ADDITIONS/MODIFICATIONS TO STANDARDIZED DCA ITAAC

The following table provides additions and modifications to the scope and language for the standardized ITAAC (ADAMS Accession No. ML16096A121) that are expected to be applicable to LWR design certification applications.

Each standardized ITAAC is shown with five columns. The two left columns are included to reference and identify the standardized ITAAC; and are not included in the DCA. The three right columns are the standardized ITAAC that are to be incorporated and adapted as appropriate into a DCA. The row below the standardized ITAAC contains a discussion to further clarify the scope of the ITAAC that should be considered for inclusion in Tier 2 Section 14.3; this discussion is not to be included in Tier 1.

Standardized ITAAC are grouped by technical discipline (e.g., Mechanical, Electrical, etc.). Each standardized ITAAC has a corresponding identifier number (e.g., the “Physical Separation of Class 1E Power Circuits” ITAAC is numbered E02) in the left most columns. The letter designation of the identifier corresponds to the technical discipline as follows:

- A (ASME)
- C (Containment)
- E (Electrical)
- F (Fire Protection)
- H (Human Factors Engineering)
- HB (Hazard Barrier)
- I (Instrumentation and Control)
- M (Mechanical)
- Q (Qualification)
- R (Radiation Protection)
- S (Structural)

The second column from the left contains two important pieces of information about the standardized ITAAC; the ITAAC Category (in bold) and the ITAAC type.

The following are descriptions of the ITAAC Categories:

As-Built Analysis ITAAC - As-built status of the SSC is required in order to perform this ITAAC.

As-Built Inspection ITAAC - As-built (including as-fabricated) status of the SSC is required in order to perform this ITAAC. As-built inspections may be performed at the final installed location or at a vendor/ module manufacturer.

Design Acceptance Criteria ITAAC - Design Acceptance Criteria (DAC) ITAAC are used to verify satisfactory design completion in those areas in which the design cannot be fully completed prior to approval of the DCD.

Design Analysis ITAAC - ITAAC performed for this category do not require manufacture of equipment nor do they require physical work at a vendor, at a module manufacturer, or at a plant under construction.

Equipment Qualification ITAAC - Qualification of safety-related components, to demonstrate the ability of the component to perform its safety function over the full range of operating conditions (functional capability), during a seismic event (seismic qualification), or in a harsh environment (environmental qualification). Equipment qualification is generally performed by a vendor or a manufacturer at their site.

Preoperational Test ITAAC - A Preoperational Test ITAAC is performed in accordance with a Preoperational Test Procedure described in DCD Section 14.2. Typically, the system is as-built and then released to the startup organization in order to perform these ITAAC.

Vendor Test ITAAC - Vendor tests are performed on fabricated equipment. The vendor test may be performed at the site of manufacture or at a third party site. Vendor tests are different than type tests in that each component of an equipment type must be tested.

No.	ITAAC Category/Type	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
HB3	**As-Built Inspection** Internal Flood Protection/ Equipment Submergence	Safety-related components located in the [ZZZ compartment] are located above the internal design flood level or are qualified for submergence.	An inspection will be performed of the [ZZZ compartment] as-built safety-related components.	The safety-related components located in the [ZZZ compartment] are located above the internal design flood elevation of [xx ft.], or an [equipment qualification data package] concludes that the components are qualified for submergence.
	Tier 2 Section 14.3 Discussion of ITAAC Implementation Sections [3.9, 3.10 and 3.11] discuss the equipment qualification programs for components located in the [ZZZ compartment] that are located below the internal design flood level. An ITAAC inspection will be performed to verify that the as-built safety-related components are either (1) located above the compartment's internal design flood level, or (2) qualified for submergence.			

No.	ITAAC Category/Type	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
M12	**Preoperational Test and Analysis** Safety-Related HVAC Design Temperature Control	The [XXX system] provides conditioned air to the [YYY structure/room] to maintain area temperatures within design limits.	An analysis and a test will be performed of the [XXX system].	A report exists and concludes that the [XXX system] is capable of providing conditioned air to maintain temperatures within design limits in the areas supplied by the system while the system is aligned in an emergency operating lineup.
	Tier 2 Section 14.3 Discussion of ITAAC Implementation Section [6.4.x or 9.4.x] provides a description of the [XXX system] operation to provide the function to control the temperatures in the [YYY structure]. The design basis temperatures of the rooms are provided in [Section x.x, Table x.x-x, and/or Figure x.x-x]. In accordance with Section 14.2.x, a preoperational test demonstrates that the [heating/cooling] capability of the [XXX system] can maintain area temperatures within the design temperature limits for the [ZZZ rooms] in the [YYY structure] while the system is aligned in an emergency operating lineup. The preoperational test will be performed at the external and internal environmental conditions existing at the time of the test. All internal heating loads may not be operating during the performance of the test. An analysis will extrapolate the test results to emergency operating conditions.			

No.	ITAAC Category/Type	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
M20	**<u>As-Built Inspection</u>** Crane Single Failure Proof Configuration	The single failure proof [ZZZ crane] is constructed to provide assurance that a failure of a single mechanism component does not result in the uncontrolled movement of the lifted load.	An inspection will be performed of the as-built [ZZZ crane].	The following single-failure proof features are verified: (a) non-redundant structural components (i.e., bridge, trolley, wire rope drum, and hook) are designed to appropriate standards, constructed from base material demonstrated to meet appropriate material properties, and pass appropriate non-destructive examination of critical welds and forgings, and (b) redundant design features are able to stop and hold the load following component failures, operator errors, and loss of power.
	<u>Tier 2 Section 14.3 Discussion of ITAAC Implementation</u> Section [9.1.4.x or 9.1.5.x] describes that the [ZZZ crane] is classified as a Type I crane as defined by the ASME NOG-1, "Rules for Construction of Overhead and Gantry Cranes (Top Running Bridge, Multiple Girder)," or equivalent. Possible failures of components should include holding brake, wire rope, drive train, and control system. Possible operator errors would include two-blocking and overload. This ITAAC inspection may be performed any time after manufacture of the [ZZZ crane] (at the factory or later).			

No.	ITAAC Category/Type	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
M27	**<u>As-Built Inspection</u>** Installed Configuration	The installed configuration of the [XXX system], including its flowpath, is consistent with procurement, construction, and installation specifications such that the system's safety functions can be achieved.	Inspection of the as-built [XXX system] will be performed to verify the installed configuration, including the flowpath.	The [XXX system] installed configuration, including the flowpath, of the components listed in [Table x.x.x-x] is consistent with procurement, construction, and installation specifications such that the system's safety functions can be achieved.
	<u>Tier 2 Section 14.3 Discussion of ITAAC Implementation</u> Verification of the installed configuration of the system includes verifying that the system and its components are installed in a manner that supports the safety functions for which the system is intended, consistent with procurement, construction, and installation specifications. This verification should include visual inspection (e.g., walkdown) of the systems, including their flowpath, and may be performed in conjunction with other preoperational activities. Examples of the verification performed by the licensee to complete this ITAAC include confirmation of valve orientation, inspection of installation (e.g., use of appropriate and calibrated tools), verification of adequate sloping of piping in accordance with design provisions, verification of adequate access for inservice inspection (ISI) and inservice testing (IST) activities and confirmation that interferences are avoided.			

No.	ITAAC Category/Type	Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
M33	**As-Built Inspection** Spent Fuel Storage Pool Drain Down Prevention	The spent fuel storage pool, piping, and connections are designed and located to prevent the drain down of the spent fuel pool water level below the minimum safety water level.	An inspection will be performed of the as-built spent fuel pool, piping, and connections.	The inspection verifies that: • There are no openings, piping penetrations, or connections below the top of the irradiated fuel assemblies. • All piping penetrations and connections below [the minimum safety water level] elevation are designed as Seismic Category I, and • All non-Seismic Category I piping that extends below [the minimum safety water level] is equipped with anti-siphon devices at or above the [minimum safety water level] elevation.
	Tier 2 Section 14.3 Discussion of ITAAC Implementation Section 9.1.2 discusses spent fuel storage. An ITAAC inspection of the as-built spent fuel storage pool is performed to verify the design features of the spent fuel pool, piping, and connections prevent drain down of the spent fuel pool water level below the minimum safety water level.			