risk-significant SSCs. The objective of the D-RAP ITAAC is to ensure that the design bases and other requirements have been correctly translated into the detailed design documents used for procurement and construction. Subsequent activities, including system ITAAC, are predicated on the assumption that these documents are correct.

An acceptable D-RAP ITAAC would include a commitment that the design is consistent with the risk insights and key assumptions related to RAP SSCs. These insights and assumptions are derived from probabilistic, deterministic, and other methods of analysis used to identify and quantify risk. The Commission has stated that an Appendix B program assures that this will be the case (for safety-related SSCs). An analogous quality assurance program for other RAP SSCs can accomplish the same thing.

The acceptance criterion for the D-RAP ITAAC should ensure that the initial design of each RAP SSC has been subject to the applicable reliability assurance activities. In other words, procurement and construction documents have been controlled by appropriate procedures within the D-RAP. The D-RAP ITAAC applies to every SSC that is within the scope of the RAP when the COL is issued. When D-RAP ITAAC are written in this manner, the following guidance applies to their closure.

The licensee performs an analysis to verify that appropriate controls were imposed on the initial development and issuance of the documents required for procurement and construction of SSCs. (The initial design of an SSC is complete when all required documents have been approved at least once. This must be done by the licensee's responsible design organization.) Once the initial design has been issued using the appropriate D-RAP procedures, changes can only be implemented using the same programs. Consequently, modifications to the initial design do not alter the facts on which D-RAP ITAAC acceptance criteria rely. Accordingly, once the D-RAP ITAAC are satisfied for a given SSC, no further analysis is needed no matter how many design changes affect it. Modifications do not create a need to revisit, reopen, or maintain the D-RAP ITAAC.

The D-RAP ITAAC only confirms that applicable program controls were applied, while other inspections ensure that these controls are effective (e.g., staff inspectors verify that the design control program is adequate). Consequently, the D-RAP activities themselves are not addressed in the D-RAP ITAAC. Similarly, verifying that construction was done correctly and confirming that the as-built configuration is consistent with the approved design is done by other ITAAC. For this reason, the D-RAP ITAAC does not address construction activities or the as-built configuration.

A licensee may change the scope of the RAP, but this can only be accomplished in accordance with 10 CFR 52.98. As part of D-RAP, licensees will apply the appropriate controls of the D-RAP when they make design changes. For this reason, if an SSC is added to the RAP, it need not be added to the scope of the D-RAP ITAAC. If a RAP SSC is deleted, the responsible design organization will have to issue a design change. The approved change can be used to close the D-RAP ITAAC in lieu of procurement or construction documents for an SSC that is no longer in the RAP.

An example D-RAP ITAAC Closure Notification is provided in Appendix D-10.

10.4.2 D-RAP ITAAC Maintenance

10 CFR 52.99(c)(2) ITAAC Maintenance requirements apply to D-RAP ITAAC in the same manner as other ITAAC. An ITAAC Post-closure Notification would be required in accordance with 10 CFR 52.99(c)(2) for discovery of a material error or omission in a D-RAP ITAAC Closure Notification, just like any other ITAAC. Likewise, a material addition or correction to a Principal Closure Document for the D-RAP ITAAC may require an ITAAC Post-closure Notification.

However, changes (additions or subtractions) to the scope of D-RAP SSCs, or changes affecting reliability assurance activities applied to D-RAP SSCs do not affect the D-RAP ITAAC and do not require submittal of a 10 CFR 52.99(c)(2) ITAAC Post-closure notification. This reflects that the scope of D-RAP ITAAC is fixed at the time of COL issuance and that other NRC inspections are relied upon to provide ongoing confidence that the licensee is effectively performing other D-RAP activities, including activities performed after the D-RAP-ITAAC is closed.

10.5 FUNCTIONAL ARRANGEMENT ITAAC

The ITAAC for a given system typically contain an ITAAC to verify the proper system functional arrangement as described in the Tier 1 Design Description. Tier 1 Design Descriptions may refer to figures to indicate the functional arrangement of major components and tables that indicate the location of major components. Tier 1 Design Descriptions also identify component design or performance attributes to be verified by ITAAC, and these Tier 1components and attributes may be identified in additional Tier 1 tables.

Regulatory Guide 1.206 defines *Functional arrangement (for a system)* as “the physical arrangement of systems and components to provide the service for which the system is intended and that is described in the ITAAC design description and as shown in the figures.” The term is defined similarly in Tier 1 documents of current and pending design certifications. (For the ABWR, verification of system functional arrangement is part of the Basic Configuration ITAAC.)

The purpose of the system Functional Arrangement ITAAC, and the associated ITAAC Closure Notification, is to verify and document that the as-built system components conform to the Tier 1 Design Description, that is, (1) that components are physically arranged as shown in any referenced figure, and located as identified in any referenced table; and (2) that system components identified in the Tier 1 Design Descriptions are physically arranged as specified by the design. The capability to perform required system safety functions described in the Tier 1 Design Description is verified by other ITAAC, which are the subject of separate ITAAC Closure Notifications. It is expected that licensees will use detailed construction drawings during walkdown inspections to verify the functional arrangement of specified as-built components. These inspections may be performed any time after construction is completed to the extent that all Tier 1 components within the scope of the ITAAC are installed.

Some system Functional Arrangement ITAAC do not refer to simplified figures or tables. For these Functional Arrangement ITAAC, it is sufficient for ITAAC Closure Notifications to state that inspections were performed and confirmed that the system is physically arranged consistent with the Tier 1 Design Description. As with other systems, the capability to perform required system safety functions described in the Tier 1 Design Description is verified by other ITAAC.

Tier 1 may also include functional (or physical) arrangement ITAAC for structures. Similar to system Functional Arrangement ITAAC, the purpose of structural Functional/Physical Arrangement ITAAC is to verify the physical arrangement of structures and structural elements as described in the Tier 1 Design Description, including any referenced tables and figures. In addition to physical arrangement, structural functional/physical arrangement ITAAC may verify other design attributes, such as the dimensions of structural elements (e.g., wall or floor thickness).

An example Functional Arrangement ITAAC Closure Notification is provided in Appendix D, Demo-3.

10.6 Reference ITAAC

Some design control documents contain "Reference ITAAC," which are ITAAC that have an entry in the "Design Commitment" column in the DCD, but the "Inspections, Tests, Analyses" and "Acceptance Criteria" fields contain only a reference to another ITAAC. Completion of these Reference ITAAC is accomplished when the referenced ITAAC are completed. When referenced ITAAC are completed and the Reference ITAAC is ready to be closed, the licensee should submit an ITAAC Closure Notification that briefly describes the referenced ITAAC, and lists their ITAAC Closure Notification(s) as references.

10.7 "Surge" in ITAAC Closure Notification Submittals

ITAAC provide confirmation that the plant was constructed in accordance with the license. Therefore, by their very nature many ITAAC are not completed until late in construction, when the structures and systems are fully installed and available for inspections, tests, and analyses. This results in a "surge" in ICN submittals during the last year of construction. This surge in submittals also coincides with the Uncompleted ITAAC Notification and a potential increase in ITAAC post-closure notifications as more ITAAC are closed. Such a rapid increase in submittals will increase the workload on both the licensee and NRC staff, and should be mitigated and managed to the extent practical. While there may be limited opportunity to accelerate ITAAC performance to flatten the "surge", considerations for mitigating and managing the impact of the ITAAC "surge" include:

- ICN content should be pre-planned prior to the "surge." The ICN examples in Appendix D should be especially helpful for this purpose. For example, for AP1000, they cover over 80% of AP1000 ITAAC.
- Staffing projections should account for the surge in submittals, and allow sufficient time for staff indoctrination and training
- Much of the physical work supporting ITAAC completion occurs earlier in construction. Licensees should aim to facilitate NRC inspection of ITAAC-related activities as early as possible, in advance of the surge.
- Many of the "surge" ITAAC will be pre-operational tests, which is a well-defined program with significant regulatory involvement, and lends itself to early preparation of the completion package and ICN, in anticipation of successful ITAAC completion.

11 ACRONYMS

ABWR – Advanced Boiling Water Reactor

AC – Acceptance Criteria

AEA – Atomic Energy Act

ASME — American Society of Mechanical Engineers

CAMS – Containment Atmospheric Monitoring System

CAP – Corrective Action Program

CFR – Code of Federal Regulations

CIP — Construction Inspection Program

COL — Combined License

COLA — Combined License Application

DAC — Design Acceptance Criteria

DCD – Design Control Document

DCRA — Design-Centered Review Approach

D-RAP – Design Reliability Assurance Program

EDV — Engineering Design Verification

ESP — Early Site Permit

FDA – Final Design Approval FHM – Fuel Handling Machine

FOIA – Freedom of Information Act

FSAR — Final Safety Analysis Report

GDCS – Gravity Driven Cooling System

HFE — Human Factors Engineering

ICN – ITAAC Closure Notification

IDB – ITAAC Determination Bases

ITA — Inspections, Tests, or Analyses

ITAAC – Inspections, Tests, Analyses and Acceptance Criteria

LAR – License Amendment Request

LWR – Light Water Reactor

NDE — Non-Destructive Examinations

NRC — U.S. Nuclear Regulatory Commission

NUREG –NRC Technical Report Designation

PWV – Post-work verification

QAP — Quality Assurance Program

QAPD — Quality Assurance Program Description

QA/QC – Quality Assurance/Quality Control

RAP – Reliability Assurance Program

RG – Regulatory Guide

RCIC – Reactor Core Isolation Cooling

RM – Refueling Machine

SSC — Structure, System or Component

UIN – Uncompleted ITAAC Notification

APPENDIX A – EXCERPTS FROM 10 CFR PART 52

10 CFR 52.99, INSPECTION DURING CONSTRUCTION

(a) Licensee schedule for completing inspections, tests or analyses. The licensee shall submit to the NRC, no later than 1 year after issuance of the combined license or at the start of construction as defined at 10 CFR 50.10(a), whichever is later, its schedule for completing the inspections, tests, or analyses in the ITAAC. The licensee shall submit updates to the ITAAC schedules every 6 months thereafter and, within 1 year of its scheduled date for initial loading of fuel, the licensee shall submit updates to the ITAAC schedule every 30 days until the final notification is provided to the NRC under paragraph (c)(1) of this section.

(b) Licensee and applicant conduct of activities subject to ITAAC. With respect to activities subject to an ITAAC, an applicant for a combined license may proceed at its own risk with design and procurement activities, and a licensee may proceed at its own risk with design, procurement, construction, and preoperational activities, even though the NRC may not have found that any one of the prescribed acceptance criteria are met.

(c) Licensee notifications and documentation.

(1) ITAAC closure notification. The licensee shall notify the NRC that prescribed inspections, tests, and analyses have been performed and that the prescribed acceptance criteria are met. The notification must contain sufficient information to demonstrate that the prescribed inspections, tests, and analyses have been performed and that the prescribed acceptance criteria are met.

(2) ITAAC post-closure notifications. Following the licensee's ITAAC closure notifications under paragraph (c)(1) of this section until the Commission makes the finding under 10 CFR 52.103(g), the licensee shall notify the NRC, in a timely manner, of new information that materially alters the bases for determining that either inspections, tests, or analyses were performed as required, or that acceptance criteria are met. The notification must contain sufficient information to demonstrate that, notwithstanding the new information, the prescribed inspections, test, or analyses have been performed as required, and the prescribed acceptance criteria are met.

(3) Uncompleted ITAAC notification. If the licensee has not provided, by the date 225 days before the scheduled date for initial loading of fuel, the notification required by paragraph (c)(1) of this section for all ITAAC, then the licensee shall notify the NRC that the prescribed inspections, tests, or analyses for all uncompleted ITAAC will be performed and that the prescribed acceptance criteria will be met prior to operation. The notification must be provided no later than the date 225 days before the scheduled date for initial loading of fuel, and must provide sufficient information to demonstrate that the prescribed inspections, tests, or analyses will be performed and the prescribed acceptance criteria for the uncompleted ITAAC will be met, including, but not limited to, a description of the specific procedures and analytical methods to be used for performing

the prescribed inspections, tests, and analyses and determining that the prescribed acceptance criteria are met.

(4) All ITAAC Complete Notification. The licensee shall notify the NRC that all ITAAC are complete.

(d) Licensee determination of non-compliance with ITAAC.

(1) In the event that an activity is subject to an ITAAC derived from a referenced standard design certification and the licensee has not demonstrated that the prescribed acceptance criteria are met, the licensee may take corrective actions to successfully complete that ITAAC or request an exemption from the standard design certification ITAAC, as applicable. A request for an exemption must also be accompanied by a request for a license amendment under 10 CFR 52.98(f).

(2) In the event that an activity is subject to an ITAAC not derived from a referenced standard design certification and the licensee has not demonstrated that the prescribed acceptance criteria are met, the licensee may take corrective actions to successfully complete that ITAAC or request a license amendment under 10 CFR 52.98(f).

(e) NRC inspection, publication of notices, and availability of licensee notifications. The NRC shall ensure that the prescribed inspections, tests, and analyses in the ITAAC are performed.

(1) At appropriate intervals until the last date for submission of requests for hearing under 10 CFR 52.103(a), the NRC shall publish notices in the Federal Register of the NRC staff's determination of the successful completion of inspections, tests, and analyses.

(2) The NRC shall make publicly available the licensee notifications under paragraph (c) of this section. The NRC shall, no later than the date of publication of the notice of intended operation required by 10 CFR 52.103(a), make publicly available those licensee notifications under paragraph (c) of this section that have been submitted to the NRC at least seven (7) days before that notice.

10 CFR 52.103, Operation Under a Combined License

(a) The licensee shall notify the NRC of its scheduled date for initial loading of fuel no later than 270 days before the scheduled date and shall notify the NRC of updates to its schedule every 30 days thereafter. Not less than 180 days before the date scheduled for initial loading of fuel into a plant by a licensee that has been issued a combined license under this part, the Commission shall publish notice of intended operation in the Federal Register. The notice must provide that any person whose interest may be affected by operation of the plant may, within 60 days, request that the Commission hold a hearing on whether the facility as constructed complies, or on completion will comply, with the acceptance criteria in the combined license, except that a hearing shall not be granted for those ITAAC which the Commission found were met under § 52.97(a)(2).

(b) A request for hearing under paragraph (a) of this section must show, prima facie, that—

(1) One or more of the acceptance criteria of the ITAAC in the combined license have not been, or will not be, met; and

(2) The specific operational consequences of nonconformance that would be contrary to providing reasonable assurance of adequate protection of the public health and safety.

(c) The Commission, acting as the presiding officer, shall determine whether to grant or deny the request for hearing in accordance with the applicable requirements of 10 CFR 2.309. If the Commission grants the request, the Commission, acting as the presiding officer, shall determine whether during a period of interim operation there will be reasonable assurance of adequate protection to the public health and safety. The Commission's determination must consider the petitioner's prima facie *showing and any answers thereto. If the Commission determines there is such reasonable assurance, it shall allow operation during an interim period under the combined license.*

(d) The Commission, in its discretion, shall determine appropriate hearing procedures, whether informal or formal adjudicatory, for any hearing under paragraph (a) of this section, and shall state its reasons therefore.

(e) The Commission shall, to the maximum possible extent, render a decision on issues raised by the hearing request within 180 days of the publication of the notice provided by paragraph (a) of this section or by the anticipated date for initial loading of fuel into the reactor, whichever is later.

(f) A petition to modify the terms and conditions of the combined license will be processed as a request for action in accordance with 10 CFR 2.206. The petitioner shall file the petition with the Secretary of the Commission. Before the licensed activity allegedly affected by the petition (fuel loading, low power testing, etc.) commences, the Commission shall determine whether any immediate action is required. If the petition is granted, then an appropriate order will be issued. Fuel loading and operation under the combined license will not be affected by the granting of the petition unless the order is made immediately effective.

(g) The licensee shall not operate the facility until the Commission makes a finding that the acceptance criteria in the combined license are met, except for those acceptance criteria that the Commission found were met under § 52.97(a)(2). If the combined license is for a modular design, each reactor module may require a separate finding as construction proceeds.

(h) After the Commission has made the finding in paragraph (g) of this section, the ITAAC do not, by virtue of their inclusion in the combined license, constitute regulatory requirements either for licensees or for renewal of the license; except for the specific ITAAC for which the Commission has granted a hearing under paragraph (a) of this section, all ITAAC expire upon final Commission action in the proceeding. However, subsequent changes to the facility or procedures described in the final safety analysis

report (as updated) must comply with the requirements in §§ 52.98(e) or (f), as applicable.

APPENDIX B – RESERVED

This appendix is reserved for future use.

APPENDIX C - GENERAL DESCRIPTION OF COMMON PROCESSES USED IN PERFORMING ITAAC-RELATED ACTIVITIES

This appendix provides supplemental information on common processes used by licensees in performing ITAAC-related activities. The purpose is to describe, in a general way, procedures, training and other processes that are used in performing ITAAC to aid the reader in understanding ITAAC Closure Notifications. Licensees have specific procedures and programs to conduct the activities described in this appendix. Each licensee will also have a Quality Assurance Program (QAP) that will govern quality-related activities. The descriptions provided below are not intended to reflect fully the licensee's implementation of 10 CFR Part 50, Appendix B, requirements. They instead provide general information regarding the rigorous processes used by the nuclear industry for activities related to ITAAC completion. For a discussion of the application of the QAP to ITAAC completion and underlying SSCs, refer to Section 3.1.2, Role of the Quality Assurance Program.

1.1 CALCULATIONS AND ANALYSES

Calculations and analyses to support completion of ITAAC requirements are controlled consistent with approved procedures developed in accordance with engineering program controls and QA program requirements as applicable. Procedures should specify the requirements for the preparation, review, approval, revision and administration of design analyses and calculations involving SSCs, including those that have associated ITAAC.

A calculation is a document that records the details and results of analytical or computational processes. These processes translate inputs, assumptions, constraints, standards, and methods into outputs that may be used in specifying or authorizing design requirements or operating parameters for SSCs. The calculation may include analysis of alternate, past or future configurations in addition to the current configuration.

Each calculation has a unique numbering system and associated revision level assigned to it. Design verification is required for safety-related ITAAC calculations and analyses and is recommended for non-safety-related ITAAC calculations and analyses. Calculations are prepared in accordance with a specified format as designated by each licensee for consistency. The results of the calculation are summarized and correlated to the calculation's purpose and objective.

Review and approval of calculations, either those calculations prepared by the licensee or prepared by an approved vendor, are defined in procedures.

Use of computers to perform calculations is controlled by procedures.

Records sufficient to provide evidence that the calculation was properly accomplished are maintained.

1.2 Test Procedures

Measures and governing procedures are established to ensure that activities affecting quality are prescribed by and performed in accordance with written instructions, procedures or drawings of a type appropriate to the circumstances and which, where applicable, include quantitative or qualitative acceptance criteria to implement the test procedures. Provisions are included for reviewing, updating, and canceling such procedures.

Licensees or others performing ITAAC testing have programs in accordance with 10 CFR Part 50, Appendix B, for assuring the proper calibration and control of measuring and test equipment, and ITAAC test procedures account for the accuracy of M&TE used to assure the validity of determinations that acceptance criteria are met.

1.3 Special Processes

Measures and governing procedures are established to assure that special processes that require interim process controls to assure quality, such as welding, heat treating, and non-destructive examination, are controlled. These provisions include assuring that special processes are accomplished by qualified personnel using qualified procedures and equipment. Personnel are qualified and special processes are performed in accordance with applicable codes, standards, specifications, criteria or other specially established requirements. Special processes are those where the results are highly dependent on the control of the process or the skill of the operator, or both, and for which the specified quality cannot be fully and readily determined by inspection or test of the final product.

1.4 Inspection Program

The inspection program establishes inspections (including surveillance of processes), as necessary to verify quality: (1) at the source of supplied items or services, (2) in-process during fabrication at a supplier's facility or at a company facility, (3) for final acceptance of fabricated and/or installed items during construction, (4) upon receipt of items for a facility and (5) during functional testing, maintenance, and modifications.

Inspection program documents establish requirements for performing the planned inspections for and documenting required inspection information such as the person(s) performing the inspection and rejection, acceptance, and re-inspection results.

Inspection results are documented by the inspector, reviewed by authorized personnel qualified to evaluate the technical adequacy of the inspection results, and controlled by instructions and procedures.

Inspector Qualification

Qualification programs for personnel performing inspections are established, and qualification program requirements are described. These qualification programs are applied to individuals performing inspections regardless of the functional group where they are assigned.

1.5 ASME Code Design Reports

American Society of Mechanical Engineers (ASME) Code Section III as-built design reports should be prepared and certified by a Registered Professional Engineer consistent with ASME Code requirements. Supporting documentation for these design reports should include certified ASME Code Section III Data Report forms, construction records (including construction drawings, deviations, repairs, etc.), records of walkdowns of each piping segment to identify differences between as-designed and as-built critical functions (pipe supports, welds, component and pipe locations, weights, orientation/moments, etc.), procurement documentation, fabrication records, receipt inspection records, and other documentation as applicable.

1.6 Reports that Exist and Conclude that Acceptance Criteria Are Met

A number of ITAAC have acceptance criteria that will be met by preparing a report that documents the results of specified inspections, tests, and/or analyses that demonstrate that acceptance criteria are met. These reports may summarize large volumes of information contained in inspection documents such as ASME code reports, may summarize multiple analyses needed to confirm the acceptance criteria, or otherwise document conclusions derived from type tests, analyses, inspections, vendor shop tests and inspections, or other sources that support the conclusion that the acceptance criteria are met.

1.7 Procurement

Measures and governing procedures are established to control the procurement of items and services to assure conformance with specified requirements. Such control should provide for the following, as appropriate: source evaluation and selection, evaluation of objective evidence of quality furnished by the supplier, source inspection, audit, and examination of items or services.

Measures are established and implemented to assess the quality of purchased items and services, whether purchased directly or through contractors, at intervals and to a depth consistent with the item’s or service’s importance to safety, complexity, quantity and the frequency of procurement. Verification actions include testing, as appropriate, during design, fabrication and construction activities. Verifications occur at the appropriate phases of the procurement process, including, as necessary, verification of activities of suppliers below the primary contractor/supplier.

Measures to assure the quality of purchased items and services are established in the Quality Assurance Program Description (QAPD).

1.8 Material Control

Measures and governing procedures are established to identify and control items to prevent the use of incorrect or defective items. This includes controls for consumable materials and items with limited shelf life. The identification of items is maintained throughout fabrication, erection, installation and use so that the item can be traced to its documentation, consistent with the item's effect on safety. Identification locations and methods are selected so as not to affect the function or quality of the item.

1.9 TRAINING AND QUALIFICATIONS

Personnel assigned to implement elements of the ITAAC are capable of performing their assigned tasks. Formal indoctrination and training programs are established and maintained for personnel performing, verifying, or managing activities within the scope of the ITAAC to assure that proficiency is achieved and maintained. Minimum qualification requirements are as delineated in supporting training programs. When required by code, regulation, or standard, specific qualification and selection of personnel is conducted in accordance with those requirements. Indoctrination includes the administrative and technical objectives, requirements of the applicable codes and standards for the ITAAC elements to be employed. Records of personnel training and qualification are maintained in accordance with QAP requirements.

1.10 MODULAR CONSTRUCTION AND TESTING

To reduce construction time, achieve high quality, enhance productivity and levelize site manpower, new nuclear plants are expected to make greater use of modular construction. Modular construction, used widely overseas and in other industries, involves offsite assembly of plant components into transportable sections that are shipped to the site and connected to other modules at their final installed plant location. In addition to assembling components, certain required inspections and tests are more efficiently and effectively performed in a module fabrication facility. Companies implement, as appropriate, measures for shipping, handling and installation of modules in their final plant location to ensure that installed modules are intact and that any inspection/test results obtained in an offsite facility remain valid. Inspection and testing commonly performed in module fabrication facilities and measures typically implemented to preserve module test/inspection results during shipping, handling and installation are described in EPRI Report 1021178.

APPENDIX D – ITAAC CLOSURE NOTIFICATION TEMPLATE AND EXAMPLES

D-46	AP1000	2.1 Item 02.05b (As-built RCS piping)
D-47	AP1000	2.1 Item 02.12a.i (Valves, active safety-related function)
D-48	AP1000	2.1 Item 02.12a.v (Squib valve installed configuration)
D-49	AP1000	2.3 Item 13.11b (Remotely operated valve loss)
D-50	AP1000	2.3 Item 01.03.i (CCS heat exchangers)
D-51	AP1000	2.3 Item 07.08.ii (SFS pump removal of spent fuel decay)
D-52	AP1000	3.2 Item 00.01c.i (HFE V&V program)
D-53	AP1000	2.3 Item 10.07b (WLS isolation valve closure)
D-54	AP1000	2.3 Item 05.03a.ii (Pre-op test – MHS load testing)
D-100	AP1000	2.2 Item 03.08c.x (In-containment coatings)
D-101	AP1000	3.3 Item 00.02a.ii.d (Concrete wall thickness measurement)
D-102	AP1000	3.3 Item 00.05b (Internal flood protection)
D-103	N/A	Site Specific Emergency Planning
D-104	N/A	Site Specific (Physical Security)
Demo 1	AP1000	2.1 Item 02.07a.i (RCS harsh environment type test)
Demo 2	AP1000	2.2 Item 01.04a.ii (Containment system impact test)
Demo 3	AP1000	2.2 Item 02.01 (Passive containment cooling)
Demo 4	AP1000	2.2 Item 2.2 03.08c.1 (Injection line flow resistace test)
Demo 5	AP1000	2.6 Item 03.08 (DC system fault current analysis)
Demo 6	AP1000	3.7 Item 00.01 (Design reliability assurance program)

AP1000 examples are based on Revision 19 to the AP1000 DCD. Although the wording of the ITAAC may be subject to change, the examples provide useful guidance for future ITAAC Closure Notifications.

ESBWR examples are based on Revision 9 to the ESBWR DCD. Although the wording of the ITAAC may be subject to change, the examples provide useful guidance for future ITAAC Closure Notifications.

US-EPR examples are based on Revision 1 to the US-EPR DCD. Although the wording of the ITAAC may be subject to change, the examples provide useful guidance for future ITAAC Closure Notifications.

Security examples are based on NUREG-0800 Standard Review Plan Section 14.3.2, Physical Security Hardware – ITAAC, Revision 1, May 2010

APPENDIX D-1 – EXAMPLE ITAAC CLOSURE NOTIFICATION TEMPLATE

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of (designate technology or COL reference) ITAAC Item X.X.X (ITAAC identifier should exactly match the ITAAC number in the COL)

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 #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item X.X.X {include basic summary description of the ITAAC}. 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

Identify the ITAAC as stated in the combined license:

Design Commitment

{The design commitment for the applicable ITAAC should be quoted directly from the source. Do not paraphrase the Design Commitment.}

Inspection/Test/Analysis

{The inspection/test/analysis (ITA) for the applicable ITAAC should be quoted directly from the source. Do not paraphrase the inspection/test/analysis.}

Acceptance Criteria

{The acceptance criteria for the ITAAC should be quoted directly from the source. Do not paraphrase the acceptance criteria.}

Tables and figures referenced in the ITAAC should be provided for reference as attachments.

ITAAC Determination Basis

The ITAAC determination basis (IDB) summarizes the purpose and scope of the ITAAC with respect to demonstrating the Design Commitment, methodology for conducting the ITA, and the results that demonstrate that the acceptance criteria are met. The IDB should be written in an active voice, and consist of sufficient information to enable a person familiar with technical/engineering concepts to understand the purpose of the ITAAC and the bases underlying the conclusion that acceptance criteria are met. Licensees may begin this section by inverting/restating the ITAAC Design Commitment, i.e., “A test, inspection or analysis was performed to demonstrate that ….” If there are multiple ITAAC associated with a given Design Commitment, licensees should so state and should identify the specific purpose and scope of the particular ITAAC being closed.

The IDB should describe the methodology and key steps used in performing the ITA and determining that acceptance criteria are met. In the event that the ITAAC offers more than one method to meet the acceptance criteria, clearly identify which method was selected.

When a range of ITA methods is used in accordance with standard industry practice to verify a large number of items (weld quality, wall dimensions), the IDB need not identify the specific method used for each item, but rather may identify that methods were used as appropriate for each item. See ICN Examples D-7 and D-101.

For those ITAAC where the acceptance criteria contains a numerical value(s), the IDB should provide the numerical results of the inspections, tests, or analysis in order to provide for direct comparison and conclusion that the acceptance criteria are met. Note that when an ITAAC calls for the same test/measurement to be performed on like components, or over a period time, numerical results may be expressed as a range. See ICN Example D-34.

Principal Closure Documents (e.g., test reports, completed procedures, completed analyses, etc.) referred to in the ITAAC Determination Basis should be identified in the list of reference documents included in the ITAAC Closure Notification and available for NRC review as part of the ITAAC Completion Package. When an industry code or standard is utilized in the performance of an ITAAC, it should be referenced with specificity consistent with the licensing basis. A concluding statement confirming the ITAAC was met should be included.

Figures referenced in the subject ITAAC should be attached to the ITAAC Closure Notification for ease of reference. Licensees may also attach a table that identifies plant component numbers, applicable ITAAC closure report or other document, and other information pertinent to the ITAAC closure.

When an inspection or test or analysis (ITA) for an as-built ITAAC is performed on a structure, system, or component (SSC) at other than the SSC’s final installed location, the IDB should identify that the ITA was performed in the manufacturing/fabrication/test facility in accordance with NEI 08-01. NEI 08-01, Section 9 provides generic technical justifications for performing certain as-built ITA at other than the SSC’s final installed location. The IDB description of ITA performed on SSCs at other than the final installed location should identify the applicable generic technical justification(s) provided in Sections 9.1-9.6. If the as-built ITA was performed at other than the final installed location, and none of the generic technical justifications provided in NEI 08-01 Section 9 apply, the technical justification for performing testing/inspection at other than the final installed location should be documented in the ITAAC Completion Package and summarized in the IDB.

ITAAC-related activities may be performed under a supplier’s or principal contractor’s QAP, provided that the supplier or principle contractor has been approved as a supplier in accordance with the licensee's QAP and the licensee has performed periodic audits and assessments of the supplier's QA programs to assure compliance with the supplier's QAP and implementing procedures.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, the licensee will perform a review of all ITAAC Findings pertaining to the subject ITAAC to determine that associated corrective actions were completed. The ITAAC Closure Notification will list all ITAAC Findings relevant to the successful completion of the ITAAC and state that they have been closed and necessary corrective actions have been completed. Alternatively, the ICN will provide a justification for why the NRC may issue its Section 52.99 determination of successful ITAAC completion despite the existence of uncompleted corrective actions. ITAAC completion reviews will be documented in ITAAC Completion packages and available for NRC inspection.

Example:

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review determined that X associated findings, listed below, have been identified.

1. {ITAAC Finding #1}

2. {ITAAC Finding #2}

3. {ITAAC Finding #3}

The corrective actions for each finding have been completed and each finding is closed. This review is documented in the completion package for ITAAC x.x.x, (Reference 4), which is available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC X.X.X was performed for {Site Name and Unit #}, and that the prescribed acceptance criteria are met.

Licensees should identify completion of specific corrective actions to address issues that were the subject of a 10 CFR Part 21 or 50.55(e) report. For example, a licensee should directly address an open Part 21 report if the ITAAC Closure Notification concerns SSCs clearly within its scope. This may be appropriate in the case of a licensee that has resolved a Part 21 issue for specific SSCs/ITAAC, although the Part 21 report may still be open and applicable to other licensees and or SSCs.

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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

References (available for NRC inspection) – Listed here should be the Principal Closure Documents cited in the ITAAC Determination Basis in support of the conclusion that acceptance criteria are met.

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*
2. Test/inspection record(s), report, completed procedure, analysis, etc., that form the ITAAC determination basis
3. Relevant inspection or test or analysis procedure
4. ITAAC Completion package retained on site

APPENDIX D-2 – EXAMPLE ITAAC CLOSURE NOTIFICATION AP1000 ITAAC 3.3.00.07D.II.A, 07D.III.A, 07D.IV.A, AND 07D.V.A

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 3.3.00.07d.ii.a, 07d.iii.a, 07d.iv.a, and 07d.v.a

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 the following {Site Name and Unit #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) for Raceway and Cable Separation inside of containment.

- ITAAC 3.3.00.07d.ii.a,
- ITAAC 3.3.00.07d.iii.a,
- ITAAC 3.3.00.07d.iv.a,
- ITAAC 3.3.00.07d.v.a

Inspections of as-built Class 1E and non-Class 1E raceways inside containment were performed to verify that adequate physical separation is provided by meeting the separation criteria specified in ITAAC 3.3.00.07d.ii.a, or by the alternative means specified in ITAAC 3.3.00.07d.iii.a, 3.3.00.07d.iv.a, or 3.3.00.07d.v.a.

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.

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

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

Enclosures: 1) {Site Name and Unit #} Completion of ITAAC 3.3.00.07d.ii.a
2) {Site Name and Unit #} Completion of ITAAC 3.3.00.07d.iii.a
3) {Site Name and Unit #} Completion of ITAAC 3.3.00.07d.iv.a
4) {Site Name and Unit #} Completion of ITAAC 3.3.00.07d.v.a

Enclosure 1 - {Site Name and Unit #} Completion of ITAAC 3.3.00.07d.ii.a

Design Commitment

7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables

Inspection/Test/Analysis

Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following:

- *ii) Within other plant areas (limited hazard areas), the minimum separation is defined by one of the following:*
  1) *The minimum vertical separation is 5 feet and the minimum horizontal separation is 3 feet.*
  2) *The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables <2/0 AWG.*
  3) *For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch.*
  4) *For configurations involving an enclosed raceway and an open raceway, the minimum vertical separation is 1 inch if the enclosed raceway is below the open raceway.*
  5) *For configuration involving enclosed raceways, the minimum separation is 1 inch in both horizontal and vertical directions.*

Acceptance Criteria

Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the followings:

- *ii.a) Within other plant areas (limited hazard areas), the separation meets one of the following:*
  1) *The vertical separation is 5 feet or more and the horizontal separation is 3 feet or more except.*
  2) *The minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches for raceways containing only instrumentation and control and low-voltage power cables <2/0 AWG.*

3) *For configurations that involve exclusively limited energy content cables (instrumentation and control), the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch.*
4) *For configurations that involve an enclosed raceway and an open raceway, the minimum vertical separation is 1 inch if the enclosed raceway is below the raceway.*
5) *For configurations that involve enclosed raceways, the minimum vertical and horizontal separation is 1 inch.*

ITAAC Determination Basis

Multiple ITAAC are performed to ensure that physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables. This ITAAC performs inspections of the Class 1E and non-Class 1E raceways inside containment to verify that physical separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways meets the required separation distances.

The cable raceway system layout was designed using a three dimensional computer model. The raceways were routed through the model plant within an appropriate space reservation envelope to ensure that no violations of the separation requirements would occur. Construction drawings and Installation Specifications provided to the installer identified separation criteria, consistent with the ITAAC commitment, that were required to be met during erection activities.

The constructor installed the cable raceway in accordance with the “Released For Construction” drawings and the Installation Specifications. These components were presented for inspection by Quality Control as appropriate portions of the work completed. Independent verification of the Class 1E raceway installation by the Quality Control Group included inspection of the separation criteria attributes identified in “Released For Construction” drawings and the Installation Specifications and was recorded in the inspection report. The completed raceway reports for the satisfactorily installed and inspected raceways were turned in and recorded in the site’s Electrical Raceway and Cable Tracking System.

Raceway completion and cable route were validated by walk-down inspection of the designated raceways prior to pulling Class 1E cables. Any deviations were documented and resolved prior to cable pull. The completed cable pull and termination tickets for the satisfactorily installed and inspected cables were turned in and recorded in the site’s Electrical Raceway and Cable Tracking System. Non-Class 1E raceway, conduit, and cable was also inspected prior to and after installation to validate the required physical separation from Class 1E raceway.

Prior to final acceptance of the overall Class 1E raceway and cable system, Engineering and Quality Control performed a walk-down of the plant Class 1E electrical components to identify any potential violations of the required cable separation criteria. Any deviations were identified, recorded, dispositioned and resolved prior to issuing the Final Report. The walk-down was performed in accordance with the site Cable Separation Final Walk-down Procedure (Reference 2).

Review of the inspection reports, the site's Electrical Raceway and Cable Tracking System, Design Change documents, Nonconformance Reports, and the Final Report concludes that the cable installed in the plant has been inspected and reviewed to ensure that the required physical separation between cables from different Class 1E divisions and between Class 1E cables and non-Class 1E cables has been achieved as follows:

- For configurations not falling into one of the exceptions below, vertical separation is ≥ 5 feet and horizontal separations is ≥ 3 feet
- Raceways containing only instrumentation and control and low voltage power cables < 2/0 AWG, vertical separation is ≥ 12 inches and horizontal separation is ≥ 6 inches
- For configurations that involve exclusively limited energy content cables, vertical separation is ≥ 3 inches and horizontal separation is ≥ 1 inch
- For configurations that involve an enclosed race below an open raceway, the vertical separation is ≥ 1 inch
- For configurations that involve enclosed raceways, the vertical and horizontal separation is ≥ 1 inch

All exceptions to the separation criteria identified in the installation specification and the project drawings (and listed above) have been identified by Design Change documents or Nonconformance Reports. These exceptions, whether identified during installation or by final walk down of the as built configuration, are not included within the scope of this ITAAC. Exceptions are addressed within the scope of either ITAAC 3.3.00.07d.iii.a (Enclosure 2), ITAAC 3.3.00.07d.iv.a (Enclosure 3), or ITAAC 3.3.00.07d.v.a (Enclosure 4).

The Cable Separation Final Report (Reference 3) describes and documents the review process used, the information identified above, as well as the references, inspection reports, cable schedules, and raceway reports used in the verification. The report concludes that separation distances are satisfactory, or are satisfactorily addressed within the scope of another related ITAAC. The Cable Separation Final Report is available for NRC inspection at the EFG plant site.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings and associated corrective actions. This review determined that three such findings, listed below, have been identified.

1. {ITAAC finding #1}

2. {ITAAC finding #2}

3. {ITAAC finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 3.3.00.07d.ii.a (Reference 4), which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.3.00.07d.ii.a was performed for {Site Name and Unit #} and 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.

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*
2. Cable Separation Final Walk-down Procedure
3. ITAAC 3.3.00.07d.ii.a Cable Separation Final Report –EFG xyz
4. ITAAC 3.3.00.07d.ii.a Completion package

Enclosure 2 - {Site Name and Unit #} Completion of ITAAC 3.3.00.07d.iii.a

Design Commitment

7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables

Inspections/Tests/Analyses

Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following:

iii) Where minimum separation distances are not maintained, the circuits are run in enclosed raceways or barriers are provided.

Acceptance Criteria

Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following:

iii.a) Where minimum separation distances are not met inside containment, the circuits are run in enclosed raceways or barriers are provided.

ITAAC Determination Basis

Multiple ITAAC are performed to ensure that "Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables." In accordance with this ITAAC, physical separation for circuits that do not meet the separation distance criteria of ITAAC 3.3.00.07d.ii.a may be provided by enclosed raceways or barriers. For circuits requiring enclosed raceways or barriers, this ITAAC performs inspections of the Class 1E and non-Class 1E raceways inside containment to verify that circuits are run in enclosed raceways or have barriers provided.

The cable raceway system layout was designed using a three dimensional computer model. The raceways were routed through the model plant within an appropriate space reservation envelope to ensure that no violations of the separation requirements would occur. Construction drawings and Installation Specifications provided to the installer identified separation criteria, consistent with the ITAAC commitment, that were required to be met during erection activities.

The constructor installed the cable raceway in accordance with the "Released For Construction" drawings and the Installation Specifications. These components were presented for inspection by Quality Control as appropriate portions of the work completed. Independent verification of the Class 1E raceway installation by the Quality Control Group included inspection of the separation criteria attributes identified in "Released For Construction" drawings and the Installation Specifications and was recorded in the inspection report. The completed raceway reports for the satisfactorily installed and inspected raceways were turned in and recorded in the site's Electrical Raceway and Cable Tracking System.

Raceway completion and cable route was validated by a walk-down inspection of the designated raceways prior to pulling Class 1E cables. Any deviations were documented and resolved prior to cable pull. The completed cable pull and termination tickets for the satisfactorily installed and inspected cables were turned in and recorded in the site's Electrical Raceway and Cable Tracking System. Non-Class 1E raceway, conduit, and cable was also inspected prior to and after installation to validate the required separation from Class 1E raceway.

Prior to final acceptance of the overall Class 1E raceway and cable system Engineering, and Quality Control performed a walk-down of the Class 1E electrical components inside containment to identify any potential violations of the required cable separation criteria. Any deviations were identified, recorded, dispositioned and resolved prior to issuing the Final Report. The walk-down was performed in accordance with the site Cable Separation Final Walk-down Procedure (Reference 2).

Review of the inspection reports, the site's Electrical Raceway and Cable Tracking System, Design Change documents, Nonconformance Reports, and the Final Report concludes that the cable installed inside containment has been inspected and reviewed to ensure that exceptions to the separation criteria identified in the installation specification and the project drawings (and listed in ITAAC 3.3.00.07d.ii.a) have been identified and addressed by Design Change documents or Nonconformance Reports. Cables requiring enclosed raceways or barriers were verified to be run in enclosed raceways or have barriers provided.

The Cable Separation Final Report (Reference 3) describes and documents the review process used, the documents identified above, as well as the inspection reports, cable schedules, and raceway reports used in the verification. The report concludes that where minimum separation distances are not met inside containment and enclosed raceways or barriers are specified to provide physical separation, the circuits are run in enclosed raceways or barriers are provided. The Cable Separation Final Report is available for NRC inspection at the EFG plant site.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings and associated corrective actions. This review determined that three such findings, listed below, have been identified.

1. {ITAAC finding #1}
2. {ITAAC finding #2}
3. {ITAAC finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 3.3.00.07d.iii.a (Reference 4), which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that 3.3.00.07d.iii.a was performed for {Site Name and Unit #} 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.

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*
2. Cable Separation Final Walk-down Procedure
3. ITAAC 3.3.00.07d.iii.a Cable Separation Final Report –EFG xyz
4. ITAAC 3.3.00.07d.iii.a Completion package

<u>Enclosure 3</u> - {Site Name and Unit #} Completion of ITAAC 3.3.00.07d.iv.a

<u>Design Commitment</u>

7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables

<u>Inspections/Tests/Analyses</u>

Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following:

iv) Separation distances less than those specified above and not run in enclosed raceways or provided with barriers are based on analysis

<u>Acceptance Criteria</u>

Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following:

iv.a) For areas inside containment, a report exists and concludes that separation distances less than those specified above and not provided with enclosed raceways or barriers have been analyzed.

<u>ITAAC Determination Basis</u>

Multiple ITAAC are performed to ensure that physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables. In accordance with this ITAAC, separation distances for circuits that do not meet the criteria of ITAAC 3.3.00.07d.ii.a may be based on analyses. For circuits that have separation distances based on analyses, this ITAAC performs inspections to verify that separation distances have been analyzed.
The cable raceway system layout was designed using a three dimensional computer model. The raceways were routed through the model plant within an appropriate space reservation envelope to ensure that no violations of the separation requirements would occur. Construction drawings and Installation Specifications provided to the installer identified separation criteria, consistent with the ITAAC commitment, that were required to be met during erection activities.

The constructor installed the cable raceway in accordance with the “Released For Construction” drawings and the Installation Specifications. These components were presented for inspection by Quality Control as appropriate portions of the work completed. Independent verification of the Class 1E raceway installation by the Quality Control Group included inspection of the separation criteria attributes identified in “Released For Construction” drawings and the Installation Specifications and was recorded in the inspection report. The completed raceway reports for the satisfactorily installed and inspected raceways were turned in and recorded in the site's Electrical Raceway and Cable Tracking System.

Raceway completion and cable route was validated by a walk-down inspection of the designated raceways prior to pulling Class 1E cables. Any deviations were documented and resolved prior to cable pull. The completed cable pull and termination tickets for the satisfactorily installed and inspected cables were turned in and recorded in the site's Electrical Raceway and Cable Tracking System. Non-Class 1E raceway, conduit, and cable was also inspected prior to and after installation to validate the required separation from Class 1E raceway.

Prior to final acceptance of the overall Class 1E raceway and cable system, Engineering and Quality Control performed a walk-down of the Class 1E electrical components inside containment to identify any potential violations of the required cable separation criteria. Any deviations were identified, recorded, dispositioned and resolved prior to issuing the Final Report. The walk-down was performed in accordance with the site Cable Separation Final Walk-down Procedure (Reference 2).

Review of the inspection reports, the site's Electrical Raceway and Cable Tracking System, Design Change documents, Nonconformance Reports, and the Final Report concludes that the cable installed inside containment has been inspected and reviewed to ensure that exceptions to the separation criteria identified in the installation specification and the project drawings (and listed in ITAAC 3.3.00.07d.ii.a) have been identified and addressed by Design Change documents or Nonconformance Reports. For cables having separation distances less than those identified in ITAAC 3.3.00.07d.ii.a that are not run in enclosed raceways and lack barriers, inspections verified that separation distances have been analyzed. The analyses performed for this ITAAC were performed in accordance with standard IEEE 384 (Reference 3), and demonstrate that the effects of lesser separation do not impact the ability of Class 1E circuits to perform their safety-related functions.

The Cable Separation Final Report (Reference 4) describes and documents the review process used, the documents identified above, as well as the inspection reports, cable schedules, and raceway reports used in the verification. The report concludes that where minimum separation distances are not met inside containment and neither enclosed raceways nor barriers are provided, the lesser separation distances are based on analyses. The Cable Separation Final Report is available for NRC inspection at the EFG plant site.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings and associated corrective actions. This review determined that three such findings, listed below, have been identified.

1. {ITAAC finding #1}

2. {ITAAC finding #2}

3. {ITAAC finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 3.3.00.07d.iv.a (Reference 5), which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.3.00.07d.iv.a was performed for {Site Name and Unit #} 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.

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*
2. Cable Separation Final Walk-down Procedure
3. IEEE Std 384-1981, IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits
4. ITAAC 3.3.00.07d.iii.a Cable Separation Final Report –EFG xyz
5. ITAAC 3.3.00.07d.iii.a Completion package

<u>Enclosure 4</u> - {Site Name and Unit #} Completion of ITAAC 3.3.00.07d.v.a

<u>Design Commitment</u>

7.d) Physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables

<u>Inspections/Tests/Analyses</u>

Inspections of the as-built Class 1E raceways will be performed to confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following:

> *v)* *Non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is considered as associated circuits and subject to Class 1E requirements.*

<u>Acceptance Criteria</u>

Results of the inspection will confirm that the separation between Class 1E raceways of different divisions and between Class 1E raceways and non-Class 1E raceways is consistent with the following:

> *v.a)* *For areas inside containment, non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is treated as Class 1E wiring.*

<u>ITAAC Determination Basis</u>

Multiple ITAAC are performed to ensure that physical separation is maintained between Class 1E divisions and between Class 1E divisions and non-Class 1E cables. In accordance with this ITAAC, non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance, and for which no barrier or analysis is provided, may be treated as Class 1E wiring. This ITAAC performs inspections of the Class 1E and non-Class 1E raceways inside containment to determine if non-Class 1E wiring that is not separated from Class 1E or associated wiring by the minimum separation distance or by a barrier or analyzed is treated as Class 1E wiring.

The cable raceway system layout was designed using a three dimensional computer model. The raceways were routed through the model plant within an appropriate space reservation envelope to ensure that no violations of the separation requirements would occur. Construction drawings and Installation Specifications provided to the installer identified separation criteria, consistent with the ITAAC commitment, that were required to be met during erection activities.

The constructor installed the cable raceway in accordance with the “Released For Construction” drawings and the Installation Specifications. These components were presented for inspection by Quality Control as appropriate portions of the work completed. Independent verification of the Class 1E raceway installation by the Quality Control Group included inspection of the separation criteria attributes identified in "Released For Construction" drawings and the Installation Specifications and was recorded in the inspection report. The completed raceway reports for the satisfactorily installed and inspected raceways were turned in and recorded in the site's Electrical Raceway and Cable Tracking System.

Raceway completion and cable route was validated by a walk-down inspection of the designated raceways prior to pulling Class 1E cables. Any deviations were documented and resolved prior to cable pull. The completed cable pull and termination tickets for the satisfactorily installed and inspected cables were turned in and recorded in the site's Electrical Raceway and Cable Tracking System. Non-Class 1E raceway, conduit, and cable was also inspected prior to and after installation to validate the required separation from Class 1E raceway.

Prior to final acceptance of the overall Class 1E raceway and cable system, Engineering and Quality Control performed a walk-down of the Class 1E electrical components inside containment to identify any potential violations of the required cable separation criteria. Any deviations were identified, recorded, dispositioned and resolved prior to issuing the Final Report. The walk-down was performed in accordance with the site Cable Separation Final Walk-down Procedure (Reference 2).

Review of the inspection reports, the site's Electrical Raceway and Cable Tracking System, Design Change documents, Nonconformance Reports, and the Final Report concludes that the cable installed inside containment has been inspected and reviewed to ensure that exceptions to the separation criteria identified in the installation specification and the project drawings (and listed in ITAAC 3.3.00.07d.ii.a) have been identified by Design Change documents or Nonconformance Reports. For non-Class 1E wiring having separation distances less than those identified in ITAAC 3.3.00.07d.ii.a and for which no barrier or analysis is provided, inspections verified that non-Class 1E wiring was treated as Class 1E wiring.

The Cable Separation Final Report (Reference 3) describes and documents the review process used, the documentation identified above, as well as the inspection reports, cable schedules, and raceway reports used in the verification. The report concludes that where minimum separation distances are not met inside containment and no barrier or analysis is provided, non-Class 1E wiring is treated as Class 1E wiring. The Cable Separation Final Report is available for NRC inspection at the EFG plant site.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings and associated corrective actions. This review determined that three such findings, listed below, have been identified.

1. {ITAAC finding #1}

2. {ITAAC finding #2}

3. {ITAAC finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 3.3.00.07d.v.a (Reference 4), which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.3.00.07d.v.a was performed for {Site Name and Unit #} 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.

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*
2. Cable Separation Final Walk-down Procedure
3. ITAAC 3.3.00.07d.iii.a Cable Separation Final Report –EFG xyz
4. ITAAC 3.3.00.07d.iii.a Completion package

APPENDIX D-3 – EXAMPLE ITAAC CLOSURE NOTIFICATION ABWR ITAAC 2.15.12 ITEM 5

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of ABWR ITAAC 2.15.12 Item 5

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 #} Inspection, Test, Analysis, and Acceptance Criteria (ITAAC) Item 2.15.12 Item 5 for the Control Building (C/B) Main Control Room system. 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

The main control area envelope is separated from the rest of the C/B by walls, floors, doors and penetrations which have a three-hour fire rating.

Inspection/Test/Analysis

Inspections of the as-built structure will be conducted.

Acceptance Criteria

The as-built C/B has a main control area envelope separated from the rest of the C/B by walls, floors, doors and penetrations which have a three-hour fire rating.

ITAAC Determination Basis

The constructor installed the C/B main control room envelope walls, floors, fire doors and penetrations as shown in Tier 1 Figures 2.15.12a, b, f and g, ensuring the boundary maintains a three-hour fire resistance rating. All passive fire protection features are of proven designs and have been tested in accordance with ASTM E119 (Reference 2) and listed by a nationally recognized testing laboratory (NRTL) to meet the three-hour fire resistance rating requirements.

During installation, the constructor performed inspections and surveys for conformance to NRTL listed design and installation requirements, including wall and floor-ceiling materials, dimensions, locations, and joints.

After construction, the Licensee performed a final inspection in accordance with the C/B CRE As-built Walk-down/Inspection Procedure (Reference 3), containing a detailed listing of boundary components, to verify separation from the rest of the C/B by passive fire protection features having a three-hour fire resistance rating, and also verified the proper operation of all passive fire protection components

These inspections confirmed that the as-built configuration meets ITAAC 2.15.12 Item 5 Acceptance Criteria.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings and associated corrective actions. This review determined that three such findings, listed below, have been identified.

1. {ITAAC finding #1}
2. {ITAAC finding #2}
3. {ITAAC finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 2.15.12 Item 5 (Reference 3), which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.15.12 Item 5 was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials
3. C/B CRE as-built walk-down/inspection Procedure, C/B-CRE-WD-XXXX
4. ITAAC 2.15.12 Item 5 Completion package

APPENDIX D-4 – EXAMPLE ITAAC CLOSURE NOTIFICATION ABWR ITAAC 2.3.3 ITEM 3

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of ABWR ITAAC 2.3.3 Item 3

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 #} Inspection, Test, Analysis, and Acceptance Criteria (ITAAC) Item 2.3.3 Item 3a and 3b for the Containment Atmospheric Monitoring System (CAMS). 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

The ITAAC stated below represents an NRC approved departure from the ABWR DCD.

Design Commitment

Each CAMS division of radiation channels is powered from its respective divisional Class 1E power source. In the CAMS, independence is provided between Class1E divisions, and between Class 1E divisions and non-Class 1E equipment.

Inspection/Test/Analysis

Item 3a - Tests will be performed on each of the CAMS radiation channels by providing a test signal to only one Class 1E division at a time.

Item 3b - Inspection of the as-built Class 1E radiation channels will be performed.

Acceptance Criteria

Item 3a – The test signal exists only in the Class 1E division under test in the CAMS.

Item 3b – In the CAMS, physical separation or electrical isolation exists between Class 1E divisions. Physical separation or electrical isolation exists between these Class 1E divisions and non-Class 1E equipment.

ITAAC Determination Basis

Item 3a – Testing consisted of powering off the power feeds from each of the two divisional power sources and verifying that both of the CAMS radiation monitoring channels in that division indicated loss of power, as well as independent test signal introduction into each CAMS Class 1E radiation monitoring channel to confirm divisional independence. The tests were designed to verify that each of the two CAMS Class 1E radiation monitoring channels in each of the two divisions met the design commitments. Testing was performed in accordance with Pre-Operational Test Procedure ABWR PTP-CAMS-0001 (Reference 3). Testing has been performed on each CAMS radiation monitoring channel in each division to confirm loss of power on one division does not affect the ability of the other division to function, and that test signal introduction into each CAMS radiation monitoring channel does **not** result in a signal being detected in the any other CAMS radiation monitoring channel. Test results indicate Acceptance Criteria contained in ITAAC 2.3.3 Item 3a have been satisfied.

Item 3b – Inspections have been performed during the construction and installation process to ensure that physical divisional separation exists between Class 1E CAMS radiation monitoring divisions, and between Class 1E CAMS radiation monitoring divisions and non-Class 1E equipment, including equipment installation in appropriately separated cabinet locations and maintenance of separation between sensors, controls, indicators, and cables. The design and installation of CAMS related equipment maintained the independence required by Regulatory Guide 1.75 (Reference 4) as identified in section 8.3 of the ABWR DCD. A review of construction in-process installation and Quality Control records was conducted, where separation requirements were built into the process used for raceway and cable design and routing. These inspections and reviews confirmed that physical separation was maintained during installation between Class 1E CAMS radiation monitoring divisions and between Class 1E CAMS divisions and non-Class 1E equipment.

Construction drawings and Installation Specifications provide the installer/contractor with identified separation criteria, consistent with Regulatory Guide 1.75 and the ITAAC commitments, which were met during construction activities and verified by inspection.

Raceway completion and cable route were validated by Quality Control walk-down of the designated raceways prior to pulling Class 1E cables.

Cable routing within cabinets was independently verified by Quality Control for separation attributes through a series of documented inspections as cables were installed and terminated.

A final walkdown was performed of the Class 1E CAMS installed equipment using Walkdown Procedure XXX to verify that there is no interference from non-Class 1 equipment installed in the area.

Based on a review of construction installation and independent Quality Control records, the Licensee has determined the Acceptance Criteria contained in ITAAC 2.3.3 Item 3b are met.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings and associated corrective actions. This review determined that three such findings, listed below, have been identified.

1. {ITAAC finding #1}

2. {ITAAC finding #2}

3. {ITAAC finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 2.3.3 Item 3a and 3b (Reference 2), which is available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.3.3 Item 3a and 3b were performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.3.3 Item 3a and 3b Completion package
3. ABWR PTP-CAMS-0001, ABWR CAMS Pre-Operational Test Procedure
4. Regulatory Guide 1.75, Criteria For Independence Of Electrical Safety Systems
5. Walkdown Procedure XXX, Walkdown of Class 1E Equipment Installation

APPENDIX D-5 – EXAMPLE ITAAC CLOSURE NOTIFICATION
ABWR ITAAC 3.3 ITEM 1

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of ABWR ITAAC 3.3 Item 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 {Site Name and Unit #(s)} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) 3.3 Item 1, ASME Piping Design Criteria. 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

The piping system shall be designed to meet its ASME Code Class and Seismic Category I requirements.

The ASME Code Class 1, 2, and 3 piping system shall be designed to retain its pressure integrity and functional capability under internal design and operating pressures and design basis loads. Piping and piping components shall be designed to show compliance with the requirements of ASME Code Section III.

Inspection/Test/Analysis

Inspections of ASME Code required documents will be conducted.

Acceptance Criteria

An ASME Code Certified Stress Report exists for the piping system and concludes that the design complies with the requirements of ASME Code, Section III.

ITAAC Determination Basis

The ASME Code classifications of ABWR piping systems are defined in Section 3.2 of the Tier 2 material of the ABWR DCD. The piping systems and their ASME Code Certified Stress Reports are listed in Table 1 (attached). All Stress Reports are identified in the ITAAC completion package (Reference 2).

Inspection Procedure XYZ (Reference 3) documents the scope of review for each of the ASME Code Certified Stress Reports. The scope of review includes the following areas:

- The piping system Design Specification in accordance with ASME Code Section III, Subsection NCA-3252, including loading definitions and load combinations.
- Thermal Analysis, in accordance with ASME Code Section III, Appendix C-1200, and applicable Subsection NB, NC or ND.
- Structural Analysis, in accordance with ASME Code Section III, Appendix C-1300, and applicable Subsection NB, NC or ND.
- Fatigue Analysis for the Class 1 piping and for the Class 3 SRV discharge piping in the wetwell and the SRV quenchers, in accordance with ASME Code Section III, Appendix C-1400, and applicable Subsection NB, NC or ND.

Inspections of the ASME Code Certified Stress Reports listed in attached Table 1 verify that the design of each piping system complies with the requirements of ASME Code, Section III, 1989 Edition, in accordance with the certified design.

<u>ITAAC Finding Review</u>

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings and associated corrective actions. This review determined that X ITAACfindings, listed below, have been identified.

1. {ITAAC finding #1}

2. {ITAAC finding #2}

3. {ITAAC finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 3.3 Item 1, (Reference 2), which is available for NRC review.

<u>ITAAC Completion statement</u>

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.3 Item 1 was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 Completion package for ITAAC 3.3 Item 1
3. Inspection Procedure XYZ, "Review of ASME Code Certified Stress Reports"

Table 1. ABWR Piping System ASME Code Design Summary

Piping System(Note 1)	ASME Code Class(es)(Note 2)	ASME Code Subsection(s)(Note 3)	Certified Stress Report(s)
Nuclear Boiler (includes MSL and FW systems, RPV head vent and main steam drains)	1, 2 and 3	NB, NC and ND	Stress Report A Stress Report B Stress Report C Stress Report D Stress Report E Stress Report F Stress Report G
Reactor Recirculation	2	NC	Stress Report H
Control Rod Drive (insert line)	2	NC	Stress Report I
Standby Liquid Control	1 and 2	NB and NC	Stress Report J Stress Report K
Residual Heat Removal	1 and 2	NB and NC	Stress Report L Stress Report M
High Pressure Core Flooder	1 and 2	NB and NC	Stress Report N Stress Report O
Leak Detection and Isolation (sample lines and isolation valves)	2	NC	Stress Report P
Reactor Core Isolation Cooling	1, 2 and 3	NB, NC and ND	Stress Report Q Stress Report R Stress Report S
Reactor Water Cleanup	1 and 3	NB and ND	Stress Report T Stress Report U
Fuel Pool Cooling and Cleanup (RHR piping for safety-related make-up and supplemental cooling)	3	ND	Stress Report V
Suppression Pool Cleanup	2	NC	Stress Report W
Radwaste (portions forming part of containment boundary)	2	NC	Stress Report X
Makeup Water (Purified) (portions forming part of containment boundary)	2	NC	Stress Report Y
Makeup Water (Condensate) (condensate header piping)	2	NC	Stress Report Z
Reactor Building Cooling Water	2 and 3	NC and ND	Stress Report AA Stress Report BB
HVAC Normal Cooling Water (portions forming part of containment boundary)	2	NC	Stress Report CC
HVAC Emergency Cooling Water	3	ND	Stress Report DD
Reactor Service Water (safety-related portions)	3	ND	Stress Report EE
Station Service Air (containment isolation)	2	NC	Stress Report FF
Instrument Air Service (containment isolation)	2	NC	Stress Report GG
High Pressure Nitrogen Gas Supply	2 and 3	NC and ND	Stress Report HH Stress Report II

Piping System (Note 1)	ASME Code Class(es) (Note 2)	ASME Code Subsection(s) (Note 3)	Certified Stress Report(s)
Emergency Diesel Generator (including fuel oil, cooling water and lube oil piping)	3	ND	Stress Report JJ
Primary Containment (suppression chamber/drywell vacuum breakers)	2	NC	Stress Report KK
Atmospheric Control	2 and 3	NC and ND	Stress Report LL Stress Report MM
Diesel Generator Fuel Oil Storage and Transfer System	3	ND	Stress Report NN

Notes:

1. See Table 3.2-1 in the Tier 2 material in the DCD for Safety Class designations of specific portions of each system. Most systems also include Class N (non-safety, non-ASME Code) portions, which are not identified in this table.
2. Per Tables 3.2-2 and 3.2-3 in the Tier 2 material in the DCD, Safety Classes 1, 2 and 3 correspond to ASME Code Classes 1, 2 and 3. All three Safety Classes are Seismic Category 1.
3. Supports for all listed piping systems are designed in accordance with Subsection NF. The Subsection NCA requirements for Design Specifications and Design Reports Subsection NCA apply to all three ASME Classes.

APPENDIX D-6 – EXAMPLE ITAAC CLOSURE LETTER AP1000 ITAAC 2.1.1 ITEM 4

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 2.1.1 item 4

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 #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) 2.1.1 item 4 for Refueling Machine (RM) and Fuel Handling Machine (FHM) gripper assemblies. 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

The RM and FHM/spent fuel handling tool (SFHT) gripper assemblies are designed to prevent opening while the weight of the fuel assembly is suspended from the gripper.

Inspection/Test/Analysis

The RM and FHM/SFHT gripper assemblies will be tested by operating the open controls of the gripper while suspending a dummy fuel assembly.

Acceptance Criteria

The RM and FHM/SFHT gripper assemblies gripper will not open while suspending a dummy test assembly.

ITAAC Determination Basis

Tests were performed to demonstrate that the as-built RM and FHM/SFHT gripper assemblies prevent opening while the full weight of the fuel assembly is suspended from the gripper as designed.

A dummy fuel assembly was lifted by the Fuel Handling Machine using test procedure APP-XX-YYY-## (Reference 2) to a sufficient height to be fully suspended. At this height the open controls for the FHM/SFHT grippers were exercised per operating procedures for releasing the fuel assembly. The grippers did not open. Thus, the FHM grippers met the acceptance criteria in that they did not open while suspending a fuel assembly.

A dummy fuel assembly was lifted by the Refueling Machine using test procedure APP-XX-YYY-## (Reference 2) to a sufficient height to be fully suspended. At this height the open controls for the RM grippers were exercised per operating procedures for releasing the fuel assembly. The grippers did not open. Thus, the RM grippers met the acceptance criteria in that they did not open while suspending a fuel assembly.

Reference 3 documents the test results and analysis and is available for NRC inspection.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review determined that there were no relevant ITAAC Findings associated with this ITAAC. The ITAAC completion review is documented in ITAAC Completion package for ITAAC 2.1.1 item 4 (Reference 4) and available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1.1 item 4 was performed for {Site Name and Unit #} 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. APP-XX-YYY-###, ITAAC 2.1.1 item 4 Refueling Machine and Fuel Handling Machine Grippers Test Procedure
3. ITAAC 2.1.1 item 4 Refueling Machine and Fuel Handling Machine/Spent Fuel Handling Tool Grippers Test Record
4. ITAAC 2.1.1 item 4 Completion package

APPENDIX D-7 – EXAMPLE ITAAC CLOSURE NOTIFICATION AP1000 ITAAC 2.1.2-4 ITEM 3B

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 2.1.2-4 Item 3b

The purpose of this letter is to notify Nuclear Regulatory Commission (NRC) in accordance with 10 CFR 52.99(c)(1) of the completion of {Site Name and Unit #} Inspection, Test, Analysis, and Acceptance Criteria (ITAAC) 2.1.2-4 item 3b for the Reactor Coolant System (RCS). 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

Pressure boundary welds in piping identified in Table 2.1.2-2 as ASME Code Section III meet ASME Code Section III requirements.

Inspections/Tests/Analyses

Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.

Acceptance Criteria

A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.

ITAAC Determination Basis

An inspection was performed in accordance with Procedure ABC (Reference 3) to demonstrate that the as-built pressure boundary welds in piping identified in Table 2.1.2-2 as ASME Code Section III meet ASME Code Section III requirements. This ITAAC was completed when the piping identified in Table 2.1.2-2 (Attachment A), which is encompassed within the respective piping system(s) Code Symbol N-Stamp and the corresponding piping system(s) Code N-5 Data Report Form(s) ABC (Reference 2), was completed. The non-destructive examinations (including visual inspection, liquid penetrant, magnetic particle, radiographic, and ultrasonic testing, as required by ASME Code Section III) of the piping pressure boundary welds were documented in the Non-destructive Examination Report(s) within the piping system's supporting data package, which supported completion of the respective Code Stamping and Code N-5 Data Report(s). The completion of stamping the respective piping system(s) along with the corresponding ASME Code N-5 Data Report Form(s) (certified by the Authorized Nuclear Inspector) ensured that the piping was constructed in accordance with the design specification(s) and the ASME Code Section III and that the satisfactory completion of the non-destructive examinations of piping pressure boundary welds for the pipe lines identified in Table 2.1.2-2 meet ASME Code Section III requirements and were documented in the Non-destructive Examination Report(s) within the supporting data packages.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings and associated corrective actions. This review identified the following ITAAC findings, listed below:

1. {ITAAC finding #1}
2. {ITAAC finding #2}
3. {ITAAC finding #3}

The corrective actions for each finding have been completed and each finding is closed. This review is documented in the completion package for ITAAC 2.1.2-4 item 3b (Reference 2) which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1.2-4 item 3b was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.1.2-4 item 3b Completion Package
3. Procedure ABC
4. N-5 Code Data Report Form(s) ABC for piping system(s)

Attachment A

ITAAC 2.1.2-4 item 3b

Partial Excerpt from Table 2.1.2-2

Identified Piping Containing Pressure Boundary Welds Meeting ASME Code Section III Requirements

Line Name	**Line Number**	**ASME Code Section III**	**N-5 (System Name)[(1)]**
Hot Legs	RCS-L001A RCS-L001B	Yes	
Cold Legs	RCS-L002A RCS-L002B RCS-L002C RCS-L002D	Yes	
Pressurizer Surge Line	RCS-L003	Yes	
ADS Inlet Headers	RCS-L004A/B RCS-L006A/B RCS-L030A/B RCS-L020A/B	Yes	
Safety Valve Inlet Piping	RCS-L005A RCS-L005B	Yes	
Safety Valve Discharge Piping	RCS-L050A/B RCS-L051A/B	Yes	
ADS First-stage Valve Inlet Piping	RCS-L010A/B RCS-L011A/B	Yes	
ADS Second-stage Valve Inlet Piping	RCS-L021A/B RCS-L022A/B	Yes	
ADS Third-stage Valve Inlet Piping	RCS-L131 RCS-L031A/B RCS-L032A/B	Yes	
ADS Outlet Piping	RCS-L012A/B RCS-L023A/B RCS-L033A/B RCS-L061A/B RCS-L063A/B RCS-L064A/B RCS-L200 RCS-L069A/B RCS-L240A/B PXS-L130A/B	Yes	
ADS Fourth-stage Inlet Piping	RCS-L133A/B RCS-L135A/B RCS-L136A/B RCS-L137A/B	Yes	

Hot Legs	RCS-L001A RCS-L001B	Yes	
Cold Legs	RCS-L002A RCS-L002B RCS-L002C RCS-L002D	Yes	
Pressurizer Surge Line	RCS-L003	Yes	
ADS Inlet Headers	RCS-L004A/B RCS-L006A/B RCS-L030A/B RCS-L020A/B	Yes	
Safety Valve Inlet Piping	RCS-L005A RCS-L005B	Yes	
Safety Valve Discharge Piping	RCS-L050A/B RCS-L051A/B	Yes	
ADS First-stage Valve Inlet Piping	RCS-L010A/B RCS-L011A/B	Yes	
ADS Second-stage Valve Inlet Piping	RCS-L021A/B RCS-L022A/B	Yes	
ADS Third-stage Valve Inlet Piping	RCS-L131 RCS-L031A/B RCS-L032A/B	Yes	
ADS Outlet Piping	RCS-L012A/B RCS-L023A/B RCS-L033A/B RCS-L061A/B RCS-L063A/B RCS-L064A/B RCS-L200 RCS-L069A/B RCS-L240A/B PXS-L130A/B	Yes	
ADS Fourth-stage Inlet Piping	RCS-L133A/B RCS-L135A/B RCS-L136A/B RCS-L137A/B	Yes	
Pressurizer Spray Piping	RCS-L106 RCS-L110A/B RCS-L212A/B RCS-L213 RCS-L215	Yes	
RNS Suction Piping	RCS-L139 RCS-L140	Yes	

CVS Purification Piping	RCS-L111 RCS-L112	Yes	

APPENDIX D-8 – EXAMPLE ITAAC CLOSURE NOTIFICATION AP1000 ITAAC 2.5.2-8 ITEM 10

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 2.5.2-8 Item 10

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 #} Inspection, Test, Analysis, and Acceptance Criteria (ITAAC) 2.5.2-8 item 10 for the Protection and Safety Monitoring System (PMS) setpoints. 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

Setpoints are determined using a methodology which accounts for loop inaccuracies, response testing, and maintenance or replacement of instrumentation.

Inspection/Test/Analysis

Inspection will be performed for a document that describes the methodology and input parameters used to determine the PMS setpoints.

Acceptance Criteria

A report exists and concludes that the PMS setpoints are determined using a methodology which accounts for loop inaccuracies, response testing, and maintenance or replacement of instrumentation.

ITAAC Determination Basis

Instrument setpoints for permanently installed instrumentation are determined using methodology specified in Procedure XXX, *Instrument Uncertainty and Setpoint Calculation Guidelines* (Reference 2). This methodology accounts for loop inaccuracies, response testing, and maintenance or replacement of instrumentation.

{Licensee} performed an inspection of Engineering Report YYY, *Setpoint Determination for the Protection and Safety Monitoring System* (Reference 3), which established the setpoints for the PMS system. The purpose of the inspection was to confirm that the PMS setpoints were determined using Reference 2 and that the procedure specifies a methodology that takes into account instrument loop uncertainties and inaccuracies, response testing results, and maintenance or replacement activities. This inspection is documented in Inspection Report ZZZ, *Closure of ITAAC 2.5.2-8, #10* (Reference 4).

The inspection determined that References 2 and 3 were used for the PMS setpoints and that Reference 2 provides specific instructions for calculating instrument and loop uncertainty setpoints in accordance with ANSI/ISA-67.04.01-2000 (as endorsed by Regulatory Guide 1.105, Revision 3). The input parameters for the calculation include instrument and loop uncertainties and inaccuracies, response testing results, and maintenance or replacement activities.

Therefore, Inspection Report ZZZ (Reference 4) exists and concludes that the PMS setpoints are determined using a methodology which accounts for loop inaccuracies, response testing, and maintenance or replacement of instrumentation.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review identified three ITAAC findings, listed below:

1. {ITAAC Finding #1}
2. {ITAAC Finding #2}
3. {ITAAC Finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 2.5.2-8, #10 (Reference 5), which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.5.2-8 item 10 was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {name of contact person for Licensee} at {telephone # for contact person}.

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. Procedure XXX, Instrument Uncertainty and Setpoint Calculation Guidelines
3. Engineering Report YYY, Setpoint Determination for the Protection and Safety Monitoring System
4. Inspection Report ZZZ, Closure of ITAAC 2.5.2-8 item10
5. ITAAC 2.5.2-8 item 10 Completion package

APPENDIX D-9 – EXAMPLE ITAAC CLOSURE NOTIFICATION AP1000 ITAAC 3.3.00.02A.I.A

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} **ITAAC 3.3.00.02a.i.a**

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 3.3.00.02a.1.a for verification that a report exists and concludes that the containment internal structures, including critical sections, conform to the approved design and will withstand design basis loads without loss of structural integrity or the safety-related 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

2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.

The Inspections, Tests, and Analyses

i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.

Acceptance Criteria

i.a) A report exists which reconciles deviations during construction and concludes that the as-built containment internal structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the nuclear island structures, including the critical sections listed in Tier 1 Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions. The subject ITAAC performs inspections of the containment internal structures and reconciles deviations during construction to the approved design.

The design bases loads as defined in the AP1000 Design Control Document are those loads associated with:

- Normal plant operation (including dead loads, live loads, lateral earth pressure loads, and equipment loads, including hydrodynamic loads, temperature and equipment vibration);
- External events (including rain, snow, flood, tornado, tornado generated missiles and earthquake); and
- Internal events (including flood, pipe rupture, equipment failure, and equipment failure generated missiles).

AP1000 DCD (Reference 2) Section 3.7 “Seismic Analysis”, Section 3.8 “Design of Category I Structures,” and Appendix 3H “Auxiliary Building Critical Sections” describe the analyses for the design basis loads for the NI Structures. Section 3.8 specifies the applicable codes and standards governing the design, materials, fabrication, construction inspection and testing for the NI structures. Section 3.8 also describes the as-built design summary reports which document that the seismic Category I structures meet the specified acceptance criteria.

The as-built nuclear island (NI) structures including the critical sections listed in Table 3.3-7, were constructed as designed and specified in the AP1000 DCD to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.

NI structures were inspected during construction to verify the as-built structures conform to the specified design, codes and standards. Identified structural deviations were documented in Non-conformance reports and entered into the site corrective action program. All NI structural non-conformance reports were evaluated by engineering in accordance with the AP1000 Design Control program to determine their impact to the structures’ ability to withstand design basis loads. As-built Design Summary Report XXX (Reference 4) documents the reconciliation of NI structural deviations identified during construction and concludes that the as-built NI structures will withstand the design basis loads specified in the Design Description without loss of structural integrity or safety-related functions.

‘

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review identified three ITAAC findings, listed below:

1. {ITAAC Finding #1}

2. {ITAAC Finding #2}

3. {ITAAC Finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 3.3.00.02a.i.a (Reference 3), which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.3.00.02a.i.a was performed 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

Enclosure:

1. Table 3.3-7

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*
2. APP-GW-GL-700 Revision 19, AP1000 Design Control Document
3. ITAAC 3.3.00.02a.i.a Completion package
4. As-built Design Summary Report XXX

Enclosure 1
Table 3.3-7
Nuclear Island Critical Structural Sections – Containment Internal Structures

Table 3.3-7 Nuclear Island Critical Structural Sections
Containment Internal Structures
South west wall of the refueling cavity
South wall of the west steam generator cavity
North east wall of the in-containment refueling water storage tank
In-containment refueling water storage tank steel wall
Column supporting the operating floor

APPENDIX D-10 – EXAMPLE ITAAC CLOSURE NOTIFICATION AP1000 ITAAC 3.7-3 ITEM 1

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 3.7-3 Item 1

The purpose of this letter is to notify 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) 3.7-3 Item 1 for the Design Reliability Assurance Program (D-RAP). 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

The D-RAP ensures that the design of SSCs within the scope of the reliability assurance program (Table 3.7-1) is consistent with the risk insights and key assumptions (e.g., SSC design, reliability, and availability).

Inspection/Test/Analysis

An analysis will confirm that the design of RAP SSCs identified in Table 3.7-1 has been completed in accordance with applicable D-RAP activities.

Acceptance Criteria

An analysis report documents that safety-related SSCs identified in Table 3.7-1 have been designed in accordance with a 10 CFR 50 Appendix B quality program.

An analysis report documents that non-safety-related SSCs identified in Table 3.7-1 have been designed in accordance with a program that satisfies quality assurance requirements for SSCs important to investment protection.

ITAAC Determination Basis

Risk-significant SSCs identified for the AP1000 standard design are listed in Table 3.7-1 of the Tier 1 Material of the AP1000 Design Control Document (DCD). Table 3.7-1 is provided in the enclosure.

The Westinghouse Quality Management System (QMS), Revision 5 (Reference 2) defines the 10 CFR 50 Appendix B quality program that was used for the design of the safety-related SSCs. The NRC approved Revision 5 to the Westinghouse QMS by letter dated September 13, 2002 (ML022540895). The Westinghouse procedure "AP1000 Quality Assurance Requirements for RTNSS Systems, Structures, and Components", APP-GW-GAM-200, Revision 1 (Reference 3) defines the quality program that was used for the design of non-safety-related SSCs.

Engineering Report ZZZ, *Validation of Design Reliability Assurance Program,* (Reference 4) documents the analysis report that verified the components listed in Table 3.7-1 have been designed in accordance with a program that satisfies applicable quality assurance requirements. Safety-related SSCs identified in Table 3.7-1 have been designed in accordance with a 10 CFR 50 Appendix B program and the non-safety-related SSCs identified in Table 3.7-1 have been designed in accordance with a program that satisfies quality assurance requirements for SSCs important to investment protection.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings and associated corrective actions. This review identified three ITAAC findings, listed below:

1. {ITAAC finding #1}
2. {ITAAC finding #2}
3. {ITAAC finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC Table 3.7-3 Item 1 (Reference 5), which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee} hereby notifies the NRC that ITAAC Table 3.7-3 Item 1 was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. Westinghouse Quality Management System, Revision 5
3. APP-GW-GAM-200, AP1000 Quality Assurance Requirements for RTNSS Systems, Structures, and Components
4. Engineering Report ZZZ, Validation of Design Reliability Assurance Program
5. ITAAC Table 3.7-3, Item 1 Completion package

Table 3.7-1
Risk-Significant Components

Equipment Name	Tag No.
Component Cooling Water System (CCS)	
Component Cooling Water Pumps	CCS-MP-01A/B
Containment System (CNS)	
Containment Vessel	CNS-MV-01
Hydrogen Igniters	VLS-EH-1 through -64
Chemical and Volume Control System (CVS)	
Makeup Pumps	CVS-MP-01A/B
Makeup Pump Suction and Discharge Check Valves	CVS-PL-V113 CVS-PL-V160A/B
Diverse Actuation System (DAS)	
DAS Processor Cabinets and Control Panel (used to provide automatic and manual actuation)	DAS-JD-001 DAS-JD-002 DAS-JD-004 OCS-JC-020
Annex Building UPS Distribution Panels (provide power to DAS)	EDS1-EA-1, EDS1-EA-14, EDS2-EA-1, EDS2-EA-14

Table 3.7-1 (cont.)
Risk-Significant Components

Equipment Name	Tag No.
Rod Drive MG Sets (Field Breakers)	PLS-MG-01A/B
Containment Isolation Valves Controlled by DAS	Refer to Table 2.2.1-1
Main ac Power System (ECS)	
Reactor Coolant Pump Switchgear	ECS-ES-31, -32, -41, -42, -51, -52, -61, -62
Ancillary Diesel Generators	ECS-MS-01, -02
6900 Vac Buses	ECS-ES-1, -2
Main and Startup Feedwater System (FWS)	
Startup Feedwater Pumps	FWS-MP-03A/B
General I&C	
IRWST Level Sensors	PXS-045, -046, -047, -048
RCS Hot Leg Level Sensors	RCS-160A/B
Pressurizer Pressure Sensors	RCS-191A/B/C/D
Pressurizer Level Sensors	RCS-195A/B/C/D
Steam Generator Narrow-Range Level Sensors	SGS-001, -002, -003, -004, -005, -006, -007, -008
Steam Generator Wide-Range Level Sensors	SGS-011, -012, -013, -014, -015, -016, -017, -018
Main Steam Line Pressure Sensors	SGS-030, -031, -032, -033, -034, -035, -036, -037
Main Feedwater Wide-Range Flow Sensors	SGS-050A/C/E, -051A/C/E
Startup Feedwater Flow Sensors	SGS-055A/B, -056A/B
CMT Level Sensors	PXS-011A/B/C/D, -012A/B/C/D, -013A/B/C/D, -014A/B/C/D
Class 1E dc Power and Uninterruptible Power System (IDS)	
125 Vdc 24-Hour Batteries	IDSA-DB-1A/B, IDSB-DB-1A/B, IDSC-DB-1A/B, IDSD-DB-1A/B
250 Vdc 24-Hour Battery Chargers	IDSA-DC-1, IDSB-DC-1, IDSC-DC-1, IDSD-DC-1

Table 3.7-1 (cont.)
Risk-Significant Components

Equipment Name	Tag No.
250 Vdc and 120 Vac Distribution Panels	IDSA-DD-1, IDSA-EA-1/-2, IDSB-DD-1, IDSB-EA-1/-2/-3, IDSC-DD-1, IDSC-EA-1/-2/-3, IDSD-DD-1, IDSD-EA-1/-2
Fused Transfer Switch Boxes	IDSA-DF-1, IDSB-DF-1/-2, IDSC-DF-1/-2, IDSD-DF-1
250 Vdc Motor Control Centers	IDSA-DK-1, IDSB-DK-1, IDSC-DK-1, IDSD-DK-1
250 Vdc 24-Hour Inverters	IDSA-DU-1, IDSB-DU-1, IDSC-DU-1, IDSD-DU-1
Passive Containment Cooling System (PCS)	
Recirculation Pumps	PCS-MP-01A/B
PCCWST Drain Isolation Valves	PCS-PL-V001A/B/C
Plant Control System (PLS)	
PLS Actuation Software and Hardware (used to provide control functions)	Refer to Table 3.7-2
Protection and Monitoring System (PMS)	
PMS Actuation Software (used to provide automatic control functions)	Refer to Tables 2.5.2-2 and 2.5.2-3
PMS Actuation Hardware (used to provide automatic control functions)	Refer to Tables 2.5.2-2 and 2.5.2-3
MCR 1E Displays and System Level Controls	OCS-JC-010, -011
Reactor Trip Switchgear	PMS-JD-RTS A01/02, B01/02, C01/02, D01/02
Passive Core Cooling System (PXS)	
IRWST Vents	PXS-MT-03
IRWST Screens	PXS-MY-Y01A/B
Containment Recirculation Screens	PXS-MY-Y02A/B
CMT Discharge Isolation Valves	PXS-PL-V014A/B, -V015A/B
CMT Discharge Check Valves	PXS-PL-V016A/B, -V017A/B
Accumulator Discharge Check Valves	PXS-PL-V028A/B, -V029A/B
PRHR HX Control Valves	PXS-PL-V108A/B
Containment Recirculation Squib Valves	PXS-PL-V118A/B, -V120A/B

Table 3.7-1 (cont.)
Risk-Significant Components

Equipment Name	Tag No.
IRWST Injection Check Valves	PXS-PL-V122A/B, -V124A/B
IRWST Injection Squib Valves	PXS-PL-V123A/B, -V125A/B
IRWST Gutter Bypass Isolation Valves	PXS-PL-V130A/B
Reactor Coolant System (RCS)	
ADS Stage 1/2/3 Valves (MOVs)	RCS-PL-V001A/B, -V011A/B RCS-PL-V002A/B, -V012A/B RCS-PL-V003A/B, -V013A/B
ADS Stage 4 Valves (Squibs)	RCS-PL-V004A/B/C/D
Pressurizer Safety Valves	RCS-PL-V005A/B
Reactor Vessel Insulation Water Inlet and Steam Vent Devices	RCS-MN-01
Reactor Cavity Doorway Damper	–
Fuel Assemblies	157 assemblies with tag numbers beginning with RXS-FA
Normal Residual Heat Removal System (RNS)	
Residual Heat Removal Pumps	RNS-MP-01A/B
RNS Motor-Operated Valves	RNS-PL-V011, -V022, -V023, -V055
RNS Stop Check Valves RNS Check Valves	RNS-PL-V015A/B RNS-PL-V017A/B
RNS Check Valves	RNS-PL-V007A/B, -V013, -V056
Spent Fuel Cooling System (SFS)	
Spent Fuel Cooling Pumps	SFS-MP-01A/B
Steam Generator System (SGS)	
Main Steam Safety Valves	SGS-PL-V030A/B, -V031A/B, -V032A/B, -V033A/B, -V034A/B, -V035A/B
Main Steam Line Isolation Valves	SGS-PL-V040A/B
Main Feedwater Isolation Valves	SGS-PL-V057A/B
Service Water System (SWS)	
Service Water Cooling Tower Fans	SWS-MA-01A/B
Service Water Pumps	SWS-MP-01A/B

Table 3.7-1 (cont.)
Risk-Significant Components

Equipment Name	Tag No.
Nuclear Island Nonradioactive Ventilation System (VBS)	
MCR Ancillary Fans	VBS-MA-10A/B
I&C Room B/C Ancillary Fans	VBS-MA-11, -12
Chilled Water System (VWS)	
Air Cooled Chiller Pumps	VWS-MP-02, -03
Air Cooled Chillers	VWS-MS-02, -03
Onsite Standby Power System (ZOS)	
Engine Room Exhaust Fans	VZS-MY-V01A/B, -V02A/B
Onsite Diesel Generators	ZOS-MS-05A/B

Note: Dash (-) indicates not applicable.

APPENDIX D-11 – EXAMPLE ITAAC CLOSURE NOTIFICATION ESBWR ITAAC 2.1.2-3 ITEM 8

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of ESBWR ITAAC 2.1.2-3 Item 8

The purpose of this letter is to notify 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) 2.1.2-3 Item 8, for the Nuclear Boiler System, for verification that the main steam isolation valves and the feedwater isolation valves close upon commands. 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

8.a. The [Main Steam Isolation Valves] MSIVs close upon command.

8.b. The Feedwater Isolation Valves (FWIVs) close upon command.

Inspection/Test/Analysis

a) Valve closure tests will be performed on the as-built MSIVs using a manual closure command to simulate an isolation signal.

b) Valve closure tests will be performed on the as-built FWIVs using a manual closure command to simulate an isolation signal.

Acceptance Criteria

a) The MSIVs close upon command.

b) The FWIVs close upon command.

ITAAC Determination Basis

Testing was performed in accordance with Preoperational Test Procedure XXX, *Nuclear Boiler System Preoperational Test*, (Reference 2), to demonstrate that the MSIVs and the FWIVs close upon command.

Each of the 8 as-built MSIVs and 4 as-built FWIVs were tested under design differential pressure, fluid flow, and temperature conditions. A manual closure command was initiated from the control room for each valve to simulate an isolation signal. The simulated isolation signal caused each valve to close, as designed. The closure of each valve was verified by observing valve position instrumentation in the control room and by observing local valve position indication.

As required by ITAAC Items 8.a and 8.b, Inspection Report YYY, *Closure of ITAAC 2.1.2-3 Item 8,* (Reference 3) was performed for Plant XYZ and documents that:

a. The MSIVs closed upon command.
b. The FWIVs closed upon command.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of 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 2-3 Item #8 (Reference 3) and is available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1.2-3 #8 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. Preoperational Test Procedure XXX, Nuclear Boiler System Preoperational Test
3. ITAAC Completion Package for ITAAC 2.1.2-3 #8.

APPENDIX D-12 – EXAMPLE ITAAC CLOSURE NOTIFICATION ESBWR COL ITAAC 2.3-1 ITEM 8.1

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of ESBWR COL ITAAC 2.3-1 Item 8.1

The purpose of this letter is to notify 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) COL ITAAC 2.3-1 Item 8.1, Emergency Facilities and Equipment. 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

Planning Standard

10 CFR 50.47(b)(8) – Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

EP Program Elements

8.1 The licensee has established a technical support center (TSC) and onsite operations support center (OSC). [H.1] ITAAC element addressed in: COL EP II.H.1. b & c.

Inspection/Test/Analysis

8.1 An inspection of the as-built TSC and OSC will be performed.

Acceptance Criteria

8.1.1 The TSC has at least 182 square meters (1950 square feet) of floor space.

8.1.2 The following communications equipment has been provided in the TSC and voice transmission and reception have been accomplished:

- *NRC systems: Emergency Notification System (ENS), Health Physics Network (HPN), Reactor Safety Counterpart Link (RSCL), Protective Measures Counterpart Link (PMCL), Management Counterpart Link (MCL)*

- *Dedicated telephone to EOF*
- *Dedicated telephone to control room*
- *Dedicated telephone to OSC*

8.1.3 The TSC has been located in the Electrical Building.

8.1.4 The TSC includes radiation monitors and a ventilation system with a high efficiency particulate air (HEPA) and charcoal filter.

8.1.5 A back-up electrical power supply is available for the TSC.

8.1.6 Reception, storage, processing, and display of plant and environmental information used to initiate emergency measures and conduct emergency assessment has been accomplished at the TSC.

8.1.7 The OSC is in a location separate from the control room.

8.1.8 The following communications equipment has been provided in the OSC and voice transmission and reception have been accomplished:

- *Dedicated telephone to control room*
- *Dedicated telephone to TSC*
- *Plant page system (voice transmission only)*

ITAAC Determination Basis

Station procedure NN3-xx-123, Emergency Response Facilities Test (Reference 2), was performed to verify that adequate emergency facilities and equipment to support the emergency response are provided and maintained in accordance with 10 CFR 50.47(b)(8).

Inspections of the as-built TSC and OSC were performed to ensure that each part of the ITAAC acceptance criteria are met. The results of these inspections are reported in the Emergency Facilities and Equipment Test Report (Reference 3) and are summarized below:

ITAAC Item	Result
2.3-1.8.1.1	The TSC has xxxx square feet of floor space, which exceeds the required minimum 182 square meters (1950 square feet) of floor space.
2.3-1.8.1.2	Voice communications have been transmitted and received to and from the TSC and the following: a. NRC systems: (1) Emergency Notification System (ENS) (2) Health Physics Network (HPN) (3) Reactor Safety Counterpart Link (RSCL) (4) Protective Measures Counterpart Link (PMCL) (5) Management Counterpart Link (MCL) b. Dedicated telephone to EOF

ITAAC Item	Result
	c. Dedicated telephone to control room d. Dedicated telephone to OSC
2.3-1.8.1.3	The TSC is located in the Electrical Building.
2.3-1.8.1.4	TSC includes radiation monitors and a ventilation system with a high efficiency particulate air (HEPA) and charcoal filter. The radiation monitors responded appropriately to test sources, and provided alarms as designed.
2.3-1.8.1.5	A back-up electrical power supply is available for the TSC. When tested by removing the normal power source, the backup power supply automatically started and accepted the TSC electrical load. In accordance with the test procedure, the TSC was powered by the backup electrical power supply for greater than one hour.
2.3-1.8.1.6	Demonstrations have been conducted to accomplish in the TSC reception, storage, processing, and display of plant environmental information used to initiate emergency measure and conduct emergency assessment.
2.3-1.8.1.7	The OSC is in the ____________, which is a location separate from the control room.
2.3-1.8.1.8	Voice communications have been transmitted and received to and from the OSC and the following: a. Dedicated telephone to control room c. Dedicated telephone to TSC d. Plant page system (voice transmission only)

The inspection results, as described above and as documented in the Emergency Facilities and Equipment Test Report, confirm that the acceptance criteria of COL ITAAC 2.3-1, Item 8.1, are fully met for the Plant XYZ Technical Support Center and Operations Support Center.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings pertaining to the subject ITAAC and associated corrective actions. This review identified {N} ITAAC findings, listed below:

1. {ITAAC Finding #1}

2. {ITAAC Finding #2}

3. {ITAAC Finding #3}

The corrective actions for each finding have been completed and each finding has been closed. This review is documented in the completion package for COL ITAAC 2.3-1 Item 8.1, (Reference 4), which is available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that COL ITAAC 2.3-1 Item 8.1 was performed for Plant/Unit XYZ and the prescribed acceptance criteria are met.

Systems, structures and components verified as a 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 ITAAC Closure Process Under 10 CFR Part 52
2. NN3-xx-123, Emergency Response Facilities Test
3. Emergency Facilities and Equipment Test Report
4. COL ITAAC 2.3-1, Item 8.1, Emergency Response Facilities ITAAC Completion Package.

APPENDIX D-13 – EXAMPLE ITAAC CLOSURE NOTIFICATION ESBWR ITAAC 2.4.2-3 ITEM 12

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of ESBWR ITAAC 2.4.2-3 Item 12

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 #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) 2.4.2-3 Item 12 for the GDCS squib valve testing. 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).

<u>ITAAC Statement</u>

<u>Design Commitment</u>

GDCS squib valves maintain RPV backflow leak tightness and maintain reactor coolant pressure boundary integrity during normal plant operation.

<u>Inspection/Test/Analysis</u>

A test will be performed to demonstrate the squib valves are leak tight during normal plant conditions.

<u>Acceptance Criteria</u>

Testing concludes GDCS squib valves have zero leakage at normal plant operating pressure.

<u>ITAAC Determination Basis</u>

Testing was performed in accordance with Pre-operational Test NN3-XX-123 (Reference 2), Gravity Driven Cooling System (GDCS) Pre-Operational Test, to verify that the GDCS squib valves maintain RPV backflow leak tightness and maintain reactor coolant pressure boundary integrity at normal plant conditions. The GDCS squib valves, 3-E50-1XX, 3-E50-2XX, 3-E50-3XX, and 3-E50-4XX, were tested with the RPV at normal operating pressure with the GDCS system aligned such that the squib valves were closed, with the drain valves (3-E50-1YYA and B) located upstream of the squib valves open. The system was maintained in this condition for X hours in accordance with the procedure. Visual checks for water leakage through the drain valves at 15-minute intervals were performed to verify that no leakage occurred through the squib valves during the X-hour period.

The testing identified zero leakage of the squib valves at normal operating pressure conditions, as documented in NN3-XX-123, Gravity Driven Cooling System Test Procedure, and confirmed that the acceptance criteria of ITAAC 2.4.2-3 Item 12 are met.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review identified {X} ITAAC findings, listed below:

1. {ITAAC Finding #1}

2. {ITAAC Finding #2}

3. {ITAAC Finding #3}

The corrective actions for each finding have been completed and each finding has been closed. This review is documented in the completion package for ITAAC 2.4.2-3 Item 12, (Reference 3) which is available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.4.2-3 Item 12 was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. NN3-XX-123, Gravity Driven Cooling System Test Procedure
3. ITAAC 2.4.2-3 Item12 Gravity Driven Cooling System Completion package

APPENDIX D-14 – EXAMPLE ITAAC CLOSURE NOTIFICATION ESBWR ITAAC 2.13.4-2 ITEM 2.A

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of ESBWR ITAAC 2.13.4-2 Item 2.a

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 #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) 2.13.4-2 Item 2.a on the Standby Onsite Power Supply System. 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

Upon receipt of an under voltage signal from the Electric Power Distribution System, the standby diesel generator starts and achieves rated speed and voltage and sequences its designed loads while maintaining voltage and frequency within design limits.

Inspection/Test/Analysis

Tests of the as-built Standby Onsite Power Supply system will be conducted by providing a real or simulated under voltage signal to start the standby diesel generators. Subsequently generated signals will start load sequencing.

Acceptance Criteria

The as-built standby diesel generator starts upon receipt of a real or simulated under voltage signal on its associated PIP bus, achieves rated speed and voltage, and sequences its designed loads while maintaining voltage and frequency within design limits.

ITAAC Determination Basis

Testing was performed in accordance with pre-operational test NN3-XX-123 (Reference 2), Standby Onsite Power System, to verify that upon receipt of an under voltage signal from the Electric Power Distribution System, each of two standby diesel generators start, achieve rated speed and voltage, and sequence designed loads, and appropriately maintain voltage and frequency within design limits.

The as-built Standby Onsite Power Supply system was tested by generating a simulated under voltage signal on the plant investment protection (PIP) bus which started the associated standby diesel generator. Subsequent signals were generated to start the load sequencing on the standby diesel generator, and the voltage and frequency were verified to remain within design limits.

The initial conditions for the test were that the standby diesel generator was ready to start and the associated PIP bus was energized with its standby diesel generator breaker open. Alternate AC supplies from other busses were verified open and racked out.

As required by ITAAC 2.13.4-2 Item 2.a, test report for the Standby Onsite Power System (Reference 3) documents that each of the as-built standby diesel generators started upon receipt of a simulated under voltage signal on its associated PIP bus, achieved rated speed and voltage, and sequenced its designed loads while maintaining voltage and frequency within design limits.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review identified X ITAAC findings, listed below:

1. {ITAAC Finding #1}
2. {ITAAC Finding #2}
3. {ITAAC Finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 2.13.4-2 Item 2.a, (Reference 4) which is available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.13.4-2 Item 2.a was performed {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 ITAAC Closure Process Under 10 CFR Part 52*
2. NN3-XX-123, Standby Diesel Generator System Test Procedure
3. Standby Onsite Power System Test Report.
4. ITAAC 2.13.4-2 Item 2.a, Standby Diesel Generator System Completion Package.

APPENDIX D-15 – EXAMPLE ITAAC CLOSURE NOTIFICATION AP1000 ITAAC 2.2.3.4 ITEM 8A

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC Item 2.2.3-4 Item 8.a)

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 #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item 2.2.3-4 Item 8.a), "Containment isolation of the Passive Core Cooling System (PXS) lines." 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

The PXS provides containment isolation of the PXS lines penetrating the containment.

Inspection/Test/Analysis

See Tier 1 Material, Table 2.2.1-3, items 1 and 7.

Acceptance Criteria

See Tier 1 Material, Table 2.2.1-3, items 1 and 7

ITAAC Determination Basis

This ITAAC Design Commitment is shown to be met by reference to ITAAC for the Containment System in Tier 1, Table 2.2.1-3. The references are to Item 1 of Table 2.2.1-3 which demonstrates the functional arrangement of the containment system and to Item 7 of Table 2.2.1-3 which demonstrates the containment isolation function.

The closure letters (References 2 and 3) for Item 1 and Item 7 of Table 2.2.1-3 summarize the methodology for conducting the ITA, and the results that demonstrate that the acceptance criteria are met. These closure letters have been submitted to the NRC and the supporting ITAAC closure activities are complete.

The records (Tests, Reports, Completed Procedures, Completed Analyses, etc.) that form the ITAAC determination basis are referenced in the closure letters for Item 1 of Table 2.2.1-3 and Item 7 of Table 2.2.1-3.

ITAAC-Finding Review

Any relevant ITAAC Findings are addressed in the closure letters for Item 1 of Table 2.2.1-3 and Item 7 of Table 2.2.1-3.

The corrective actions for each finding have been completed and each finding is closed. This review is documented in the completion packages for ITAAC 2.2.1-3 Item 1 and ITAAC 2.2.1-3 Item 7, (References 4 and 5), which are available for NRC inspection.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.2.3-4 Item 8. a) was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. Closure Letter for Item 1 of Table 2.2.1-3, Dated XXXX YY, 20ZZ
3. Closure Letter for Item 7 of Table 2.2.1-3, Dated XXXX YY, 20ZZ

APPENDIX D-16 – EXAMPLE ITAAC ENCLOSURE NOTIFICATION COMPLETION OF ESBWR ITAAC 2.1.1-3 ITEM 2

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of ESBWR ITAAC 2.1.1-3 Item #2

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 #} ESBWR Inspection, Test, Analysis, and Acceptance Criteria (ITAAC) 2.1.1-3 Item #2 for the Reactor Pressure Vessel (RPV) System. 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

The key dimensions (and acceptable variations) of the as-built RPV are as described in Table 2.1.1-2. [A copy of ESBWR Design Control Document (DCD) Table 2.1.1-2 is provided in Attachment 1. Table 2.1.1-2 references DCD Figure 2.1.1-1, a copy of which is provided in Attachment 2.]

Inspection/Test/Analysis

Inspection of the as-built RPV key dimensions (and acceptable variations thereof) will be conducted.

Acceptance Criteria

The RPV conforms to the key dimensions (and acceptable variations) described in Table 2.1.1-2.

ITAAC Determination Basis

Inspections were performed of the as-built RPV to verify the key dimensions and acceptable variations as described in DCD Tier 1 Table 2.1.1-2. DCD Tier 2, Section 5.3.3, also describes the inspection process for the RPV. Following RPV fabrication, personnel performed inspections to ensure these key dimensions are met. Because it would be impractical to perform measurements once the RPV was installed on site, these inspections were conducted at the supplier’s site in accordance with NEI 08-01, Section

9.5, “As-built Inspections.” These inspections, performed by the supplier, are documented in Inspection Report XXX (Reference 2), which was supplied with the RPV module to {Licensee}.

{Licensee} Procedure XYZ, *Material Receipt*, (Reference 3), establishes and governs the process used for performing and documenting receipt inspections of components such as the RPV delivered to the site. These inspections include, but are not limited to:

- Checks for physical damage (fire, excessive exposure to weather, rough handling, etc.
- Quantity
- Technical and quality requirements

Upon arrival at {Site Name}, {Licensee} personnel performed receipt and inspections of the RPV module in accordance with Procedure XYZ. Included in these activities was a review of the documentation accompanying the RPV. This activity, documented on Receiving Inspection Report #YYY (Reference 4), confirmed that Inspection Report XXX documented that the key dimensions denoted in DCD Tier 1 Table 2.1.1-2 are within the acceptable values specified in the table. The actual measurement results are identified in Attachment 1. Receiving Inspection Report #YYY is contained in Inspection Report ZZZ, *Closure of ITAAC 2.1.1-3 #2* (Reference 5).

{Licensee} has reviewed installation records pertaining to the RPV; these are identified and contained in Inspection Report ZZZ. There is no evidence to indicate that the key dimensions identified in DCD Tier 1 Table 2.1.1-2 and validated by the inspections described above were adversely impacted during installation of the RPV.

As required by ITAAC 2.1.1-3 #2, Inspection Report ZZZ, *Closure of ITAAC 2.1.1-3 Item #2*, documents that the as-built RPV conforms to the key dimensions (and acceptable variations) described in DCD Tier 1 Table 2.1.1-2.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review identified three ITAAC findings, listed below:

1. {ITAAC Finding #1}
2. {ITAAC Finding #2}
3. {ITAAC Finding #3}

The corrective actions for each finding have been completed and each finding has been closed. This review is documented in ITAAC Completion package for ITAAC 2.1.1-3 Item #2 (Reference 6), which is available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1.1-3 Item #2 was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

Attachments:
1. Verification of Key Dimensions of RPV Components and Acceptable Variations in ESBWR DCD Tier 1 Table 2.1.1-2
2. ESBWR DCD Tier 1 Figure 2.1.1-1, *Reactor Pressure Vessel System Key Features Layout*

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52*
2. Inspection Report XXX
3. Procedure XYZ, *Material Receipt*
4. Receiving Inspection Report #YYY
5. Inspection Report ZZZ, *Closure of ITAAC 2.1.1-3 #2*
6. ITAAC Completion package for ITAAC 2.1.1-3 #2

ATTACHMENT 1

Verification of Key Dimensions of RPV Components and Acceptable Variations in ESBWR DCD Tier 1 Table 2.1.1-2

Description	Dimension / Elevation (Figure 2.1.1-1)	Nominal Value mm (in.)	Acceptable Variation mm (in.)	Actual Measurement (in.)
RPV bottom head inside invert elevation	A	0	Reference elevation zero	0
Bottom of active fuel location from elevation zero[1]	B	4405 (173.4)	± 16 (0.63)	NN
Top of active fuel location from elevation zero[1]	C	7453 (293.4)	± 16 (0.63)	NN
RPV top head inside invert elevation	D	27560 (1085)	± 100 (3.94)	NN
RPV inside diameter (inside cladding)	E	7112 (280.0)	± 51 (2.01)	NN
RPV wall thickness in beltline (including cladding)	F	182 (7.17)	177.2 min (6.976 min)	NN

[1]Dimension is verified by calculations based on as-built interfacing components.

ATTACHMENT 2

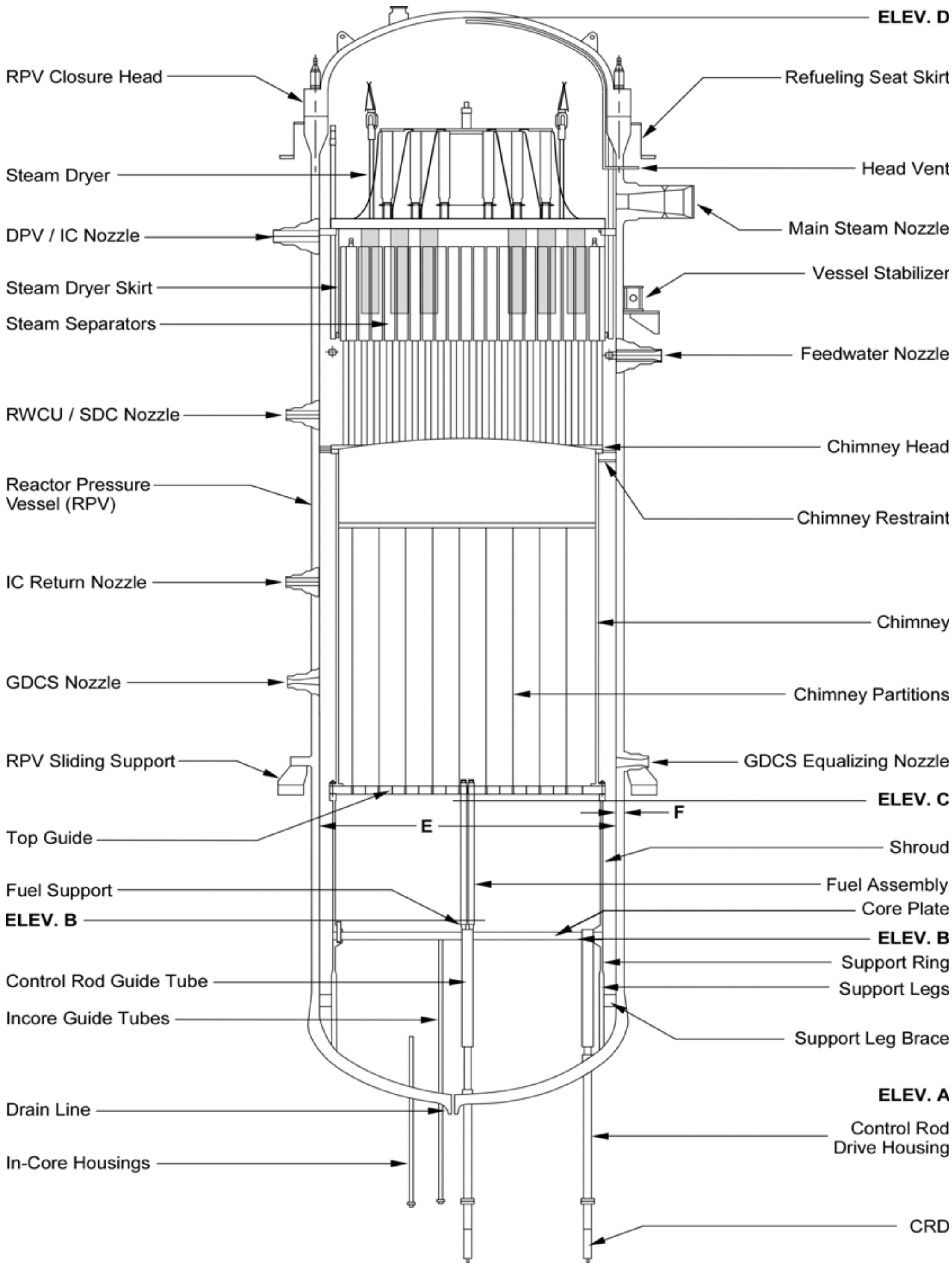

Figure 2.1.1-1. Reactor Pressure Vessel and Internals Key Features Layout

APPENDIX D-17 – EXAMPLE ITAAC ENCLOSURE NOTIFICATION COMPLETION OF ESBWR ITAAC 2.1.2-3 ITEM 12

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of ESBWR ITAAC 2.1.2-3 Item #12

The purpose of this letter is to notify the NRC in accordance with 10 CFR 52.99(c)(1) of the completion of {Site Name and Unit #} ESBWR Inspection, Test, Analysis, and Acceptance Criteria (ITAAC) 2.1.2-3 Item #12 for the Nuclear Boiler System. The closure process for this ITAAC is based on the guidance described in NEI 08-01, *Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52* (Reference 1), which was endorsed by the NRC in Regulatory Guide 1.215.

ITAAC Statement

Design Commitment

The throat diameter of each Main Steamline (MSL) flow restrictor is sized for design choke flow requirements.

Inspection/Test/Analysis

Inspections of each as-built MSL flow restrictor throat diameter will be performed.

Acceptance Criteria

The throat diameter of each MSL flow restrictor is less than or equal to 355 mm (14.0 in).

ITAAC Determination Basis

Inspections were performed of each Main Steamline flow restrictor throat diameter to verify it is sized for design choke flow requirements.

As described in Tier 2, Sections 5.1 and 5.4, of the ESBWR design control document (DCD), each MSL flow restrictor is an integral part of the main steam nozzle on the reactor pressure vessel (RPV). The restrictor is machined into the nozzle itself during fabrication; therefore, the restrictors are supplied as part of the RPV integral module.

Following fabrication, personnel performed several inspections to ensure the RPV was fabricated in accordance with design specifications. These inspections, performed by the supplier, included confirming the dimensions of the MSL flow restrictors; specifically, the throat diameter of each restrictor is less than or equal to 355 mm (14 in.). Because it would be impractical to perform measurements once the RPV was installed on site, these inspections were conducted at the supplier's site in accordance with NEI 08-01, Section 9.5,"As-built Inspections," and observed by the licensee's representative. Inspections of the flow restrictors are documented in Inspection Report XXX, Section AAA (Reference 2), which was supplied with the RPV module to {Licensee}.

Material Receipt, (Reference 3), establishes and governs the process used for performing and documenting receipt inspections of components such as the RPV delivered to the site. These inspections include, but are not limited to:

- Checks for physical damage (fire, excessive exposure to weather, rough handling, etc.
- Quantity
- Technical and quality requirements

Upon arrival at {Site Name}, qualified {Licensee} personnel performed receipt inspections of the RPV module in accordance with Procedure XYZ. Included in these activities was a review of the quality documentation accompanying the RPV. This activity, documented on Receiving Inspection Report #YYY (Reference 4), confirmed that GEH Inspection Report XXX, Section AAA documented the throat diameter of each MSL flow restrictor to be less than or equal to 355 mm (14 in.). Receiving Inspection Report #YYY is contained in Inspection Report ZZZ, *Closure of ITAAC 2.1.2-3 #12* (Reference 5).

{Licensee} has reviewed installation records pertaining to the RPV; these are identified and contained in Inspection Report ZZZ. There is no evidence to indicate that the dimensions of the MSL flow restrictors were adversely impacted during installation of the RPV.

As required by ITAAC 2.1.2-3 Item #12, Inspection Report ZZZ, *Closure of ITAAC 2.1.2-3 Item #12*, documents the throat diameter of each MSL flow restrictor to be less than or equal to 355 mm (14 in.). For the four MSL flow restrictors, the throat diameters were measured to be the following:

MSL Flow Restrictor	**Measured Throat Diameter** **(Acceptance Criteria: Less than or equal to 355 mm (14.0 in))**
1	354 mm
2	351 mm
3	353 mm
4	352 mm

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review identified no relevant ITAAC findings associated with this ITAAC. The ITAAC completion review is documented in ITAAC Completion Package for ITAAC 2.1 2-3 Item #12 (Reference 6) and is available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1.2-3 Item #12 was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for Licensee} at {Telephone # for Contact Person}.

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. Inspection Report XXX, Section AAA
3. Procedure XYZ, *Material Receipt*
4. Receiving Inspection Report #YYY
5. Inspection Report ZZZ, *Closure of ITAAC 2.1.2-3 #12*
6. ITAAC Completion package for ITAAC 2.1.2-3 #12

APPENDIX D-18 – EXAMPLE ITAAC CLOSURE NOTIFICATION: COMPLETION OF AP1000 ITAAC 3.3-6 ITEM 16

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 3.3-6 Item 16

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 #} Inspection, Test, Analysis, and Acceptance Criteria (ITAAC) 3.3-6 Item 16 for inspection of the secondary security power supply equipment. 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

Secondary security power supply system for alarm annunciator equipment and non-portable communications equipment is located within a vital area.

Inspection/Test/Analysis

An inspection will be performed to ensure that the location of the secondary security power supply system for alarm annunciator equipment and non-portable communications equipment is within a vital area.

Acceptance Criteria

Secondary security power supply equipment for alarm annunciator equipment and non-portable communications equipment is located within a vital area.

ITAAC Determination Basis

The secondary security power supply equipment and non-portable communications equipment was installed in accordance with approved drawings and specifications released by Engineering for construction. An inspection was performed of the secondary security power supply system to verify the alarm annunciator equipment and non-portable communications equipment is located within a vital area. The inspection was performed in accordance with Procedure ABC (Reference 2), which required performance of visual observations to compare the installed equipment to the approved drawings, and was documented in Inspection Report ZZZ (Reference 3). Inspection Report ZZZ (Reference 3) exists and concludes that inspections confirmed that the secondary security power supply system for alarm annunciator equipment and non-portable communications equipment is located within a vital area.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review determined that three ITAAC findings, listed below, have been identified.

1. {ITAAC Finding #1}

2. {ITAAC Finding #2}

3. {ITAAC Finding #3}

The corrective actions for each finding have been completed and each finding closed. This review is documented in the completion package for ITAAC 3.3-6 Item 16 (Reference 4), which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.3-6 Item 16 was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 ITAAC Closure Process Under 10 CFR Part 52.*

2. Inspection Procedure ABC

3. Inspection Report ZZZ, Closure of ITAAC 3.3-6 Item 16

4. ITAAC 3.3-6 Item 16 Completion package

APPENDIX D-19 – NOT USED

APPENDIX D-20 – EXAMPLE ITAAC CLOSURE NOTIFICATION: COMPLETION OF US-EPR ITAAC 2.4.1 ITEMS 4.14 C AND D

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 2.4.1 Items 4.14 c and d.

The purpose of this letter is to notify 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) 2.4.1 items 4.14 c and d for the Protection System (PS). 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

The PS system design and application software are developed using a process composed of six lifecycle phases, with each phase having outputs which must conform to the requirements of that phase. The six lifecycle phases are the following:

1) Basic Design Phase.
2) Detailed Design Phase.
3) Manufacturing Phase.
4) System Integration and Testing Phase.
5) Installation and Commissioning Phase.
6) Final Documentation Phase.

Inspection/Test/Analysis

c. Analyses will be performed to verify that the outputs for the PS manufacturing phase conform to the requirements of that phase.

d. Analyses will be performed to verify that the outputs for the PS system integration and testing phase conform to the requirements of that phase.

<u>Acceptance Criteria</u>

c. *A report exists and concludes that the outputs conform to the requirements of the manufacturing phase of the PS.*

d. *A report exists and concludes that the outputs conform to the requirements of the system integration and testing phase of the PS.*

<u>ITAAC Determination Basis</u>

The Software Program Manual for TELEPERM XS Safety Systems Topical Report (Reference 2) describes the lifecycle processes for application software development used in safety–related applications of the TXS platform for the U.S. EPR, as well as software verification and validation processes.

Closure of ITAAC 2.4.1 items 4.14 a and b (Reference 3) on the basic design phase of the PS hardware and software design process was submitted to the NRC on XX/YY/ZZZZ (date). This document confirms that the acceptance criteria for the basic design phase of PS hardware and software design process are met. The basic design phase provides the requirements to which the subsequent phases of the design process must conform.

{Licensee} performed an inspection of engineering report, Protection System Manufacturing Phase Outputs (Reference 4). The purpose of the inspection was to confirm the existence of a report that concludes the outputs conform to the requirements of the manufacturing phase of the PS.

{Licensee} performed analyses of the outputs for the system integration and testing phase of the PS to verify that the outputs of this phase conform to the requirements of this phase. The Protection System Integration and Testing Phase Outputs Report (Reference 5) provides the results of the analyses. This report concludes that the outputs conform to the requirements of the system integration and testing phase of the PS.

Closure of ITAAC 2.4.1 items 4.14 c and d (Reference 6) concludes that Reference 4 and Reference 5 provide documentation demonstrating that the acceptance criteria for the detailed design phase of the PS hardware and software design process has been met.

<u>ITAAC Finding Review</u>

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 2.4.1 items 4.14 c and d (Reference 2) and available for NRC review.

ITAAC Closure Statement

Based on the above information, {Licensee} hereby notifies the NRC that ITAAC 2.4.1 items 4.14 c and d were performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

References (available for NRC review)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52.*
2. Software Program Manual for TELEPERM XS Safety Systems Topical Report (ANP-10272)
3. Closure of ITAAC 2.4.1 items 4.14 a and b
4. Protection System Manufacturing Phase Outputs
5. Protection System Integration and Testing Phase Outputs Report
6. Closure of ITAAC 2.4.1 items 4.14 c and d
7. ITAAC 2.4.1 item 4.14 c and d Completion Package

APPENDIX D-21 – EXAMPLE SECURITY ITAAC CLOSURE NOTIFICATION ITAAC TABLE 2.2-1 ITEM 1.1

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC Table 2.2-1 Item 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 {Site Name and Unit #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Table 2.2-1 Item 1.1 on protection of vital equipment. 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.

<u>ITAAC Statement</u>

<u>Design Commitment</u>

1.1 Access to vital equipment will require passage through at least two physical barriers.

<u>Inspection/Test/Analysis</u>

1.1 All vital equipment physical barriers will be inspected.

<u>Acceptance Criteria</u>

1.1 Vital equipment is located within a protected area such that access to the vital equipment requires passage through at least two physical barriers.

<u>ITAAC Determination Basis</u>

Personnel from the Security organization have completed station procedure NN3-xx-123, Vital Equipment Facilities Security Inspection (Reference 2) to verify that adequate security facilities and equipment to support the Security Plan are provided in accordance with 10 CFR 73.55(e)(9)(i) and 10 CFR 73.55(e)(9)(iv). Inspections related to this ITAAC performed walkdowns of each piece of vital equipment contained within the Physical Security Program (PSP) to verify its location within vital area physical barriers. Additionally walkdowns were performed of each as-built vital area to verify its location within protected area physical barriers. The inspection results are documented in the Vital Equipment Facilities Security Inspection

Report (Reference 3) and conclude that the vital equipment is located within a protected area such that access to the vital equipment requires passage through at least two physical barriers.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Site Name and Unit #} performed a review of ITAAC findings and associated corrective actions. This review identified X ITAAC findings:

1. {ITAAC finding #1}
2. {ITAAC finding #2}
3. {ITAAC finding #3}

The corrective actions for each finding have been completed and each finding is closed. This review is documented in the completion package for {Site Name and Unit #} ITAAC Table 2.2-1 Item 1.1, (Reference 4), which is available for NRC review.

ITAAC Completion statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC Table 2.2-1 Item 1 was performed for {Site Name and Unit #}, and that the prescribed acceptance criteria were 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. NN3-xx-123, Vital Equipment Facilities Security Inspection
3. Vital Equipment Facilities Security Inspection Report

4. {Site Name and Unit #(s)} ITAAC Table 2.2-1 Item 1.1

EXAMPLE D-28 – EXAMPLE ITAAC CLOSURE NOTIFICATION COMPLETION OF ASME COMPONENT HYDROSTATIC TEST ITAAC 2.1 02.04A

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.1 02.04a

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 02.04a for verification that a report exists and concludes that the results of the hydrostatic test of the components identified in Table 2.1.2-1 of the Design Control Document (DCD) as American Society of Mechanical Engineers (ASME) Code Section III conform with the requirements of the ASME Code Section III for the Reactor Coolant System (RCS). 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:

The components identified in Table 2.1.2-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.

Inspections, Tests, Analyses:

A hydrostatic test will be performed on the components required by the ASME Code Section III to be hydrostatically tested.

Acceptance Criteria:

A report exists and concludes that the results of the hydrostatic test of the components identified in Table 2.1.2-1 as ASME Code Section III conform with the requirements of the ASME Code Section III.

ITAAC Determination Basis

A hydrostatic test was performed to demonstrate that the components identified in Table 2.1.2-1 (Attachment A) as ASME Code Section III retain their pressure boundary integrity at their design pressure. The completion of the N-5 Data Reports was governed by Procedure ABC (Reference 4).

This ITAAC was completed once each component identified in Table 2.1.2‑1 had their individual Code Symbol N-Stamp and corresponding Code Data Report (Reference 2) completed, and the components were installed into the respective Code Symbol N-Stamped piping system(s) and documented on the corresponding N-5 Code Data Report(s) ABC (Reference 3). The hydrostatic testing results of the component's pressure boundary were documented in the Hydrostatic Testing Report(s) within the supporting component's data package, which supported completion of the respective Code Stamping and Code Data Report(s).

The completion of stamping the individual components and the respective piping system(s) along with the corresponding ASME Code Data Reports (certified by the Authorized Nuclear Inspector) ensures that the components were constructed in accordance with the Design Specifications and the ASME Code Section III and that the satisfactory completion of the hydrostatic pressure testing of each component identified in Table 2.1.2‑1 as ASME Code Section III was documented in the Hydrostatic Testing Report(s) within the supporting data packages and meets ASME Code Section III requirements.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings 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 ITAAC Completion Package for ITAAC 2.1 02.04a (Reference 5) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1 02.04a was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. NPV-1 Code Data Report ZZZ for pumps and line valves
3. N-5 Code Data Report(s) ABC for piping system(s)
4. Procedure ABC
5. ITAAC 2.1 02.04a Completion Package

Attachment A

ITAAC Number: 2.1 02.04a
SYSTEM: Reactor Coolant System

Partial Excerpt from AP1000 DCD Tier 1 Table 2.1.2-1
Components Identified to Retain Pressure Boundary Integrity at Design Pressure in accordance with ASME Code Section III

Equipment Name	Tag ID	ASME Code Section III	N-5 (System Name) (1)
Steam Generator 1	RCS-MB-01	Yes	
Steam Generator 2	RCS-MB-02	Yes	
RCP 1A	RCS-MP-01A	Yes	
RCP 1B	RCS-MP-01B	Yes	
RCP 2A	RCS-MP-02A	Yes	
RCP 2B	RCS-MP-02B	Yes	
Pressurizer	RCS-MV-02	Yes	
Automatic Depressurization System (ADS) Sparger A	PXS-MW-01A	Yes	
ADS Sparger B	PXS-MW-01B	Yes	
Pressurizer Safety Valve	RCS-PL-V005A	Yes	
Pressurizer Safety Valve	RCS-PL-V005B	Yes	
First-stage ADS Motor-operated Valve (MOV)	RCS-PL-V001A	Yes	
First-stage ADS MOV	RCS-PL-V001B	Yes	
Second-stage ADS MOV	RCS-PL-V002A	Yes	
Second-stage ADS MOV	RCS-PL-V002B	Yes	
Third-stage ADS MOV	RCS-PL-V003A	Yes	
Third-stage ADS MOV	RCS-PL-V003B	Yes	
Fourth-stage ADS Squib Valve	RCS-PL-V004A	Yes	
Fourth-stage ADS Squib Valve	RCS-PL-V004B	Yes	
Fourth-stage ADS Squib Valve	RCS-PL-V004C	Yes	

Equipment Name	Tag ID	ASME Code Section III	N-5 (System Name) (1)
Fourth-stage ADS Squib Valve	RCS-PL-V004D	Yes	
ADS Discharge Header A Vacuum Relief Valve	RCS-PL-V010A	Yes	
ADS Discharge Header B Vacuum Relief Valve	RCS-PL-V010B	Yes	
First-stage ADS Isolation MOV	RCS-PL-V011A	Yes	
First-stage ADS Isolation MOV	RCS-PL-V011B	Yes	
Second-stage ADS Isolation MOV	RCS-PL-V012A	Yes	
Second-stage ADS Isolation MOV	RCS-PL-V012B	Yes	
Third-stage ADS Isolation MOV	RCS-PL-V013A	Yes	
Third-stage ADS Isolation MOV	RCS-PL-V013B	Yes	
Fourth-stage ADS MOV	RCS-PL-V014A	Yes	
Fourth-stage ADS MOV	RCS-PL-V014B	Yes	
Fourth-stage ADS MOV	RCS-PL-V014C	Yes	
Fourth-stage ADS MOV	RCS-PL-V014D	Yes	
Reactor Vessel Head Vent Valve	RCS-PL-V150A	Yes	
Reactor Vessel Head Vent Valve	RCS-PL-V150B	Yes	
Reactor Vessel Head Vent Valve	RCS-PL-V150C	Yes	
Reactor Vessel Head Vent Valve	RCS-PL-V150D	Yes	

(1) System Name as defined on the ASME Code N-5 Data Report Form.

EXAMPLE D-29 – EXAMPLE ITAAC CLOSURE NOTIFICATION ASME CODE SECTION III COMPONENTS ITAAC 2.3 06.02A

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.3 06.02a

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 2.3 06.02a for verification that the American Society of Mechanical Engineers (ASME) Boiler & Pressure Vessel Code (BPVC) Section III design reports exist for the as-built components identified in Table 2.3.6-1 of the Design Control Document (DCD) as ASME Code Section III for the Normal Residual Heat Removal System (RNS). 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:

The components identified in Table 2.3.6-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.

Inspections, Tests, Analyses:

Inspection will be conducted of the as-built components as documented in the ASME design reports.

Acceptance Criteria:

The ASME Code Section III design reports exist for the as-built components identified in Table 2.3.6-1 as ASME Code Section III.

ITAAC Determination Basis

Inspections were performed in accordance with ASME BPVC (indicate Code Edition/Date) Section III to demonstrate that the as-built components identified in Table 2.3.6-1 (Attachment

A) as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.

Each component listed in Tier 1 Table 2.3.6‑1 as ASME Code Section III was fabricated in accordance with the DCD and the ASME BPVC Section III requirements. The ASME Code Section III Design Reports for these components exist and document that the as-built components conform to the approved design details. The ASME Section III Design Report for each component is documented in the component's completed ASME Section III Code Data Report. The individual component ASME Section III Code Data Reports are documented on the ASME Section III N-5 Code Data Report(s) ABC for the applicable piping system (Reference 2).

All the as-built piping systems including the components listed in Tier 1 Table 2.3.6‑1 as ASME Code Section III, have been subjected to a reconciliation process (Reference 3), which verifies that the as-built piping systems have been analyzed for applicable loads (e.g. stress reports) and for compliance with all design specification and Code provisions. Design reconciliation of the as-built systems, including installed components, validates that construction completion, including field changes and any nonconforming condition dispositions, is consistent with and bounded by the approved design. All applicable fabrication, installation and testing records, as well as, those for the related QA verification/ inspection activities, which confirm adequate construction in compliance with the ASME BPVC Section III and design provisions, are referenced in the N-5 data report and/or its sub-tier references.

The applicable ASME Section III N-5 Code Data Report(s), which include the Design Reports for all the components listed in Tier 1 Table 2.3.6‑1 as ASME Code Section III, exist and conclude that these components have been designed and constructed (including their installation within the applicable as-built piping system) in accordance with the ASME BPVC (indicate Code Edition/Date), Section III requirements. The N-5 Code Data Reports for the piping systems containing the components listed in Tier 1 Table 2.3.6‑1 are identified in Attachment A.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 2.3 06.02a (Reference 4) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.3 06.02a was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. ASME Section III N-5 Code Data Report(s) ABC for piping system(s)
3. Licensee's Program for As-Built Reconciliation of the ASME Piping Systems
4. ITAAC 2.3 06.02a Completion Package

Attachment A

Piping Identified as ASME Section III in AP1000 DCD Tier 1 Table 2.3.6-1
SYSTEM: NORMAL RESIDUAL HEAT REMOVAL SYSTEM

Equipment Name	Tag ID	N-5 (System Name) (1)
RNS Pump A (Pressure Boundary)	RNS-MP-01A	RNS-XXX
RNS Pump B (Pressure Boundary)	RNS-MP-01B	RNS-XXX
RNS Heat Exchanger A (Tube Side)	RNS-ME-01A	RNS-XXX
RNS Heat Exchanger B (Tube Side)	RNS-ME-01B	RNS-XXX
RCS Inner Hot Leg Suction Motor-operated Isolation Valve	RNS-PL-V001A	RNS-XXX
RCS Inner Hot Leg Suction Motor-operated Isolation Valve	RNS-PL-V001B	RNS-XXX
RCS Outer Hot Leg Suction Motor-operated Isolation Valve	RNS-PL-V002A	RNS-XXX
RCS Outer Hot Leg Suction Motor-operated Isolation Valve	RNS-PL-V002B	RNS-XXX
RCS Pressure Boundary Thermal Relief Check Valve	RNS-PL-V003A	RNS-XXX
RCS Pressure Boundary Thermal Relief Check Valve	RNS-PL-V003B	RNS-XXX
RNS Discharge Motor-operated Containment Isolation Valve	RNS-PL-V011	RNS-XXX
RNS Discharge Containment Isolation Test Connection	RNS-PL-V012	RNS-XXX
RNS Discharge Header Containment Isolation Check Valve	RNS-PL-V013	RNS-XXX
RNS Discharge RCS Pressure Boundary Check Valve	RNS-PL-V015A	RNS-XXX
RNS Discharge RCS Pressure Boundary Check Valve	RNS-PL-V015B	RNS-XXX

Equipment Name	Tag ID	N-5 (System Name) (1)
RNS Discharge RCS Pressure Boundary Check Valve	RNS-PL-V017A	RNS-XXX
RNS Discharge RCS Pressure Boundary Check Valve	RNS-PL-V017B	RNS-XXX
RNS Hot Leg Suction Pressure Relief Valve	RNS-PL-V021	RNS-XXX
RNS Suction Header Motor-operated Containment Isolation Valve	RNS-PL-V022	RNS-XXX
RNS Suction from IRWST Motor-operated Isolation Valve	RNS-PL-V023	RNS-XXX
RNS Discharge to IRWST Motor-operated Isolation Valve	RNS-PL-V024	RNS-XXX
RNS Discharge Header Relief Valve	RNS-PL-V045	RNS-XXX
RNS Suction from Cask Loading Pit Motor-operated Isolation Valve	RNS-PL-V055	RNS-XXX
RNS Suction from Cask Loading Pit Check Valve	RNS-PL-V056	RNS-XXX
RNS Pump Miniflow Air-Operated Isolation Valve	RNS-PL-V057A	RNS-XXX
RNS Pump Miniflow Air-Operated Isolation Valve	RNS-PL-V057B	RNS-XXX
RNS Return from Chemical and Volume Control System (CVS) Containment Isolation Valve	RNS-PL-V061	RNS-XXX

(2) System Name as defined on the ASME Section III N-5 Code Data Report.

EXAMPLE D-30 – EXAMPLE ITAAC CLOSURE NOTIFICATION ASME CODE SECTION III COMPONENTS ITAAC 2.3 06.03A

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.3 06.03a

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 2.3 06.03a for verification that a report exists and concludes that the American Society of Mechanical Engineers (ASME) Boiler & Pressure Vessel Code Section III requirements are met for non-destructive examination of pressure boundary welds for the Normal Residual Heat Removal System (RNS). 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:

Pressure boundary welds in components identified in Table 2.3.6-1 as ASME Code Section III meet ASME Code Section III requirements.

Inspections, Tests, Analyses:

Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.

Acceptance Criteria:

A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.

ITAAC Determination Basis

Inspections were performed in accordance with ASME Boiler & Pressure Vessel Code Section III {indicate Code edition/addenda}to demonstrate that as-built pressure boundary welds in components identified in Table 2.3.6-1 as ASME Code Section III meet ASME Code Section III requirements.

The applicable non-destructive examinations (including liquid penetrant, magnetic particle, radiographic, and ultrasonic testing, as required by ASME Code Section III) of the components' pressure boundary welds were documented in the Non-destructive Examination Report(s), which supported completion of the respective ASME Section III N-5 Code Data Report(s) certified by the Authorized Nuclear Inspector, as listed in Attachment A.

Per ASME Code Section III, Subarticle NCA-8300, "Code Symbol Stamps," the N-5 Code Data Report(s) ABC (Reference 2) documents satisfactory completion of the required examination and testing of the item, which includes non-destructive examinations of pressure boundary welds. Satisfactory completion of the non-destructive examination of pressure boundary welds ensures that the pressure boundary welds in components identified in Table 2.3.6-1 as ASME Code Section III meet ASME Code Section III requirements.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 2.3 06.03a (Reference 3) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.3 06.03a was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. ASME Section III N-5 Code Data Report(s) ABC for piping system(s)
3. ITAAC 2.3 06.03a Completion Package

Attachment A

ITAAC Number: 2.3 06.03a
SYSTEM: Normal Residual Heat Removal System

Components Identified as ASME Section III in AP1000 DCD Tier 1 Table 2.3.6-1
Components Identified Containing Pressure Boundary Welds Meeting ASME Code Section III Requirements

Equipment Name	Tag ID	N-5 (System Name) (1)
RNS Pump A (Pressure Boundary)	RNS-MP-01A	RNS-XXX
RNS Pump B (Pressure Boundary)	RNS-MP-01B	RNS-XXX
RNS Heat Exchanger A (Tube Side)	RNS-ME-01A	RNS-XXX
RNS Heat Exchanger B (Tube Side)	RNS-ME-01B	RNS-XXX
RCS Inner Hot Leg Suction Motor-operated Isolation Valve	RNS-PL-V001A	RNS-XXX
RCS Inner Hot Leg Suction Motor-operated Isolation Valve	RNS-PL-V001B	RNS-XXX
RCS Outer Hot Leg Suction Motor-operated Isolation Valve	RNS-PL-V002A	RNS-XXX
RCS Outer Hot Leg Suction Motor-operated Isolation Valve	RNS-PL-V002B	RNS-XXX
RCS Pressure Boundary Thermal Relief Check Valve	RNS-PL-V003A	RNS-XXX
RCS Pressure Boundary Thermal Relief Check Valve	RNS-PL-V003B	RNS-XXX
RNS Discharge Motor-operated Containment Isolation Valve	RNS-PL-V011	RNS-XXX
RNS Discharge Containment Isolation Test Connection	RNS-PL-V012	RNS-XXX
RNS Discharge Header Containment Isolation Check Valve	RNS-PL-V013	RNS-XXX
RNS Discharge RCS Pressure Boundary Check Valve	RNS-PL-V015A	RNS-XXX
RNS Discharge RCS Pressure Boundary Check Valve	RNS-PL-V015B	RNS-XXX

Equipment Name	Tag ID	N-5 (System Name) (1)
RNS Discharge RCS Pressure Boundary Check Valve	RNS-PL-V017A	RNS-XXX
RNS Discharge RCS Pressure Boundary Check Valve	RNS-PL-V017B	RNS-XXX
RNS Hot Leg Suction Pressure Relief Valve	RNS-PL-V021	RNS-XXX
RNS Suction Header Motor-operated Containment Isolation Valve	RNS-PL-V022	RNS-XXX
RNS Suction from IRWST Motor-operated Isolation Valve	RNS-PL-V023	RNS-XXX
RNS Discharge to IRWST Motor-operated Isolation Valve	RNS-PL-V024	RNS-XXX
RNS Discharge Header Relief Valve	RNS-PL-V045	RNS-XXX
RNS Suction from Cask Loading Pit Motor-operated Isolation Valve	RNS-PL-V055	RNS-XXX
RNS Suction from Cask Loading Pit Check Valve	RNS-PL-V056	RNS-XXX
RNS Pump Miniflow Air-Operated Isolation Valve	RNS-PL-V057A	RNS-XXX
RNS Pump Miniflow Air-Operated Isolation Valve	RNS-PL-V057B	RNS-XXX
RNS Return from Chemical and Volume Control System (CVS) Containment Isolation Valve	RNS-PL-V061	RNS-XXX

(1) System Name as defined on the ASME Section III N-5 Code Data Report.

EXAMPLE D-31 – EXAMPLE ITAAC CLOSURE NOTIFICATION ASME CODE SECTION III PIPING ITAAC 2.3 06.04B

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.3 06.04b

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 2.3 06.04b for verification that a report exists and concludes that the results of the hydrostatic test of the piping identified in Table 2.3.6-2 of the Design Control Document (DCD) as American Society of Mechanical Engineers (ASME) Boiler & Pressure Vessel Code Section III conform with the requirements of the ASME Code Section III for the Normal Residual Heat Removal System (RNS). 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.

<u>ITAAC Statement</u>

<u>Design Commitment</u>:

The piping identified in Table 2.3.6 -2 as ASME Code Section III retains its pressure boundary integrity at its design pressure.

<u>Inspections, Tests, Analyses</u>:

A hydrostatic test will be performed on the piping required by the ASME Code Section III to be hydrostatically tested.

<u>Acceptance Criteria</u>:

A report exists and concludes that the results of the hydrostatic test of the piping identified in Table 2.3.6-2 as ASME Code Section III conform with the requirements of the ASME Code Section III.

ITAAC Determination Basis

This ITAAC verifies that the piping identified in DCD Table 2.3.6-2 (as listed in Attachment A to this ITAAC Closure Notification) fully meets all applicable ASME Boiler & Pressure Vessel Code, Section III requirements and retains its pressure boundary integrity at its design pressure.

A hydrostatic test was performed in accordance with procedure XYZ (as applicable) that complies with the ASME Boiler & Pressure Vessel Code (insert Edition/Addenda), Section III requirements to demonstrate that the ASME Code Section III piping identified in Table 2.3.6-2 retains its pressure boundary integrity at its design pressure.

A hydrostatic test verified that there are no leaks at welds or piping, and that the pressure boundary integrity is retained at its design pressure. The hydrostatic testing results of the pipe lines were documented in the Hydrostatic Testing Report(s). The Hydrostatic Testing Report(s) supports completion of the ASME Section III N-5 Code Data Report(s) ABC for the applicable piping system (i.e., RNS) (Reference 2).

The applicable ASME Section III N-5 Code Data Report(s) ABC (Reference 2) identified in Attachment A documents that the results of the hydrostatic testing of the piping identified in Table 2.3.6-2 conform with the requirements of the ASME Boiler & Pressure Vessel Code (insert Edition/Addenda), Section III.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 2.3 06.04b (Reference 3) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.3 06.04b was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. ASME Section III N-5 Code Data Report(s) ABC for the RNS system(s)
3. ITAAC 2.3 06.04b Completion Package

Attachment A

ITAAC Number: 2.3 06.04b
SYSTEM: Normal Residual Heat Removal System

Piping Identified as ASME Code Section III in AP1000 DCD Tier 1 Table 2.3.6-2 Piping Identified to Retain Pressure Boundary Integrity at Design Pressure in accordance with ASME Code Section III Requirements

Line Name	Line Number	N-5 (System Name) (1)
RNS Suction Lines, from the RCS Hot Leg Connection to the RCS Side of Valves RNS PL-V001A and RNS-PL-V001B	RNS-L001, RNS-L002A, RNS-L002B	RNS-XXX
RNS Suction Lines, from the RCS Pressure Boundary Valves, RNS-PL-V001A and RNS-PL-V001B, to the RNS pumps	RNS-L004A, RNS-L004B, RNS-L005, RNS-L006, RNS-L007A, RNS-L007B, RNS-L009A, RNS-L009B	RNS-XXX
RNS Suction Line from CVS	RNS-L061	RNS-XXX
RNS Suction Line from IRWST	RNS-L029	RNS-XXX
RNS Suction Line LTOP Relief	RNS-L040	RNS-XXX
RNS Discharge Lines, from the RNS Pumps to the RNS Heat Exchangers RNS-ME-01A and RNS-ME-01B	RNS-L011A RNS-L011B	RNS-XXX
RNS Discharge Lines, from RNS Heat Exchanger RNS-ME-01A to Containment Isolation Valve RNS-PL-V011	RNS-L012A RNS-L014	RNS-XXX
RNS Discharge Line, from RNS Heat Exchanger RNS-ME-01B to Common Discharge Header RNS-DBC-L014	RNS-L012B	RNS-XXX
RNS Discharge Lines, Containment Isolation Valve RNS-PL-V011 to Containment Isolation Valve RNS-PL-V013	RNS-L016	RNS-XXX
RNS Suction Line from Cask Loading Pit	RNS-L065	RNS-XXX
RNS Discharge Lines, from Containment Isolation Valve RNS-PL-V013 to RCS Pressure Boundary Isolation Valves RNS-PL-V015A and RNS-PL-V015B	RNS-L017 RNS-L018A RNS-L018B	RNS-XXX
RNS Discharge Lines, from Direct Vessel Injection (DVI) Line RNS-BBC-L018A to Passive Core Cooling System (PXS) IRWST Return Isolation Valve RNS-PL-V024	RNS-L020	RNS-XXX
RNS Discharge Lines, from RCS Pressure Boundary Isolation Valves RNS-PL-V015A and RNS-PL-V015B to Reactor Vessel DVI Nozzles	RNS-L019A RNS-L019B	RNS-XXX

Line Name	Line Number	N-5 (System Name) (1)
RNS Heat Exchanger Bypass	RNS-L008A RNS-L008B	RNS-XXX
RNS Suction from Spent Fuel Pool	RNS-L052	RNS-XXX
RNS Pump Miniflow Return	RNS-L030A RNS-L030B	RNS-XXX
RNS Discharge to Spent Fuel Pool	RNS-L051	RNS-XXX
RNS Discharge to CVS Purification	RNS-L021	RNS-XXX

(1) System Name as defined on the ASME Section III N-5 Code Data Report.

EXAMPLE D-32 – EXAMPLE ITAAC CLOSURE NOTIFICATION HARSH ENVIRONMENT QUALIFICATION–INSTALLED CONFIGURATION ITAAC 2.1 02.07A.II

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.1 02.07a.ii

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 #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item 2.1 02.07a.ii for the site verification of Reactor Coolant System equipment qualified to harsh environments as identified in Table 2.1.2-1 of the DCD. 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:

The Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

Inspections, Tests, Analysis:

ii) Inspection will be performed of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.

Acceptance Criteria:

ii) A report exists and concludes that the as-built Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.1.2-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the Class 1E equipment identified in DCD Tier 1 Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function. The subject ITAAC requires inspection of the as-built Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.

Harsh environment qualification of the components in DCD Table 2.1.2-1 was previously verified by bounding type tests, analyses or a combination of bounding type tests and analyses in accordance with ITAAC 2.1.02.07a.i (Reference 2). Equipment qualification data packages identify the equipment mounting employed for qualification and the environmental conditions tested or analyzed.

In accordance with procedure XYZ (Reference 5), an inspection was conducted of the Reactor Coolant System to confirm the satisfactory installation of the Class 1E components. The inspection included verification of equipment make/model/serial number; verification of as-designed equipment mounting, wiring, cables, and terminations; and verification of equipment location to confirm that the harsh environmental conditions for the room in which the component is mounted are bounded by the tested or analyzed conditions.

The documentation of installed configuration of harsh environment qualified components includes photographs and/or sketches of equipment mounting and connections. The verification of installed component configuration is documented in the Equipment Qualification (EQ) as-built reconciliation.

Attachment A identifies the EQ As-Built Reconciliation Report (Reference 6) completed to verify that the installed configuration of the Class 1E equipment identified in DCD Table 2.1.2-1 including the associated wiring, cables, and terminations are bounded by the qualified configuration and IEEE Standard 323-1974 (Reference 3).

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a a review of ITAAC Findings and associated corrective actions. This review found that there were no relevant ITAAC Findings associated with this ITAAC. The ITAAC completion review is documented in ITAAC Completion Package for ITAAC 2.1 02.07a.ii (Reference 4) and available for NRC review.

ITAAC Closure Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1 02.07a.ii was performed for {Site Name and Unit #} and 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. Nuclear Power Plant ITAAC 2.1 02.07a.i ITAAC Closure Letter
3. IEEE 323-1974 – IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations
4. Nuclear Power Plant ITAAC 2.1 02.07a.ii ITAAC Completion Package
5. Procedure XYZ – Performance of Equipment Qualification As-Built Reconciliations
6. Equipment Qualification Data Packages as identified in Table 1 (enclosure to this letter)

Attachment A
EQUIPMENT QUALIFICATION ITAAC COMPLIANCE MATRIX FOR
HARSH ENVIRONMENT QUALIFIED COMPONENTS LISTED IN AP1000 DCD TIER 1 TABLE 2.1.2-1

SYSTEM: REACTOR COOLANT SYSTEM

Equipment Name	Tag Number	Class 1E/ Qual. for Harsh Envir.	EQDP Report Number	EQ As-Built Reconciliation Report Number
First-stage ADS Motor-operated Valve (MOV)	RCS-PL-V001A	Yes/Yes	EQDP PV01	RCS-PV-XXX
First-stage ADS MOV	RCS-PL-V001B	Yes/Yes	EQDP PV01	RCS-PV-XXX
Second-stage ADS MOV	RCS-PL-V002A	Yes/Yes	EQDP PV01	RCS-PV-XXX
Second-stage ADS MOV	RCS-PL-V002B	Yes/Yes	EQDP PV01	RCS-PV-XXX
Third-stage ADS MOV	RCS-PL-V003A	Yes/Yes	EQDP PV01	RCS-PV-XXX
Third-stage ADS MOV	RCS-PL-V003B	Yes/Yes	EQDP PV01	RCS-PV-XXX
Fourth-stage ADS Squib Valve	RCS-PL-V004A	Yes/Yes	EQDP PV70	RCS-PV-XXX
Fourth-stage ADS Squib Valve	RCS-PL-V004B	Yes/Yes	EQDP PV70	RCS-PV-XXX
Fourth-stage ADS Squib Valve	RCS-PL-V004C	Yes/Yes	EQDP PV70	RCS-PV-XXX
Fourth-stage ADS Squib Valve	RCS-PL-V004D	Yes/Yes	EQDP PV70	RCS-PV-XXX
ADS Discharge Header A Vacuum Relief Valve	RCS-PL-V010A	Yes/Yes	EQDP PV18	RCS-PV-XXX
ADS Discharge Header B Vacuum Relief Valve	RCS-PL-V010B	Yes/Yes	EQDP PV18	RCS-PV-XXX
First-stage ADS Isolation MOV	RCS-PL-V011A	Yes/Yes	EQDP PV01	RCS-PV-XXX
First-stage ADS Isolation MOV	RCS-PL-V011B	Yes/Yes	EQDP PV01	RCS-PV-XXX
Second-stage ADS Isolation MOV	RCS-PL-V012A	Yes/Yes	EQDP PV01	RCS-PV-XXX
Second-stage ADS Isolation MOV	RCS-PL-V012B	Yes/Yes	EQDP PV01	RCS-PV-XXX
Third-stage ADS Isolation MOV	RCS-PL-V013A	Yes/Yes	EQDP PV01	RCS-PV-XXX

[Table truncated]

EXAMPLE D-33 – EXAMPLE ITAAC CLOSURE NOTIFICATION TYPE TEST/ANALYSIS TO VERIFY ELECTRICAL ISOLATION ITAAC 2.5 02.07A

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} 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 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), which was endorsed by the NRC in Regulatory Guide 1.215.

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 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. This was accomplished by completing the prescribed tests under conditions where the non-Class 1E side of the isolation barrier 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 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 plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.5.02.07a was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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

EXAMPLE D-34 – EXAMPLE ITAAC CLOSURE NOTIFICATION BATTERY BANK LOAD TESTING ITAAC 2.6 03.04C

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 2.6 03.04c

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 2.6 03.04c to verify that the battery terminal voltage is greater than or equal to 210 Volt (V) after a period of no less than 24 hours with an equivalent load that equals or exceeds the battery bank design duty cycle capacity. 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:

Each IDS 24-hour battery bank supplies a dc switchboard bus load for a period of 24 hours without recharging.

Inspections, Tests, Analyses:

Testing of each 24-hour as-built battery bank will be performed by applying a simulated or real load, or a combination of simulated or real loads which envelope the battery bank design duty cycle. The test will be conducted on a battery bank that has been fully charged and has been connected to a battery charger maintained at 270±2 V for a period of no less than 24 hours prior to the test.

Acceptance Criteria:

The battery terminal voltage is greater than or equal to 210 V after a period of no less than 24 hours with an equivalent load that equals or exceeds the battery bank design duty cycle capacity.

ITAAC Determination Basis

Testing was performed in accordance with Preoperational Test Procedure APP-IDS-T1P-502 (Reference 3) to demonstrate that each Class 1E dc and Uninterruptible Power Supply System (IDS) 24-hour battery bank identified in AP1000 Tier 1 Design Description (see Attachment 1) supplies a Direct Current (dc) switchboard bus load for a period of 24 hours without recharging. A battery discharge performance test for each 24 hour IDS battery bank was performed in accordance with IEEE 450-1995, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants" by connecting the battery bank to a battery charger maintained at *270±2 V* for 24 hours to fully charge the battery, and then applying a simulated load that enveloped the battery bank design duty cycle. Battery terminal voltage was continuously monitored and recorded throughout the 24 hour charging period and the 24 hour discharge test. The recorded voltage remained within the ranges identified in Attachment 1 for each 24 hour IDS battery bank.

The Test Results Report (Reference 3) confirmed that the battery terminal voltage is greater than or equal to 210 V after a period of 24 hours with an equivalent load that equals or exceeds the battery bank design duty cycle capacity.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 ITAAC Completion Package for ITAAC 2.6 03.04c (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.6 03.04c was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.6 03.04c Completion Package
3. Completed Preoperational Test Procedure APP-IDS-T1P-502 which includes the associated Test Results Report

Attachment 1
24-HOUR BATTERY BANKS LISTED in AP1000 DCD TIER 1 TABLE 2.6.3-1

Table 2.6.3-1		
Equipment Name	**Tag No.**	**Recorded Test Voltage Range (Vdc)**
Division A 250 Vdc 24-Hour Battery Bank	IDSA-DB-1	220.4– 250.0
Division B 250 Vdc 24-Hour Battery Bank 1	IDSB-DB-1	XXX.X – YYY.Y
Division C 250 Vdc 24-Hour Battery Bank 1	IDSC-DB-1	XXX.X – YYY.Y
Division D 250 Vdc 24-Hour Battery Bank	IDSD-DB-1	XXX.X – YYY.Y

EXAMPLE D-35 – EXAMPLE ITAAC CLOSURE NOTIFICATION EQUIPMENT GROUNDING SYSTEM ITAAC 2.6.01.III

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.6 06.01.iii

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 2.6 06.01.iii for verifying that a connection exists between the equipment grounding system and the station grounding grid. 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:

The EGS provides an electrical grounding system for:
(1) instrument/computer grounding;
(2) electrical system grounding of the neutral points of the main generator, main step-up transformers, auxiliary transformers, load center transformers, auxiliary and onsite standby diesel generators; and
(3) equipment grounding of equipment enclosures, metal structures, metallic tanks, ground bus of switchgear assemblies, load centers, motor control centers, and control cabinets. Lightning protection is provided for exposed structures and buildings housing safety-related and fire protection equipment. Each grounding system and lightning protection system is grounded to the station grounding grid.

Inspections, Tests, Analyses:
iii) An inspection for the equipment grounding system connection to the station grounding grid will be performed.

Acceptance Criteria:
iii) A connection exists between the equipment grounding system and the station grounding grid.

ITAAC Determination Basis

Multiple inspections are performed to demonstrate that the Grounding and Lightning Protection System (EGS) provides an electrical grounding system for equipment grounding of equipment enclosures, metal structures, metallic tanks, ground bus of switchgear assemblies, load centers, motor control centers and control cabinets, and each grounding system is grounded to the station grounding grid. This ITAAC verifies that a connection exists between the equipment grounding system and the station grounding grid.

The equipment grounding system provides grounding of equipment enclosures, metal structures, metallic tanks, ground bus of switchgear assemblies, load centers, motor control centers, and control cabinets. The equipment grounding system connects to the station grounding grid via {XX} discrete connection points from the individual building ground loops to the station grounding grid. An inspection was performed in accordance with Installation and Inspection Procedures XXX-XX (Reference 4) to verify that each of the {XX} connections conformed to the Electrical Installation Specification (Reference 5). The inspection included a visual inspection of the physical and mechanical condition of each connection, as well as verification that the resistance across each connection was within specified limits.

The results of the inspections are documented in an inspection report (Reference 3) and conclude that a connection exists between the equipment grounding system and the station grounding grid.

ITAAC Finding Review

In accordance with procedures for ITAAC completion, {Licensee} performed a review of 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 2.6 06.01.iii (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.6 06.01.iii was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

References (available for NRC inspection)

1. NEI 08-01*, Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*.
2. ITAAC 2.6 06.01.iii Completion Package
3. Ground Grid and Equipment Grounding System Connection Inspection report XXX-XXX-XXX
4. Equipment Grounding System Installation and Inspection Procedure XXX-XX
5. APP-G1-XX-YYY, AP1000 Electrical Installation Specification

EXAMPLE D-36 – EXAMPLE ITAAC CLOSURE NOTIFICATION 24-HOUR INVERTER LOAD TESTING ITAAC 2.6 03.04F

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.6 03.04f

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 2.6 03.04f to verify that each Uninterruptible Power Supply System (IDS) 24-hour inverter supplies its design load. 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:

Each IDS 24-hour inverter supplies its ac load.

Inspections, Tests, Analyses:

Testing of each 24-hour as-built inverter will be performed by applying a simulated or real load, or a combination of simulated or real loads, equivalent to a resistive load greater than 12 kW. The inverter input voltage will be no more than 210 Vdc during the test.

Acceptance Criteria:

Each 24-hour inverter supplies a line-to-line output voltage of 208 ± 2% V at a frequency of 60 ± 0.5% Hz.

ITAAC Determination Basis

Testing was performed in accordance with Preoperational Test Procedure APP-IDS-T1P-501 (Reference 3) to demonstrate that each IDS 24-hour inverter identified in the AP1000 Tier 1 Table 2.6.3-1 (see Attachment 1) supplies its Alternating Current (ac) load. A load test was performed on each 24-hour inverter by applying a simulated load greater than the inverter's design capacity of 12 kW with minimum input voltage (no more than 210Vdc). Key parameters were continuously monitored and recorded during the test, including input voltage, resistive applied load, output voltage, and output frequency. Output voltage was verified to meet the specified acceptance criteria of 208 ± 2% V at a frequency of 60 ± 0.5% Hz. The recorded voltage and frequency remained within the ranges identified in Attachment 1 for each IDS 24 hour inverter.

The Test Results Report (TRR) (Reference 3) confirmed that each 24-hour inverter supplies a line-to-line output voltage of 208 ± 2% V at a frequency of 60 ± 0.5% Hz.

ITAAC Finding Review

In accordance with procedures for ITAAC completion, {Licensee} performed a review of ITAAC findings 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 ITAAC Completion Package for ITAAC 2.6 03.04f (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.6 03.04f was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.6 03.04f Completion Package
3. Archived completed Preoperational Test Procedure APP-IDS-T1P-501 which includes the associated Test Results Report (TRR)

Attachment 1
24 HOUR INVERTERS LISTED in AP1000 DCD TIER 1 TABLE 2.6.3-1

Equipment Name	Tag No.	Recorded Voltage Range (V)	Recorded Frequency Range (Hz)
Division A 24-Hour Inverter 1	IDSA-DU-1	209.6 – 211.1	59.9-60.1
Division B 24-Hour Inverter 1	IDSB-DU-1	XXX.X – YYY.Y	AA.A – BB.B
Division C 24-Hour Inverter 1	IDSC-DU-1	XXX.X – YYY.Y	AA.A – BB.B
Division D 24-Hour Inverter 1	IDSD-DU-1	XXX.X – YYY.Y	AA.A – BB.B

EXAMPLE D-37 – EXAMPLE ITAAC CLOSURE NOTIFICATION INSPECTION OF REACTOR COOLANT LOOP PIPING ITAAC 2.3 06.09B.III

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.3 06.09b.iii

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 2.3 06.09b.iii for verifying that the Reactor Coolant System (RCS) cold legs piping centerline is 17.5 inches ± 2 inches above the hot legs piping centerline. 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:

The RNS provides heat removal from the reactor coolant during shutdown operations.

Inspections, Tests, Analyses:

iii) Inspection will be performed of the reactor coolant loop piping.

Acceptance Criteria:

iii) The RCS cold legs piping centerline is 17.5 inches ± 2 inches above the hot legs piping centerline.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the Normal Residual Heat Removal System (RNS) provides heat removal from the reactor coolant during shutdown operations. This ITAAC requires an inspection of the elevation difference in hot leg and cold leg reactor coolant loop piping to verify that the installed piping elevations will maintain heat removal capability during shutdown operation while draining the steam generators for maintenance.

The inspection of the reactor coolant loop piping was performed by the constructor’s survey personnel utilizing survey equipment in accordance with site survey and measurement procedures. The elevation difference was determined by measuring the centerline elevation of each piping leg (2 hot legs, 4 cold legs) at multiple locations in relation to a common reference point, and comparing the results. The results with specific measurement points and values are documented in Reference 2, and determined that the elevation difference between centerlines of the RCS cold legs and hot legs ranged from minimum of 17.46 inches to a maximum 17.58 inches.

The inspection results verify that the RCS cold legs piping centerline is 17.5 inches ± 2 inches above the hot legs piping centerline.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 2.3 06.09b.iii (Reference 3) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.3 06.09b.iii was performed for {Site Name and Unit #} 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. Inspection Report(s) XXX
3. ITAAC 2.3 06.09b.iii Completion Package

EXAMPLE D-38 – EXAMPLE ITAAC CLOSURE NOTIFICATION INSPECTION OF AVAILABLE ROOM VOLUMES ITAAC 3.3 00.06A

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 3.3 00.06a

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 3.3 00.06a for verifying that specified room volumes exceed the volume of the liquid radwaste storage tanks. 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:
The available room volumes of the radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" exceed the volume of the liquid radwaste storage tanks (WLS-MT-05A, MT-05B, MT-06A, MT-06B, MT-07A, MT-07B, MT-07C, MT-11).

Inspections, Tests, Analyses:
An inspection will be performed of the as-built radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" to define volume.

Acceptance Criteria:
A report exists and concludes that the as-built available room volumes of the radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" exceed the volume of the liquid radwaste storage tanks (WLS-MT-05A, MT-05B, MT-06A, MT-06B, MT-07A, MT-07B, MT-07C, MT-11).

ITAAC Determination Basis

An inspection was performed to demonstrate that the available room volumes of the radiologically controlled area of the auxiliary building between floor elevations 66'-6" and 82'-6" exceed the as-built volume of the liquid radwaste storage tanks (WLS-MT-05A, MT-05B, MT-06A, MT-06B, MT-07A, MT-07B, MT-07C, MT-11). The inspections were performed in accordance with Inspection Plan XXX-XX (Reference 2).

Prior to the inspection of the radiologically controlled area of the auxiliary building, a review of the design documents was performed to confirm the list of rooms in the radiologically controlled area of the auxiliary building between floor elevations 66’-6” and 82’-6”. The available volume of each room was determined from the as-built dimensions of the room less the volume of various structures, systems, and components installed in the room, as determined based on manufacturer data, measurements, and conservative assumptions (e.g., excluding the entire volume of a room, or portion of a room, that is only partially occupied by piping, cable, or other miscellaneous SSCs). The as-built volumes of the liquid waste storage tanks were determined based on the as-built information provided by the tank vendor(s). Comparison was then made between the total as-built available room volume for the radiologically controlled rooms (ZZZ cubic feet) versus the total as-built volume of the liquid waste storage tanks (YYY cubic feet), and the results are documented in Reference 3, Inspection Report XXX.

Based on the inspection results, it was determined that the as-built available room volumes of the radiologically controlled area of the auxiliary building between floor elevations 66’-6” and 82’-6” exceed the volume of the liquid radwaste storage tanks (WLS-MT-05A, MT-05B, MT-06A, MT-06B, MT-07A, MT-07B, MT-07C, MT-11).

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 3.3 00.06a (Reference 4) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.3.00.06a was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. Inspection Plan XXX-XX, "Inspection of As-Built Radiologically Controlled Area of the Auxiliary Building for ITAAC Closure"
3. Inspection Report(s) XXX
   ITAAC 3.3 00.06a Completion Package

EXAMPLE D-39 – EXAMPLE ITAAC CLOSURE NOTIFICATION INSPECTION OF RMS MONITORS ITAAC 3.5.00.5

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 3.5 00.05

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 3.5 00.05 for verifying that the Radiation Monitoring System (RMS) process radiation monitors exist as listed in Tier 1 Table 3.5-2 of the DCD. 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:

The process radiation monitors listed in Table 3.5-2 are provided.

Inspections, Tests, Analyses:

Inspection for the existence of the monitors will be performed.

Acceptance Criteria:

Each of the monitors listed in Table 3.5-2 exists.

ITAAC Determination Basis

An inspection of the as-built RMS was performed to verify that the process radiation monitors listed in ITAAC Table 3.5-2 are provided (installed).

Walkdown inspections of the as-built RMS were conducted to confirm that the process radiation monitors listed in ITAAC Table 3.5-2 exist in the component locations indicated in ITAAC Table 3.5-7 (see Attachment 1). Inspection Plan XXX-XX (Reference 2) was used to conduct the inspection, which involved visual observations of the process radiation monitors listed in ITAAC Table 3.5-2 and verification that the monitors are installed in their specified locations. The Make/Model and other nameplate data of the monitors was also inspected and compared to that specified in design documents to verify that the installed radiation monitors have the appropriate nominal detection range to provide indication of unusual radiological events, as identified in the Tier 1 Design Description. The results of the inspection are documented in Reference 3.

The inspections confirmed that each process radiation monitor listed in ITAAC Table 3.5-2 was present in its proper location as indicated in ITAAC Table 3.5-7. The inspection verified that the process radiation monitors listed in ITAAC Table 3.5-2 exist.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of all ITAAC Findings 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 3.5 00.05 (Reference 4) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.5.00.05 was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. XXX-XX, Inspection Plan
3. YYY-YY, Inspection Results Report
4. ITAAC 3.5 00.05 Completion Package

Attachment 1
PROCESS RADIATION MONITOR LOCATIONS
(From AP1000 DCD Tables 3.5-2 and 3.5-7)

Process Radiation Monitors		
Equipment List	**Equipment No.**	**Location**
Steam Generator Blowdown	BDS-RE010	Turbine Building
Steam Generator Blowdown	BDS-RE011	Turbine Building
Component Cooling Water	CCS-RE001	Turbine Building
Main Steam Line	SGS-RY026	Auxiliary Building
Main Steam Line	SGS-RY027	Auxiliary Building
Service Water Blowdown	SWS-RE008	Turbine Building
Primary Sampling System Liquid Sample	PSS-RE050	Auxiliary Building
Primary Sampling System Gaseous Sample	PSS-RE052	Auxiliary Building
Containment Air Filtration Exhaust	VFS-RE001	Annex Building
Gaseous Radwaste Discharge	WGS-RE017	Auxiliary Building

EXAMPLE D-40 – EXAMPLE ITAAC CLOSURE NOTIFICATION MCR CONTROLS ITAAC 2.1 02.11A.I

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.1 02.11a.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 02.11a.i to verify that controls exist in the Main Control Room (MCR) to cause remotely operated valves identified in Table 2.1.2-1 to perform active 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:

Controls exist in the MCR to cause the remotely operated valves identified in Table 2.1.2-1 to perform active functions.

Inspections, Tests, Analyses:

i) Testing will be performed on the squib valves identified in Table 2.1.2-1 using controls in the MCR without stroking the valve.

Acceptance Criteria:

i) Controls in the MCR operate to cause a signal at the squib valve electrical leads which is capable of actuating the squib valve.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that controls exist in the MCR to cause the remotely operated valves identified in AP1000 DCD Table 2.1.2-1 (Attached Table 1) to perform active functions. The subject ITAAC requires testing on the squib valves identified in the table using controls in the MCR without stroking the valve.

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. The information recorded during testing of temperature, voltage, and firing current was utilized to confirm that a sufficient test signal was received at the squib valve. This calculation verifies that each squib valve received a signal from the PMS capable of actuating the squib valve.

Test Results Report XXX (Reference 3) confirmed that the controls in the MCR operate to cause a signal at the squib valve electrical leads which is capable of actuating the squib valve for each valve that is included in this ITAAC.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 02.11a.i (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1 02.11a.i was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 02.11a.i Completion Package

3. Preoperational Test Procedure APP-XXX-T1P-XXX which includes the associated Test Results Report (TRR) XXX

Table 1
(Partial Excerpt from Design Control Document Table 2.1.2-1)

Table 2.1.2-1		
Component Name	**Tag No.**	**Active Function**
Fourth-stage ADS Squib Valve	RCS-PL-V004A	Transfer Open
Fourth-stage ADS Squib Valve	RCS-PL-V004B	Transfer Open
Fourth-stage ADS Squib Valve	RCS-PL-V004C	Transfer Open
Fourth-stage ADS Squib Valve	RCS-PL-V004D	Transfer Open

EXAMPLE D-41 – EXAMPLE ITAAC CLOSURE NOTIFICATION SAFETY FUNCTION PERFORMED ON SIGNAL FROM PMS ITAAC 2.1 02.11B.I

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} 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), which was endorsed by the NRC in Regulatory Guide 1.215.

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

PMS 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. The information recorded during testing of temperature, voltage, and firing current was utilized to confirm that a sufficient test signal was received at the squib valve. This calculation 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 plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1.02.11b.i was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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

EXAMPLE D-42 – EXAMPLE ITAAC CLOSURE NOTIFICATION PLANT PAGE SYSTEM TEST ITAAC 2.3 19.02A

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 2.3.19.02a

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 2.3.19.02a to verify that the telephone/page equipment is installed and voice transmission and reception from the MCR are accomplished. 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:

The EFS telephone/page system provides intraplant, station to-station communications and area broadcasting between the MCR and the locations listed in Table 2.3.19-1.

Inspections, Tests, Analyses:

An inspection and test will be performed on the telephone/page communication equipment.

Acceptance Criteria:

Telephone/page equipment is installed and voice transmission and reception from the MCR are accomplished.

ITAAC Determination Basis

Inspection and testing was performed to verify that the Communications System (EFS) telephone/page system provides intraplant, station-to-station communications, and area broadcasting between the Main Control Room (MCR) and the locations listed in Table 2.3.19-1 (Attachment 1). Inspections and testing were performed in accordance with procedure XXX-EFS-T1P-XXX (Reference 3), and were performed in two parts:

Manual zone initiation

The plant is divided by area into zones or "groups" for communications. Each zone/group of end devices (phones and loudspeakers) within the plant was tested by entering the line number (or extension) of the zone or group that was paged from each handset in the MCR to initiate a page, announcement or alarm tone. Each zone or group was verified locally by personnel stationed in those zones to determine that the zone/group that was chosen was broadcasting the proper page/tone or announcement. The testing verified that all programmed zones (or extensions) were able to be selected from any phone in the MCR by dialing the corresponding extension, and that the chosen zone/group was broadcasting the proper page/tone or announcement. Following confirmation that the proper page/tone or announcement was received, personnel stationed in the zone then responded via the same equipment to verify that voice communication was received in the MCR.

Stored (speed dial) zone initiation

Inspection was performed to verify that the required zones/groups were stored under the "services" tab in the MCR Voice-over-Internet Protocol phones, and were labeled appropriately. Testing of these zones/groups was accomplished by selecting the pre-programmed zones and each zone/group was verified locally by personnel stationed in those zones to determine that the zone/group that was chosen was broadcasting the proper page/tone or announcement. All phones located in the MCR were tested to ensure that all of the stored zones were properly configured, correctly labeled, and operable.

The inspection and test results are documented in the approved test procedure XXX-EFS-T1P-XXX and confirm that telephone/page equipment is installed and voice transmission and reception from the MCR are accomplished.

<u>ITAAC Finding Review</u>

In accordance with plant procedures for ITAAC completion), {Licensee} performed a review of ITAAC Findings 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 2.3.19.02a (Reference 2) and available for NRC review.

<u>ITAAC Completion Statement</u>

Based on the above information, [Licensee] hereby notifies the NRC that ITAAC 2.3.19.02a was performed for {Site Name and Unit #}, 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.

Licensee requests 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.3.19.02a Completion Package
3. Approved Test Procedure XXX-EFS-T1P-XXX, which includes the Test Results Report

Attachment 1 (ITAAC Table 2.3.19-1)

Table 2.3.19-1	
Telephone/Page System Equipment	**Location**
Fuel Handling Area	12562
Division A, B, C, D dc Equipment Rooms	12201/12203/12205/12207
Division A, B, C, D I&C Rooms	12301/12302/12304/12305
Maintenance Floor Staging Area	12351
Containment Maintenance Floor	11300
Containment Operating Deck	11500

EXAMPLE D-43 – EXAMPLE ITAAC CLOSURE NOTIFICATION SEISMIC CATEGORY I ITEMS ON NUCLEAR ISLAND ITAAC 2.2 02.05A.I

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.2 02.05a.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 2.2 02.05a.i for verification that the seismic Category I components in the Passive Containment Cooling System identified in Table 2.2.2-1 of the Design Control Document (DCD) are located on the Nuclear Island. 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:

The seismic Category I components identified in Table 2.2.2-1 can withstand seismic design basis loads without loss of safety function.

Inspections, Tests, Analyses:

i) Inspection will be performed to verify that the seismic Category I components and valves identified in Table 2.2.2-1 are located on the Nuclear Island.

Acceptance Criteria:

i) The seismic Category I components identified in Table 2.2.2-1 are located on the Nuclear Island.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the seismic Category I components identified in Table 2.2.2-1 can withstand seismic design basis loads without loss of safety function. The subject ITAAC requires an inspection to verify that the seismic Category I components and valves identified in Table 2.2.2-1 are located on the Nuclear Island, which is a Seismic Category I structure.

To assure that seismic Category I components can withstand seismic design basis loads without loss of safety function, all of the components in DCD Table 2.2.2-1 are designed to be located on the seismic Category I Nuclear Island. In accordance with procedure XYZ, (Reference 2) an inspection was conducted of the Passive Containment Cooling System to confirm the satisfactory installation of the seismically qualified components. The inspection included verification of equipment make/model/serial number and verification of equipment location (Building, Elevation, Room). The inspection to verify installed component locations is documented in the Equipment Qualification (EQ) as-built reconciliation.

Attachment A identifies the Equipment Qualification (EQ) As-built Reconciliation Report (Reference 4) completed to verify the installed location of the Seismic Category I components listed in DCD Table 2.2.2-1. The results of the inspection conclude that each component is located on the Nuclear Island.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 02.05a.i (Reference 3) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.2 02.05a.i was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. EQ Walkdown Inspection Procedure ABC
3. ITAAC 2.2 02.05a.i Completion Package
4. EQ As-Built Reconciliation Report(s) XXX (Attachment A)

Attachment A

EQUIPMENT QUALIFICATION ITAAC COMPLIANCE TABLE

SYSTEM: PASSIVE CONTAINMENT COOLING SYSTEM

Equipment Name	Tag Number	Seismic Cat. I	EQ As-Built Reconcilliation Report Number
PCCWST	PCS-MT-01	Yes	PCS-CB20-XXX
Water Distribution Bucket	PCS-MT-03	Yes	PCS-MT05-XXX
Water Distribution Wiers	PCS-MT-04	Yes	PCS-MT05XXX
PCCWST Isolation Valve	PCS-PL-V001A	Yes	PCS-PV-XXX
PCCWST Isolation Valve	PCS-PL-V001B	Yes	PCS-PV-XXX
PCCWST Isolation Valve	PCS-PL-V001C	Yes	PCS-PV-XXX
PCCWST Isolation Block MOV	PCS-PL-V002A	Yes	PCS-PV-XXX
PCCWST Isolation Block MOV	PCS-PL-V002B	Yes	PCS-PV-XXX
PCCWST Isolation Block MOV	PCS-PL-V002C	Yes	PCS-PV-XXX
PCS Recirculation Return Isolation Valve	PCS-PL-V023	Yes	PCS-PV-XXX
PCCWST Supply to Fire Protection System Isolation Valve	PCS-PL-V005	Yes	PCS-PV-XXX
PCS Makeup to SFS Isolation Valve	PCS-PL-V009	Yes	PCS-PV-XXX
Water Makeup Isolation Valve	PCS-PL-V044	Yes	PCS-PV-XXX
Water Bucket Makeup Line Drain Valve	PCS-PL-V015	Yes	PCS-PV-XXX
Water Bucket Makeup Line Isolation Valve	PCS-PL-V020	Yes	PCS-PV-XXX
PCCWST Long-Term Makeup Line Check Valve	PCS-PL-V039	Yes	PCS-PV-XXX
PCCWST Long-Term Makeup Drain Isolation	PCS-PL-V042	Yes	PCS-PV-XXX
PCS Discharge to SFS Pool Isolation Valve	PCS-PL-V045	Yes	PCS-PV-XXX
Recirc Header Discharge to PCCWST Isolation Valve	PCS-PL-V046	Yes	PCS-PV-XXX
PCCWST Drain Isolation Valve	PCS-PL-V049	Yes	PCS-PV-XXX
Recirc Header Discharge to SFS Pool Isolation Valve	PCS-PL-V050	Yes	PCS-PV-XXX
PCCWST Discharge to SFS Pool Isolation Valve	PCS-PL-V051	Yes	PCS-PV-XXX
PCS Water Delivery Flow Sensor	PCS-001	Yes	PCS-JE-XXX
PCS Water Delivery Flow Sensor	PCS-002	Yes	PCS-JE-XXX
PCS Water Delivery Flow Sensor	PCS-003	Yes	PCS-JE-XXX

Equipment Name	Tag Number	Seismic Cat. I	EQ As-Built Reconcilliation Report Number
PCS Water Delivery Flow Sensor	PCS-004	Yes	PCS-JE-XXX
Containment Pressure Sensor	PCS-005	Yes	PCS-JE-XXX
Containment Pressure Sensor	PCS-006	Yes	PCS-JE-XXX
Containment Pressure Sensor	PCS-007	Yes	PCS-JE-XXX
Containment Pressure Sensor	PCS-008	Yes	PCS-JE-XXX
PCCWST Water Level Sensor	PCS-010	Yes	PCS-JE-XXX
PCCWST Water Level Sensor	PCS-011	Yes	PCS-JE-XXX
High-range Containment Pressure Sensor	PCS-012	Yes	PCS-JE-XXX
High-range Containment Pressure Sensor	PCS-013	Yes	PCS-JE-XXX
High-range Containment Pressure Sensor	PCS-014	Yes	PCS-JE-XXX

EXAMPLE D-44 – EXAMPLE ITAAC CLOSURE NOTIFICATION SEISMIC QUALIFICATION ITAAC 2.2 02.05A.II

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.2 02.05a.ii

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 2.2 02.05a.ii for verification that a report exists and concludes that the seismic Category I components in the Passive Containment Cooling System can withstand seismic design basis loads without loss of safety function. 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:

The seismic Category I components identified in Table 2.2.2-1 can withstand seismic design basis loads without loss of safety function.

Inspections, Tests, Analyses:

ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I components will be performed.

Acceptance Criteria:

ii) A report exists and concludes that the seismic Category I components can withstand seismic design basis loads without loss of safety function.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the seismic Category I components identified in Design Control Document (DCD) Table 2.2.2-1 can withstand seismic design basis loads without loss of safety function. The subject ITAAC requires type tests, analyses, or a combination of type tests and analyses to be performed on seismic Category I components identified in DCD Table 2.2.2-1.

The seismic Category I valves listed in Design Control Document Table 2.2.2-1 were qualified using a combination of tests and analyses to demonstrate structural integrity and operability. Structural integrity of all of the seismic Category I valves was demonstrated by analysis in accordance with American Society of Mechanical Engineers Boiler and Pressure Vessel (B&PV) Code Section III, Rules for Construction of Nuclear Power Plant Components (Reference 6). For the subset of active safety-related valves identified in DCD Table 2.2.2-1, functionality of the active valves under seismic loads was accomplished by using the guidance of ASME QME-1-2007 (Reference 7).

Tanks and other passive seismic Category I mechanical equipment identified in DCD Table 2.2.2-1 were qualified by analysis to demonstrate structural integrity in accordance with ASME B&PV Code, Section III (Reference 6).

Safety-related (Class 1E) electrical equipment identified in DCD Table 2.2.2-1 was seismically qualified by testing combined with analysis in accordance with IEEE Std 344-1987 (Reference 5). This equipment includes safety-related (Class 1E) field sensors and the safety-related active valve accessories such as electric actuators, position switches, pilot solenoid valves and electrical connector assemblies.

The specific qualification method (i.e., type testing, analysis, or combination) used for each component in DCD Table 2.2.2-1 is identified in Attachment A. Additional information about the methods used to qualify safety-related equipment supplied for the AP1000 is provided in AP1000 DCD Appendix 3D, "Methodology for Qualifying AP1000 Safety-Related Electrical and Mechanical Equipment", (Reference 4).

Equipment Qualification Data Packages (EQDPs) XXX (Reference 3) are identified in Attachment A for each seismic Category I component and are included in the ITAAC Completion Package (Reference 2). These EQDPs contain applicable test reports and associated documentation and conclude that the components identified in DCD Table 2.2.2-1 can withstand seismic design basis loads without loss of safety function.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 02.05a.ii (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.2 02.05a.ii was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.2 02.05a.ii Completion Package
3. Equipment Qualification Document Packages (EQDPs) XXX
4. APP-GW-GL-700 – AP1000 Design Control Document, Appendix 3D
5. IEEE 344-1987, Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations
6. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section III, Rules for Construction of Nuclear Power Plant Components. [Indicate Code Edition/date]
7. ASME QME-1-2007, "Qualification of Active Mechanical Equipment Used in Nuclear Power Plants," The American Society of Mechanical Engineers, June 2007

Attachment A

EQUIPMENT QUALIFICATION ITAAC COMPLIANCE TABLE

SYSTEM: PASSIVE CONTAINMENT COOLING SYSTEM

Equipment Name	Tag Number	ASME Code Section III	Seismic Cat. I	Type of Qualification	EQDP Report Number
PCCWST	PCS-MT-01	Yes	Yes	Analysis	EQDP CB20
Water Distribution Bucket	PCS-MT-03	Yes	Yes	Analysis	EQDP MT05
Water Distribution Wiers	PCS-MT-04	Yes	Yes	Analysis	EQDP MT05
PCCWST Isolation Valve	PCS-PL-V001A	Yes	Yes	Type Test/Analysis	EQDP PV11
PCCWST Isolation Valve	PCS-PL-V001B	Yes	Yes	Type Test/Analysis	EQDP PV11
PCCWST Isolation Valve	PCS-PL-V001C	Yes	Yes	Type Test/Analysis	EQDP PV01
PCCWST Isolation Block MOV	PCS-PL-V002A	Yes	Yes	Type Test/Analysis	EQDP PV01
PCCWST Isolation Block MOV	PCS-PL-V002B	Yes	Yes	Type Test/Analysis	EQDP PV01
PCCWST Isolation Block MOV	PCS-PL-V002C	Yes	Yes	Type Test/Analysis	EQDP PV01
PCS Recirculation Return Isolation Valve	PCS-PL-V023	Yes	Yes	Type Test/Analysis	EQDP PV10
PCCWST Supply to Fire Protection System Isolation Valve	PCS-PL-V005	Yes	Yes	Type Test/Analysis	EQDP PV03
PCS Makeup to SFS Isolation Valve	PCS-PL-V009	Yes	Yes	Type Test/Analysis	EQDP PV03
Water Makeup Isolation Valve	PCS-PL-V044	Yes	Yes	Type Test/Analysis	EQDP PV03
Water Bucket Makeup Line Drain Valve	PCS-PL-V015	Yes	Yes	Type Test/Analysis	EQDP PV02
Water Bucket Makeup Line Isolation Valve	PCS-PL-V020	Yes	Yes	Type Test/Analysis	EQDP PV03
PCCWST Long-Term Makeup Line Check Valve	PCS-PL-V039	Yes	Yes	Type Test/Analysis	EQDP PV03
PCCWST Long-Term Makeup Drain Isolation	PCS-PL-V042	Yes	Yes	Type Test/Analysis	EQDP PV02
PCS Discharge to SFS Pool Isolation Valve	PCS-PL-V045	Yes	Yes	Type Test/Analysis	EQDP PV02

Equipment Name	Tag Number	ASME Code Section III	Seismic Cat. I	Type of Qualification	EQDP Report Number
Recirc Header Discharge to PCCWST Isolation Valve	PCS-PL-V046	Yes	Yes	Type Test/Analysis	EQDP PV03
PCCWST Drain Isolation Valve	PCS-PL-V049	Yes	Yes	Type Test/Analysis	EQDP PV02
Recirc Header Discharge to SFS Pool Isolation Valve	PCS-PL-V050	Yes	Yes	Type Test/Analysis	EQDP PV02
PCCWST Discharge to SFS Pool Isolation Valve	PCS-PL-V051	Yes	Yes	Type Test/Analysis	EQDP PV02
PCS Water Delivery Flow Sensor	PCS-001	-	Yes	Type Test/Analysis	EQDP C1E
PCS Water Delivery Flow Sensor	PCS-002	-	Yes	Type Test/Analysis	EQDP C1E
PCS Water Delivery Flow Sensor	PCS-003	-	Yes	Type Test/Analysis	EQDP C1E
PCS Water Delivery Flow Sensor	PCS-004	-	Yes	Type Test/Analysis	EQDP C1E
Containment Pressure Sensor	PCS-005	-	Yes	Type Test/Analysis	EQDP C1E
Containment Pressure Sensor	PCS-006	-	Yes	Type Test/Analysis	EQDP C1E
Containment Pressure Sensor	PCS-007	-	Yes	Type Test/Analysis	EQDP C1E
Containment Pressure Sensor	PCS-008	-	Yes	Type Test/Analysis	EQDP C1E
PCCWST Water Level Sensor	PCS-010	-	Yes	Type Test/Analysis	EQDP C1E
PCCWST Water Level Sensor	PCS-011	-	Yes	Type Test/Analysis	EQDP C1E
High-range Containment Pressure Sensor	PCS-012	-	Yes	Type Test/Analysis	EQDP C1E
High-range Containment Pressure Sensor	PCS-013	-	Yes	Type Test/Analysis	EQDP C1E
High-range Containment Pressure Sensor	PCS-014	-	Yes	Type Test/Analysis	EQDP C1E

EXAMPLE D-45 – EXAMPLE ITAAC CLOSURE NOTIFICATION SEISMIC SITE VERIFICATION ITAAC 2.2 02.05A.III

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.2 02.05a.iii

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 2.2 02.05a.iii for verification that the report exists and concludes that the as-built components including anchorage are seismically bounded by the tested or analyzed 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:

The seismic Category I components identified in Table 2.2.2-1 can withstand seismic design basis loads without loss of safety function.

Inspections, Tests, Analyses:

iii) Inspection will be performed for the existence of a report verifying that the as-built components including anchorage are seismically bounded by the tested or analyzed conditions.

Acceptance Criteria:

iii) The report exists and concludes that the as-built components including anchorage are seismically bounded by the tested or analyzed conditions.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the seismic Category I components identified in Table 2.2.2-1 can withstand seismic design basis loads without loss of safety function. The subject ITAAC requires an inspection to be performed for the existence of a report verifying that the as-built components including anchorage are seismically bounded by the tested or analyzed conditions.

Seismic qualification of the components in DCD Table 2.2.2-1 was previously verified by bounding type tests, analyses, or a combination of type tests and analyses in accordance with ITAAC 2.2.02.05a.ii (Reference 3). As part of the seismic qualification program, consideration is given to the definition of the clearances needed around the equipment mounted in the plant to permit the equipment to move during a postulated seismic event without causing impact between adjacent pieces of safety related equipment. This is done as part of seismic testing by measuring the maximum dynamic relative displacement of the top and bottom of the equipment.

Equipment qualification data packages identify the equipment mounting employed for qualification and establish interface requirements for assuring that subsequent in-plant installation does not degrade the established qualification. Interface requirements are defined based on the test configuration and other design requirements.

In accordance with procedure XYZ, (Reference 4) an inspection was conducted of the Passive Containment Cooling System to confirm the satisfactory installation of the seismically qualified components. The inspection included verification of equipment make/model/serial number; verification of as-designed equipment mounting orientation, anchorage and clearances; and verification of electrical and other interfaces.

The documentation of installed configuration of seismically qualified components includes photographs and/or sketches of equipment/mounting/interfaces. The verification of installed component configuration is documented in the Equipment Qualification (EQ) as-built reconciliation.

Attachment A identifies the Equipment Qualification (EQ) As-built Reconciliation Report (Reference 5) completed to verify that the installed configuration of the Seismic Category I components listed in DCD Table 2.2.2-1, including anchorage, is seismically bounded by the tested or analyzed conditions and IEEE Standard 344-1987 (Reference 6) and Regulatory Guide 1.100, Revision 2 (Reference 7).

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 02.05a.iii (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.2 02.05a.iii was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.2 02.05a.iii Completion Package
3. Nuclear Power Plan ITAAC 2.2 02.05a.ii ITAAC Closure Letter
4. EQ Walkdown Inspection Procedure ABC
5. EQ As-Built Reconciliation Report(s) as identified in Attachment A
6. IEEE Std 344-1987, *Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations*.
7. Regulatory Guide 1.100, *Seismic Qualification of Electric and Mechanical Equipment for Nuclear Power Plants*, Revision 2

Attachment A

EQUIPMENT QUALIFICATION ITAAC COMPLIANCE TABLE FOR SEISMIC CATEGORY 1 COMPONENTS LISTED IN AP1000 DCD TIER 1 TABLE 2.2.2-1

SYSTEM: PASSIVE CONTAINMENT COOLING SYSTEM

Equipment Name	Tag Number	Seismic Cat. I	EQDP Report Number	EQ As-Built Reconciliation Report Number
PCCWST	PCS-MT-01	Yes	EQDP CB20	PCS-CB20-XXX
Water Distribution Bucket	PCS-MT-03	Yes	EQDP MT05	PCS-MT05-XXX
Water Distribution Wiers	PCS-MT-04	Yes	EQDP MT05	PCS-MT05XXX
PCCWST Isolation Valve	PCS-PL-V001A	Yes	EQDP PV11	PCS-PV-XXX
PCCWST Isolation Valve	PCS-PL-V001B	Yes	EQDP PV11	PCS-PV-XXX
PCCWST Isolation Valve	PCS-PL-V001C	Yes	EQDP PV01	PCS-PV-XXX
PCCWST Isolation Block MOV	PCS-PL-V002A	Yes	EQDP PV01	PCS-PV-XXX
PCCWST Isolation Block MOV	PCS-PL-V002B	Yes	EQDP PV01	PCS-PV-XXX
PCCWST Isolation Block MOV	PCS-PL-V002C	Yes	EQDP PV01	PCS-PV-XXX
PCS Recirculation Return Isolation Valve	PCS-PL-V023	Yes	EQDP PV10	PCS-PV-XXX
PCCWST Supply to Fire Protection System Isolation Valve	PCS-PL-V005	Yes	EQDP PV03	PCS-PV-XXX
PCS Makeup to SFS Isolation Valve	PCS-PL-V009	Yes	EQDP PV03	PCS-PV-XXX
Water Makeup Isolation Valve	PCS-PL-V044	Yes	EQDP PV03	PCS-PV-XXX
Water Bucket Makeup Line Drain Valve	PCS-PL-V015	Yes	EQDP PV02	PCS-PV-XXX
Water Bucket Makeup Line Isolation Valve	PCS-PL-V020	Yes	EQDP PV03	PCS-PV-XXX
PCCWST Long-Term Makeup Line Check Valve	PCS-PL-V039	Yes	EQDP PV03	PCS-PV-XXX
PCCWST Long-Term Makeup Drain Isolation	PCS-PL-V042	Yes	EQDP PV02	PCS-PV-XXX
PCS Discharge to SFS Pool Isolation Valve	PCS-PL-V045	Yes	EQDP PV02	PCS-PV-XXX
Recirc Header Discharge to PCCWST Isolation Valve	PCS-PL-V046	Yes	EQDP PV03	PCS-PV-XXX
PCCWST Drain Isolation Valve	PCS-PL-V049	Yes	EQDP PV02	PCS-PV-XXX
Recirc Header Discharge to SFS Pool Isolation Valve	PCS-PL-V050	Yes	EQDP PV02	PCS-PV-XXX
PCCWST Discharge to SFS Pool Isolation Valve	PCS-PL-V051	Yes	EQDP PV02	PCS-PV-XXX
PCS Water Delivery Flow Sensor	PCS-001	Yes	EQDP C1E	PCS-JE-XXX
PCS Water Delivery Flow Sensor	PCS-002	Yes	EQDP C1E	PCS-JE-XXX
PCS Water Delivery Flow Sensor	PCS-003	Yes	EQDP C1E	PCS-JE-XXX
PCS Water Delivery Flow Sensor	PCS-004	Yes	EQDP C1E	PCS-JE-XXX
Containment Pressure Sensor	PCS-005	Yes	EQDP C1E	PCS-JE-XXX
Containment Pressure Sensor	PCS-006	Yes	EQDP C1E	PCS-JE-XXX

Equipment Name	Tag Number	Seismic Cat. I	EQDP Report Number	EQ As-Built Reconciliation Report Number
Containment Pressure Sensor	PCS-007	Yes	EQDP C1E	PCS-JE-XXX
Containment Pressure Sensor	PCS-008	Yes	EQDP C1E	PCS-JE-XXX
PCCWST Water Level Sensor	PCS-010	Yes	EQDP C1E	PCS-JE-XXX
PCCWST Water Level Sensor	PCS-011	Yes	EQDP C1E	PCS-JE-XXX
High-range Containment Pressure Sensor	PCS-012	Yes	EQDP C1E	PCS-JE-XXX
High-range Containment Pressure Sensor	PCS-013	Yes	EQDP C1E	PCS-JE-XXX
High-range Containment Pressure Sensor	PCS-014	Yes	EQDP C1E	PCS-JE-XXX

EXAMPLE D46 – EXAMPLE ITAAC CLOSURE NOTIFICATION AS-BUILT PIPING MEETS FUNCTIONAL CAPABILITY REQUIREMENTS ITAAC 2.1 02.05B

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of ITAAC 2.1.02.05b

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 2.1.02.05b for verification that an American Society of Mechanical Engineers (ASME) Design Report for Class 1 Piping and Class 2/3 Piping exists and concludes that each of the as-built Reactor Coolant System (RCS) piping lines identified in ITAAC Table 2.1.2-2 meets its functional capability requirements. 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:

Each of the lines identified in Table 2.1.2-2 for which functional capability is required is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability.

Inspections, Tests, Analyses:

Inspection will be performed for the existence of a report verifying that the as-built piping meets the requirements for functional capability.

Acceptance Criteria:

A report exists and concludes that each of the as-built lines identified in Table 2.1.2-2 for which functional capability is required meets the requirements for functional capability.

ITAAC Determination Basis

An inspection was performed of the ASME Section III as-built piping design report XXX to verify that the report demonstrates that each of the RCS piping lines identified in ITAAC Table

2.1.2-2 that requires functional capability is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability. "Functional capability," in this context, refers to the capability of the piping to withstand the effects of earthquakes, without a loss of safety function (to convey fluids from one location to another). Specific functional capability requirements are defined in the AP1000 Design Control Document (DCD) Tier 2 Table 3.9-11 (Reference 2).

Piping functional capability is not a specific ASME Code requirement but it is a requirement in the AP1000 DCD (Reference 2). As such, information demonstrating that DCD functional capability requirements are met was included in the ASME Section III As-Built Design Reports for safety class piping prepared in accordance with ASME Section III NCA-3550 under the ASME Boiler & Pressure Vessel Code [Licensee insert Edition/Addenda] Section III requirements. The as-built piping systems have been subjected to a reconciliation process (Reference 3), which verifies that the as-built piping systems have been analyzed for functional capability and for compliance with the design specification and ASME Code provisions. Design reconciliation of the as-built systems validates that construction completion, including field changes and any nonconforming condition dispositions, is consistent with and bounded by the approved design. As required by ASME Code, the As-Built Design Report includes the results of physical inspection of the piping and reconciliation to the design pipe stress report.

Inspections of the ASME Section III As-Built Piping Design Reports XXX for the RCS piping lines identified in ITAAC Table 2.1.2-2 were completed and concluded that each of the as-built RCS piping lines for which functional capability is required meets the requirements for functional capability. The ASME Section III As-Built Piping Design Reports for each of the as-built RCS piping lines in ITAAC Table 2.1.2-2 are identified in Attachment 1.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 ITAAC Completion Package for ITAAC 2.1.02.05b (Reference 4) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1.02.05b was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

Attachment

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52.*
2. APP-GW-GL-700 – AP1000 Design Control Document, Tier 2, Chapter 3, Table 3.9-11
3. Licensee's Program for As-Built Reconciliation of the ASME Piping Systems
4. ITAAC 2.1 02.05b Completion Package

Attachment 1
Reports on Functional Capability of Reactor Coolant System (RCS) Piping – ITAAC 2.1.02.05b
Piping Identified as Functional Capability Required in Tier 1 Table 2.1.2-2

Table 2.1.2-2					
Line Name	**Line Number**	**ASME Code Section III**	**Leak Before Break**	**Functional Capability Required**	**ASME III As-Built Design Report**
Hot Legs	RCS-L001A RCS-L001B	Yes	Yes	Yes	XXX
Cold Legs	RCS-L002A RCS-L002B RCS-L002C RCS-L002D	Yes	Yes	Yes	YYY
Pressurizer Surge Line	RCS-L003	Yes	Yes	Yes	ZZZ
ADS Inlet Headers	RCS-L004A/B RCS-L006A/B RCS-L030A/B RCS-L020A/B	Yes	Yes	Yes	AAA
Safety Valve Inlet Piping	RCS-L005A RCS-L005B	Yes	Yes	Yes	AAA
Safety Valve Discharge Piping	RCS-L050A/B RCS-L051A/B	Yes	No	Yes	AAA
ADS First-stage Valve Inlet Piping	RCS-L010A/B RCS-L011A/B	Yes	No	Yes	AAA
ADS Second-stage Valve Inlet Piping	RCS-L021A/B RCS-L022A/B	Yes	Yes No	Yes	AAA
ADS Third-stage Valve Inlet Piping	RCS-L131 RCS-L031A/B RCS-L032A/B	Yes	Yes Yes No	Yes	AAA
ADS Outlet Piping	RCS-L012A/B RCS-L023A/B RCS-L033A/B RCS-L061A/B RCS-L063A/B RCS-L064A/B RCS-L200 RCS-L069A/B RCS-L240A/B PXS-L130A/B	Yes	No	Yes	AAA
ADS Fourth-stage Inlet Piping	RCS-L133A/B RCS-L135A/B RCS-L136A/B RCS-L137A/B	Yes	Yes	Yes	BBB

EXAMPLE D-47 – EXAMPLE ITAAC CLOSURE NOTIFICATION VALVES – ACTIVE SAFETY-RELATED FUNCTION ITAAC 2.1 02.12A.I

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.1 02.12a.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 02.12a.i for verification that a test report exists and concludes that each motor-operated valve in the Reactor Coolant System changes position as indicated in Table 2.1.2-1 of the Design Control Document (DCD) 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:

The automatic depressurization valves identified in Table 2.1.2-1 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 that demonstrate the capability of the valve to operate under its design conditions.*

Acceptance Criteria:

i) *A test report exists and concludes that each motor-operated valve changes position as indicated in Table 2.1.2-1 under design conditions.*

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the automatic depressurization valves identified in Design Control Document Table 2.1.2-1 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 to be performed to demonstrate the capability of the valve to operate under its design conditions.

The motor operated valves identified in DCD Table 2.1.2-1 have been qualified in accordance the provisions of ASME Standard 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 measurements, 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.

To address the unique application of the automatic depressurization motor operated valves, end-loading qualification was performed via analysis in accordance with ASME QME-1 2007 Section QV-7441(c) to demonstrate that the valve is stronger than the attached piping system. {If testing was required, describe end-load testing.}

The results of the qualification are documented in the Equipment Qualification Document Packages (Reference 4) which are identified in Attachment A for each applicable valve. The Equipment Qualification Data Package summarizes the applicable test methodology, environmental qualification, seismic qualification and the ASME QME-1 2007 functional qualification and application reports that demonstrate that each motor-operated valve changes position as indicated in DCD Table 2.1.2-1 under design conditions.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 ITAAC Completion Package for ITAAC 2.1 02.12a.i (Reference 5) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1 02.12a.i was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. ASME-QME-1-2007, Qualification of Active Mechanical Equipment used in Nuclear Power Plants
3. APP-XXX, PV01 Design Specification
4. Equipment Qualification Document Package(s) (EQDPs) XXX
5. ITAAC 2.1 02.12a.i Completion Package

Attachment A

EQUIPMENT QUALIFICATION ITAAC COMPLIANCE MATRIX FOR AUTOMATIC DEPRESSURIZATION MOTOR OPERATED VALVES IN AP1000 DCD TIER 1 TABLE 2.1.2-1

SYSTEM: REACTOR COOLANT SYSTEM

Equipment Name	Tag Number	Active Function	EQDP Report Number
First-stage ADS Motor-operated Valve (MOV)	RCS-PL-V001A	Transfer Open	EQDP PV01
First-stage ADS MOV	RCS-PL-V001B	Transfer Open	EQDP PV01
Second-stage ADS MOV	RCS-PL-V002A	Transfer Open	EQDP PV01
Second-stage ADS MOV	RCS-PL-V002B	Transfer Open	EQDP PV01
Third-stage ADS MOV	RCS-PL-V003A	Transfer Open	EQDP PV01
Third-stage ADS MOV	RCS-PL-V003B	Transfer Open	EQDP PV01
First-stage ADS Isolation MOV	RCS-PL-V011A	Transfer Open	EQDP PV01
First-stage ADS Isolation MOV	RCS-PL-V011B	Transfer Open	EQDP PV01
Second-stage ADS Isolation MOV	RCS-PL-V012A	Transfer Open	EQDP PV01
Second-stage ADS Isolation MOV	RCS-PL-V012B	Transfer Open	EQDP PV01
Third-stage ADS Isolation MOV	RCS-PL-V013A	Transfer Open	EQDP PV01
Third-stage ADS Isolation MOV	RCS-PL-V013B	Transfer Open	EQDP PV01

EXAMPLE D-48 EXAMPLE ITAAC CLOSURE NOTIFICATION SQUIB VALVE INSTALLED CONFIGURATION ITAAC 2.1 02.12A.V

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.1 02.12a.v

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 02.12a.v for the verification that a report exists and concludes that the as-built squib valves in the Reactor Coolant System are bounded by the tests or type tests. The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1), which was endorsed by NRC in Regulatory Guide 1.215.

ITAAC Statement

Design Commitment:

The automatic depressurization valves identified in Table 2.1.2-1 perform an active safety-related function to change position as indicated in the table.

Inspections, Tests, Analyses:

v) Inspection will be performed for the existence of a report verifying that the as- built squib valves are bounded by the tests or type tests.

Acceptance Criteria:

v) A report exists and concludes that the as-built squib valves are bounded by the tests or type tests.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the automatic depressurization valves identified in DCD Tier 1 Table 2.1.2-1 (Attachment A) perform an active safety-related function to change position as indicated in the table. The subject ITAAC requires inspection for the existence of a report verifying that the as-built squib valves are bounded by the tests or type tests.

The squib valves in DCD Table 2.1.2-1 were previously type tested and demonstrated the capability of the valve to operate under its design conditions, as documented in the Equipment Qualification Document Package(s) XXX (Reference 2) in accordance with ITAAC 2.1 02.12a.iv (Reference 3). Equipment qualification data packages identify the equipment mounting employed for the type testing and the specific conditions tested.

In accordance with procedure XYZ (Reference 4) an inspection was conducted of the Reactor Coolant System to confirm the satisfactory installation of the squib valves. The inspection included verification of equipment make/model/serial number, verification of as-designed equipment mounting and location, and verification of the as-designed mechanical and electrical connections.

The documentation of installed configuration of the squib valves includes photographs and/or sketches of equipment mounting and connections. The verification of installed component configuration is documented in the Equipment Qualification (EQ) as-built reconciliation.

Attachment A identifies the EQ As-Built Reconciliation Report (Reference 5) completed to verify that the installed configuration of the squib valves identified in Table 2.1.2-1 is bounded by the type tests.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review found that there was no relevant ITAAC Findings associated with this ITAAC. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.1 02.12a.v (Reference 6) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.1 02.12a.v was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. Equipment Qualification Document Package(s) XXX
3. ITAAC 2.1 02.12a.iv ITAAC Closure Notification
4. Procedure XYZ – Performance of As-built Reconciliation
5. EQ As-Built Reconciliation Report(s) XXX
6. ITAAC 2.1 02.12a.v Completion Package

Attachment A

EQUIPMENT QUALIFICATION ITAAC COMPLIANCE MATRIX FOR AUTOMATIC DEPRESSURIZATION SQUIB VALVES IN AP1000 DCD TIER 1 TABLE 2.1.2-1

SYSTEM: REACTOR COOLANT SYSTEM

Equipment Name	Tag Number	Active Function	Type of Qualification	EQDP Number	As-Built Reconciliation Report Number
Fourth-stage ADS Squib Valve	RCS-PL-V004A	Transfer Open	Type Testing	EQDP PV70	RCS-PV-XXX
Fourth-stage ADS Squib Valve	RCS-PL-V004B	Transfer Open	Type Testing	EQDP PV70	RCS-PV-XXX
Fourth-stage ADS Squib Valve	RCS-PL-V004C	Transfer Open	Type Testing	EQDP PV70	RCS-PV-XXX
Fourth-stage ADS Squib Valve	RCS-PL-V004D	Transfer Open	Type Testing	EQDP PV70	RCS-PV-XXX

EXAMPLE D-49 – EXAMPLE ITAAC CLOSURE NOTIFICATION FOR REMOTELY OPERATED VALVE LOSS OF MOTOR POWER POSITION ITAAC 2.3 13.11B

XX/YY/ZZZZ (Date)

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.3 13.11b

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 2.3 13.11b to verify that after a loss of motive power, each remotely operated valve identified in Table 2.3.13-1 assumes the indicated loss of motive power position. 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:

After loss of motive power, the remotely operated valves identified in Table 2.3.13-1 assume the indicated loss of motive power position.

Inspections, Tests, Analyses:

Testing of the remotely operated valves will be performed under the conditions of loss of motive power.

Acceptance Criteria:

After loss of motive power, each remotely operated valve identified in Table 2.3.13-1 assumes the indicated loss of motive power position.

ITAAC Determination Basis

Testing was performed on the remotely operated valves identified in Table 2.3.13-1 of the AP1000 DCD (Table 1) to demonstrate that after a loss of motive power, each remotely operated valve assumes the indicated loss of motive power position.

Testing was performed after construction / component testing completion. Using Preoperational Test Procedure APP-XXX-T1P-XXX (Reference 3), testing was performed on the remotely operated valves identified in Table 2.3.13-1.

Remotely Operated Valves, PSS-PL-V011, PSS-PL-V010A, PSS-PL-V010B, PSS-PL-V008, PSS-PL-V046 and PSS-PL-V023, identified in Table 2.3.13-1 were tested under the conditions of loss of motive power. For the solenoid operated valves (V010A/B and V008) the solenoid was de-energized, and visual inspection confirmed that the valves failed closed. For the air operated valves (V011, V023, and V046) power was removed from the associated 3-way solenoid valve, which results in both isolation of compressed air from the valve and venting of the valve actuator. The valve position of each of the valves was visually inspected to confirm that the valves failed closed after motive power removal. Test Results Report XXX (Reference 3) confirmed that after loss of motive power, each remotely operated valve identified in Table 2.3.13-1 assumed the indicated loss of motive power position.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion), {Licensee} performed a review of ITAAC Findings 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 2.3 13.11b (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.3 13.11b was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.3 13.11b Completion Package
3. Preoperational Test Procedure APP-XXX-T1P-XXX which includes the associated Test Results Report (TRR) XXX

Table 1

(Partial Excerpt from Design Control Document Table 2.3.13-1)

Table 2.3.13-1			
Component Name	**Tag No.**	**Remotely Operated Valve**	**Loss of Motive Power Position**
Liquid Sample Line Containment Isolation Valve Outside Reactor Containment (ORC)	PSS-PL-V011	Yes	Closed
Liquid Sample Line Containment Isolation Valve Inside Reactor Containment (IRC)	PSS-PL-V010A	Yes	Closed
Liquid Sample Line Containment Isolation Valve IRC	PSS-PL-V010B	Yes	Closed
Containment Air Sample Containment Isolation Valve IRC	PSS-PL-V008	Yes	Closed
Air Sample Line Containment Isolation Valve ORC	PSS-PL-V046	Yes	Closed
Sample Return Line Containment Isolation Valve ORC	PSS-PL-V023	Yes	Closed

EXAMPLE D-50 – EXAMPLE ITAAC CLOSURE NOTIFICATION CCS HEAT EXCHANGERS ITAAC 2.3 01.03.I

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 2.3 01.03.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 2.3 01.03.i for the verification that a report exists and concludes that the UA of each Component Cooling Water System (CCS) heat exchanger is greater than or equal to 14.0 million Btu/hr-°F. 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:

The CCS provides the nonsafety-related functions of transferring heat from the RNS during shutdown and the spent fuel pool cooling system during all modes of operation to the SWS.

Inspections, Tests, Analyses:

i) Inspection will be performed for the existence of a report that determines the heat transfer capability of the CCS heat exchangers.

Acceptance Criteria:

i) A report exists and concludes that the UA of each CCS heat exchanger is greater than or equal to 14.0 million Btu/hr-°F.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the CCS provides the nonsafety-related functions of transferring heat from the Normal Residual Heat Removal System (RNS) during shutdown and the spent fuel pool cooling system during all modes of operation to the Service

Water System (SWS). This ITAAC verifies the heat transfer capability of the CCS heat exchangers.

Upon final fabrication of the CCS Heat Exchanger, the vendor completed an analysis to validate that the CCS Heat Exchangers are capable of meeting the specified heat transfer performance requirements. The vendor prepared a report for each heat exchanger, Heat Exchanger Design and Performance Characteristics Report (Reference 2), identifying the heat exchanger's design and performance characteristics, including the heat transfer capability (UA) for each heat exchanger Inspections were performed of each report in accordance with the vendor's Quality Assurance Program to determine the UA of each heat exchanger was adequately demonstrated. These inspections are documented in the heat exchanger reports.

{Licensee} performed an inspection of the Heat Exchanger Design and Performance Characteristics Reports. The purpose of the inspection was to confirm that the UA of each CCS heat exchanger was determined to be greater than or equal to 14.0 million Btu/hr-°F. The UA of heat exchanger CCS-ME01A was determined to be XXX Btu/hr-°F and the UA of heat exchanger CCS-ME01B was determined to be XXX Btu/hr-°F. This inspection is documented in Inspection Report ZZZ, *Closure of ITAAC 2.3.01.03.i* (Reference 4).

The Heat Exchanger Design and Performance Characteristics Report exists for each heat exchanger and concludes that the UA of each CCS heat exchanger is greater than or equal to 14.0 million Btu/hr-°F.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings and associated corrective actions. This review found that there are no relevant ITAAC Findings and no closed or outstanding construction deficiencies or defects associated with this ITAAC. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.3 01.03.i (Reference 3) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.3 01.03.i was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. Heat Exchanger Design and Performance Characteristics Reports
3. ITAAC 2.3 01.03.i Completion Package
4. Inspection Report ZZZ, *Closure of ITAAC 2.3.01.03.i*

EXAMPLE D-51 – EXAMPLE ITAAC CLOSURE NOTIFICATION SFS PUMP REMOVAL OF SPENT FUEL DECAY ITAAC 2.3 07.08.II

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.3 07.08.ii

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 2.3 07.08.ii to verify that each Spent Fuel Pool Cooling System (SFS) pump produces at least 900 Gallons per Minute (gpm) through its heat exchanger. 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:

The SFS provides the nonsafety-related function of removing spent fuel decay heat using pumped flow through a heat exchanger.

Inspections, Tests, Analyses:

ii) Testing will be performed to confirm that each SFS pump provides flow through its heat exchanger when taking suction from the SFP and returning flow to the SFP.

Acceptance Criteria:

ii) Each SFS pump produces at least 900 gpm through its heat exchanger.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the SFS provides the nonsafety-related function of removing spent fuel decay heat using pumped flow through a heat exchanger. This ITAAC verifies the pumped flow capability for the SFS.

As described in the Tier 1 Design Description, the SFS consists of two SFS pumps, A and B. Testing of the SFS pumps was performed after construction and component testing completion and prior to hot functional water testing. The testing was performed using Preoperational Test Procedure APP-SFS-T1P-502 (Reference 3). The test was conducted by running each of the SFS pumps individually, taking suction from and returning flow to the Spent Fuel Pool (SFP). Once steady flow was established, instrument readings were taken at the respective SFS Pump Discharge Flow Sensor and recorded in the test procedure documentation. Test results confirmed that each SFS pump provides flow through its heat exchanger when taking suction from the SFP and returning flow to the SFP. The testing determined that SFS pump A produced XXX gpm through its associated heat exchanger, and SFS pump B produced YYY gpm through its associated heat exchanger.
The Test Results Report (TRR) was completed as required by ITP Test Results Report Procedure APP-GW-TSP-328 (Reference 4). The report verifies and documents that each SFS pump produces at least 900 gpm through its heat exchanger.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 2.3 07.08.ii (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.3 07.08.ii was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.3 07.08.ii Completion Package
3. Completed Preoperational Test Procedure APP-SFS-T1P-502 which includes the associated Test Results Report (TRR)
4. ITP Test Results Report Procedure APP-GW-TSP-328

EXAMPLE D-52 – EXAMPLE ITAAC CLOSURE NOTIFICATION HUMAN FACTORS ENGINEERING VERIFICATION AND VALIDATION ITAAC 3.2 00.01C.I

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 3.2.00.01c.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 3.2.00.01c.i to verify that integrated system validation (ISV) was conducted in conformance with the implementation plan and includes an evaluation using performance-based tests to determine whether the integrated Human Factors Engineering (HFE) system design (i.e., hardware, software, and personnel elements) meets performance requirements and acceptably supports safe operation of the plant. 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:

1. *The HFE verification and validation program is performed in accordance with the HFE verification and validation implementation plan and includes the following activities:*

   c) Integrated system validation.

Inspections, Tests, Analyses:

(i) An evaluation of the implementation of the integrated system validation will be performed.

Acceptance Criteria:

(i) A report exists and concludes that: The test scenarios listed in the implementation plan for integrated system validation were executed in conformance with the plan and noted human deficiencies were addressed.

ITAAC Determination Basis

Multiple ITAAC are performed to confirm that the HFE verification and validation program, as described in Chapter 18 of the AP1000 DCD, is performed in accordance with the HFE verification and validation implementation plan. The subject ITAAC performs an evaluation of ISV implementation. Following the execution of the ISV, an evaluation of the ISV activity (including operating procedures, operator performance, and Control Room design) was performed and documented. This evaluation concluded that the ISV was conducted in conformance with the NRC approved HFE ISV Plan (Reference 5) and concluded that ISV participants received appropriate training, simulator scenarios contained appropriate detail and were executed in conformance with the plan, the near-full scope simulator provided an appropriate ISV test bed, test data was collected and analyzed in accordance with the plan, and deficiencies were appropriately documented and prioritized.

Following the execution of the ISV, the test data was analyzed. The analysis results and supporting data are documented in the AP1000 HFE Integrated System Validation Report (Reference 3) and the AP1000 HFE Integrated System Validation Results Data Report, (Reference 4). The ISV results demonstrate, via the successful management of complex operational and accident scenarios, that the Main Control Room (MCR) design, Human-System Interface resources, procedures, MCR staffing, and operator training are adequate to support safe operation. In addition significant Human Engineering Deficiencies (HEDs) were resolved, and limitations of the ISV implementation and execution were recorded and addressed in accordance with the implementation plan. . The overall results are discussed in terms of the safety and operability of the AP1000 Main Control Room.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 3.2.00.01c.i (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.2.00.01c.i was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 3.2.00.01c.i Completion Package
3. APP-OCS-GER-320, "AP1000 Human Factors Engineering Integrated System Validation Report"
4. APP-OCS-GER-321, "AP1000 Human Factors Engineering Integrated System Validation Results Data Report"
5. APP-OCS-GEH-320, "AP1000 Human Factors Engineering Integrated System Validation Plan"

EXAMPLE D-53 – EXAMPLE ITAAC CLOSURE NOTIFICATION SIMULATED SIGNAL CAUSES WLS ISOLATION VALVE TO ACTUATE ITAAC 2.3 10.07B

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.3 10.07b

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 2.3 10.07b to verify that a simulated high radiation signal causes the discharge control isolation valve WLS-PL-V223 to close. 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:

The WLS provides the nonsafety-related function of controlling releases of radioactive materials in liquid effluents.

Inspections, Tests, Analyses:

Tests will be performed to confirm that a simulated high radiation signal from the discharge radiation monitor, WLS-RE-229, causes the discharge isolation valve WLS-PL-V223 to close.

Acceptance Criteria:

A simulated high radiation signal causes the discharge control isolation valve WLS-PL-V223 to close.

ITAAC Determination Basis

Tests were performed to demonstrate that the Liquid Radwaste System (WLS) provides the nonsafety-related function of controlling releases of radioactive materials in liquid effluents.

Testing, using Preoperational Test Procedure APP-WLS-T1P-501 (Reference 3), simulated a high radiation signal from the discharge radiation monitor, WLS-RE-229, sent to the plant control system. Local inspection then verified discharge isolation valve (WLS-PL-V223) changed position from open to closed automatically on the simulated high radiation signal from the discharge radiation monitor, WLS-RE-229.

The Test Results Report (TRR) (Reference 3) confirmed that a simulated high radiation signal causes the discharge control isolation valve, WLS-PL-V223, to close.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 ITAAC Completion Package for ITAAC 2.3 10.07b (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.3 10.07b was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.3 10.07b Completion Package
3. Completed Preoperational Test Procedure APP-WLS-T1P-501 which includes the associated Test Results Report (TRR)

EXAMPLE D-54 – EXAMPLE ITAAC CLOSURE NOTIFICATION CRANE SINGLE FAILURE PROOF TESTING ITAAC 2.3 05.03A.II

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 2.3.05.03a.ii

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 2.3.05.03a.ii to verify that the polar crane shall be static-load tested to 125% of the rated load. 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:

3a) The polar crane is single failure proof.

Inspections, Tests, Analyses:

ii) Testing of the polar crane is performed.

Acceptance Criteria:

ii) The polar crane shall be static-load tested to 125% of the rated load.

ITAAC Determination Basis

Multiple ITAAC are performed to verify that the polar crane is single failure proof. The subject ITAAC performs static load testing to verify the crane can support 125% of the rated load.

Testing was performed in accordance with Preoperational Test Procedure XXX-MHS-T1P-XXX (Reference 3) with a load equal to 125% of the crane's rated load. This testing is performed as required by NUREG-0554 Section 8.2 (Reference 4), in accordance with the requirements of ASME NOG-1 (Reference 5). The main hoist was tested and visually observed to exhibit no drift downward after stopping. The load was successfully supported under these conditions.

The test results are documented in the approved Preoperational Test Procedure XXX-MHS-T1P-XXX, and confirm that the polar crane was static-load tested to 125% of the rated load.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 2.3.05.03a.ii (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.3.05.03a.ii was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.3.05.03a.ii Completion Package
3. Approved Preoperational Test Procedure XXX-MHS-T1P-XXX, which includes the Test Results Report

EXAMPLE D-100 – EXAMPLE ITACC CLOSURE NOTIFICATION CONTAINMENT COATINGS AND TRANSPORTABLE MATERIAL DENSITY ITAAC 2.2 03.08C.X

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 2.2.03.08c.x

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 2.2.03.08c.x for verification that coatings, caulking, signs and tags, and ventilation filters and fiber-producing fire barriers specified in the ITAAC meet specified minimum density requirements. 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:

The PXS provides RCS makeup, boration, and safety injection during design basis events.

Inspections, Tests, Analyses:

x) Inspections will be conducted of the as-built nonsafety-related coatings or of plant records of the nonsafety-related coatings used inside containment on walls, floors, ceilings, and structural steel except in the CVS room. Inspections will be conducted of the as-built non-safety-related coatings or of plant records of the non-safety-related coatings used on components below the maximum flood level of a design basis LOCA or located above the maximum flood level and not inside cabinets or enclosures.

Inspections will be conducted on caulking, tags, and signs used inside containment below the maximum flood level of a design basis LOCA or located above the maximum flood level and not inside cabinets or enclosures.

Inspections will be conducted of ventilation filters and fiber-producing fire barriers used inside containment within the ZOI or below the maximum flood level of a design basis LOCA

Acceptance Criteria:

x) A report exists and concludes that the coatings used on these surfaces have a dry film density of ≥ 100 lb/ft3. If a coating is used that has a lower dry film density, a report must exist and conclude that the coating will not transport. A report exists and concludes that inorganic zinc coatings used on these surfaces are Safety – Service Level I.

A report exists and concludes that tags and signs used in these locations are made of steel or another metal with a density ≥ 100 lb/ft3. In addition, a report exists and concludes that caulking used in these locations or coatings used on these signs or tags have a dry film density of ≥ 100 lb/ft3. If a material is used that has a lower density, a report must exist and conclude that there is insufficient water flow to transport lightweight caulking, signs, or tags.

A report exists and concludes that the ventilation filters and fire barriers in these locations have a density of ≥ 100 lb/ft3.

ITAAC Determination Basis

Multiple ITAAC are performed to demonstrate that the Passive Core Cooling System (PXS) provides Reactor Coolant System (RCS) makeup, boration, and safety injection during design basis events. The subject ITAAC requires inspections to verify that:

1. Nonsafety-related coatings used inside containment on walls, floors, ceilings and structural steel (except in the Chemical and Volume Control System CVS room) have a dry film density of ≥ 100 lb/ft^3, and inorganic zinc (IOZ) coatings used on these surfaces are Safety-Service Level I.
2. Nonsafety-related coatings used on components below the maximum flood level of a design basis Loss of Coolant Accident (LOCA) or located above the maximum flood level and not inside cabinets or enclosures have a dry film density of ≥ 100 lb/ft^3, and inorganic zinc coatings used on these surfaces are Safety-Service Level I.
3. Tags and signs used below the maximum flood level of a design basis LOCA or located above the maximum flood level and not inside cabinets or enclosures are made of steel or another metal with a density of ≥ 100 lb/ft^3, including coatings used on these signs and tags, and that caulking in these areas has a density of ≥ 100 lb/ft^3.
4. Ventilation filters and fiber-producing fire barriers used inside containment within the Zone of Influence (ZOI) or below the maximum flood level of a design basis LOCA have a density of ≥ 100 lb/ft^3.

1. – Surface Coatings

Prior to application of protective coatings to floors, walls, ceilings, structural steel and piping, personnel confirmed that the selected coating system meets the minimum dry film density requirement of $\geq$100 lb/ft^3. The applied coatings are limited to those approved in the design specification, where the dry film density is an intrinsic property of each coating that is determined by testing prior to approval of that coating. Some of these protective coatings were applied at a vendor facility prior to shipment of items to the site and documented in vendor Quality Assurance Data Packages in accordance with the vendor's approved Quality Plan. The Engineering, Procurement and Construction (EPC) Contractor's QA personnel performed receipt and QC inspections of coated walls, floors, ceilings, structural steel and piping coated in the vendor facility in accordance with Contractor procedure ABC (Reference 3). Included in these receipt inspection activities was an inspection of the quality documentation accompanying the coating work. This inspection, documented in Receiving Inspection Reports XYZ (Reference 4), confirmed that vendor Quality Assurance Data Packages for the delivered SSCs included a Certificate of Conformance confirming the dry film density of the selected coating system as well as application/inspection certifications for surfaces coated with IOZ.

The basis for inspecting protective coatings of as-built SSCs at other than their final installed locations is provided in NEI 08-01, Section 9.5, "As-built Inspections."

Installation of walls, floors, ceilings, structural steel and piping was performed in accordance with applicable procedures to assure that protective coatings were not adversely impacted during installation. EPC Contractor inspections of protective coatings applied to SSCs are documented in the ITAAC Completion Package (Reference 2).

EPC Contractor QC personnel reviewed application and inspection records pertaining to the on-site application of protective coatings to walls, floors, ceilings, structural steel and piping by doing an inspection of the Construction Work Packages. Construction Work Packages include a Certificate of Conformance confirming the dry film density of the selected coating system $\geq$ 100 lb/ft^3, as well as application/inspection certifications for surfaces coated with IOZ. These inspections are documented in Inspection Report(s) VVV (Reference 5). Inspection of on-site application of protective coatings included repairs or "touch-ups" applied following the initial application as well as following installation of SSCs coated at the vendor facility. No coatings of lower density were used in these applications.

Inspection of the Quality Assurance Data Packages for SSCs coated at the vendor facility and Construction Work Packages concerning on-site application of coatings concluded that the coatings used on these surfaces have a dry film density $\geq$ 100 lb/ft^3, and that IOZ applications were Safety – Service Level I.

2. – Component Coatings

Prior to application of protective coatings to components located below the maximum flood level of a design basis loss-of-coolant accident (LOCA), or located above the maximum flood level and not inside cabinets or enclosures, personnel confirmed that the selected coating system is an approved coating that meets the dry film density requirement. These protective coatings were applied at a vendor facility prior to shipment of components to the site and documented in vendor Quality Assurance Data Packages in accordance with the vendor's approved Quality Plan.

The Engineering, Procurement and Construction (EPC) Contractor's QA personnel performed receipt and QC inspections of components coated in the vendor facility in accordance with Contractor procedure ABC (Reference 3). Included in these activities, was an inspection of the quality documentation accompanying the coating work. This inspection, documented in Receiving Inspection Reports UVW (Reference 6), confirmed that vendor Quality Assurance Data Packages for the delivered SSCs included a Certificate of Conformance confirming the dry film density of the selected coating system, as well as application/inspection certifications for surfaces coated with IOZ. No coatings of lower density were used in these applications.

The basis for inspecting protective coatings of as-built SSCs at other than their final installed locations is provided in NEI 08-01, Section 9.5, "As-built" Inspections." "Touch-ups" or repairs required during installation of the components are included in the "on-site" coating applications from item 1 above.

Inspection of the Quality Assurance Data Packages for components coated at the vendor facility concluded that the coatings used on these surfaces have a dry film density $\geq$ 100 lb/ft^3, and that IOZ applications were Safety – Service Level I.

<u>3. – Caulking, Tags, and Signs</u>

Prior to application of any tags, signs or caulking inside containment, personnel confirmed that the selected material was either steel or another material with a density of $\geq$ 100 lb/ft^3. Signs or tags that are coated were also verified to have coatings with a dry film density of $\geq$ 100 lb/ft^3. These inspections are documented in Construction Work Packages.

EPC Contractor QC personnel have reviewed application and inspection records pertaining to the application of signs, tags and caulking by doing an inspection of the Construction Work Packages; these are identified and contained in Inspection Reports AAA (Reference 7). This activity confirmed that Construction Work Packages included a Certificate of Conformance confirming the material of the tags and signs and the dry film density of caulking and the selected coating system used on any tags or signs. No materials of lower density were utilized for caulking, tags, and signs in these locations.

Inspection of the Construction Work Packages concluded that the tags and signs are made of steel or other metal with a density of $\geq$ 100 lb/ft^3 and that caulking used in these locations, or coatings used on these signs or tags, have a dry film density $\geq$ 100 lb/ft^3.

<u>4. – Ventilation Filters and Fiber-producing Fire Barriers</u>

By design, there are no ventilation filters installed within the AP1000 containment. Prior to installation of fire barriers inside containment that are within the ZOI or below the maximum flood level, personnel confirmed that the fire barriers are either non-fiber-producing type barriers, or fiber-producing barriers that have a density of ≥ 100 lb/ft^3. The density was confirmed using information provided by the material supplier specific to the barrier material provided. These inspections are documented in Construction Work Packages.

EPC Contractor QC personnel have reviewed installation records pertaining to the ventilation filters and fire barriers by doing an inspection of the Construction Work Packages; these are identified and contained in Inspection Reports BBB (Reference 8). Inspection of the Construction Work Packages concluded that ventilation filters and fire barriers have a density ≥ 100 lb/ft^3.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 ITAAC Completion Package for ITAAC 2.2.03.08c.x (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.2.03.08c.x was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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 2.2 03.08c.x Completion Package
3. EPC Contractor Procedure ABC
4. Receiving Inspection Reports XYZ
5. Inspection Reports VVV
6. Receiving Inspection Reports UVW
7. Inspection Reports AAA
8. Inspection Reports BBB

EXAMPLE D-101 – EXAMPLE ITAAC CLOSURE NOTIFICATION INSPECTION OF AS-BUILT CONCRETE WALL THICKNESS ITAAC 3.3 00.02A.II.D

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 3.3.00.02a.ii.d

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 3.3.00.02a.ii.d for verification that the as-built concrete thicknesses of the radiologically controlled area of the auxiliary building conform to the building sections defined in ITAAC Table 3.3-1. 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:

2a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.

Inspections, Tests, Analysis:

ii) An inspection of the as-built concrete thicknesses will be performed.

Acceptance Criteria:

ii.d) A report exists that concludes that the as-built concrete thicknesses of the radiologically controlled area of the auxiliary building sections conform to the building sections defined in Table 3.3-1.

ITAAC Determination Basis

Multiple ITAAC are performed to verify that the nuclear island structures, including the critical sections listed in Table 3.3-7 of the AP1000 Design Control Document Tier 1 (Reference 5), are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Tier 1 Design Description, without loss of structural integrity and the safety-related functions. The subject ITAAC verifies that the as-built concrete thicknesses of the radiologically controlled area of the auxiliary building sections conform to the building sections identified in ITAAC Table 3.3-1 (Attachment 1), consistent with design basis loading requirements.

The inspections were performed of the as-built sections (following concrete placement) in accordance with the requirements of measurement guideline APP-XX-XX-XXX (Reference 3), which identifies the location and frequency of inspection points for determining wall, floor, or basemat thicknesses to ensure the resulting measurements are representative of the entire section being inspected. The measurement specifications are based on the size and construction type of each section. Measurements were taken using survey equipment in accordance with site survey procedures. The inspection results contained in Reference 4 and summarized in Attachment 1 conclude that the as-built concrete thicknesses of the radiologically controlled area of the auxiliary building sections conform to the building sections defined in ITAAC Table 3.3-1.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 ITAAC Completion Package for ITAAC 3.3.00.02a.ii.d (Reference 2) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.3.00.02a.ii.d was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

Attachment

<u>References (available for NRC inspection)</u>

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*.
2. ITAAC 3.3.00.02a.ii.d Completion Package
3. APP-XX-XX-XXX, Inspection of Nuclear Island Concrete Structures
4. Inspection Report(s) XYZ
5. APP-GW-GL-700 – AP1000 Design Control Document, Tier 1

Attachment 1
ITAAC Table 3.3-1 – Auxiliary Building Radiologically Controlled Area Walls and Floors

Table 3.3-1 (cont.)
Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building[1]

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness[2][3]	Inspection Results	
				Minimum Recorded Thickness	Maximum Recorded Thickness
Auxiliary Building Walls/Floors Radiologically Controlled					
Column Line 1 wall	From I to N	From 66'-6" to 100'-0"	3'-0"	2'-11.75"	3'-0.125"
Column Line 1 wall	From I to 5'-6" east of L-2	From 100'-0" to 180'-0"	2'-3"	X'-xx.x"	Y'-yy.y"
Column Line 1 wall	From 5'-6" east of L-2 to N	From 100'-0" to 125'-0"	3'-0"	X'-xx.x"	Y'-yy.y"
Column Line 1 wall	From 5'-6" east of L-2 to N	From 125'-0" to 180'-0"	2'-3"	X'-xx.x"	Y'-yy.y"
Column Line 2 wall	From I to K-2	From 66'-6" to 135'-3"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line 2 wall	From K-2 to L-2	From 66'-6" to 135'-3"	5'-0"	X'-xx.x"	Y'-yy.y"
Column Line 2 wall	From L-2 to N	From 98'-1" to 135'-3"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line 2 wall	From I to J-1	From 135'-3" to 153'-0"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line 3 wall	From J-1 to J-2	From 66'-6" to 82'-6"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line 3 wall	From J-1 to J-2	From 100'-0" to 135'-3"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line 3 wall	From J-2 to K-2	From 66'-6" to 135'-3"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line 3 wall	From K-2 to L-2	From 66'-6" to 92'-8 1/2"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line 4 wall	From I to J-1	From 66'-6" to 153'-0"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line 4 wall	From J-1 to J-2	From 66'-6" to 92'-6"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line 4 wall	From J-1 to J-2	From 107'-2" to 135'-3"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line 4 wall	From J-2 to K-2	From 66'-6" to 135'-3"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line 4 wall	From I to intersection with shield building wall	From 135'-3" to 180'-0"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line 5 wall	From I to shield building; with opening east of J-1 (below 107'-2"	From 66'-6" to 160'-6"	2'-0"	X'-xx.x"	Y'-yy.y"

Table 3.3-1 (cont.)
Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building(1)

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness(2)(3)	Inspection Results	
				Minimum Recorded Thickness	Maximum Recorded Thickness
	floor).				
Column Line 7.1 wall	From I to 8' east of J-1	From 66'-6" to 82'-6"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line 7.2 wall	From I to 5'-6"east of J-1	From 66'-6" to 100'-0"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line I wall	From 1 to 7.3	From 66'-6" to 100'-0"	3'-0"	X'-xx.x"	Y'-yy.y"
Column Line I wall	From 1 to 4	From 100'-0" to 180'-0"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line I wall	From 4 to 5	From 100'-0" to 160'-6"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line J-1 wall	From 1 to 2	From 82'-6" to 100'-0"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line J-1 wall	From 2 to 4	From 66'-6" to 135'-3"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line J-1 wall	From 2 to 4	From 135'-3" to 153'-0"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line J-1 wall	From 4 to shield building	From 66'-6" to 107'-2"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line J-2 wall	From 2 to 4	From 66'-6" to 135'-3"	2'-6"	X'-xx.x"	Y'-yy.y"
Column Line J-2 wall	From 4 to intersection with shield building wall	From 66'-6" to 135'-3"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line K-2 wall	From 2 to 4	From 66'-6" to 135'-3"	4'-9"	X'-xx.x"	Y'-yy.y"
Column Line L-2 wall	From 2 to 4	From 66'-6" to 135'-3"	4'-0"	X'-xx.x"	Y'-yy.y"
Column Line N wall	From 1 to 2	From 66'-6" to 100'-0"	3'-0"	X'-xx.x"	Y'-yy.y"
Column Line N wall	From 1 to 12'-9" north of 1	From 100'-0" to 125'-0"	3'-9"	X'-xx.x"	Y'-yy.y"
Column Line N wall	From 1 to 12'-9" north of 1	From 125'-0" to 135'-0"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line N wall	From 12'-9" north of 1 to 2	From 100'-0" to 118'-2 1/2"	3'-0"	X'-xx.x"	Y'-yy.y"
Column Line N wall	From 12'-9" north of 1 to 2	From 118'-2 1/2" to 135'-3"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line N wall	From 1 to 2	From 118'-2 1/2" to 135'-3"	2'-0"	X'-xx.x"	Y'-yy.y"
Column Line N wall	From 2 to 4	From 66'-6" to 98'-1"	3'-0"	X'-xx.x"	Y'-yy.y"
Column Line N wall	From 2 to 4	From 98'-1" to 135'-3"	5'-6"	X'-xx.x"	Y'-yy.y"
Column Line N wall	From 1 to 4	From 135'-3" to 180'-0"	2'-0"	X'-xx.x"	Y'-yy.y"

Table 3.3-1 (cont.)
Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building(1)

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness(2)(3)	Inspection Results	
				Minimum Recorded Thickness	Maximum Recorded Thickness
Labyrinth Wall between Col. Line 3 and 4 and J-1 to 7'-3" from J-2	Not Applicable	From 82'-6" to 92'-6"	2'-6"	X'-xx.x"	Y'-yy.y"
N-S Shield Wall (low wall)	Between K-2 and L-2 extending from column line 1 north	From 100'-0" to 107'-2"	2'-6"	X'-xx.x"	Y'-yy.y"
N-S Shield Wall	Between K-2 and L-2 extending from column line 1 north	From 100'-0" to 125'-0"	2'-3"	X'-xx.x"	Y'-yy.y"
E-W Shield Wall	Between 1 and 2 extending from column line N east	From 100'-0" to 125'-0"	2'-9"	X'-xx.x"	Y'-yy.y"
Auxiliary Area Basemat	From 1-7.3 and I-N, excluding shield building	From 60'-6" to 66'-6"	6'-0"	X'-xx.x"	Y'-yy.y"
Floor	From 1 to 2 and I to N	82'-6"	2'-0"	X'-xx.x"	Y'-yy.y"
Floor	From 2 to 4 and J-1 to J-2	82'-6"	2'-0"	X'-xx.x"	Y'-yy.y"
Floor	From 4 to 5 and J-1 to J-2	82'-6"	0'-9"	X'-xx.x"	Y'-yy.y"
Pipe Chase Floor	From 2 to 5 and J-1 to J-2	92'-6"	2'-0"	X'-xx.x"	Y'-yy.y"
Floor	From 2 to 3 and J-2 to K-2	90'-3"	3'-0"	X'-xx.x"	Y'-yy.y"
Floor	From 3 to 4 and J-2 to K-2	92'-6"	2'-0"	X'-xx.x"	Y'-yy.y"
Floor	From 4 to 7.3 and I to J-1	82'-6"	2'-0"	X'-xx.x"	Y'-yy.y"
Floor	From 1 to 2 and I to N	100'-0"	3'-0"	X'-xx.x"	Y'-yy.y"
Floor	From 2 to 4 and K-2 to L-2	92'-8 1/2"	3'-2 1/2"	X'-xx.x"	Y'-yy.y"
Floor	From I to J-2 and 4 to intersecting vertical wall before column line 5	107'-2"	2'-0"	X'-xx.x"	Y'-yy.y"
Floor	From I to shield building wall and from intersecting vertical wall before column line 5 to column line 5	105'-0"	0'-9"	X'-xx.x"	Y'-yy.y"
Floor	From 1 to 10'-0" north of 1 and L-2 to N	125'-0"	3'-0"	X'-xx.x"	Y'-yy.y"
Floor	From 10'-0" north of 1 to 2 and L-2 to N	118'-2 1/2"	2'-0"	X'-xx.x"	Y'-yy.y"

Table 3.3-1 (cont.)
Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building[1]

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness[2][3]	Inspection Results	
				Minimum Recorded Thickness	Maximum Recorded Thickness
Floor	From 3 to 4 and J-2 to K-2	117'-6"	2'-0"	X'-xx.x"	Y'-yy.y"
Floor	From 2 to 4 and I to J-1	153'-0"	0'-9"	X'-xx.x"	Y'-yy.y"
Roof	From 1 to 4 and I to N	180'-0"	1'-3"	X'-xx.x"	Y'-yy.y"
Floor	From 4 to short of column line 5 and from I to intersection with shield building wall	135'-5"	0'-9"	X'-xx.x"	Y'-yy.y"
Floor	From short of column line 5 to column line 5 and from I to intersection with shield building wall	133'-0"	0'-9"	X'-xx.x"	Y'-yy.y"

1. The column lines and floor elevations are identified and included on Figures 3.3-1 through 3.3-13.
2. These wall (and floor) thicknesses have a construction tolerance of ± 1 inch, except for exterior walls below grade where the tolerance is +12 inches, - 1 inch.
3. For walls that are part of structural modules, the concrete thickness also includes the steel face plates.
4. For floors with steel surface plates, the concrete thickness also includes the plate thickness.
5. Where a wall (or a floor) has openings, the concrete thickness does not apply at the opening.

EXAMPLE D-102 – EXAMPLE ITAAC CLOSURE NOTIFICATION AS-BUILT AUXILIARY BUILDING ROOM BOUNDARIES FLOOD BARRIER ITAAC 3.3 00.05B

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of AP1000 ITAAC 3.3.00.05b

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 3.3.00.05b for verifying that floors and walls as identified on ITAAC Table 3.3-2 have provisions to prevent flooding between rooms. 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:

The boundaries between rooms identified in Table 3.3-2 of the auxiliary building are designed to prevent flooding of rooms that contain safety-related equipment.

Inspections, Tests, Analyses:

An inspection of the auxiliary building rooms will be performed.

Acceptance Criteria:

A report exists that confirms floors and walls as identified on Table 3.3-2 have provisions to prevent flooding between rooms up to the maximum flood levels for each room defined in Table 3.3-2.

ITAAC Determination Basis

An inspection of the auxiliary building rooms was performed to demonstrate that the boundaries between auxiliary building rooms identified in ITAAC Table 3.3-2 (Attachment 1) are designed to prevent flooding of rooms that contain safety-related equipment. The inspection was performed in accordance with Inspection Plan XYZ (Reference 2) to document the existence of provisions to prevent flooding between rooms via openings or penetrations below the maximum flood levels for the rooms indicated in ITAAC Table 3.3-2. A visual inspection was performed of the floors and walls of each of the rooms included in ITAAC Table 3.3-2. As part of this visual inspection, all openings and penetrations through these boundaries below the maximum flood level were documented. Each opening or penetration located below the maximum flood levels was then inspected to ensure that watertight doors, penetration seals or [identify any other provisions used] specified in the design documents to prevent flooding from the flooding source to the adjacent rooms were installed as required. The results of the visual inspection of the floors and walls were recorded in accordance with Reference 2 and the results documented in Reference 3. The inspection results compiled into Reference 3 confirm that floors and walls as identified on ITAAC Table 3.3-2 have provisions to prevent flooding between rooms up to the maximum flood levels for each room defined in Table 3.3-2.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 ITAAC Completion Package for ITAAC 3.3.00.05b (Reference 4) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 3.3.00.05b was performed for {Site Name and Unit #}, 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(e)(1).

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

Attachment

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52.*
2. Inspection Plan XYZ, "Inspection of the Auxiliary Building Rooms for Flood Prevention Provisions"
3. Inspection Report(s) XXX
4. ITAAC 3.3 00.05b Completion Package

Attachment 1 (ITAAC Table 3.3-2)

Table 3.3-2
Nuclear Island Building Room Boundaries
Required to Have Flood Barrier Floors and Walls

Boundary/ Maximum Flood Level (inches)	Between Room Number to Room Number	
	Room with Postulated Flooding Source	Adjacent Room
Floor/36	12306	12211
Floor/3	12303	12203/12207
Floor/3	12313	12203/12207
Floor/1	12300	12201/12202/12207 12203/12204/12205
Floor/3	12312	12212
Wall/36	12306	12305
Floor/1	12401	12301/12302/12303 12312/12313
Wall/1	12401	12411/12412
Floor/36	12404	12304
Floor/4	12405	12305
Floor/36	12406	12306
Wall/36	12404	12401
Wall/1	12421	12452
Floor/3	12501	12401/12411/12412
Floor/3	12555	12421/12423/12422
Wall/36	12156/12158	12111/12112

APPENDIX D-103 – EXAMPLE S-1 – EXAMPLE ITAAC CLOSURE NOTIFICATION SITE-SPECIFIC EMERGENCY PLANNING ITAAC C.3.8.01.06.05

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC C.3.8.01.06.05

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 C.3.8.01.06.05 for verification that field monitoring team(s) demonstrated an ability to make rapid assessment of actual or potential magnitude and locations of any radiological hazards through simulated liquid or gaseous release pathways. 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:

The means exists to make rapid assessments of actual or potential magnitude and locations of radiological hazards through liquid or gaseous release pathways, including activation, notification means, field team composition, transportation, communication, monitoring equipment, and estimated deployment times. [I.8]

Inspections, Tests, Analyses:

A test will be performed of the capabilities to make rapid assessments of actual or potential magnitude and locations of radiological hazards through liquid or gaseous release pathways, including activation, notification means, field team composition, transportation, communication, monitoring equipment, and estimated deployment times.

Acceptance Criteria:

The field monitoring team(s) was activated and evaluated. They demonstrated an ability to make rapid assessment of actual or potential magnitude and locations of any radiological hazards through simulated liquid or gaseous release pathways. A qualified *field team was notified, activated, briefed and dispatched from the EOF during a radiological release scenario. The team demonstrated the procedural guidance in team composition, use of monitoring equipment, communication from the field, and locating specific sampling locations.*

ITAAC Determination Basis

A test was performed to demonstrate the ability to make rapid assessment of actual or potential magnitude and locations of any radiological hazards through simulated liquid or gaseous release pathways. A radiological release scenario was simulated in accordance with Procedure ABC (Reference 3), and two person field monitoring teams were activated and evaluated; including a vehicle driver and Health Physics Specialist, trained and qualified to monitor for radioactive materials released to the environment and to sample air, soil, vegetation, water, etc., for radioactive material dispersion and deposition.

The teams were staged at the Offsite Environmental Lab, in accordance with the Emergency Plan. The teams were briefed, dispatched, and directed by the Emergency Operations Facility (EOF) to characterize the size, location, and intensity of the simulated plume, using current and forecasted meteorological conditions. In accordance with Procedure DEF (Reference 4), the EOF provided the direction of the projected plume pathway and specified the data and samples to monitor. By traversing the projected plume pathway, the teams located the projected plume and recorded radiological dose rates and collected air samples in accordance with Procedure GHI (Reference 5). The data collected during the simulation was communicated to the EOF for use in developing dose projections at the site boundary, 2 miles, 5 miles and 10 miles downwind.

During the simulated radiological release scenario, the teams also collected environmental samples including Thermo Luminescent Dosimeters (TLD), soil, water, and vegetations to determine the radiological dispersion/effects within the identified plume area. These samples were collected and returned to the designated environmental lab in accordance with Procedure MNO (Reference 6) for analysis and reporting to the EOF.

Both the field monitoring teams and the EOF demonstrated effective use of their procedures (References 3 through 6), appropriate and successful use of communications equipment (radios and cellular phones), and appropriate use of monitoring, sampling, and dose assessment equipment. The field monitoring teams were effective in locating specific sample locations within the projected plume pathway. The evaluation of the field monitoring teams' performance was documented in accordance with Procedure ABC (Reference 3) in the Exercise Report (Reference 2).

The Exercise Report (Reference 2) demonstrates that field monitoring teams are able to make rapid assessment of actual of potential magnitude and locations of any radiological hazards through simulated liquid or gaseous release pathways. The field monitoring teams were staged at the Offsite Environmental Lab in accordance with the Emergency

Plan, and were briefed, dispatched, and directed by the EOF. The information contained in the Exercise Report documents the successful completion of ITAAC C.3.8.01.06.05.

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, {Licensee} performed a review of ITAAC Findings 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 C.3.8.01.06.05 (Reference 7) and available for NRC review.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC C.3.8.01.06.05 was performed for {Site Name and Unit #}, 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. Exercise Report XYZ, of capabilities for rapid assessment
3. Procedure ABC, Conduct of Drills and Exercises
4. Procedure DEF, Procedure for EOF Activation and Operation
5. Procedure GHI, Procedure for Plant Radiological Surveying
6. Procedure MNO, Procedure for Environmental Monitoring
7. ITAAC C.3.8.01.06.05 Completion Package

APPENDIX D-104 – EXAMPLE S-2 –PHYSICAL SECURITY ITAAC CLOSURE NOTIFICATION ITAAC 2.6.09.5C

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: ITAAC Closure Notification on Completion of {Site Name and Unit #} ITAAC 2.6.09.05c

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 2.6.09.05c. The purpose of this ITAAC is to verify that the central and secondary alarm stations (CAS/SAS) are designed and equipped such that, in the event of a single act, in accordance with the design basis threat of radiological sabotage, equipment needed to maintain the functional capability of either alarm station to detect and assess alarms and communicate with onsite and offsite response personnel exists. The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1).

ITAAC Statement

Design Commitment

The central and secondary alarm stations are designed and equipped such that, in the event of a single act, in accordance with the design basis threat of radiological sabotage, the design enables the survivability of equipment needed to maintain the functional capability of either alarm station to detect and assess alarms and communicate with onsite and offsite response personnel.

Inspection/Test/Analysis

Inspections and/or analysis of the central and secondary alarm station will be performed.

Acceptance Criteria

The central and secondary alarm stations are designed and equipped such that, in the event of a single act, in accordance with the design basis threat of radiological sabotage, equipment needed to maintain the functional capability of either alarm station to detect and assess alarms and communicate with onsite and offsite response personnel exists.

ITAAC Determination Basis

The CAS and SAS are designed such that their construction, location, protection, and equipment are functionally the same. Both alarm stations are designed to be functionally equivalent and redundant, such that all functions needed to detect and assess alarms, and initiate response of both onsite and offsite security forces, is available in each location. The redundant design and spatial separation of CAS and SAS assure that no single act by the design basis threat that disables one station would disable the other station. Verification of the proper location of CAS and SAS within the protected area is covered by separate ITAAC 2.6.09.05b.

An inspection and analysis of the central and secondary alarm stations were performed to confirm that they are designed and equipped such that, in the event of a single act, in accordance with the design basis threat of radiological sabotage, the design enables the survivability of equipment needed to maintain the functional capability of either alarm station to a) detect and assess alarms; b) initiate and coordinate an adequate response to an alarm; c) summon offsite assistance; and d) provide command and control, as required by 10 CFR 73.55(i)(4).

Personnel from the site security organization performed walk-down inspections of the as-built CAS/SAS and reviewed design documentation in accordance with station procedure {Site Procedure #, “Central Alarm and Secondary Alarm Stations (CAS/SAS) Security Inspection Procedure”} (Reference 2). The as-built inspection results were compared to the expected results in the CAS/SAS Single Act Assessment (Reference 3), and the results of the comparison are documented in the CAS/SAS Security Design Inspection Report (Reference 5).

In addition, an analysis was performed that considers attack strategies and tactics utilized by the design basis threat and the associated NRC Design Basis Threat guidance in RG 5.69 (Reference 6) to examine each single act that can be projected against the equipment located in the as-built CAS/SAS. The results of this CAS/SAS Analysis of Single Act (Reference 4) were also compared to the expected results in the CAS/SAS Single Act Assessment.

The inspection and analysis results above provide the determination that the (CAS/SAS) are designed and equipped such that, in the event of a single act, in accordance with the design basis threat of radiological sabotage and the associated NRC Design Basis Threat guidance, equipment needed to maintain the functional capability of either alarm station to detect and assess alarms and communicate with onsite and offsite response personnel exists.

ITAAC Finding Review

In accordance with {project specific procedure for ITAAC completion}, {Licensee} performed a review of ITAAC findings and associated corrective actions. This review found there are no relevant ITAAC findings and no associated unresolved corrective actions with this ITAAC. The ITAAC finding review is documented in the ITAAC Completion Package for ITAAC 2.6.09.05c (Reference 7) and is available for NRC inspection.

ITAAC Completion Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that ITAAC 2.6.09.05c was performed for {Site Name and Unit #}, 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.

{Licensee Name} requests 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 {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

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. {Site Procedure #} “Central Alarm and Secondary Alarm Stations (CAS/SAS) Security Inspection Procedure” (Safeguards Information)
3. APP-SES-Z0C-001, “CAS/SAS Single Act Assessment” (Safeguards Information)
4. {Site Document #}, “CAS/SAS Security Design Inspection Report” (Safeguards Information)
5. {Site Document #}, “CAS/SAS Analysis of Single Act” (Safeguards Information)
6. Regulatory Guide 5.69, “Guidance for the Application of the Radiological Sabotage Design-Basis Threat in the Design, Development, and Implementation of a Physical Security Program that Meets 10 CFR 73.55 Requirements” (Safeguards Information)
7. ITAAC 2.6.09.05c Completion Package

ITAAC DEMONSTRATION PROJECT EXAMPLES

The following ITAAC Closure Notification examples were developed as part of the NRC's 2010-11 Simulated ITAAC Closure and Verification Demonstration Project, which was also supported by the U.S. Department of Energy. The final report for the demonstration project is available via NRC-ADAMS at ML11166A182.

These examples (Demo 1 – Demo 6) were developed by Southern Nuclear and thus are documented on SNC letterhead. Minor formatting differences may exist versus the Appendix D-1 template, however, like the other ICN examples in this Appendix, they may be used as guidance for providing sufficient ITAAC determination basis in actual ICNs.

DEMO 1 - THE REACTOR COOLANT SYSTEM (RCS) HARSH ENVIRONMENT TYPE TEST 2.1 02.07A.I

Project No.: 0783 ND-11-0491

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Completion of ITAAC 2.1 02.07a.i

The purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the *Simulated* completion of Vogtle Electric Generating Plant (VEGP) Unit 3, Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item 2.1 02.07a.i for the harsh environment qualification of equipment in the Reactor Coolant System identified in Table 2.1.2-1 of the AP1000 DCD in accordance with 10 CFR 52.99(c)(1). The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1), which is endorsed by NRC Regulatory Guide 1.215.

ITAAC Statement

Design Commitment:

The Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

Inspections, Tests, Analysis:

(i)Type tests, analyses, or a combination of type tests and analyses will be performed on Class 1E equipment located in a harsh environment.

Acceptance Criteria:

(i)A report exists and concludes that the Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

ITAAC Determination Basis

Equipment qualification reports for the Class 1E equipment identified in DCD Tier 1 Table 2.1.2-1 as being qualified for a harsh environment conclude that the equipment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function. For Class 1E electrical components, type testing was performed in accordance with IEEE 323-1974 (Reference 3) and Regulatory Guide 1.89, "Qualification of Class 1E Equipment for Nuclear Power Plants", to meet the requirements of 10 CFR 50.49, "Environmental Qualification of Electrical Equipment Important to Safety for Nuclear Power Plants." For safety-related mechanical equipment, such as tanks and valves, type testing meets the requirements of Appendix A to 10 CFR Part 50, General Design Criterion 4, "Fluid Systems."

Equipment Qualification Data Packages (EQDP) are identified in Table 1 (enclosure to this letter) for each safety-related mechanical or Class 1E electrical component located in a harsh environment. These EQDPs contain applicable test reports and associated documentation and conclude that the listed components are qualified to perform their required function. EQDPs comply with the requirements in AP1000 DCD Tier 2 Chapter 3 and are included in the ITAAC completion package (Reference 2).

Safety-related electrical and mechanical equipment had been qualified using testing, analysis, or a combination of testing and analysis in accordance with IEEE-323 and RG 1.89. The specific qualification method used for each component is identified in Table 1 (enclosure to this letter). Additional information about the methods used to qualify safety-related equipment supplied for the AP1000 is provided in Appendix 3D, "Methodology for Qualifying AP1000 Safety-Related Electrical and Mechanical Equipment" of the AP1000 DCD (Reference 4).

ITAAC Finding Review

In accordance with procedures for ITAAC closure, Southern Nuclear performed a review of ITAAC findings pertaining to the subject ITAAC. This review identified one relevant ITAAC finding.

ITAAC finding #2010001-01 – Failure to Adequately Substantiate the Basis for Environmental Qualification of Class 1E Equipment

The ITAAC completion review determined that all corrective actions associated with the finding are complete and the finding is closed. The NRC closure of this finding is documented in the NRC Construction Inspection Program Management System (CIPMS). The ITAAC Completion Package (Reference 2) documents the closure for ITAAC 2.1 2.07a.i and is available for NRC inspection.

ITAAC Completion Statement

Based on the above information for VEGP Unit 3, Southern Nuclear hereby notifies the NRC that ITAAC 2.1 02.07a.i was performed and 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.

Southern Nuclear requests 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 J. (Jim) T. Davis at 706-826-5544.

Sincerely,

J. T. Davis
Vogtle 3 & 4 Licensing Supervisor
SNC Nuclear Development

JTD/faw

Enclosure: Completion of ITAAC 2.1 02.07a.i

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*.
2. SV3 ITAAC 2.1 02.07a.i ITAAC Completion Package
3. IEEE 323-1974 – IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations 1.89
4. APP-GW-GL-700, AP1000 Design Control Document, Appendix 3D
5. Equipment Qualification Data Packages as identified in Table 1 (enclosure to this letter).

cc: Southern Nuclear Operating Company
Mr. J. A. Miller, Executive Vice President, Nuclear Development (w/o enclosure)
Mr. D. H. Jones, Site Vice President, Vogtle 3 & 4 (w/o enclosure)
Mr. J. R. Johnson, Vice President, AP1000 Quality & Compliance (w/o enclosure)
Mr. C. R. Pierce, AP1000 Licensing Manager
Mr. J. D. Williams, Vogtle 3 & 4 Site Support Manager
Mr. J. T. Davis, Vogtle 3 & 4 Site Licensing Supervisor
Mr. B. W. Waites, Project Engineer
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Mr. R. F. Ziesing, Director, US Licensing, NPP
Mr. S. A. Bradley, Vogtle Project Licensing Manager
Mr. M. A. Melton, Manager, Regulatory Interfaces
Mr. D. A. Lindgren, Principal Engineer, AP1000 Licensing and Customer Interface
Mr. T. J. Ray, Manager AP1000 COL Licensing Support

Department of Energy
Mr. T. Miller, DOE/PM

Southern Nuclear Operating Company

ND-11-0491

Enclosure

Completion of ITAAC 2.1 02.07a.i

Table 1
Equipment Qualification Document Package Listing

Equipment Name	Tag Number	Class 1E/ Qual for Harsh Envir.	Envir. Zone (see Table 3D.5-1 of DCD)	Qualification Program	Type of Qualification	EQDP Report Number
First-stage ADS Motor-operated Valve (MOV)	RCS-PL-V001A	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
First-stage ADS MOV	RCS-PL-V001B	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Second-stage ADS MOV	RCS-PL-V002A	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Second-stage ADS MOV	RCS-PL-V002B	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Third-stage ADS MOV	RCS-PL-V003A	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Third-stage ADS MOV	RCS-PL-V003B	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Fourth-stage ADS Squib Valve	RCS-PL-V004A	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV70
Fourth-stage ADS Squib Valve	RCS-PL-V004B	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV70
Fourth-stage ADS Squib Valve	RCS-PL-V004C	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV70
Fourth-stage ADS Squib Valve	RCS-PL-V004D	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV70

Equipment Name	Tag Number	Class 1E/ Qual for Harsh Envir.	Envir. Zone (see Table 3D.5-1 of DCD)	Qualification Program	Type of Qualification	EQDP Report Number
ADS Discharge Header A Vacuum Relief Valve	RCS-PL-V010A	Yes/Yes	1	M*	Type Testing	EQDP PV18
ADS Discharge Header B Vacuum Relief Valve	RCS-PL-V010B	Yes/Yes	1	M*	Type Testing	EQDP PV18
First-stage ADS Isolation MOV	RCS-PL-V011A	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
First-stage ADS Isolation MOV	RCS-PL-V011B	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Second-stage ADS Isolation MOV	RCS-PL-V012A	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Second-stage ADS Isolation MOV	RCS-PL-V012B	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Third-stage ADS Isolation MOV	RCS-PL-V013A	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Third-stage ADS Isolation MOV	RCS-PL-V013B	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Fourth-stage ADS MOV	RCS-PL-V014A	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Fourth-stage ADS MOV	RCS-PL-V014B	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Fourth-stage ADS MOV	RCS-PL-V014C	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01
Fourth-stage ADS MOV	RCS-PL-V014D	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV01

Equipment Name	Tag Number	Class 1E/ Qual for Harsh Envir.	Envir. Zone (see Table 3D.5-1 of DCD)	Qualification Program	Type of Qualification	EQDP Report Number
Reactor Vessel Head Vent Valve	RCS-PL-V150A	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV13
Reactor Vessel Head Vent Valve	RCS-PL-V150B	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV13
Reactor Vessel Head Vent Valve	RCS-PL-V150C	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV13
Reactor Vessel Head Vent Valve	RCS-PL-V150D	Yes/Yes	1	M* & E* (Note 1)	Type Testing	EQDP PV13
RCS Cold Leg 1A Narrow Range Temperature Sensor	RCS-JE-TE121A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Cold Leg 1B Narrow Range Temperature Sensor	RCS-JE-TE121B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Cold Leg 1B Narrow Range Temperature Sensor	RCS-JE-TE121C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Cold Leg 1A Narrow Range Temperature Sensor	RCS-JE-TE121D	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Cold Leg 2B Narrow Range Temperature Sensor	RCS-JE-TE122A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Cold Leg 2A Narrow Range Temperature Sensor	RCS-JE-TE122B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Cold Leg 2A Narrow Range Temperature Sensor	RCS-JE-TE122C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Cold Leg 2B Narrow Range Temperature Sensor	RCS-JE-TE122D	Yes/Yes	1	E*	Type Testing	EQDP C1E

Equipment Name	Tag Number	Class 1E/ Qual for Harsh Envir.	Envir. Zone (see Table 3D.5-1 of DCD)	Qualification Program	Type of Qualification	EQDP Report Number
RCS Cold Leg 1A Dual Range Temperature Sensor	RCS-JE-TE125A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Cold Leg 2A Dual Range Temperature Sensor	RCS-JE-TE125B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Cold Leg 1B Dual Range Temperature Sensor	RCS-JE-TE125C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Cold Leg 2B Dual Range Temperature Sensor	RCS-JE-TE125D	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 1 Narrow Range Temperature Sensor	RCS-JE-TE131A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 2 Narrow Range Temperature Sensor	RCS-JE-TE131B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 1 Narrow Range Temperature Sensor	RCS-JE-TE131C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 2 Narrow Range Temperature Sensor	RCS-JE-TE131D	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 1 Narrow Range Temperature Sensor	RCS-JE-TE132A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 2 Narrow Range Temperature Sensor	RCS-JE-TE132B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 1 Narrow Range Temperature Sensor	RCS-JE-TE132C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 2 Narrow Range Temperature Sensor	RCS-JE-TE132D	Yes/Yes	1	E*	Type Testing	EQDP C1E

Equipment Name	Tag Number	Class 1E/ Qual for Harsh Envir.	Envir. Zone (see Table 3D.5-1 of DCD)	Qualification Program	Type of Qualification	EQDP Report Number
RCS Hot Leg 1 Narrow Range Temperature Sensor	RCS-JE-TE133A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 2 Narrow Range Temperature Sensor	RCS-JE-TE133B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 1 Narrow Range Temperature Sensor	RCS-JE-TE133C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 2 Narrow Range Temperature Sensor	RCS-JE-TE133D	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 1 Wide Range Temperature Sensor	RCS-JE-TE135A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 2 Wide Range Temperature Sensor	RCS-JE-TE135B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Wide Range Pressure Sensor	RCS-JE-PT140A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Wide Range Pressure Sensor	RCS-JE-PT140B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Wide Range Pressure Sensor	RCS-JE-PT140C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Wide Range Pressure Sensor	RCS-JE-PT140D	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 1 Level Sensor	RCS-JE-LT160A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCS Hot Leg 2 Level Sensor	RCS-JE-LT160B	Yes/Yes	1	E*	Type Testing	EQDP C1E
Passive Residual Heat Removal (PRHR) Return Line Temperature Sensor	RCS-JE-TE161	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Pressure Sensor	RCS-JE-PT191A	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Pressure Sensor	RCS-JE-PT191B	Yes/Yes	1	E*	Type Testing	EQDP C1E

Equipment Name	Tag Number	Class 1E/ Qual for Harsh Envir.	Envir. Zone (see Table 3D.5-1 of DCD)	Qualification Program	Type of Qualification	EQDP Report Number
Pressurizer Pressure Sensor	RCS-JE-PT191C	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Pressure Sensor	RCS-JE-PT191D	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Level Reference Leg Temperature Sensor	RCS-JE-TE193A	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Level Reference Leg Temperature Sensor	RCS-JE-TE193B	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Level Reference Leg Temperature Sensor	RCS-JE-TE193C	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Level Reference Leg Temperature Sensor	RCS-JE-TE193D	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Level Sensor	RCS-JE-LT195A	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Level Sensor	RCS-JE-LT195B	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Level Sensor	RCS-JE-LT195C	Yes/Yes	1	E*	Type Testing	EQDP C1E
Pressurizer Level Sensor	RCS-JE-LT195D	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 1A Bearing Water Temperature Sensor	RCS-JE-TE211A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 1A Bearing Water Temperature Sensor	RCS-JE-TE211B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 1A Bearing Water Temperature Sensor	RCS-JE-TE211C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 1A Bearing Water Temperature Sensor	RCS-JE-TE211D	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 1B Bearing Water Temperature Sensor	RCS-JE-TE212A	Yes/Yes	1	E*	Type Testing	EQDP C1E

Equipment Name	Tag Number	Class 1E/ Qual for Harsh Envir.	Envir. Zone (see Table 3D.5-1 of DCD)	Qualification Program	Type of Qualification	EQDP Report Number
RCP 1B Bearing Water Temperature Sensor	RCS-JE-TE212B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 1B Bearing Water Temperature Sensor	RCS-JE-TE212C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 1B Bearing Water Temperature Sensor	RCS-JE-TE212D	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 2A Bearing Water Temperature Sensor	RCS-JE-TE213A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 2A Bearing Water Temperature Sensor	RCS-JE-TE213B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 2A Bearing Water Temperature Sensor	RCS-JE-TE213C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 2A Bearing Water Temperature Sensor	RCS-JE-TE213D	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 2B Bearing Water Temperature Sensor	RCS-JE-TE214A	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 2B Bearing Water Temperature Sensor	RCS-JE-TE214B	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 2B Bearing Water Temperature Sensor	RCS-JE-TE214C	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 2B Bearing Water Temperature Sensor	RCS-JE-TE214D	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 1A Pump Speed Sensor	RCS-JE-ST281	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 1B Pump Speed Sensor	RCS-JE-ST282	Yes/Yes	1	E*	Type Testing	EQDP C1E
RCP 2A Pump Speed Sensor	RCS-JE-ST283	Yes/Yes	1	E*	Type Testing	EQDP C1E

Equipment Name	Tag Number	Class 1E/ Qual for Harsh Envir.	Envir. Zone (see Table 3D.5-1 of DCD)	Qualification Program	Type of Qualification	EQDP Report Number
RCP 2B Pump Speed Sensor	RCS-JE-ST284	Yes/Yes	1	E*	Type Testing	EQDP C1E

E* - Electrical Equipment Program (Harsh Environment)
M* - Mechanical Equipment Program (Harsh Environment)
Note 1 - The Mechanical part is for the valve and the electrical part is for the limit switch and the motor operator, the squib operator, or the solenoid operator.

DEMO 2 - CONTAINMENT SYSTEM IMPACT TESTING 2.2 01.04A.II

Project No.: 0783 ND-10-2182

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Completion of ITAAC 2.2 01.04a.ii

The purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the *Simulated* completion of Vogtle Electric Generating Plant (VEGP) Unit 3, Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item 2.2 01.04a.ii for impact testing on the containment and pressure-retaining penetration materials in accordance with the ASME Code Section III, Subsection NE, to confirm the fracture toughness of the materials in accordance with 10 CFR 52.99(c)(1). The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1).

ITAAC Statement

Design Commitment:

The components identified in Table 2.2.1-1 as ASME Code Section III retain their pressure boundary integrity at their design pressure.

Inspections, Tests, Analysis:

ii) Impact testing will be performed on the containment and pressure-retaining penetration materials in accordance with the ASME Code Section III, Subsection NE, to confirm the fracture toughness of the materials.

Acceptance Criteria:

A report exists and concludes that the containment and pressure-retaining penetration materials conform with fracture toughness requirements of the ASME Code Section III.

ITAAC Determination Basis

Impacting testing has been performed on the containment and pressure-retaining penetration materials in accordance with ASME Code Section III, Subsection NE, to confirm the fracture toughness of the materials. The ASME Code Data Report (Reference 3) provided with the Vogtle Electric Generating Plant (VEGP) Unit 3 containment vessel concluded that the containment and pressure-retaining penetration materials, for components identified in Table 2.2.1-1 as ASME Code Section III, conform with fracture toughness requirements of the ASME Code Section III.

The AP1000 Containment Vessel has been designed and fabricated as an ASME N-stamped vessel. Other equipment that has been classified as Class MC and form the pressure retaining boundary of containment is considered ASME Code “Parts” of the containment vessel and combined under the N-Stamp of the vessel. The table below provides a summary of all ASME Code Stamped Class MC Parts from Table 2.2.1-1 that require testing per this ITAAC. The impact testing results and are included as part of the Certified Material Test Report in the ASME Code Data Report.

Component/Part	ASME Code Stamp	ASME Definition
Containment Vessel	N	Component
Penetration Sleeves	-	Material
Guard Pipes (non-bellows)	-	Material
Airlocks	NPT	Part
Equipment Hatches	NPT	Part
Electrical Penetration Assemblies	NPT	Part
Bellows (including guard pipes)	NPT	Part
Flued Heads	-	Material
Fuel Transfer Tube	NPT	Part

ITAAC Finding Review

In accordance with procedures for ITAAC closure, Southern Nuclear performed review of all ITAAC findings pertaining to the subject ITAAC. This review found that there were no relevant ITAAC findings associated with this ITAAC. The ITAAC Completion Package (Reference 2) documents closure for ITAAC 2.2 01.04a.ii and is available for NRC review.

ITAAC Closure Statement

Based on the above information for VEGP Unit 3, Southern Nuclear hereby notifies the NRC that ITAAC 2.2 01.04a.ii was performed and the prescribed acceptance criteria are met.

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 J. (Jim) T. Davis at 706-826-5544.

Sincerely,

J. T. Davis
Vogtle 3 & 4 Licensing Supervisor
SNC Nuclear Development

JTD/faw

References (available for NRC review)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*.
2. ITAAC 2.2 01.04a.ii Completion Package
3. Vogtle Electric Generating Plant (VEGP) Unit 3 Containment Vessel Certified Material Test Report

cc: <u>Southern Nuclear Operating Company</u>
Mr. J. A. Miller, Executive Vice President, Nuclear Development (w/o enclosure)
Mr. D. H. Jones, Site Vice President, Vogtle 3 & 4 (w/o enclosure)
Mr. C. R. Pierce, AP1000 Licensing Manager
Mr. J. D. Williams, Vogtle 3 & 4 Site Support Manager
Mr. J. T. Davis, Vogtle 3 & 4 Site Licensing Supervisor
Mr. B. W. Waites, Project Engineer
Mr. P. C. Albuquerque, Vogtle 3 & 4 Site Licensing Engineer

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Mr. S. A. Bradley, Vogtle Project Licensing Manager
Mr. M. A. Melton, Manager, Regulatory Interfaces
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<u>Department of Energy</u>
Mr. T. Miller, DOE/PM

DEMO 3 - PASSIVE CONTAINMENT COOLING FUNCTIONAL ARRANGEMENT 2.2 02.01

Project No.: 0783 ND-11-0492

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3
Completion of ITAAC 2.2 02.01

The purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the *Simulated* completion of Vogtle Electric Generating Plant (VEGP) Unit 3, Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item 2.2 02.1 for verifying that the Passive Containment Cooling System (PCS) conforms with the functional arrangement as described in the Design Description in Section 2.2.2 of the AP1000 DCD in accordance with 10 CFR 52.99(c)(1). The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1).

ITAAC Statement

Design Commitment:

The functional arrangement of the PCS is as described in the Design Description of this Section 2.2.2.

Inspections, Tests, Analysis:

Inspection of the as- built system will be performed.

Acceptance Criteria:

The as-built PCS conforms to the functional arrangement as described in the Design Description of this Section 2.2.2.

ITAAC Determination Basis

An inspection of the as-built PCS was conducted as part of the system turnover/walkdown between construction completion and pre-operational testing on the Passive Cooling System (PCS) to confirm that the functional arrangement of the PCS is as described in the Design Description of DCD Tier 1 Section 2.2.2. [Based on guidance in NEI 08-01, Section 10.5, that was developed subsequent to the ITAAC Demonstration Project, the following sentence should be added here to the ITAAC Determination Basis for functional arrangement ITAAC:

"This inspection encompassed all SSCs identified in the Tier 1 design description, including those in referenced tables and figures."]

The inspection (walkdown) was completed in accordance with Consortium Procedure APP-GW-GQP-XXX (Reference 3) which requires the preparation of a detailed inspection plan. This plan included the use of detailed drawings to perform visual observations and compare the as-built system to the design description.

The inspection confirmed that the functional arrangement of the as-built PCS conforms to the Design Description of DCD Tier 1 Section 2.2.2, as documented in the PCS functional arrangement inspection report (Reference 4).

ITAAC Finding Review

In accordance with procedures for ITAAC closure, Southern Nuclear performed a review of all ITAAC findings pertaining to the subject ITAAC. This review found that there was no relevant ITAAC findings associated with this ITAAC. The Completion Package (Reference 2) documents the closure for ITAAC 2.2 02.01 and is available for NRC inspection.

ITAAC Completion Statement

Based on the above information for VEGP Unit 3, Southern Nuclear notifies the NRC that ITAAC 2.2 02.01 was performed and 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 J. (Jim) T. Davis at 706-826-5544.

Sincerely,

J. T. Davis
Vogtle 3 & 4 Licensing Supervisor
SNC Nuclear Development

JTD/faw

Enclosure: Completion ITAAC 2.2 02.01

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52.*
2. ITAAC 2.2 02.01 Completion Package
3. APP-GW-GQP-XXX, System Walkdown Inspection Procedure
4. SV3-PCS-GQI-XXX, PCS Functional Arrangement Inspection Report

cc: Southern Nuclear Operating Company
Mr. J. A. Miller, Executive Vice President, Nuclear Development (w/o enclosure)
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Department of Energy
Mr. T. Miller, DOE/PM

DEMO 4 - INJECTION LINE FLOW RESISTANCE TESTING AND ANALYSIS 2.2 03.08C.I

Project No.: 0783 ND-11-0493

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Completion of ITAAC 2.2 03.08c.i

The purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the *Simulated* completion of Vogtle Electric Generating Plant (VEGP) Unit 3, Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item 2.2 03.08c.i for verifying the flow resistance in the Passive Core Cooling System (PXS) for each Core Makeup Tank (CMT), Accumulator, In-Containment Refueling Water Storage Tank (IRWST) injection line, and each containment recirculation line in accordance with 10 CFR 52.99(c)(1). The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1).

ITAAC Statement

Design Commitment:

The PXS provides RCS makeup, boration, and safety injection during design basis events.

Inspections, Tests, Analysis:

A low-pressure injection test and analysis for each CMT, each accumulator, each IRWST injection line, and each containment recirculation line will be conducted. Each test is initiated by opening isolation valve(s) in the line being tested. Test fixtures may be used to simulate squib valves.

CMTs:
Each CMT will be initially filled with water. All valves in these lines will be open during the test.

Accumulators:
Each accumulator will be partially filled with water and pressurized with nitrogen. All valves in these lines will be open during the test. Sufficient flow will be provided to fully open the check valves.

IRWST Injection:
The IRWST will be partially filled with water. All valves in these lines will be open during the test. Sufficient flow will be provided to fully open the check valves.

Containment Recirculation:
A temporary water supply will be connected to the recirculation lines. All valves in these lines will be open during the test. Sufficient flow will be provided to fully open the check valves.

Acceptance Criteria:

The injection line flow resistance from each source is as follows:

CMTs:

> *The calculated flow resistance between each CMT and the reactor vessel is*
> *≥ 1.81 x 10^{-5} ft/gpm^2 and*
> *≤ 2.25 x 10^{-5} ft/gpm^2.*

Accumulators:

> *The calculated flow resistance between each accumulator and the reactor vessel is*
> *≥1.47 x 10^{-5} ft/gpm^2 and*
> *≤1.83 x 10^{-5} ft/gpm^2.*

IRWST Injection:

> *The calculated flow resistance for each IRWST injection line between the IRWST and the reactor vessel is:*
> *Line A: ≥ 5.53 x 10^{-6} ft/gpm^2 and ≤ 9.20 x 10^{-6} ft/gpm^2 and*
> *Line B: ≥ 6.21 x 10^{-6} ft/gpm^2 and ≤ 1.03 x 10^{-5} ft/gpm^2.*

Containment Recirculation:

> *The calculated flow resistance for each containment recirculation line between the containment and the reactor vessel is:*
> *Line A: ≤ 1.11 x 10^{-5} ft/gpm^2 and*
> *Line B: ≤ 1.04 x 10^{-5} ft/gpm^2.*

ITAAC Determination Basis

CMTs:
A performance test was conducted to determine that the flow path from each Core Makeup Tank (CMT) (PXS-MT-02A/B) to the reactor vessel has a flow resistance ≥ 1.81 x 10^{-5} ft/gpm^2 and ≤ 2.25 x 10^{-5} ft/gpm^2. This was accomplished by opening both of the associated CMT discharge isolation valves and gravity draining each tank through the direct vessel injection flow path with all valves in these lines open, while measuring CMT level, pressure and discharge flow.

The constant value for flow resistance was calculated, adjusted for measurement uncertainty, and compared to the acceptance criteria. The flow resistance was calculated to be 2.00 $\times 10^{-5}$ ft/gpm^2 which falls within the required calculated flow resistance as required by the ITAAC acceptance criteria. The test procedure and results are provided in Reference 3.

Accumulators:
A performance test was conducted to determine that the flow path from each Accumulator (PXS-MT-01A/B) to the reactor vessel has a flow resistance $\geq 1.47 \times 10^{-5}$ ft/gpm^2 and $\leq 1.83 \times 10^{-5}$ ft/gpm^2. This was accomplished by partially filling each accumulator with water and pressurizing with nitrogen, opening the associated Accumulator discharge isolation valve, and blowing down each tank through the direct vessel injection flow path with all valves in these lines open, while measuring Accumulator Tank level, pressure and discharge flow. Sufficient flow was provided to fully open the check valves.

The constant value for flow resistance was calculated based on measured tank level, pressure and discharge flow, adjusted for measurement uncertainty, and compared to the acceptance criteria. The flow resistance was determined to be 1.65 $\times 10^{-5}$ ft/gpm^2 which falls within the required calculated flow resistance as required by the ITAAC acceptance criteria. The test procedure and results are provided in Reference 4.

IRWST Injection:
A performance test was conducted to determine that the flow path from IRWST Injection Line A to the reactor vessel has a flow resistance $\geq 5.53 \times 10^{-6}$ ft/gpm^2 and $\leq 9.20 \times 10^{-6}$ ft/gpm^2, and the flow path from IRWST Injection Line B to the reactor vessel has a flow resistance $\geq 6.21 \times 10^{-6}$ ft/gpm^2 and $\leq 1.03 \times 10^{-5}$ ft/gpm^2. This was accomplished by partially filling the IRWST with demineralized water, isolating the containment sump injection recirculation lines, and opening the IRWST isolation valves and gravity draining the IRWST through the direct vessel injection flow path to injection line “A” with all valves in these lines open, while measuring IRWST level, pressure and discharge flow. Sufficient flow was provided to fully open the check valves. The process is then repeated for the flow path to injection line “B”.

The constant value for flow resistance was calculated, based on tank level, pressure and discharge flow, adjusted for measurement uncertainty, and compared to the acceptance criteria. The flow resistance was determined to be 7.80 $\times 10^{-6}$ ft/gpm^2 for Line A and 8.80 $\times 10^{-6}$ ft/gpm^2 for Line B which falls within the required calculated flow resistance required by the ITAAC acceptance criteria. The test procedure and results are provided in Reference 5.

Containment Recirculation:
A performance test was conducted to determine that the flow resistance in each containment recirculation line between the containment and the reactor vessel for line A is $\leq 1.11 \times 10^{-5}$ ft/gpm^2 and line B is $\leq 1.04 \times 10^{-5}$ ft/gpm^2. This was accomplished by opening all valves and installing flow test fixtures for the squib valves in the containment recirculation sump lines, filling the In-containment Refueling Water Storage Tank (IRWST) with demineralized water to act as a temporary water supply, and initiating flow from the “A” screen in the IRWST into the containment recirculation sump to recirculation injection line “B” to the reactor vessel. The process is then repeated with screen “B” to injection line “A” while measuring flow rate and differential pressure. All valves in these lines were open during the test and sufficient flow was provided to fully open the check valves.

The constant value for flow resistance was calculated based on measured flow rate and differential pressure, adjusted for measurement uncertainty, and compared to the acceptance criteria. The flow resistance was determined to be 1.05×10^{-5} ft/gpm^2 for line A and 9.80×10^{-6} ft/gpm^2 for Line B which falls within the required calculated flow resistance required by the ITAAC acceptance criteria. The test procedure and results are provided in Reference 6.

The flow resistance values determined in the CMTs, Accumulators, IRWST Injection, and Containment Recirculation tests described above meet the acceptance criteria of the ITAAC and verify the design commitment that the PXS provides Reactor Coolant System (RCS) makeup, boration, and safety injection during design basis events.

ITAAC Finding Review

In accordance with procedures for ITAAC closure, Southern Nuclear performed a review of all ITAAC findings pertaining to the subject ITAAC. This review found that there were no relevant ITAAC findings associated with this ITAAC. The ITAAC Completion Package (Reference 2) documents the closure for ITAAC 2.2 03.08c.i and is available for NRC inspection.

ITAAC Completion Statement

Based on the above information for VEGP Unit 3, Southern Nuclear hereby notifies the NRC that ITAAC 2.2 03.08c.i was performed and 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 J. (Jim) T. Davis at 706-826-5544.

Sincerely,

J. T. Davis
Vogtle 3 & 4 Licensing Supervisor
SNC Nuclear Development

JTD/faw

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52.*
2. SV3 ITAAC 2.2 03.08c.i Completion Package
3. SV3-PXS-T2-XX1, CMT Injection Line Flow Resistance Test
4. SV3-PXS-T2-XX2, Accumulator Injection Line Flow Resistance Test
5. SV3-PXS-T2-XX3, IRWST Injection Line Flow Resistance Test
6. SV3-PXS-T2-XX4, Containment Recirculation Line Flow Resistance Test

cc: Southern Nuclear Operating Company
Mr. J. A. Miller, Executive Vice President, Nuclear Development (w/o enclosure)
Mr. D. H. Jones, Site Vice President, Vogtle 3 & 4 (w/o enclosure)
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Mr. J. D. Williams, Vogtle 3 & 4 Site Support Manager
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Mr. P. C. Albuquerque, Vogtle 3 & 4 Site Licensing Engineer

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DEMO 5 - DC SYSTEM FAULT CURRENT ANALYSIS 2.6.03.08

Project No.: 0783 ND-10-2188

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Completion of ITAAC 2.6.03.08

The purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the *Simulated* completion of Vogtle Electric Generating Plant (VEGP) Unit 3, Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item 2.6 03.08 for verifying fault interruption capability for the Class 1E dc and Uninterruptible Power Supply System (IDS) in accordance with 10 CFR 52.99(c)(1). The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1).

ITAAC Statement

Design Commitment:

Circuit breakers and fuses in IDS battery, battery charger, dc distribution panel, and MCC circuits are rated to interrupt fault currents.

Inspections, Tests, Analysis:

Analyses for the as-built IDS dc electrical distribution system to determine fault currents will be performed.

Acceptance Criteria:

Analyses for the as-built IDS dc electrical distribution system exist and conclude that the analyzed fault currents do not exceed the interrupt capacity of circuit breakers and fuses in the battery, battery charger, dc distribution panel, and MCC circuits, as determined by their nameplate ratings.

ITAAC Determination Basis

Analyses for the as-built IDS dc electrical distribution system were performed ensuring that the analyzed fault currents did not exceed the interrupt capacity of circuit breakers and fuses in the battery, battery charger, dc distribution panel, and MCC circuits, as determined by their nameplate ratings.

The minimum required interrupt capacity rating of circuit breakers and fuses in the battery, battery charger, dc distribution panel, and MCC circuits in the IDS were determined by calculation and summarized in letter SV0-IDS-E0Y-XXX (Reference 2). This calculation utilized the worst case short circuit contribution from each battery and charger in the IDS as input to the protection coordination study, which determined protective device sizes in accordance with the criteria stated in Section 7.1 of IEEE 946.

An inspection (Reference 3) of the as-built IDS was performed to verify and document the nameplate rating for each of these devices. The nameplate rating was compared against the analytically determined system fault currents. The determined fault currents do not exceed the interrupt capacity of these circuit breakers and fuses. The combination of the inspection of the as-built IDS and the analysis documented in Reference 2 ensure that the circuit breakers and fuses in IDS battery, battery charger, dc distribution panel, and MCC circuits are rated to interrupt fault current.

ITAAC Finding Review

In accordance with procedure for ITAAC closure, Southern Nuclear performed a review of all ITAAC findings pertaining to the subject ITAAC. This review found that there were no relevant ITAAC findings associated with this ITAAC. The ITAAC Completion Package (Reference 4) documents the closure for ITAAC 2.6 03.08 and is available for NRC review.

ITAAC Closure Statement

Based on the above information for VEGP Unit 3, Southern Nuclear hereby notifies the NRC that ITAAC 2.6 03.08 was performed and the prescribed acceptance criteria are met.

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 J. (Jim) T. Davis at 706-826-5544.

Sincerely,

J. T. Davis
Vogtle 3 & 4 Licensing Supervisor
SNC Nuclear Development

JTD/faw

References (available for NRC review)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52.*
2. SV0-IDS-E0Y-XXX, Westinghouse Engineering Letter “IDS Protection Coordination Study Results”
3. SV2-IDS-GQI-XXX, SV2 Fault Current Interruption Device Inspection
4. SV2 ITAAC 2.6 03.08 ITAAC Completion Package

5. IEEE 946 - Recommended Practice for the Design of DC Auxiliary Power Systems for Generating Stations

cc: Southern Nuclear Operating Company
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Department of Energy
Mr. T. Miller, DOE/PM

DEMO 6 - DESIGN RELIABILITY ASSURANCE PROGRAM 3.7 00.01

Project No.: 0783 ND-10-2189

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Completion of ITAAC 3.7 00.01

The purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the *Simulated* completion of Vogtle Electric Generating Plant (VEGP) Unit 3, Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item 3.7 00.01 for the Design Reliability Assurance Program (D-RAP) in accordance with 10 CFR 52.99(c)(1). The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1).

ITAAC Statement

Design Commitment:

The D-RAP ensures that the design of SSCs within the scope of the reliability assurance program (Table 3.7-1) is consistent with the risk insights and key assumptions (e.g., SSC design, reliability, and availability).

Inspections, Tests, Analysis:

An analysis will confirm that the design of RAP SSCs identified in Table 3.7-1 has been completed in accordance with applicable D-RAP activities.

Acceptance Criteria:

An analysis report documents that safety-related SSCs identified in Table 3.7-1 have been designed in accordance with a 10 CFR 50 Appendix B quality program.

An analysis report documents that non-safety-related SSCs identified in Table 3.7-1 have been designed in accordance with a program that satisfies quality assurance requirements for SSCs important to investment protection.

ITAAC Determination Basis

Risk-significant SSCs identified for the AP1000 standard design are listed in Table 3.7-1 of the Tier 1 Material of the AP1000 Design Control Document (DCD). Table 3.7-1 is provided in the enclosure.

The Westinghouse Quality Management System (QMS), Revision 5 defines the 10 CFR 50 Appendix B quality program that was used for the design of the safety-related SSCs. The NRC approved Revision 5 to the Westinghouse QMS by letter dated September 13, 2002 (ML022540895). The Westinghouse procedure "AP1000 Quality Assurance Requirements for RTNSS Systems, Structures, and Components", APP-GW-GAM-200, Revision 1 defines the quality program that was used for the design of non-safety-related SSCs.

Engineering Report ZZZ, *Validation of Design Reliability Assurance Program,* (Reference 2) documents the analysis report that verified the components listed in Table 3.7-1 have been designed in accordance with a program that satisfies there applicable quality assurance requirements. Safety-related SSCs identified in Table 3.7-1 have been designed in accordance with a 10 CFR 50 Appendix B program and the non-safety-related SSCs identified in Table 3.7-1 have been designed in accordance with a program that satisfies quality assurance requirements for SSCs important to investment protection.

ITAAC Finding Review

In accordance with procedures for ITAAC closure, Southern Nuclear performed a review of all ITAAC findings pertaining to the subject ITAAC. This review found that there were no relevant ITAAC findings associated with this ITAAC. The ITAAC Completion Package (Reference 3) documents the closure for ITAAC 3.7 00.01 and is available for NRC review.

ITAAC Closure Statement

Based on the above information for VEGP Unit 3, Southern Nuclear hereby notifies the NRC that ITAAC 3.7 00.01 was performed and 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 J. (Jim) T. Davis at 706-826-5544.

Sincerely,

J. T. Davis
Vogtle 3 & 4 Licensing Supervisor
SNC Nuclear Development

JTD/faw

Enclosure: Completion of ITAAC 3.7 00.01

References (available for NRC review)

1. NEI 08-01*, Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*.
2. Engineering Report ZZZ, Validation of Design Reliability Assurance Program
3. SV2 ITAAC 3.7 00.01 ITAAC Completion Package

cc: Southern Nuclear Operating Company
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Department of Energy
Mr. T. Miller, DOE/PM

Southern Nuclear Operating Company

ND-10-2189

Enclosure

Completion of ITAAC 3.7 00.01

Table 3.7-1
Risk-Significant Components

Equipment Name	Tag No.
Component Cooling Water System (CCS)	
Component Cooling Water Pumps	CCS-MP-01A/B
Containment System (CNS)	
Containment Vessel	CNS-MV-01
Hydrogen Igniters	VLS-EH-1 through -64
Chemical and Volume Control System (CVS)	
Makeup Pumps	CVS-MP-01A/B
Makeup Pump Suction and Discharge Check Valves	CVS-PL-V113 CVS-PL-V160A/B
Letdown Discharge Isolation Valves	CVS-PL-V045 CVS-PL-V047
Diverse Actuation System (DAS)	
DAS Processor Cabinets and Control Panel (used to provide automatic and manual actuation)	DAS-JD-001 DAS-JD-002 DAS-JD-003 DAS-JD-004 OCS-JC-020
Component Cooling Water System (CCS)	
Component Cooling Water Pumps	CCS-MP-01A/B
Containment System (CNS)	
Containment Vessel	CNS-MV-01
Hydrogen Igniters	VLS-EH-1 through -64
Chemical and Volume Control System (CVS)	
Makeup Pumps	CVS-MP-01A/B
Makeup Pump Suction and Discharge Check Valves	CVS-PL-V113 CVS-PL-V160A/B
Letdown Discharge Isolation Valves	CVS-PL-V045 CVS-PL-V047
Diverse Actuation System (DAS)	
DAS Processor Cabinets and Control Panel (used to provide automatic and manual actuation)	DAS-JD-001 DAS-JD-002 DAS-JD-003 DAS-JD-004

	OCS-JC-020
Annex Building UPS Distribution Panels (provide power to DAS)	EDS1-EA-1, EDS1-EA-14, EDS2-EA-1, EDS2-EA-14
Rod Drive MG Sets (Field Breakers)	PLS-MG-01A/B
Containment Isolation Valves Controlled by DAS	CVS-PL-V045, -V047 VFS-PL-V003, -V004, -V009, -V010 WLS-PL-V055, -V057
Main ac Power System (ECS)	
Reactor Coolant Pump Switchgear	ECS-ES-31, -32, -41, -42, -51, -52, -61, -62
Ancillary Diesel Generators	ECS-MS-01, -02
6900 Vac Buses	ECS-ES-1, -2
Main and Startup Feedwater System (FWS)	
Startup Feedwater Pumps	FWS-MP-03A/B
General I&C	
IRWST Level Sensors	PXS-045, -046, -047, -048
RCS Hot Leg Level Sensors	RCS-160A/B
Pressurizer Pressure Sensors	RCS-191A/B/C/D
Pressurizer Level Sensors	RCS-195A/B/C/D
Steam Generator Narrow-Range Level Sensors	SGS-001, -002, -003, -004, -005, -006, -007, -008
Steam Generator Wide-Range Level Sensors	SGS-011, -012, -013, -014, -015, -016, -017, -018
Main Steam Line Pressure Sensors	SGS-030, -031, -032, -033, -034, -035, -036, -037
Main Feedwater Wide-Range Flow Sensors	FWS-050B/D/F, -051B/D/F
Startup Feedwater Flow Sensors	SGS-055A/B, -056A/B
CMT Level Sensors	PXS-011A/B/C/D, -012A/B/C/D, -013A/B/C/D, -014A/B/C/D
Class 1E dc Power and Uninterruptible Power System (IDS)	
250 Vdc 24-Hour Batteries	IDSA-DB-1A/B, IDSB-DB-1A/B, IDSC-DB-1A/B, IDSD-DB-1A/B
250 Vdc 24-Hour Buses	IDSA-DS-1, IDSB-DS-1 IDSC-DS-1, IDSD-DS-1
250 Vdc 24-Hour Battery Chargers	IDSA-DC-1, IDSB-DC-1, IDSC-DC-1, IDSD-DC-1

250 Vdc and 120 Vac Distribution Panels	IDSA-DD-1, IDSA-EA-1/-2, IDSB-DD-1, IDSB-EA-1/-2/-3, IDSC-DD-1, IDSC-EA-1/-2/-3, IDSD-DD-1, IDSD-EA-1/-2
Fused Transfer Switch Boxes	IDSA-DF-1, IDSB-DF-1/-2, IDSC-DF-1/-2, IDSD-DF-1
250 Vdc Motor Control Centers	IDSA-DK-1, IDSB-DK-1, IDSC-DK-1, IDSD-DK-1
250 Vdc 24-Hour Inverters	IDSA-DU-1, IDSB-DU-1, IDSC-DU-1, IDSD-DU-1
Passive Containment Cooling System (PCS)	
Recirculation Pumps	PCS-MP-01A/B
PCCWST Drain Isolation Valves	PCS-PL-V001A/B/C
Plant Control System (PLS)	
PLS Actuation Software (used to provide control functions)	Refer to Table 3.7-2
PLS Actuation Hardware (used to provide control functions)	Refer to Table 3.7-2
Protection and Monitoring System (PMS)	
PMS Actuation Software (used to provide automatic control functions)	Refer to Tables 2.5.2-2 and 2.5.2-3
PMS Actuation Hardware (used to provide automatic control functions)	Refer to Tables 2.5.2-2 and 2.5.2-3
MCR 1E Displays and System Level Controls	OCS-JC-010, -011
Reactor Trip Switchgear	PMS-JD-RTS A01/02, B01/02, C01/02, D01/02
Passive Core Cooling System (PXS)	
IRWST Vents	PXS-MT-03
IRWST Screens	PXS-MY-Y01A/B/C
Containment Recirculation Screens	PXS-MY-Y02A/B
CMT Discharge Isolation Valves	PXS-PL-V014A/B, -V015A/B
CMT Discharge Check Valves	PXS-PL-V016A/B, -V017A/B
Accumulator Discharge Check Valves	PXS-PL-V028A/B, -V029A/B
PRHR HX Control Valves	PXS-PL-V108A/B
Containment Recirculation Squib Valves	PXS-PL-V118A/B, -V120A/B

IRWST Injection Check Valves	PXS-PL-V122A/B, -V124A/B
IRWST Injection Squib Valves	PXS-PL-V123A/B, -V125A/B
IRWST Gutter Bypass Isolation Valves	PXS-PL-V130A/B
Reactor Coolant System (RCS)	
ADS Stage 1/2/3 Valves (MOVs)	RCS-PL-V001A/B, -V011A/B RCS-PL-V002A/B, -V012A/B RCS-PL-V003A/B, -V013A/B
ADS Stage 4 Valves (Squibs)	RCS-PL-V004A/B/C/D
Pressurizer Safety Valves	RCS-PL-V005A/B
Reactor Vessel Insulation Water Inlet and Steam Vent Devices	RCS-MN-01
Reactor Cavity Doorway Damper	–
Fuel Assemblies	157 assemblies with tag numbers beginning with RXS-FA
Normal Residual Heat Removal System (RNS)	
Residual Heat Removal Pumps	RNS-MP-01A/B
RNS Motor-Operated Valves	RNS-PL-V011, -V022, -V023, -V055
RNS Stop Check Valves RNS Check Valves	RNS-PL-V015A/B RNS-PL-V017A/B
RNS Check Valves	RNS-PL-V007A/B, -V013, -V056
Spent Fuel Cooling System (SFS)	
Spent Fuel Cooling Pumps	SFS-MP-01A/B
Steam Generator System (SGS)	
Main Steam Safety Valves	SGS-PL-V030A/B, -V031A/B, -V032A/B, -V033A/B, -V034A/B, -V035A/B
Main Steam Line Isolation Valves	SGS-PL-V040A/B
Main Feedwater Isolation Valves	SGS-PL-V057A/B
Service Water System (SWS)	
Service Water Cooling Tower Fans	SWS-MA-01A/B
Service Water Pumps	SWS-MP-01A/B
Nuclear Island Nonradioactive Ventilation System (VBS)	
MCR Ancillary Fans	VBS-MA-10A/B
I&C Room B/C Ancillary Fans	VBS-MA-11, -12

Containment Air Filtration System (VFS)	
Containment Purge Isolation Valves	VFS-PL-V003 VFS-PL-V004 VFS-PL-V009 VFS-PL-V010
Chilled Water System (VWS)	
Air Cooled Chiller Pumps	VWS-MP-02, -03
Air Cooled Chillers	VWS-MS-02, -03
Liquid Radwaste System (WLS)	
Sump Containment Isolation Valves	WLS-PL-V055 WLS-PL-V057
Onsite Standby Power System (ZOS)	
Engine Room Exhaust Fans	VZS-MY-V01A/B, -V02A/B
Onsite Diesel Generators	ZOS-MS-05A/B

APPENDIX E – UNCOMPLETED ITAAC NOTIFICATION TEMPLATES AND EXAMPLES

Appendix	Technology	Description
E-1	All	Template for Uncompleted ITAAC Notification Cover Letter
E-2	All	Template for Uncompleted ITAAC Notification Enclosure
E-3	AP1000	Example Uncompleted ITAAC Notification 2.1.01.04 (Fuel handling grippers)

APPENDIX E-1 – UNCOMPLETED ITAAC NOTIFICATION COVER LETTER TEMPLATE

XX/YY/ZZZZ (Date)

To: NRC

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

Subject: Notification of Uncompleted ITAAC 225-days Prior to Initial Fuel Load

Pursuant to 10 CFR 52.99(c)(3), {Licensee} hereby notifies the NRC that as of {month/day/year}, {Site Name and Unit #} Inspection, Test, Analysis, and Acceptance Criteria (ITAAC) items listed in Enclosure 1 will not be completed 225-days prior to initial fuel load currently scheduled for {month, day, year}. Enclosure 2 describes the plans for completing each ITAAC listed in Enclosure 1. [With this letter, {Licensee} has provided the entire set of notifications for ITAAC that will not be completed 225-days prior to initial fuel load. OR {Licensee} will at a later date provide additional notifications for ITAAC that will not be completed 225-days prior to initial fuel load.]

This notification is consistent with the guidance described in NEI-08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52,* which was endorsed by the NRC in Regulatory Guide 1.215. In accordance with NEI 08-01, this notification includes ITAAC for which required inspections, tests or analyses have not been performed or have been only partially completed. All ITAAC will be fully completed and all Section 52.99(c)(1) ITAAC Closure Notifications will be submitted to NRC to support the Commission finding that all acceptance criteria are met prior to plant operation, as required by 10 CFR 52.103(g).

If the NRC has any questions regarding this letter or the Enclosures, please contact {name of contact person for Licensee} at {telephone # for contact person}.

Sincerely,

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

<u>Enclosures</u>

1. List of Uncompleted ITAAC Items as of XX/XX/XX
2 Completion Plans for Uncompleted ITAAC Items Listed in Enclosure 1

APPENDIX E-2 – UNCOMPLETED ITAAC NOTIFICATION TEMPLATE FOR ITAAC-SPECIFIC ENCLOSURE(S)

XX/YY/ZZZZ (Date)

{Name of Licensee}
{Site name and Unit #}
{Docket #}

Subject: **Uncompleted ITAAC Item X.X.X** (ITAAC identifier should exactly match the ITAAC number in the COL)

ITAAC Statement

Design Commitment

{The design commitment for the applicable ITAAC should be quoted directly from the source. Do not paraphrase the Design Commitment.}

Inspection/Test/Analysis

{The inspection/test/analysis (ITA) for the applicable ITAAC should be quoted directly from the source. Do not paraphrase the inspection/test/analysis.}

Acceptance Criteria

{The acceptance criteria for the applicable ITAAC should be quoted directly from the source. Do not paraphrase the acceptance criteria.}

Tables and figures referenced in the ITAAC should be provided.

ITAAC Completion Description

This section should be very similar to the ITAAC Determination Basis in a Section 52.99(c)(1) ITAAC Closure Notification. The key difference is that it should use the passive present tense to describe the procedures and/or methods that will be used to conduct the ITA and demonstrate that the Acceptance Criteria are met (e.g., “The valves are tested…”). Licensees may use passive present tense throughout this section even if a portion of these activities may have been completed for an ITAAC. An ITAAC is considered uncompleted until all activities within its scope are completed and an ITAAC Closure Notification is submitted to NRC. Licensees may otherwise use and apply the Appendix D-1 template guidance on ITAAC Determination Basis to complete this section for each uncompleted ITAAC.

It is expected that licensees will use the same method for performing required inspections, tests and analyses and determining that acceptance criteria are met for the entire scope of SSCs covered by a given ITAAC. However, if the licensee plans to use more than one method, the UIN ITAAC Completion Description should provide a sufficient description of all methods to be used.

List of ITAAC Findings

The UIN shall list applicable ITAAC findings by number and, if closed, a reference to the closure of the finding. To the extent there are findings that are not closed by the time of the UIN, the UIN should include a statement that, before submission of the ICN, corrective actions will be completed for all relevant ITAAC findings identified prior to ICN submission.

References (available for NRC inspection)

Provide the list of Principal Completion Documents that are expected to be referenced in the ITAAC Closure Notification for the ITAAC and included in the ITAAC Completion Package. If exact document numbers or titles are not known, the Reference information should be as detailed and descriptive as practical.

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*
2. Test procedure/methodology to be used to perform the ITAAC
3. Completed Test Procedure, Report, or other
4. ITAAC Completion Package for ITAAC X.X.X

APPENDIX E-3 – EXAMPLE ENCLOSURE 2 FOR UNCOMPLETED ITAAC NOTIFICATION

(Based on NEI 08-01 Examples D-6 and Template E-2)

XX/YY/ZZZZ (Date)

{Name of Licensee}

{Site name and Unit #}

{Docket #}

Subject: Uncompleted ITAAC 2.1.01.04

ITAAC Statement

Design Commitment

The RM and FHM/spent fuel handling tool (SFHT) gripper assemblies are designed to prevent opening while the weight of the fuel assembly is suspended from the gripper.

Inspection/Test/Analysis

The RM and FHM/SFHT gripper assemblies will be tested by operating the open controls of the gripper while suspending a dummy fuel assembly.

Acceptance Criteria

The RM and FHM/SFHT gripper assemblies will not open while suspending a dummy test assembly.

ITAAC Completion Description

Tests are performed to demonstrate that the as-built Refueling Machine (RM) and Fuel Handling Machine/Spent Fuel Handling Tool (FHM/SFHT) gripper assemblies prevent opening while the full weight of the fuel assembly is suspended from the gripper as designed.

A dummy fuel assembly is lifted by the Fuel Handling Machine using test procedure APP-XX-YYY-## (Reference 2) to a sufficient height to be fully suspended. At this height the open controls for the FHM/SFHT grippers are exercised per operating procedures for releasing the fuel assembly. Test personnel observe to ensure that the grippers do not open, thus, demonstrating that the FHM grippers meet the specified acceptance criterion.

A dummy fuel assembly is lifted by the Refueling Machine using test procedure APP-XX-YYY-## (Reference 2) to a sufficient height to be fully suspended. At this height the open controls for the RM grippers are exercised per operating procedures for releasing the fuel assembly. Test personnel observe to ensure that the grippers do not open, thus demonstrating that the RM grippers meet the specified acceptance criterion.

Test results are documented in the Refueling Machine and Fuel Handling Machine/Spent Fuel Handling Tool Grippers Test Record (Reference 3) and are available for NRC inspection as part of the ITAAC Completion Package (Reference 4).

List of ITAAC Findings

The UIN shall list applicable ITAAC findings by number and, if closed, a reference to the closure of the finding. To the extent there are findings that are not closed by the time of the UIN, the UIN should include a statement that, before submission of the ICN, corrective actions will be completed for all relevant ITAAC findings identified prior to ICN submission.

References (available for NRC inspection)

1. NEI 08-01, *Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52*
2. APP-XX-YYY-###, ITAAC 2.1.1 item 4 Refueling Machine and Fuel Handling Machine Grippers Test Procedure
3. ITAAC 2.1.1 item 4 Refueling Machine and Fuel Handling Machine/Spent Fuel Handling Tool Grippers Test Record
4. ITAAC 2.1.1 Item 4 Completion package

APPENDIX F – ALL ITAAC COMPLETE NOTIFICATION TEMPLATE

{Date}

To: NRC

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

Subject: Completion of All ITAAC

In accordance with 10 CFR 52.99(c)(4), this letter serves to notify the NRC that all of the inspections, tests, and analyses have been performed, all acceptance criteria are met, and all ITAAC conclusions are being maintained, as prescribed in the combined license for {Site Name and Unit #}.

ITAAC Closure Notifications have been submitted to NRC for each ITAAC in accordance with 10 CFR 52.99(c)(1). All of the ITAAC Closure Notifications are substantiated by ITAAC Completion packages, which include the documentation (tests, reports, completed procedures, completed analyses, etc.) that support the ITAAC determination bases. The ITAAC Completion packages are available for NRC inspection at the plant site.

{Licensee Name} is not aware of any condition that warrants submittal of an ITAAC Post-closure Notification under 10 CFR 52.99(c)(2) and hereby affirms the completion of all ITAAC prescribed in the combined license for {Site Name and Unit #}. On this basis, {Licensee Name} requests an NRC staff recommendation to the Commission to make a finding that the acceptance criteria in the combined license are met (10 CFR 52.103(g)).

Please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person} ({Email Address for Contact Person}) if you have any questions.

Sincerely,

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

APPENDIX G – ITAAC MAINTENANCE PROMPT NOTIFICATION TEMPLATE

Licensees should use the following template to promptly inform the NRC of conditions or activities that adversely and materially affect the validity of conclusions in an ITAAC Closure Notification or the statements made in the "All ITAAC Complete" Notification.

The following information should be provided to the NRC Operations Center by one of the following methods:

- E-mail (**preferred**) to: hoo.hoc@nrc.gov
- Facsimile to 301-816-5151
- Phone to 301-816-5100

Note that prompt notification of NRC by one of these methods does not relieve the licensee from applicable requirements to provide formal written notification in accordance with Section 52.99.

Notifications made to the NRC Operations Center should clearly indicate the reasons for the notification and include, but need not necessarily be limited to, the following information, to the extent known:

- Name and address and telephone number of individual or individuals informing the Commission

- Identification of the facility reporting the situation that materially alters the basis for determining that a prescribed inspection, test or analysis was performed as required or finding that a prescribed acceptance criterion is met (Licensee, Site Name, Unit # and Docket #).

- The date that the licensee determined that it had information that materially alters the basis for determining that a prescribed inspection, test or analysis was performed as required or finding that a prescribed acceptance criterion is met.

- The specific ITAAC affected and the date of the original ITAAC Closure Notification submitted under Section 52.99(c)(1).

- The systems affected and the nature of the condition that materially alters the basis for determining that a prescribed inspection, test or analysis was performed as required or finding that a prescribed acceptance criterion is met.

- Planned corrective actions and applicable schedules for rework and post work verification, if available.
- Whether the 10 CFR 52.99(c)(4) All ITAAC Complete Notification has been submitted for the facility (Site Name and Unit #) reporting the situation and the submittal date, if applicable.

APPENDIX H – ITAAC MAINTENANCE EXAMPLES

If licensee activities materially alter statements made in the ITAAC Determination Basis summarized in the original ITAAC Closure Notification, licensees should notify NRC via submittal of an ITAAC Post-closure Notification in accordance with 10 CFR 52.99(c)(2). The notification process and thresholds are discussed in Section 8.2, Post-ITAAC Closure Notifications to NRC, of this document. To illustrate application of thresholds 2-5 pertaining to material alterations of the ITAAC Determination Basis, the following ITAAC maintenance examples are discussed in this appendix.

THRESHOLD # 1 – Material error or omission: Is there a material error or omission in the original ITAAC Closure Notification? This threshold refers to situations in which there is an error or information not contained in the 10 CFR 52.99(c)(1) notification that "has a natural tendency or capability to influence an agency decision maker" in either determining whether the prescribed inspection, test, or analysis was performed as required, or finding that the prescribed acceptance criterion is met (76 Fed. Reg. 27,931).	
EXAMPLES FOR THRESHOLD #2 – Post Work Verification (PWV): Will the PWV use a significantly different approach than the original performance of the ITA as described in the original ITAAC Closure Notification?	
2.1	Replacement of Damaged Feedwater Inboard Isolation Check Valve Requires Different Post Work Verification
2.2	Replacement of Damaged Remote Shutdown System (RSS) Raceway and Cable
2.3	Replacement of Plug-in Module in the Reactor Trip (RT) System or Engineered Safety Feature (ESF) System (Infant Mortality)
2.4	Repair of CVCS Pipe Crack
2.5	Emergency Power Source (EPS) Fuel Transfer System Valve Repair
2.6	Replacement of High Pressure Core Flooder (HPCF) Pump with Identical Post Work Verification (PWV) as Original Test
2.7	Replacement of Standby Liquid Control (SLC) Pump with Different Post Work Verification (PWV) Because of Plant Conditions
2.8	Replacement of Standby Liquid Control (SLC) Pump Piston With Identical Post Work Verification (PWV) as original Test
2.9	Modification to Backup Electrical Power Supply for Technical Support Center (TSC)
2.10	Replacement of Lighting Units and Light Bulbs for Protected Area (PA) Illumination (Physical Security)
2.11	Replacement of Public Address System Loudspeaker With Like For Like Spare and Identical Post Work Verification

EXAMPLES FOR THRESHOLD # 3 – Engineering Change: Will an engineering change be made that materially alters the determination that the acceptance criteria are met?	
3.1	Damaged Pipe Support Requires Design Change to Correct
3.2	Software Change in Protection and Safety Monitoring System (PSMS)
3.3	Piping Support Modification With No Impact on Seismic Analysis
3.4	Replacement of Diesel Generator Air Start Receiver Tanks With Larger Capacity Tanks
3.5	Thermal Expansion Issue Detected During Pre-core Hot Functional Testing Requires Modification of Snubbers and Spring Cans
3.6	Residual Heat Removal (RHR) Pump Vibration Detected During Surveillance Testing Requires Impeller Replacement
3.7	Replacement of Wind Speed Sensor Mounting Bracket
3.8	Electrical Storm Damages Junction Boxes and Surge Protection System for Protected Area (PA) Illumination (Physical Security)
3.9	Modification To Vital Equipment Within Established Vital Area Requires Modification To Vital Area Boundary (Physical Security)
3.10	Modification to Backup Electrical Power Supply for Technical Support Center (TSC)
3.11	Public Address System Loudspeaker Failure Requires Design Change
EXAMPLES FOR THRESHOLD #4 – Additional items to be Verified: Will there be additional items that need to be verified through the ITAAC?	
4.1	Modification of Protected Area (PA) Illumination (Physical Security)
4.2	Addition of Piping Support in the Residual Heat Removal System (RHRS)
4.3	Replacement of Environmentally Qualified (EQ) Cable
4.4	Replacement of Damaged Pipe Requires Additional Welds
4.5	Raceway Reroute for a CAMS Channel Requires a Configuration Change from Electrical Separation to Electrical Isolation (Relay, Breaker, or Optical Isolator)
EXAMPLES FOR THRESHOLD #5 – Complete and Valid ITAAC Closure Representation: Will any other licensee activities materially alter the ITAAC determination basis?	
5.1	Revision of the Fire Hazards Report for New Postulated Fire Scenario
5.2	Replacement of 3 Hour Fire Rated Door with 6 Hour Fire Rated Door

5.3	Changes to Backup Electrical Power Supply for Technical Support Center (TSC)
5.4	Modification of Protected Area (PA) Illumination (Physical Security)
5.5	High Noise Areas in Plant Require a Change in Method of Notification of Workers (Protective Response)
5.6	Relocation of Vital Equipment To A Different Vital Area (Physical Security)
5.7	Change in the Methodology Used to Determine Setpoints for the Protection and Safety Monitoring System (PMS)
5.8	Re-Testing of Pump Flow Rate

ITAAC MAINTENANCE EXAMPLES

THRESHOLD #1 – None

THRESHOLD #2 – Post Work Verification (PWV)

Will the PWV use a significantly different approach than the original performance of the ITA as described in the original ITAAC Closure Notification?

Example 1 – Replacement of Damaged Feedwater Inboard Isolation Check Valve Requires Different Post Work Verification

ESBWR ITAAC Table 2.1.2-3 for the Nuclear Boiler System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
11. Check valves listed in Table 2.1.2-1 open and close under system pressure, fluid flow, and temperature conditions.	Tests of installed valves for opening and closing will be conducted under system preoperational pressure, fluid flow, and temperature conditions.	Based on the direction of the differential pressure across the valve, each check valve listed in Table 2.1.2-1 opens and closes.

<u>Feedwater Inboard Isolation Check Valves</u>

Preoperational testing of the feedwater system has been completed, the ITAAC Closure Notification has been submitted, and the plant is ready to load fuel, pending the 52.103(g) finding. During the movement of construction materials in the area, one of the subject valves is damaged.

The damaged valve is replaced with a like spare. Due to an inability to achieve preoperational conditions in the current plant configuration, the new valve is tested at a significantly different condition than the preoperational test condition. The valve functions properly and an engineering analysis concludes that the valve meets the ITAAC acceptance criteria.

An ITAAC Post-closure Notification is required because the post-work testing is significantly different than the original ITA (i.e., different test pressure).

Example 2 – Replace Damaged Remote Shutdown System (RSS) Raceway and Cable

ABWR ITAAC 2.2.6.5a – Remote Shutdown System (RSS) Electrical Independence

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Each of two RSS divisions is powered from its respective Class 1E division. In the RSS, independence is provided between Class 1E divisions, and between Class 1E divisions and non-Class 1E equipment.	Tests will be performed on the RSS by providing a test signal in only one Class 1E division at a time.	The test signal exists in only the Class 1E division under test in the RSS.

Testing was performed, the acceptance criteria were satisfied and the ITAAC Closure Notification was submitted. During other construction activities in the area, a portion of the raceway carrying RSS Division II Class 1E cable was damaged.

Power to RSS Division II was removed during the repair work. The section of tray was replaced with the same type tray section. The damaged cable was replaced with the same type of cables. The components were replaced and retested according to the original ITA, and returned to service.

As the post-work verification was the same as the testing method described in the original ITA and Closure Notification, an ITAAC Post-closure Notification is not required.

Example 3 - Replacement of Plug-in Module in the Reactor Trip (RT) System or Engineered Safety Feature (ESF) System

AP1000 ITAAC 2.5.2-8 Item #1 – Protection and Safety Monitoring System (PMS) Functional Arrangement.

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The functional arrangement of the PMS is as described in the Design Description of this Section 2.5.2.	Inspection of the as-built system will be performed.	The as-built PMS conforms with the functional arrangement as described in the Design Description of this Section 2.5.2.

<u>Plug-in Module replacement in instrumentation and control system</u>

This case also applies to ITAAC on other I&C systems, where inspection of as-built system functional arrangement is conducted.

After submitting the ITAAC Closure Notification, a module in the Reactor Trip System or ESF System was replaced due to infant mortality during preoperational test. The existing module was replaced by a new module of the same model as the original.

As no additional engineering justification is needed, and the functional arrangement of the system remains the same, an ITAAC Post-Closure Notification <u>is not required.</u>

Example 4 - Repair of CVCS Pipe Crack

US-APWR ITAAC 2.4.6-5 #4.b – Chemical and Volume Control System (CVCS)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The ASME Code Section III piping, identified in Table 2.4.6-3, retains its pressure boundary integrity at its design pressure.	A hydrostatic test will be performed on the as-built piping, identified in Table 2.4.6-3, required by the ASME Code Section III to be hydrostatically tested.	ASME Code Data Report(s) exist and conclude that the results of the hydrostatic test of the as-built piping identified in Table 2.4.6-3 as ASME Code Section III conform to the requirements of the ASME Code, Section III.

<u>CVCS Pipe Repair</u>

After submittal of the ITAAC Closure Notification, a small crack was found on the outer surface of a pipe during a hydrostatic test of an ASME Code Section III CVCS piping. After grinding to remove the crack, the pipe wall thickness remains above the minimum allowable wall thickness. After the repair, a liquid penetrant test was successfully conducted.

As no additional engineering justification is needed, an ITAAC Post-Closure Notification <u>is not required.</u>

Example 5 - Emergency Power Source (EPS) Fuel Transfer System Valve Repair

US-APWR ITAAC 2.6.4-1 #13 - Emergency Power Source (EPS)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Each Class 1E EPS is capable of providing power at the set voltage and frequency to its Class 1E 6.9kV bus within 100 seconds of receiving a start signal.	A test will be performed to verify that each as-built Class 1E EPS can reach set voltage and frequency within 100 seconds of receiving a start signal.	The as-built Class 1E EPS reaches the set voltage and frequency within 100 seconds of receiving a start signal.

EPS Fuel Transfer System Valve Repair

The ITAAC Closure Notification was submitted after the Class 1E EPS was tested and met the acceptance criteria. Field investigation found that the fuel oil control valve had been damaged and needed to be replaced. The repair was made with identical (like-for-like, same model) parts. Post-repair test was conducted including the test required by ITAAC 2.6.4-13. An ITAAC Post-Closure Notification is not required.

Example 6 – Replacement of High Pressure Core Flooder (HPCF) Pump with Identical Post Work Verification (PWV) as Original Test

ABWR ITAAC 2.4.2.3g – High Pressure Core Flooder (HPCF) System – HPCF Pump Available NPSH

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The HPCF pumps have sufficient NPSH available at the pumps.	Inspections, tests and analyses will be performed upon the as-built system. NPSH tests of the pumps will be performed in a test facility. The analyses will consider the effects of: - Pressure losses for pump inlet piping and components. - Suction from the suppression pool with water level at the minimum value. - 50% minimum blockage of the pump suction strainers. - Design basis fluid temperature (100 ^{o}C). - Containment at atmospheric pressure.	The available NPSH exceeds the NPSH required by the pumps.

The ITAAC Closure Notification has been submitted. The licensee makes a decision to replace a HPCF pump with another pump which has been adequately tested for NPSH in a test facility. No piping or other configuration changes have been implemented. The post work verification (PWV) for the newly installed pump is the same as the testing performed for the original pump in the as-built system to satisfy the ITAAC acceptance criteria.

An ITAAC Post-Closure Notification is not required.

Example 7 – Replacement of Standby Liquid Control (SLC) Pump with Different Post Work Verification (PWV) Because of Plant Conditions

ABWR ITAAC 2.2.4.3h – Standby Liquid Control (SLC) System – SLC Pump Available NPSH

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The SLC pumps have sufficient NPSH.	Tests will be conducted on the as-built SLC System by injecting demineralized water using both SLC System pumps from the storage tank to the RPV with the storage tank at the low level (pump trip level) and a temperature of greater than or equal to 43 ^{o}C.	The available NPSH exceeds the NPSH required as demonstrated by the SLC System injecting greater than or equal to 378 liters/minute.

The ITAAC Closure Notification has been submitted. The licensee makes a decision to replace a SLC pump with another identical pump which meets all the procurement requirements for the originally installed SLC pump. The current plant configuration will not allow the original test, which pumped water from the SLC tank to the RPV, to be performed. Instead, the PWV will consist of a loop flow test supported by analysis to demonstrate that the replacement SLC pump satisfies the ITAAC acceptance criteria for available NPSH. PWV consisting of a loop flow test supported by analysis differs significantly from the original test-only ITAAC methodology.

An ITAAC Post-closure Notification is required.

Example 8 – Replacement of Standby Liquid Control (SLC) Pump Piston With Identical Post Work Verification (PWV) as original Test

ABWR ITAAC 2.2.4.3c – Standby Liquid Control (SLC) System – SLC Reactor Injection Capacity

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The SLC System delivers at least 189 L/min of solution with either pump operating	Tests will be conducted on the as-built SLC System using installed controls, power	The SLC System injects greater than or equal to 189 L/min into the reactor with

when the reactor pressure is less than or equal to 8.72 MPaA.	supplies and other auxiliaries. Demineralized water will be injected from the storage tank into the reactor with one pump running against a discharge pressure of greater than or equal to 8.72 MPaA	either pump running against a discharge pressure greater than or equal to 8.72 MPaA.

The ITAAC Closure Notification has been submitted. Subsequently, the licensee determines that the SLC pump piston (positive displacement pump) needs to be replaced. The post-work verification (PWV) will consist of a flow test via the test loop to the test tank to confirm that the ITAAC acceptance remains met. No analysis is required to support this testing.

An ITAAC Post-closure Notification <u>is not required.</u>

Example 9 – Modification to Backup Electrical Power Supply for Technical Support Center (TSC)

Plant X – ITAAC #8 – Emergency Facilities and Equipment

EP Program Elements (From NUREG-0654/FEMA-REP-1)	Inspections, Tests, Analyses	Acceptance Criteria
8. The licensee has established a technical support center (TSC) and an onsite operation support center (OSC). [H.1]	8.1 An inspection of the as-built TSC and OSC will be performed, including a test of the capabilities.	8.1.7 A Reliable and backup electrical power supply is available for the TSC.

Case 1 – The ITAAC Closure Notification has been submitted. The individual backup batteries are to be replaced, due to fair wear and tear. The Post Work Verification (PWV) is the same as the method described in the original ITA and Closure Notification. The acceptance criteria are satisfied.

An ITAAC Post-closure Notification <u>is not required</u>.

Case 2 – The ITAAC Closure Notification has been submitted. A decision has been made to replace short-term battery power source with a longer-term diesel generator backup power source. The Licensee will use a different post work verification testing procedure (with engineering justification). The PWV differs from the performance of the ITA as described in the original ITAAC Closure Notification and relies on an engineering justification to justify the method for verifying the acceptance criterion continues to be met.

An ITAAC Post-closure Notification <u>is required.</u>

Example 10 – Replacement of Lighting Units and Light Bulbs for Protected Area (PA) Illumination (Physical Security)

ABWR ITAAC 5.0-1.5 – Protected Area (PA) Illumination (Physical Security)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Isolation zones and exterior areas within the protected area are provided with illumination to permit observation of abnormal presence or activity of persons or vehicles.	Inspection of the illumination in the isolation zones and external areas of the protected area will be performed to confirm sufficient illumination to permit observation.	A report exists and concludes that illumination in isolation zones and exterior areas within the protected area is 0.2 foot candles measured horizontally at ground level or, alternatively, sufficient to permit observation.

The ITAAC Closure Notification has been submitted. The licensee has performed general replacement of individual lighting units and light bulbs due to fair wear and tear. The results of post-work verification (PWV) are consistent with the description in the original ITAAC Closure Notification.

An ITAAC Post-closure Notification <u>is not required.</u>

Example 11 – Replacement of Public Address System Loudspeaker With Like For Like Spare and Identical Post Work Verification

Plant Z – ITAAC #10 – Protective Response

EP Program Elements (From NUREG-0654/FEMA-REP-1)	Inspections, Tests, Analyses	Acceptance Criteria
10. The means exist to warn and advise onsite individuals of an emergency, including those in areas controlled by the operator, including: a. employees not having emergency assignments; b. visitors; c. contractor and constructor personnel; and d. other persons who may be in the public access areas, or passing through the site, or within the owner controlled area.	10. A test of the onsite warning and communications capability will be performed during a drill or exercise.	10.1.1 A report exists that confirms that, during a drill or exercise, notification and instructions were provided to onsite workers and visitors, within the Protected Area over the plant public announcement system.

The ITAAC Closure Notification has been submitted. During a subsequent drill, the licensee noted a loudspeaker had failed in the public announcement system. The licensee removed and replaced the speaker with a like for like unit. The post-work verification (PWV) was the same as the method described in the original ITAAC Closure Notification.

An ITAAC Post-closure Notification is not required.

THRESHOLD # 3 – Engineering Changes

Will an engineering change be made that materially alters the determination that the acceptance criteria are met?

Example 1 – Damaged Pipe Support Requires Design Change to Correct

AP1000 ITAAC 2.1.2.5b –

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Each of the lines identified in Table 2.1.2-2 for which functional capability is required is designed to withstand combined normal and seismic design basis loads without a loss of its functional capability.	Inspection will be performed for the existence of a report verifying that the as-built piping meets the requirements for functional capability.	A report exists and concludes that each of the as-built lines identified in Table 2.1.2-2 for which functional capability is required meets the requirements for functional capability.

The ITAAC Closure Notification has been submitted. A pipe support is damaged during pre-operational testing of the Reactor Coolant System (RCS) system. An evaluation determines that the pipe support cannot be repaired or replaced within the original location tolerances.

A design change would be required to specify hanger repair/replacement, including an evaluation to ensure the repair will meet the conditions of the closed ITAAC.

An ITAAC Post-closure Notification <u>is required</u>.

Example 2 – <u>Software change in Protection and Safety Monitoring System</u> (<u>PSMS)</u>

US-APWR ITAAC 2.5.1-6 #24 – Reactor Trip (RT) System and Engineered Safety Features (ESF System)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Software Program Manual (SPM) is implemented to manage the PSMS software lifecycle process in each software lifecycle phase.	An inspection will be performed for the implementation phase result summary report of PSMS software in accordance with the SPM.	The implementation phase result summary report exists and concludes that the implementation phase activities of PSMS software are performed in accordance with the US-APWR SPM.

The ITAAC Closure Notification has been submitted. Subsequently, a set of application software within the PSMS was replaced to incorporate a minor design change in a plant fluid system. After installation of the new software, V&V of the affected portion of the PSMS system was successfully conducted.

The new software is an engineering change that materially alters the original ITAAC Determination Basis. Since software was changed that potentially affects the function of as-built PSMS and a new V&V was performed, an ITAAC Post-Closure Notification <u>is required</u>.

Example 3 – Piping Support Modification With No Impact on Seismic Analysis

US-APWR ITAAC 2.4.4-5#5.B.ii – Emergency Core Cooling System (ECCS)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The seismic Category I piping, including supports, identified in Table 2.4.4-3 withstand seismic design basis loads without a loss of its safety function.	Inspections and analyses will be performed to verify that the as-built seismic Category I piping, including supports, identified in Table 2.4.4-3 can withstand seismic design basis loads without a loss of its safety function.	A report exists and concludes that the as-built seismic Category I piping, including supports, identified in Table 2.4.4-3 can withstand seismic design basis loads without a loss of its safety function.

<u>Piping Support Modification</u>

The ITAAC Closure Notification has been submitted. Subsequently, an additional small support was installed for a vent valve on the main piping to suppress flow-induced vibration of the system. The supports for the vent valve were connected to the main pipe and the original main supports that were modeled in the seismic analysis of the piping system were not modified.

Since the seismic analysis model was not affected, an ITAAC Post-Closure Notification <u>is not required</u>.

Example 4 - Replacement of Diesel Generator Air Start Receiver Tanks With Larger Capacity Tanks

ABWR ITAAC 2.12.13.3 – Tests – As-Built Diesel Generator (DG) System Starts – Air Start Receiver Tank Capacity

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
DG air start receivers have capacity for five DG starts without recharging their tanks.	Tests on the as-built DG Systems will be conducted by starting the DGs five times.	As-built DGs start five times without recharging their start receiver tanks.

The testing has been satisfactorily completed and the ITAAC Closure Notification has been submitted. The vendor then makes a recommendation that the air receiver tanks need to have 10% larger capacity to provide additional margin. Based on the vendor recommendation, the larger air receiver tanks are procured and installed via an engineering change. Plant documentation is updated to reflect the change.

An ITAAC Post-closure Notification is not required because the larger capacity tank does not materially alter the ITAAC determination.

Example 5 – Thermal Expansion Issue Detected During Pre-core Hot Functional Testing Requires Modification of Snubbers and Spring Cans

AP1000 ITAAC 2.1.2.2b –

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The piping identified in Table 2.1.2-2 as ASME Code Section III is designed and constructed in accordance with ASME Code Section III requirements.	Inspection will be conducted of the as-built components as documented in the ASME design reports.	The ASME code Section III design reports exist for the as-built piping identified in Table 2.1.2-2 as ASME Code Section III.

The ITAAC Closure Notification has been submitted. During the pre-core Hot Functional Test, a problem was discovered during plant heatup while monitoring thermal expansion. Resolution of the problem required the modification of certain snubbers and spring cans to correct a potential design flaw. The implementation of this engineering change was required to ensure that the ITAAC acceptance criteria remain met.

An ITAAC Post-closure Notification is required.

Example 6 – Residual Heat Removal (RHR) Pump Vibration Detected During Surveillance Testing Requires Impeller Replacement

AP1000 ITAAC 2.3.6.9bii – Residual Heat Removal System (RNS)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The RNS provides heat removal from the reactor coolant during shutdown operations.	Testing will be performed to confirm that the RNS can provide flow through the RNS heat exchangers when the pump suction is aligned to the RCS hot leg and the discharge is aligned to both PXS DVI lines with the RCS at atmospheric pressure.	Each RNS pump provides at least 1400 gpm net flow to the RCS when the hot leg water level is at an elevation 15.5 inches ± 2 inches above the bottom of the hot leg.

The ITAAC Closure Notification has been submitted. During subsequent surveillance testing, a RNS pump was found to have high vibration. The source of the high vibration was determined to be the pump impeller. The pump impeller was replaced with an impeller of the same design but fabricated with a different material. An engineering change was implemented because of the different material but the engineering change was not required to ensure the ITAAC acceptance criteria continue to be met. Post-work verification (PWV) can be performed in the same manner as the original test.

An ITAAC Post-closure Notification is not required.

Example 7– Replacement of Wind Speed Sensor Mounting Bracket

Plant X – ITAAC #9 – Accident Assessment

EP Program Elements (From NUREG-0654/FEMA-REP-1)	Inspections, Tests, Analyses	Acceptance Criteria
9.4 The means exist to evaluate meteorological information. [I.5]	9.4 A test will be performed to verify the ability to assess meteorological information in the TSC and Control Room.	9.4 The following parameters (in-part) are displayed in the TSC and Control Room: Wind Speed (at 10m and 60m).

The ITAAC Closure Notification has been submitted. A tornado damaged the 60m wind speed sensor mounting bracket. The bracket is evaluated to determine if it needs to be redesigned. The bracket will be redesigned to withstand stronger winds, and remounted at the 60m location. Although the bracket was redesigned, the engineering change was not necessary to ensure that the acceptance criteria continue to be met.

An ITAAC Post-closure Notification is not required.

Example 8 – Electrical Storm Damages Junction Boxes and Surge Protection System for Protected Area (PA) Illumination (Physical Security)

ABWR ITAAC 5.0-1.5 – Protected Area (PA) Illumination (Physical Security)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Isolation zones and exterior areas within the protected area are provided with illumination to permit observation of abnormal presence or activity of persons or vehicles.	Inspection of the illumination in the isolation zones and external areas of the protected area will be performed to confirm sufficient illumination to permit observation.	A report exists and concludes that illumination in isolation zones and exterior areas within the protected area is 0.2 foot candles measured horizontally at ground level or, alternatively, sufficient to permit observation.

Case 1 - The ITAAC Closure Notification has been submitted. During an electrical storm a power surge caused an overload that damaged several electrical junction boxes and the surge protection system. A like for like replacement of junction boxes and standard wiring was performed, and an upgraded surge protection system was installed. Although an engineering change is required, the surge protection system is not substantially changed, and an engineering change was not needed to ensure that the acceptance criteria continued to be met.

An ITAAC Post-closure Notification is not required.

Case 2 – The ITAAC Closure Notification has been submitted. During an electrical storm a power surge caused an overload that damaged several electrical junction boxes and the surge protection system. The damaged junction boxes were replaced (like for like replacement) and additional junction boxes were installed. An upgraded surge protection system was installed and the standard wiring package was upgraded to meet the higher standards required for the upgraded surge protection system. Although an engineering change is required, the junction boxes, wiring and surge protection system are not substantially changed and the engineering change was not needed to ensure that the acceptance criteria continued to be met.

An ITAAC Post-closure Notification is not required.

Example 9 – Modification To Vital Equipment Within Established Vital Area Requires Modification To Vital Area Boundary (Physical Security)

ABWR ITAAC 5.0-1.1a – Vital Areas & Vital Area Barriers Requirements (Physical Security)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. Vital Equipment (a) Vital equipment is located only within a vital area.	(a) Inspections will be performed to confirm that vital equipment is located within a vital area.	A report exists and concludes that (a) vital equipment is located only within a vital area

The ITAAC Closure Notification has been submitted. The licensee performs an upgrade of the vital equipment located within the established vital area using the engineering change process. The engineering change requires the vital area doorway to be relocated such that the vital area boundary is changed. Repositioning of the vital area doorway is a material change to the original ITAAC determination basis.

An ITAAC Post-closure Notification is required.

Example 10 – Modification to Backup Electrical Power Supply for Technical Support Center (TSC)

Plant X – ITAAC #8 – Emergency Facilities and Equipment

EP Program Elements (From NUREG-0654/FEMA-REP-1)	Inspections, Tests, Analyses	Acceptance Criteria
8. The licensee has established a technical support center (TSC) and an onsite operation support center (OSC). [H.1]	8.1 An inspection of the as-built TSC and OSC will be performed, including a test of the capabilities.	8.1.7 A Reliable and backup electrical power supply is available for the TSC.

Case 1 – The ITAAC Closure Notification has been submitted. Subsequently, the licensee determines that the backup electrical power supply system has been shown to be susceptible to flooding due to site surface water run-off issues. An engineering change is implemented to "waterproof" the backup power supply and to change final site grading in the area. PWV is performed to verify the ITAAC Acceptance Criteria are met. The PWV is the same as that performed for the initial ITAAC closure. However, the engineering change has materially affected the original ITAAC determination basis.

<u>An ITAAC Post-closure Notification</u> is required.

Case 2 – The ITAAC Closure Notification has been submitted. The licensee has performed subsequent, periodic load testing of the backup power supply (i.e., batteries) for the TSC. The results of the subsequent load testing indicated that the batteries were being inadequately charged. The licensee performed an engineering evaluation of the batteries and charging system and identified a need for a more robust charging system. An upgraded charging system is procured and an engineering change is implemented to install the new charging system. PWV is performed which is identical to the original testing for the batteries and the ITAAC acceptance criteria are satisfied. The implementation of this engineering change to correct the problem of inadequate charging has materially affected the original ITAAC determination basis.

An ITAAC Post-closure Notification <u>is required.</u>

Example 11 – Public Address System Loudspeaker Failure Requires Design Change

Plant Z – ITAAC #10 – Protective Response

EP Program Elements (From NUREG-0654/FEMA-REP-1)	Inspections, Tests, Analyses	Acceptance Criteria
10. The means exist to warn and advise onsite individuals of an emergency, including those in areas controlled by the operator, including: [J.1] a. employees not having emergency assignments; b. visitors; c. contractor and constructor personnel; and d. other persons who may be in the public access areas, or passing through the site, or within the owner controlled area.	10. A test of the onsite warning and communications capability will be performed during a drill or exercise.	10.1.1 A report exists that confirms that, during a drill or exercise, notification and instructions were provided to onsite workers and visitors, within the Protected Area over the plant public announcement system.

The ITAAC Closure Notification has been submitted. During a subsequent drill, the licensee noted a loudspeaker had failed in the public announcement system. The vendor who supplied the original loudspeaker replaced the faulty loudspeaker with a loudspeaker made by a different manufacturer. An equivalence evaluation was performed and the new loudspeaker was determined to be equivalent to the original (e.g., has the same decibel level as the originally installed loudspeaker). Replacement of the faulty loudspeaker with an equivalent one is considered corrective maintenance. The equivalence evaluation does not constitute an engineering change that materially alters the determination that the ITAAC acceptance criteria continued to be met.

An ITAAC Post-closure Notification <u>is not required.</u>

THRESHOLD # 4 – Additional Items to be Verified

Will there be additional items that need to be verified through the ITAAC?

Example 1 – Modification of Protected Area (PA) Illumination (Physical Security)

ABWR ITAAC 5.0-1.5 – Protected Area (PA) Illumination (Physical Security)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Isolation zones and exterior areas within the protected area are provided with illumination to permit observation of abnormal presence or activity of persons or vehicles.	Inspection of the illumination in the isolation zones and external areas of the protected area will be performed to confirm sufficient illumination to permit observation.	A report exists and concludes that illumination in isolation zones and exterior areas within the protected area is 0.2 foot candles measured horizontally at ground level or, alternatively, sufficient to permit observation.

Case 1 - The ITAAC Closure Notification has been submitted. Subsequently, a new storage facility has been installed within the isolation zone which creates areas with less than 0.2 foot candle illumination. The project must install one new light to eliminate the problem. PWV was performed to verify that illumination of at least 0.2 foot candles is provided in the required areas. There has been an additional SSC added even though the test was performed in the same manner.

An ITAAC Post-closure Notification is required.

Case 2 - The ITAAC Closure Notification has been submitted. Subsequently, the licensee installs a new administration building and several storage trailers within the Protected Area reducing the illumination in several areas of the isolation zones and exterior areas of the protected area. The licensee repositions several of the established light poles and installs additional lighting units on the existing poles to provide sufficient illumination to the exterior areas. PWV was performed to verify that illumination of at least 0.2 foot candles is provided in the required areas. The relocated light poles and additional lighting constitute additional items within the scope of this ITAAC and thus materially alter the original ITAAC Determination Basis.

An ITAAC Post-closure Notification is required.

Example 2 – Addition of Piping Support in the Residual Heat Removal System (RHRS)

US-APWR ITAAC 2.4.5-5 #5.b.i – Residual Heat Removal System (RHRS)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The seismic Category I piping, including supports, identified	Inspections will be performed to verify that the as-built	The as-built seismic Category I piping, including supports,

in Table 2.4.5-3 can withstand seismic design basis loads without a loss of its safety function.	seismic Category I piping, including supports, identified in Table 2.4.5-3 is supported by a seismic Category I structure(s).	identified in Table 2.4.5-3 is supported by a seismic Category I structure(s).

Addition of Piping Support

The ITAAC Closure Notification has been submitted. Subsequently, an additional pipe support was installed to the RHRS main piping to suppress flow-induced vibration of the system. Although seismic re-analysis confirmed the integrity of the structure after the modification, the list of piping supports of the RHRS was affected.

As the addition of the pipe support affected a list of supports for RHRS piping, an ITAAC Post-Closure Notification is required.

Example 3 – Replacement of Environmentally Qualified (EQ) Cable

AP1000 ITAAC 2.1.2.7aii

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
7.a) The Class 1E equipment identified in Table 2.1.2-1 as being qualified for a harsh environment can withstand the environmental conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.	ii) Inspection will be performed of the as-installed Class 1E equipment and the associated wiring, cables, and terminations located in a harsh environment.	ii) A report exists and concludes that the as-installed Class 1E equipment and the associated wiring, cables, and terminations identified in Table 2.1.2-1 as being qualified for a harsh environment are bounded by type tests, analyses, or a combination of type tests and analyses.

Case 1 – The ITAAC Closure Notification has been submitted. During subsequent work in the field, the licensee determines that an environmentally qualified (EQ) cable has been damaged. A decision was made to repair the cable by adding a cable splice. The cable splice is a new SSC requiring environmental qualification (EQ) and thus materially alters the original ITAAC Determination Basis.

An ITAAC Post-closure Notification is required.

Case 2 – The ITAAC Closure Notification has been submitted. During subsequent work in the field, the licensee determines that an environmentally qualified (EQ) cable has been damaged. A decision was made to replace the damaged cable with a new cable which was already qualified as replacement for the damaged cable. The number of SSCs remains the same.

An ITAAC Post-closure Notification is not required.

Example 4 – Replacement of Damaged Pipe Requires Additional Welds

AP1000 ITAAC 2.1.2.3b –

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
3.b) Pressure boundary welds in piping identified in Table 2.1.2-2 as ASME Code Section III meet ASME Code Section III requirements	Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.	A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.

The ITAAC Closure Notification has been submitted. During subsequent walkdowns in the field, the licensee discovers a damaged pipe. The damage to the pipe required the pipe to be replaced and additional welds to be added. The new welds required new non-destructive examinations (NDE). The overall population of pressure boundary welds has changed since some original welds have been deleted and new welds have been added and the new NDE materially alters the original ITAAC Determination Basis.
An ITAAC Post-Closure Notification is required.

Example 5 – Raceway Reroute for a CAMS Channel Requires a Configuration Change from Electrical Separation to Electrical Isolation (Relay, Breaker, or Optical Isolator)

ABWR ITAAC 2.3.3.3b – CAMS RAD. Channels – As-built Physical Separation

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
In the CAMS, independence is provided between Class 1E divisions, and between Class 1E divisions and non-Class 1E equipment.	Inspections of the as-built Class 1E radiation channels will be performed.	In the CAMS, physical separation or electrical isolation exists between Class 1E divisions. Physical separation or electrical isolation exists between these Class 1E divisions and non-Class 1E equipment.

The ITAAC Closure Notification has been submitted. During a raceway reroute, it was determined that a configuration change was required to protect a circuit using electrical isolation instead of electrical separation. The addition of an isolation device (relay, breaker, or optical isolator) changes the number of components associated with the ITAAC and thus materially alters the original ITAAC Determination Basis.

An ITAAC Post-closure Notification is required.

Threshold #5 – Complete and Valid ITAAC Closure Representation

Will any other licensee activities materially alter the ITAAC determination basis?

Example 1 – Revision of the Fire Hazards Report for New Postulated Fire Scenario

ABWR ITAAC 2.15.6.9 – Fire Hazards Report

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
A plant fire hazards analysis considers potential fire hazards and assesses the effects of postulated fire on the ability to shutdown the reactor and to maintain the reactor in a safe, cold shutdown condition. Each postulated fire is documented in a Fire Hazards Report.	Inspections of the Fire Hazards Report will be conducted.	A Fire Hazards Report exists for the as-built plant and concludes that for each postulated fire, the plant can be shutdown and maintained in a safe, cold shutdown condition.

After completion of the Fire Hazards Report and submittal of the ITAAC Closure Notification, it becomes necessary to revise the Fire Hazards Report because of a postulated fire scenario that was not previously considered. Because the new Fire Hazards Report was not referenced in the original ITAAC Closure Notification, the Fire Hazards Report is revised and the ITAAC Determination Basis is also revised so that it is complete and accurate.

An ITAAC Post-closure Notification <u>is required</u>.

Example 2 – Replacement of 3 Hour Fire Rated Door with 6 Hour Fire Rated Door

ABWR ITAAC 2.15.12.3 – As-Built INSP. – Control Building (C/B)– Fire Rating

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Inter-divisional walls, floors, doors and penetrations, and penetrations in the external C/B walls to connecting tunnels, have a three-hour fire rating.	Inspections of the as-installed interdivisional boundaries and external wall penetrations to connecting tunnels will be conducted.	The as-installed walls, floors, doors and penetrations that form the inter-divisional boundaries, and penetrations in the external C/B walls to connecting tunnels, have a three-hour fire rating.

The ITAAC Closure Notification has been submitted and the NRC has already approved closure of ITAAC family 15A (which includes ITAAC 2.15.12.3). The door XXX was damaged by surrounding construction activities and must be replaced. The exact door could not be found and a similar door with a 6 hour fire rating was put in its place using approved design control and construction procedures.

An ITAAC Post-closure Notification is not required since the replacement component exceeds the requirements of the acceptance criteria.

Example 3 – Changes to Backup Electrical Power Supply for Technical Support Center (TSC)

Plant X – ITAAC #8 – Emergency Facilities and Equipment

EP Program Elements (From NUREG-0654/FEMA-REP-1)	Inspections, Tests, Analyses	Acceptance Criteria
8. The licensee has established a technical support center (TSC) and an onsite operation support center (OSC). [H.1]	8.1 An inspection of the as-built TSC and OSC will be performed, including a test of the capabilities.	8.1.7 A Reliable and backup electrical power supply is available for the TSC.

Case 1 - The ITAAC Closure Notification has been submitted. Subsequently, the licensee has changed the vendor who supplies the backup power supply (i.e., batteries) for the TSC. A review is performed to determine whether the vendor change impacts the prescribed ITAAC acceptance criteria. It is subsequently determined that this change will not result in any other changes in the backup power supply system's critical characteristics. All ITAAC conclusions remain valid.

An ITAAC Post-closure Notification is not required.

Case 2 – The ITAAC Closure Notification has been submitted. Subsequent to closure of the ITAAC, the licensee decides to change the source of the backup power for the TSC. The source of the backup power is not material to this ITAAC, only that the back-up power supply is available.

An ITAAC Post-closure Notification is not required.

Example 4 – Modification of Protected Area (PA) Illumination (Physical Security)

ABWR ITAAC 5.0-1.5 – Protected Area (PA) Illumination (Physical Security)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Isolation zones and exterior areas within the protected area	Inspection of the illumination in the isolation zones and	A report exists and concludes that illumination in isolation

are provided with illumination to permit observation of abnormal presence or activity of persons or vehicles.	external areas of the protected area will be performed to confirm sufficient illumination to permit observation.	zones and exterior areas within the protected area is 0.2 foot candles measured horizontally at ground level or, alternatively, sufficient to permit observation.

The ITAAC Closure Notification has been submitted. Subsequently, the licensee removes several established light poles for the installation of a large crane for temporary use. The illumination within the isolation zones and exterior areas of the protected area are still within the ITAAC acceptance criteria as verified by PWV and the licensee has elected not to reinstall the removed light poles. This constitutes a material change to the original ITAAC determination basis.

An ITAAC Post-closure Notification is required.

Example 5 – High Noise Areas in Plant Require a Change in Method of Notification of Workers (Protective Response)

Plant Z – ITAAC #10 – Protective Response

EP Program Elements (From NUREG-0654/FEMA-REP-1)	Inspections, Tests, Analyses	Acceptance Criteria
10. The means exist to warn and advise onsite individuals of an emergency, including those in areas controlled by the operator, including: [J.1] a. employees not having emergency assignments; b. visitors; c. Contractor and construction personnel; and d. other persons who may be in the public access areas, on or passing through the site, or within the owner controlled area.	10.1 A test of the onsite warning and communications capability will be performed during a drill or exercise.	10.1.1 A report exists that confirms that, during a drill or exercise, notification and instructions were provided to onsite workers and visitors, within the Protected Area, over the plant announcement system.

A report has been prepared and the ITAAC Closure Notification has been submitted. During a subsequent drill, and after preoperational testing has been initiated, the licensee noted unanticipated high noise levels in certain areas of the plant, and there are questions as to whether the prescribed acceptance criteria remain met. The licensee now anticipates this will reflect normal plant operating conditions. Licensee has implemented the use of electronic notification media (e.g., pagers, PDAs, Blackberries, etc.) for personnel entering these high noise areas, within the Protected Area of the plant, vice relying on the plant's public announcement system.

This is a change in the method of notification for onsite personnel. The licensee must submit a license amendment request.

Example 6 – Relocation of Vital Equipment To A Different Vital Area (Physical Security)

ABWR ITAAC 5.0-1.1a – Vital Areas & Vital Area Barriers Requirements (Physical Security)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. Vital Equipment (a) Vital equipment is located only within a vital area.	 (a) Inspections will be performed to confirm that vital equipment is located within a vital area.	A report exists and concludes that (a) vital equipment is located only within a vital area

Case 1: The ITAAC Closure Notification has been submitted. The licensee upgrades or replaces like for like vital equipment located within the established vital area. The original ITA continues to be met since the vital equipment is still located within the established vital area.

An ITAAC Post-closure Notification <u>is not required.</u>

Case 2: The ITAAC Closure Notification has been submitted. Subsequently, the licensee upgraded three components of vital equipment located within the established vital area. Due to the larger size of the new equipment, only two of the new components will fit safely in the established vital area. The third component will be installed in another vital area on a lower level. The relocation of the vital equipment materially alters the original ITAAC determination basis.

An ITAAC Post-closure Notification <u>is required.</u>

Example 7 – Change in the Methodology Used to Determine Setpoints for the Protection and Safety Monitoring System (PMS)

AP1000 ITAAC 2.5.2.10 - Protection and Safety Monitoring System (PMS)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Setpoints are determined using a methodology which accounts for loop inaccuracies, response testing, and maintenance or replacement of instrumentation.	Inspection will be performed for a document that describes the methodology and input parameters used to determine the PMS setpoints.	A report exists and concludes that the PMS setpoints are determined using a methodology which accounts for loop inaccuracies, response testing, and maintenance or replacement of instrumentation.

The ITAAC Closure Notification has been submitted. Subsequently, the licensee makes a decision to change the methodology for determining the setpoints. Both the original setpoint methodology and the new setpoint methodology are acceptable approaches to the NRC. However, the ITA requires the setpoint methodology to be described.

An ITAAC Post-closure Notification is required.

Example 8 – Re-Testing of Pump Flow Rate

AP1000 ITAAC 2.3.07.08.ii – Spent Fuel Pool Cooling System (SFS) Pump Flow Rate

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The SFS provides the nonsafety-related function of removing spent fuel decay heat using pumped flow through a heat exchanger.	Testing will be performed to confirm that each SFS pump provides flow through its heat exchanger when taking suction from the SFP and returning flow to the SFP.	Each SFS pump produces at least 900 gpm through its heat exchanger.

The ITAAC Closure Notification has been submitted. Subsequently, the licensee performs additional preoperational testing on the SFS. The additional testing was performed in the same configuration using the same methodology as the initial test, and the flow rate through heat exchanger “A” was recorded as 920 gpm. The submitted ICN stated that the flow rate recorded during the initial test was 930 gpm. The minor difference was attributed to slight variations in valve position and fluid temperature. This does not constitute a material change to the original ITAAC determination basis because even though the numerical result is different, the acceptance criteria are still met and none of the other notification thresholds were exceeded. Therefore the ICN is still a complete and valid ITAAC Closure representation.

An ITAAC Post-closure Notification is not required.

APPENDIX I – ITAAC POST-CLOSURE NOTIFICATION TEMPLATE AND EXAMPLES

Appendix	Technology	ITAAC
I-1	N/A	Template
I-2	ABWR	ABWR ITAAC 5.0-1.5 (PA Illumination)
I-3	ABWR	ABWR ITAAC 2.15.6.9 (Fire Hazards Report)
I-4	AP1000	AP1000 ITAAC 2.1.1, Item 4 (RM & FHM gripper)

APPENDIX I-1 – ITAAC POST-CLOSURE NOTIFICATION TEMPLATE

XX/YY/ZZZZ (Date)

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

Subject: Supplement for (designate technology or COL reference) ITAAC Item X.X.X Completion

In accordance with 10 CFR 52.99(c)(2), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of supplemental information regarding the completion status of {Site Name and Unit #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item X.X.X {include basic description of the ITAAC}. This notification is being provided in accordance with NEI 08-01 (Reference 1), which was endorsed by the NRC in Regulatory Guide 1.215.

Reason for Supplement

Additional actions were required to restore/maintain the completed status of ITAAC Item X.X.X following the submittal of ITAAC Closure Notification {number/date and ADAMS accession number} (Reference 4) due to {brief description of activity/event that created condition requiring additional actions such as; corrective maintenance, engineering change implementation, or addition of components associated with ITAAC-related systems.} Include additional discussion specifically stating the reason for the supplement, such as post work verification (PWV) differs significantly from the original ITA performed.

ITAAC Statement

Design Commitment
{The design commitment for the applicable ITAAC should be quoted directly from the source. Do not paraphrase the Design Commitment.}

Inspection/Test/Analysis
{The inspection/test/analysis (ITA) for the applicable ITAAC should be quoted directly from the source. Do not paraphrase the inspection/test/analysis.}

Acceptance Criteria
{The acceptance criteria for the ITAAC should be quoted directly from the source. Do not paraphrase the acceptance criteria.}

Supplemental ITAAC Determination Basis

This section should summarize the basis for concluding that the acceptance criteria remain met. For example, 1) briefly summarize the PWV that differed from the original ITA and the basis for concluding that the acceptance criteria remain met, or 2) briefly summarize the ITAAC determination basis for new components or replacement components that differ from the original.

It should be written in an active voice, and consist of sufficient information to enable a person familiar with technical/engineering concepts to understand the bases underlying the conclusion established by the licensee regarding the updated ITAAC determination basis and successful ITAAC completion restoration or maintenance.

In addition, the records (Tests, Reports, Completed Procedures, Completed Analyses, etc.) that form the ITAAC supplemental determination basis must be referenced and available for NRC inspection. A closing statement confirming that ITAAC completion has been maintained should be included.

Associated ITAAC Findings

In accordance with plant procedures for ITAAC completion, the licensee will perform a review of all ITAAC findings pertaining to the subject ITAAC to determine that associated corrective actions were completed. The ITAAC Post-closure Notification will list all ITAAC findings relevant to successful completion of the ITAAC and state that all corrective actions have been completed. ITAAC completion reviews will be documented in ITAAC Completion Packages and available for NRC inspection. Any ITAAC Finding related to the subject ITAAC should be listed as follows:

ITAAC Finding(s) related to this ITAAC Supplemental Closure Notification:

1. {ITAAC finding #1}
2. {ITAAC finding #2}
3. {ITAAC finding #3}

ITAAC Post-closure Notifications should state, “The corrective actions for each finding have been completed and thus the completed status of this ITAAC is maintained.”

Alternatively, the text above can be changed to indicate that “There are no findings related to this ITAAC.”

ITAAC Completion Maintained Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that the completed status of ITAAC X.X.X for {Site Name and Unit #} has been maintained, and that the prescribed acceptance criteria continue to be met.

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

References

1. NEI 08-01, Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52
2. {Test/inspection record(s), report, completed procedure, analysis, etc., that form the supplemental ITAAC determination basis}
3. {ITAAC X.X.X Completion Package}
4. Original ITAAC Closure Notification {number/date and ADAMS accession number}

APPENDIX I-2 - EXAMPLE ITAAC POST-CLOSURE NOTIFICATION ABWR ITAAC 5.0-1.5

XX/YY/ZZZZ (Date)
To: NRC
From: {Name of Licensee}
{Site Name and Unit #}
{Docket #}

Subject: Supplement for ABWR ITAAC 5.0-1.5 Completion

In accordance with 10 CFR 52.99(c)(2), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of supplemental information regarding the completion status of {Site Name and Unit #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item 5.0-1.5 for Protected Area Illumination (Site Security). This notification is being provided in accordance with NEI 08-01 (Reference 1), which was endorsed by the NRC in Regulatory Guide 1.215.

Reason for Supplement

Additional actions were required to restore the completed status of ITAAC Item 5.0-1.5 following the submittal of ITAAC Closure Notification {number/date and ADAMS accession number} (Reference 5) due to installation of a new storage facility within the isolation zone which creates areas with less than the minimum required ITAAC acceptance criteria for illumination. One additional light has been added and illumination levels have been verified to meet the ITAAC acceptance criteria.

ITAAC Statement

Design Commitment
Isolation zones and exterior areas within the protected area are provided with illumination to permit observation of abnormal presence or activity of persons or vehicles.

Inspection/Test/Analysis
Inspection of the illumination in the isolation zones and external areas of the protected area will be performed to confirm sufficient illumination to permit observation.

Acceptance Criteria
A report exists and concludes that illumination in isolation zones and exterior areas within the protected area is 0.2 foot candles measured horizontally at ground level or, alternatively, sufficient to permit observation.

Supplemental ITAAC Determination Basis

After the original closure of ITAAC 5.0-1.5, a new storage facility was installed within the isolation zone which created areas with less than the minimum ITAAC acceptance criteria illumination. One additional light has been added to increase illumination in the area shadowed by the new facility which does constitute the addition of an SSC. A partial test {test document number and title} dated XX/YY/ZZ (Reference 2) has been performed for the affected area in the same manner as the original test after installation of the additional light. An additional report, {report document number and title} dated XX/YY/ZZ (Reference 3), has been generated concluding that the acceptance criteria of 0.2 foot candles measured horizontally at ground level for ITAAC item 5.0-1.5 is met in the affected area. The ITAAC 5.0-1.5 Completion Package (Reference 4) has been updated to include these activities. This maintains the completed status of ITAAC 5.0-1.5.

Associated ITAAC Findings

ITAAC Findings related to this ITAAC Supplemental Closure:

1. {ITAAC finding #1}
2. {ITAAC finding #2}

The corrective actions for each finding have been completed and thus the completed status of this ITAAC is maintained.

ITAAC Completion Maintained Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that the completed status of ITAAC 5.0-1.5 for {Site Name and Unit #} has been maintained, and that the prescribed acceptance criteria continue to be met.

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

References

1. NEI 08-01, Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52
2. {Illumination Test document number, title, and completion date}
3. {Illumination Report document number, title, and completion date}
4. ITAAC 5.0-1.5 Completion Package
5. Original ITAAC Closure Notification {number/date and ADAMS accession number}

APPENDIX I-3 - EXAMPLE ITAAC POST-CLOSURE NOTIFICATION ABWR ITAAC 2.15.6.9

XX/YY/ZZZZ (Date)

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

Subject: Supplement for ABWR ITAAC 2.15.6.9 Completion

In accordance with 10 CFR 52.99(c)(2), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of supplemental information regarding the completion status of {Site Name and Unit #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) Item 2.15.6.9 for a Fire Hazards Report. This notification is being provided in accordance with NEI 08-01 (Reference 1), which was endorsed by the NRC in Regulatory Guide 1.215.

Reason for Supplement

Additional actions were required to maintain the completed status of ITAAC Item 2.15.6.9 following the submittal of ITAAC Closure Notification {number/date and ADAMS accession number} (Reference 5) due to identification of a postulated fire scenario that was not previously considered in the Fire Hazards Report**.** The Fire Hazards Report has been revised and verified to be complete and accurate.

ITAAC Statement

Design Commitment
A plant fire hazards analysis considers potential fire hazards and assesses the effects of postulated fire on the ability to shutdown the reactor and to maintain the reactor in a safe, cold shutdown condition. Each postulated fire is documented in a Fire Hazards Report.

Inspection/Test/Analysis
Inspections of the Fire Hazards Report will be conducted.

Acceptance Criteria
A Fire Hazards Report exists for the as-built plant and concludes that for each postulated fire, the plant can be shutdown and maintained in a safe, cold shutdown condition.

Supplemental ITAAC Determination Basis

After the original closure of ITAAC 2.15.6.9, a postulated fire scenario was identified that was not previously considered. This additional fire scenario has been analyzed in {analysis document number and title} dated XX/YY/ZZ (Reference 2) in the same manner as the original fire scenarios. A revised Fire Hazards Report, {report document number and title} dated XX/YY/ZZ (Reference 3), has been generated concluding that the acceptance criteria of ITAAC 2.15.6.9 continues to be met. The ITAAC 2.15.6.9 Completion Package (Reference 4) has been updated to include this additional analysis. This maintains ITAAC 2.15.6.9 in a completed status.

Associated ITAAC Findings

ITAAC Findings related to this ITAAC Supplemental Closure Notification:

1. {ITAAC finding #1}
2. {ITAAC finding #2}

The corrective actions for each finding have been completed and thus the completed status of this ITAAC is maintained.

ITAAC Completion Maintained Statement

Based on the above information, {Licensee Name} hereby notifies the NRC that the completed status of ITAAC 2.15.6.9 for {Site Name and Unit #} is maintained, and that the prescribed acceptance criteria continue to be met.

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

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

References

1. NEI 08-01, Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52
2. {Fire scenario analysis document number, title, and completion date}
3. {Fire Hazards Report document number, title, and completion date}
4. ITAAC 2.15.6.9 Completion Package
5. Original ITAAC Closure Notification {number/date and ADAMS accession number}

APPENDIX I-4 - EXAMPLE ITAAC POST-CLOSURE NOTIFICATION AP1000 ITAAC 2.1.1 ITEM 4

XX/YY/ZZZZ (Date)

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

Subject: Supplement for AP1000 ITAAC 2.1.1 ITEM 4 Completion

In accordance with 10 CFR 52.99(c)(2), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of supplemental information regarding the completion status of {Site Name and Unit #} Inspection, Test, Analysis and Acceptance Criteria (ITAAC) 2.1.1 item 4 for the Refueling Machine (RM) and Fuel Handling Machine (FHM) gripper assemblies. This notification is being provided in accordance with NEI 08-01 (Reference 1), which was endorsed by the NRC in Regulatory Guide 1.215.

Reason for Supplement

Additional actions were required to restore the completed status of ITAAC 2.1.1 item 4 following the submittal of ITAAC Closure Notification {number/date and ADAMS accession number} (Reference 5) due to a plant modification to the Refueling Machine control circuitry that had the potential to impact the gripper interlock**.** Additional testing has been performed after completion of the modification to verify the ITAAC acceptance criteria remains satisfied for the Refueling Machine gripper.

ITAAC Statement

Design Commitment
The RM and FHM/spent fuel handling tool (SFHT) gripper assemblies are designed to prevent opening while the weight of the fuel assembly is suspended from the gripper.

Inspection/Test/Analysis
The RM and FHM/SFHT gripper assemblies will be tested by operating the open controls of the gripper while suspending a dummy fuel assembly.

Acceptance Criteria
The RM and FHM/SFHT gripper assemblies gripper will not open while suspending a dummy test assembly.

<u>Supplemental ITAAC Determination Basis</u>

After the original closure of ITAAC 2.1.1 item 4, Engineering Change 0123456 (Reference 2) was performed to correct a deficiency with the Refueling Machine (RM) control circuitry. The deficiency with the control circuit was not related to the gripper interlock function but the modification had the potential to impact the gripper interlock. Based on this potential, a partial APP-XX-YYY-## dated XX/YY/ZZ (Reference 3) was completed. During this test a dummy fuel assembly was lifted by the RM to a sufficient height to be fully suspended. At this height the open controls for the RM grippers were exercised for releasing the fuel assembly. The grippers did not open verifying that ITAAC 2.1.1 item 4 acceptance criteria for the RM remains satisfied. The ITAAC 2.1.1 item 4 Completion Package (Reference 4) has been updated to include this additional testing. This maintains the completed status of ITAAC 2.1.1 Item 4.

<u>Associated ITAAC Findings</u>

ITAAC Findings related to this ITAAC Supplemental Closure Notification:

1. {ITAAC finding #1}
2. {ITAAC finding #2}

The corrective actions for each finding have been completed and thus the completed status of this ITAAC is maintained.

<u>ITAAC Completion Maintained Statement</u>

Based on the above information, {Licensee Name} hereby notifies the NRC that the completed status of ITAAC 2.1.1 item 4 for {Site Name and Unit #} is maintained, and that the prescribed acceptance criteria continue to be met.

If there are any questions, please contact {Name of Contact Person for licensee} at {Telephone Number for Contact Person}.

Sincerely,

<u>{Signature of Licensee Representative}</u>
{Typed Name of Licensee Representative}
{Title of Licensee Representative}

References

1. NEI 08-01, Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52
2. Engineering Change 0123456, Refueling Machine Control Circuit Modification, completed on XX/YY/ZZ.
3. Partial APP-XX-YYY-###, ITAAC 2.1.1 item 4 Refueling Machine and Fuel Handling Machine Grippers Test Procedure, completed on XX/YY/ZZ
4. ITAAC 2.1.1 item 4 Completion Package
5. Original ITAAC Closure Notification {number/date and ADAMS accession number}

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