

**Response to**

**Request for Additional Information No. 115 (1054, 1353, 1434, 1048), Revision 0**

**10/29/2008**

**U. S. EPR Standard Design Certification**

**AREVA NP Inc.**

**Docket No. 52-020**

**SRP Section: 14.03.02 - Structural and Systems Engineering - Inspections, Tests,  
Analyses, and Acceptance Criteria**

**SRP Section: 14.03.05 - Instrumentation and Controls - Inspections, Tests,  
Analyses, and Acceptance Criteria**

**SRP Section: 14.03.09 - Human Factors Engineering - Inspections, Tests,  
Analyses, and Acceptance Criteria**

**Application Section: FSAR Ch 14**

**QUESTIONS for Construction Inspection and Allegations Branch (CCIB)  
QUESTIONS for Structural Engineering Branch 2 (ESBWR/ABWR Projects) (SEB2)**

**Question 14.03.02-1:**

ITAAC Item 3.1 in Table 2.1.1-7

SRP 14.3 App. A IV.4.B states that Acceptance Criteria should be objective and unambiguous. The Commitment Wording and AC for Item 3.1 states, in part, that..."SBs 2 and 3 decoupling from RSB above elevation 0' 0" as described in Figures ...2.1.1-8 and 2.1.1-10". A review of these Figures indicate that the decoupling is shown to extend below 0' 0". Which is correct, the wording ..."above 0' 0"', or the Figures 2.1.1-8 and 2.1.1-10 which indicate decoupling below elevation 0' 0"?

In addition, should not the FB also be stated here as being decoupled from the RSB above elevation 0' 0" at its ceiling by the decoupling gap as shown on Figure 2.1.1-10?

**Response to Question 14.03.02-1:**

A response to this question will be provided by January 21, 2009.

**Question 14.03.02-2:**

ITAAC Item 4.2 in Table 2.1.1-7

SRP 14.3, App. A IV.4.B states that any differences between the design descriptions and the Commitment Wording of the ITAAC should be minimized unless intended to better conform the commitments in the design descriptions with the ITAAC format. The Commitment Wording of this ITAAC omits the wording “and safety related functions” after words “without loss of structural integrity” used in the design description in Section 2.1. The Commitment Wording, ITA, and AC should be revised to include the wording ‘and safety related functions’.

Should the ITA and AC be split in two with an analysis and an inspection being performed? The analysis would verify that the NI structures will be Seismic Category I structures if they are constructed per the approved design, and the inspection would verify that the NI structures conform to the analysis and the approved design and are able to withstand design basis loads per Section 2.1.1, without loss of structural integrity.

This comment is also applicable to the following ITAAC:

ITAAC Item 4.3 in Table 2.1.2-2

ITAAC Item 4.3 in Table 2.1.5-2

**Response to Question 14.03.02-2:**

A response to this question will be provided by January 21, 2009.

**Question 14.03.02-3:**

ITAAC Item 4.6 in Table 2.1.1-7

Why does the ITA not state that the inspection is of the as-built installation? It could state 'Inspection of RSB and RCB will be performed.'

**Response to Question 14.03.02-3:**

A response to this question will be provided by January 21, 2009.

**Question 14.03.02-4:**

ITAAC Item 4.8 in Table 2.1.1-7

SRP 14.3 App. A IV.4.B states that Acceptance Criteria should be objective and unambiguous. The AC for Item 4.8 lists room numbers UJA11 002, UJA11 005, UJA11 006, and UJA11-009 and refers to Figure 2.1.1-11. These room numbers are not listed on Figure 2.1.1-11. Similarly, room numbers UJA07 014 and UJA07 015 are referred on Figure 2.1.1-12, but these room numbers are not listed on Figure 2.2.2-12. The above two Figures should be revised to show the location of the room numbers identified in the AC, or justify otherwise.

**Response to Question 14.03.02-4:**

A response to this question will be provided by January 21, 2009.

**Question 14.03.02-5:**

ITAAC Item 3.1 in Table 2.1.3-1

SRP 14.3 App. A IV.4.B states that Acceptance Criteria should be objective and unambiguous. The Commitment Wording for Item 3.1 states, in part, that..."as shown on Figure 2.1.3-1, seismic separations are provided between the NAB and surrounding buildings". The AC for Item 3.1 states, in part, that..."The as-built NAB is separated from surrounding buildings as shown on Figure 2.1.3-1". Why doesn't the Item 3.1 ITAAC Commitment Wording state what minimum dimensions are required to permit seismic separation to exist between NAB and surrounding buildings, and the AC require that minimum dimensions be met to achieve desired seismic separation?

This is also applicable to following ITAAC:

ITAAC Item 3.2 in Table 2.1.4-1

**Response to Question 14.03.02-5:**

A response to this question will be provided by January 21, 2009.

**Question 14.03.02-6:**

ITAAC Item 3.3 in Table 2.1.1-7

The design commitment and AC refer to a flooding wall and water-tight door as described in Table 2.1.1-3. That table has four walls listed. Which wall does the ITAAC address?

**Response to Question 14.03.02-6:**

A response to this question will be provided by January 21, 2009.

**Question 14.03.02-7:**

ITAAC Item 4.1 in Table 2.2.2-2

This ITAAC states that EPGBs as-installed at site grade level....is at elevation 0' 0", as indicated on Figures 2.1.2-2 and 2.1.2-3. Grade elevation is shown on these figures but it is not correlated with an elevation of 0' 0". Please clarify what the the reference elevation is on these figures.

**Response to Question 14.03.02-7:**

A response to this question will be provided by January 21, 2009.

**Question 14.03.02-8:**

ITAAC Item 4.9 in Table 2.1.1-7

The ITAAC requires an analysis to indicate that essential SSCs in RCB rooms in Table 2.1.1-4 are protected from the dynamic effects of pipe breaks. Should there not also be an inspection to determine whether the pipe whip restraints, that contain the pipes so as not to cause damage to the essential SSCs, are installed per the analysis? Revise ITAAC table accordingly.

**Response to Question 14.03.02-8:**

A response to this question will be provided by January 21, 2009.

**Question 14.03.02-9:**

Summarize the EPR standard design envelope site parameters, (such as, soil properties, seismology design basis, extreme wind, tornado, precipitation (for roof design) ambient design temperature, hazards in site vicinity, required stability of slope, and maximum settlement values for seismic Category I structures). Discuss necessary EPR standard design System Descriptions and ITAAC requirements for verification of site parameters, and provide needed ITAAC tables to ensure compliance with the EPR standard design envelope site parameters.

**Response to Question 14.03.02-9:**

Significant site parameters for the U.S. EPR are summarized in U.S. EPR FSAR Tier 1, Table 5.0-1, which are derived from the site parameters listed in U.S. EPR FSAR Tier 2, Table 2.1-1. ITAAC are not required for site parameters, as explained in RG 1.206, Section C.II.1.2.1, "Although the site parameters for certified designs were included in the Tier 1 document, no ITAAC were developed for those site parameters."

Guidance for the Tier 1 content of a design certification is provided in Standard Review Plan (SRP) 14.3, Appendix A, Section I.C:

"Tier 1- means the portion of the design-related information contained in the generic DCD that is approved and certified by this design certification rule (Tier 1 information). The design descriptions, interface requirements, and site parameters are derived from Tier 2 information. Tier 1 information includes:

- i. Definitions and general provisions;
- ii. Design descriptions;
- iii. Inspections, tests, analyses, and acceptance criteria (ITAAC);
- iv. Significant site parameters; and
- v. Significant interface requirements."

The above SRP 14.3, Appendix A, Section I.C guidance shows that site parameters are handled separately from design descriptions and ITAAC.

Guidance for developing site parameters is provided in SRP 2.0, which covers both Tier 1 and Tier 2. As explained in SRP 14.3.1, "the review of Tier 1 information related to site parameters [was] relocated from SRP Section 14.3.1, Draft Revision 0, to SRP Section 2.0, 'Site Characteristics and Site Parameters'." The process for selecting and verifying site parameters is described in U.S. EPR FSAR Tier 2, Section 14.3.5. The reference to SRP 14.3 in U.S. EPR FSAR Tier 2, Section 14.3.5 will be revised to SRP 2.0 to reflect the relocation of guidance.

Site parameters are verified by a COL applicant in Tier 2 instead of using ITAAC. Specifically, a COL applicant that references the U.S. EPR design certification will verify site parameters per U.S. EPR FSAR Tier 2, Table 1.8-2, Item 2.0-1:

“A COL applicant that references the U.S. EPR design certification will compare site-specific data to the design parameter data in Table 2.1-1. If the specific data for the site falls within the assumed design parameter data and characteristics in Table 2.1-1, then the U.S. EPR standard design is bounding for the site. For site-specific design parameter data or characteristics that are outside the bounds of the assumptions presented in Table 2.1-1, the COL applicant will confirm that the U.S. EPR design acceptably meets any additional requirements that may be imposed by the more limiting site specific design parameter data or characteristic, and that the design maintains conformance to the design commitments and acceptance criteria described in this FSAR.”

Therefore, since site parameters do not need ITAAC per SRP 14.3 or RG 1.206, Section C.II.1.2.1 and since site parameters are verified per U.S. EPR FSAR Tier 2, Table 1.8-2, Item 2.0-1, no ITAAC are required for verifying the site parameters listed in U.S. EPR FSAR Tier 1, Table 5.0-1.

**FSAR Impact:**

U.S. EPR FSAR Tier 2, Section 14.3.5 will be revised as described in the response and indicated on the enclosed markup.

**Question 14.03.05-7:**

ITAAC 4.2 in FSAR Table 2.4.2-2

This ITAAC discusses a minimum inventory of controls, displays, and alarms in the MCR and RSS. How will an inspector know that the AC is met since it is not specific as to what is contained in that minimum inventory?

**Response to Question 14.03.05-7:**

ITAAC associated with the minimum inventory of controls, displays, and alarms in the main control room (MCR) and remote shutdown station (RSS) are addressed in U.S. EPR FSAR Tier 1, Section 3.4, "Human Factors Engineering." Therefore, ITAAC 4.2 in U.S. EPR FSAR Tier 1, Table 2.4.2-2 will be deleted.

**FSAR Impact:**

U.S. EPR FSAR Tier 1, Section 2.4.2 will be revised as described in the response and indicated on the enclosed markup.

**Question 14.03.09-5:**

Table 3.4-1 General (1)

SRP 14.3.9, Acceptance Criteria 5 states that HFE-related ITAAC should primarily address verification of products (e.g., the control room, the human-system interfaces, etc.) or results reports from implementing the HFE program element implementation plan. The ITAAC in Table 3.4-1 for Human Factors Engineering (HFE) appear to be directed at the HFE program and its processes and not verification of products for the plant design or results reports from implementing the HFE program element implementation plan. Explain why the ITAAC for HFE do not address products for the plant design or results reports from implementing the HFE program element implementation plan, or revise .

**Response to Question 14.03.09-5:**

A response to this question will be provided by February 25, 2009.

**Question 14.03.09-6:**

Table 3.4-1 General (2)

Several ITAAC items in Table 3.4-1 refer to an "output summary" without identifying the document that is summarized. Please fully identify the documents subject to inspection in the ITAAC. The connection should be made between the words output summary and what is stated in the Design Commitment and ITA.

For instance - the output summary fo item 2 in Table 3.4.-1 - The output summary is the Functional Requirements Analysis

For item 3 in Table 3.4.-1 - The output summary is the Functional Allocation report results

For item 5 in Table 3.4-1 - The output summary is the results of the staffing and qualification analysis.

For item 9 in Table 3.4-1 - In Tier 2 Section 18.8.3, The output summary referred to in AC b.1 for Item 9 is referred to as a results summary. Why is there a the difference in the terminology?

For item 10 in Table 3.4-1 - In Tier 2 Section 18.9.3, The output summary referred to in AC b.1 for Item 9 is referred to as a results summary. Why is there a difference in the terminology.?

For item 11 in Table 3.4-1 - In Tier 2 Section 18.10.3.7, The output summary referred to in AC b.1 for Item 9 is referred to as a results summary. Why is there a difference in the terminology? In addition, the items that "results summary" contains for V&V is different between Tier 2 in this section and what is in the AC b.1 for item 11. Please clarify why there is a diffeerence or revise appropriately.

The ITAs should be analysis or inspections or a combination of both. Evaluation is not a good word to use in the ITA since it is not defined in SRP Section 14.3. Analysis is defined as a "calculation, mathematical computation, or engineering or technical evaluation". Please consider revising the terninology used.

The ACs in this table are suggested to begin with either of the following: 1) A report exists and concludes that the **process.....**", or 2) "An output summary report exists and concludes that ....."

**Response to Question 14.03.09-6:**

A response to this question will be provided by February 25, 2009.

**Question 14.03.09-7:**

ITAAC Item 4 in Table 3.4-1

SRP 14.3, App. A IV.4.B states that any differences between the design descriptions and the Commitment Wording of the ITAAC should be minimized unless intended to better conform the commitments in the design descriptions with the ITAAC format. The Commitment for Table 3.4-1, Item 4 does not agree with the wording in the description of HFE program features in Tier 1 Section 3.4.1. Section 3.4.1 item 4 states, in part, "A task analysis is documented by validation of operating procedures...." The Commitment states, in part, "A task analysis is documented by validation of operating procedure *guidelines*...." Why is this terminology different?

In Tier 2, Section 18.4.3 - It states 'The results summary also describes how successive iterations of the task analysis (TA) for procedure development, the procedures themselves, and training programs results in an HSI design that supports in-scope information, control, and support requirements.' The AC for item 4 states 'how iterations of the procedure development task analysis' Explain this difference in terminology. In addition, the output summary referred to in the AC is the report for the task analysis.

**Response to Question 14.03.09-7:**

A response to this question will be provided by February 25, 2009.

**Question 14.03.09-8:**

ITAAC Item 5 in Table 3.4-1

SRP 14.3, App. A IV.4.B describes the three column format for ITAAC including the provision that the acceptance criteria in Column 3 for the inspections, test, or analyses described in Column 2 which, if met, demonstrate that the Design Commitments in Column 1 have been met. The Commitment for Table 3.4-1, Item 5 is not aligned with the AC. The Commitment states that the evaluation of staffing will be based on "HSI design features." The AC states that the output summary describes how minimum staffing "meets regulatory requirements while maintaining roles and responsibilities." Please explain how the AC satisfies the Commitment.

Tier 2 on page 18.5-2 states 'The objective of the U.S. EPR staffing and qualifications analyses is to demonstrate that the HSI design and the number, roles, and responsibilities of the plant operating staff is able to adequately meet the demands of the processes of the plant.' This seems to be a more suitable AC.

**Response to Question 14.03.09-8:**

A response to this question will be provided by February 25, 2009.

**Question 14.03.09-9:**

ITAAC Item 8 in Table 3.4-1

SRP 14.3, App. A IV.4.B describes the three column format for ITAAC including the provision that the acceptance criteria in Column 3 for the inspections, test, or analyses described in Column 2 which, if met, demonstrate that the Design Commitments in Column 1 have been met. The three columns of Table 3.4-1, Item 8 are not aligned, as follows:

- The Commitment refers to the “methodology” for selecting and validating the final minimum inventory, while the ITA refers to the “process”.
- The Commitment and ITA refer to “validating the final minimum inventory”, while the AC refers to “verifying the completeness of the minimum inventory.”
- The AC refers to the “minimum inventory in the *MCR and RSS*”, while the Commitment and ITA refer only to the “*final* minimum inventory” without mentioning the MCR and RSS.

Why is the terminology used in the three ITAAC columns different?

In Tier 2 in Section 18.7.4.4 it is stated that 'The methodology for selecting the final minimum inventory is described in the HSI design implementation plan and includes a description'. After this sentence in Tier 2 is the listing of what the methodology for selecting the final minimum inventory includes, and that is what is stated for acceptance criterion a.1. Why is the implementation plan not used in this ITAAC?

Where is the acceptance criteria a.2 derived from? The methodology for verifying the completeness of the minimum inventory in the MCR and the RSS does not seem to be derived from Tier 2.

**Response to Question 14.03.09-9:**

A response to this question will be provided by February 25, 2009.

**Question 14.03.09-10:**

ITAAC Item 9 in Table 3.4-1

SRP 14.3, App. A IV.4.B describes the three column format for ITAAC including the provision that the acceptance criteria in Column 3 for the inspections, test, or analyses described in Column 2 which, if met, demonstrate that the Design Commitments in Column 1 have been met. The Commitment refers to several attributes for procedures that are not mentioned in the AC. Explain why the AC does not align with the Commitment.

**Response to Question 14.03.09-10:**

A response to this question will be provided by February 25, 2009.

**Question 14.03.09-11:**

ITAAC Item 10 in Table 3.4-1

SRP 14.3, App. A IV.4.B describes the three column format for ITAAC including the provision that the acceptance criteria in Column 3 for the inspections, test, or analyses described in Column 2 which, if met, demonstrate that the Design Commitments in Column 1 have been met. The Commitment for Table 3.4-1, Item 10 refers to several attributes for training program development that are not mentioned in the AC. Please explain why the AC does not align with the Commitment.

**Response to Question 14.03.09-11:**

A response to this question will be provided by February 25, 2009.

**Question 14.03.09-12:**

ITAAC Item 12 in Table 3.4-1

SRP 14.3, App. A IV.4.B describes the three column format for ITAAC including the provision that the acceptance criteria in Column 3 for the inspections, test, or analyses described in Column 2 which, if met, demonstrate that the Design Commitments in Column 1 have been met. The AC for Table 3.4-1, Item 12 does not appear to properly address the Commitment. The Commitment appears to require that the as-built design conforms to the standard design resulting from the HFE V&V process. The ITA and AC refer to a process for conducting design implementation without mentioning whether as-built design actually conforms with the standard design resulting from the HFE V&V process. Please clarify whether this item is intended to verify processes or features of the as-built design.

**Response to Question 14.03.09-12:**

A response to this question will be provided by February 25, 2009.

**Question 14.03.09-13:**

ITAAC item 1 in Table 3.4-1

The OER is conducted in accordance not only with a process but an implementation plan. Would the Commitment and AC for item 1 be more accurate if they referred to that implementation plan? For example:

Commitment - '.....performed in accordance with the implementation plan.....'

AC a.1 - 'A report exists and concludes that the implementation plan provided a method to:.....'

**Item 6 in Table 3.4-1**

An implementation plan is used to implement methodology for developing a HRA. In Tier 2, the following aspects of that implementation plan are listed: **(1)** considered to determine the risk-significant HAs and the importance measures, HRA sensitivity analyses, and threshold criteria used to compile the list of risk-significant HAs. **(2)** A description of how HAs influence operator tasks related to monitoring passive and automated systems. **(3)** A description of how the PRA and HRA results along with the risk-significant HAs are addressed in other aspects of the HFE program with a goal of minimizing the likelihood for operator error and the ability to detect and recover from errors. **(4)** A description of how HRA assumptions are validated during the design process. Four aspects of an implementation plan are listed here whereas the AC (a.1) only has three. Please explain or revise.

In Tier 2 in Section 18.6.3 for item 6, it states that 'An output report identifies the list of risk-important HAs and summarizes how those HAs and the associated tasks and scenarios were addressed during the various parts of the HFE design process. The output report addresses the results of the HRA assumption validation. This wording is different from what is in AC (b.1) for item 6 in Table 3.4-1. Please explain or revise.

**Item 9 in Table 3.4-1**

Again in Tier 2 an implementation plan is key to development of procedures. In Tier 2, it is stated ' An implementation plan describes:

- The basis or starting point for procedure development (i.e., how the TA (see Section 18.4) and procedure development interrelate).
- The content of procedures.
- How the HSI style guide (see Section 18.7.6.1) integrates with the procedure writer's guide.
- How procedures are verified and validated.
- The justification for using electronic operating procedures instead of paper-based procedures.'

In Item 9 for AC a.1 in Table 3.4-1, why does it state a process describes the items listed above?

**Item 10 in Table 3.4-1**

The AC for this item, in Tier 2 Section 18.9.1 states: 'An implementation plan describes training program scope including:

- Categories of personnel to be trained (similar to the scope of analysis conducted for staffing, see Section 18.5.1)
- Specific plant conditions, operational activities (e.g., operations, maintenance, testing and surveillance), and HSIs which effect training scenarios and methods.'

Why does the AC a.1 for item 10 state that a process describes the items listed above?

**Response to Question 14.03.09-13:**

A response to this question will be provided by February 25, 2009.

**Question 14.03.09-14:**

ITAAC Item 12 in Table 3.4-1

In Tier 2 Section 18.11.1, the following is stated; 'Design implementation verifies the following:

- Aspects of the design that were not verified during the V&V process.
- Modifications to the standard U.S. EPR design conform to the HFE principles and design guidance expressed in the HFE style guide and meets the HFE review criteria in NUREG-0711 (Reference NUREG-0711, "Human Factors Engineering Program Review Model," 1994.) and NUREG-0700 (Reference NUREG-0700, "Human-System Interface Design Review Guidelines," Revision 2, May 2002.).
- As-built HSIs, plant-specific procedures, and training conform to the design that resulted from the V&V process.
- Items in the HFE Issues Tracking Database have been adequately addressed.'

This appears to be different from what is stated in AC a.1 for Item 12.

In Tier 2 Section 18.11.4, the following is stated:

A summary report is generated detailing the status of HEDs tracked including any that remain unresolved. Also included are the methods and criteria used during the design implementation process and the results of the verification. This report becomes part of the final design documentation owned by the U.S. EPR operator.

This appears to be different from what is stated in AC b.1 for Item 12. Please explain.

**Response to Question 14.03.09-14:**

A response to this question will be provided by February 25, 2009.

# U.S. EPR Final Safety Analysis Report Markups

**2.4.2 Safety Information and Control System**

**1.0 Description**

The safety information and control system (SICS) provides the human-machine interface (HMI) means to perform control and information functions needed to monitor the plant safety status and bring the unit to and maintain it in a safe shutdown state in case of the inoperability of the process information and control system (PICS).

In case of the unavailability of the PICS, the SICS provides the following safety related functions:

- Manual actuation of reactor trip in the main control room (MCR) and remote shutdown station (RSS).
- Manual actuation of engineered safety features (MCR only).
- Monitoring and control of systems required to achieve and maintain safe shutdown (MCR and RSS).
- Display of Type A through Type C post-accident monitoring variables (MCR only).

**2.0 Arrangement**

2.1 The location of the SICS equipment is as listed in Table 2.4.2-1—Safety Information and Control System Equipment.

2.2 Physical separation exists between the four safety related divisions of the SICS.

**3.0 Mechanical Design Features**

3.1 Equipment identified as Seismic Category I in Table 2.4.2-1 can withstand a design basis seismic load without loss of safety function.

**4.0 I&C Design Features, Displays and Controls**

4.1 Main Control Room actions required to transfer control to the RSS can be accomplished during a rapid evacuation of the MCR. This process provides for the transfer of control of the SICS from the MCR to the RSS. Procedures exist for the evacuation of the MCR and the transfer of control of the SICS from the MCR to RSS.

14.03.05-7

4.2 ~~The SICS provides a minimum inventory of controls, displays and alarms available in the MCR and the RSS.~~

4.3 Electrical isolation devices exist in the signal paths between the safety related parts of SICS and the non safety I&C systems.

4.4 The SICS equipment classified as Class 1E in Table 2.4.2-1 can perform its safety function when subjected to electromagnetic interference (EMI), radio-frequency interference (RFI), electrostatic discharges (ESD), and power surges.

**Table 2.4.2-2—Safety Information and Control System ITAAC  
(3 Sheets)**

	<b>Commitment Wording</b>	<b>Inspection, Test or Analysis</b>	<b>Acceptance Criteria</b>
2.1	The location of the SICS equipment is as listed in Table 2.4.2-1.	Inspection will be performed of the location of the equipment.	The equipment listed in Table 2.4.2-1 is located as listed in Table 2.4.2-1.
2.2	Physical separation exists between the four safety related divisions of the SICS.	Inspections will be performed on the as-built SICS to confirm that adequate separation exists between the four safety related divisions of SICS	The separation between the safety related components of the SICS of different divisions is as follows: <ul style="list-style-type: none"> <li>• Within the MCR and RSS, the minimum vertical separation is 3 inches and the minimum horizontal separation is 1 inch.</li> <li>• Within other plant areas, the minimum vertical separation is 12 inches and the minimum horizontal separation is 6 inches.</li> </ul>
3.1	Equipment identified as Seismic Category I in Table 2.4.2-1 is designed to perform its function following the design basis seismic event.	Inspections, type tests, tests, analyses or a combination of tests and analyses will be performed on the equipment designated as Seismic Category I in Table 2.4.1-1.	(1) A report exists and concludes that the equipment listed as Seismic Category I in Table 2.4.1-1 is installed as designed. (2) A report exists and concludes that the equipment listed as Seismic Category I in Table 2.4.1-1 can withstand seismic design basis loads without loss of safety function.
4.1	Procedures exist for the transfer of control of the SICS from the MCR to the RSS.  <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">14.03.05-7</div> 	An inspection will be performed on the existence of procedures for the transfer of control of the SICS from the MCR to the RSS. A test will be performed on the transfer of control of SICS from the MCR to the RSS.	(1) Procedures exist for the transfer of control of the SICS from the MCR to the RSS (2) The procedures provide the capability to transfer control of the SICS from the MCR to the RSS.
4.2	<del>The SICS provides a minimum inventory of controls, displays, and alarms available in the MCR and the RSS.</del>	<del>Inspections and tests will be performed to verify the existence of controls, displays, and alarms on the as-built SICS in the MCR and the RSS.</del>	<del>The SICS provides a minimum inventory of controls, displays, and alarms in the MCR and RSS.</del> <del>The minimum inventory of</del>

**Table 2.4.2-2—Safety Information and Control System ITAAC  
(3 Sheets)**

14.03.05-7

	Commitment Wording	Inspection, Test or Analysis	Acceptance Criteria
			<p><del>controls, displays, and alarms on the SICS in the MCR and the RSS is provided by the human factors engineering (HFE) program discussed in Tier 1 Section 3.4.</del></p>
4.3	Electrical isolation devices exist in the signal paths between the safety related portions of SICS and the non safety I&C systems.	Inspections, type tests, tests, analyses or a combination of tests and analyses will be performed on electrical isolation devices.	Electrical isolation devices exist in the signal paths between the safety related portion of SICS and the non safety I&C systems
4.4	The SICS equipment listed as Class 1E in Table 2.4.2-1 can perform its safety function when subjected to EMI, RFI, ESD, and power surges.	Type tests, tests, analyses or a combination of these will be performed for the Class 1E equipment listed in Table 2.4.1-1.	A report exists and concludes that the equipment listed as Class 1E in Table 2.4.2-1 can perform its safety function when subjected to EMI, RFI, ESD, and power surges.
4.5	<p>The SICS hardware and software are developed using a design process with the following life cycle phases:</p> <ul style="list-style-type: none"> <li>• Basic design phase.</li> <li>• Detailed design phase.</li> <li>• Manufacturing phase.</li> <li>• Testing phase.</li> <li>• Installation and Commissioning phase.</li> </ul>	<p>Inspections will be performed on the design process for the SICS hardware and software development.</p> <p>An analysis will be performed to verify that the SICS hardware and software are developed in accordance with the design process.</p>	<p>1a) A report exists and provides the design outputs of the basic design phase of the SICS hardware and software design process.</p> <p>1b) V&amp;V reports exist that address the Concept and Requirements Activities and conclude that the design outputs generated in the basic design phase conform to the requirements of this phase.</p> <p>2a) A report exists and provides the design outputs of the detailed design phase of the SICS hardware and software design process.</p> <p>2b) V&amp;V reports exist that address the Design and Implementation Activities and conclude that the design outputs generated in the detailed design phase conform to the requirements of this phase.</p>

covers both visual inspections and tests. The details in Tier 2 are not referenced in Tier 1 CDM and are not part of the certified design.

Column 3 (Acceptance Criteria) depends upon the design feature to be verified and the method used for the verification. Acceptance criteria are objective and clear to avoid confusion over whether or not acceptance criteria have been satisfied. Some acceptance criteria contain numerical values that are not specifically identified in the Tier 1 design description or the ITAAC table design commitments column. This is acceptable because the design description defines the important design feature that needs to be included in the CDM, whereas the numerical value is a measurement standard that determines if the feature has been provided.

**14.3.3 Tier 1, Chapter 3, Non-System Based Design Descriptions and ITAAC**

The format and selection process for Tier 1, Chapter 3 is similar to Tier 1, Chapter 2 in that it includes CDM and ITAAC tables. Tier 1, Chapter 3 addresses the following non-system based topics:

- Section 3.1 – Security.
- Section 3.2 - Reliability assurance program (RAP).
- Section 3.3 - Initial testing program (ITP).
- Section 3.4 - Human factors engineering (HFE).
- Section 3.5 - Containment isolation.

**14.3.4 Tier 1, Chapter 4, Interface Requirements**

Interface requirements are items to be met by the site-specific portions of a facility that are not within the scope of the certified design. The site-specific portions of the design are those that depend on site characteristics. Interface requirements define the design features and characteristics that demonstrate that the site-specific portion of the design conforms to the certified design. Interface requirements comply with 10 CFR 52.47(a)(26) requirements.

**14.3.5 Tier 1, Chapter 5, Site Parameters**

Tier 1, Chapter 5 defines safety-significant site parameters that are the basis for the standard plant design presented in the U.S. EPR design certification application. The list of site parameters follows the suggested list contained in SRP 14.32.0 and corresponds with the requirements for site parameter information contained in 10 CFR 52.47(a)(1). Compliance with these site parameters is verified during the COL application process, so no ITAAC are necessary for site parameters.

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14.32.0