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November 10, 2009

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Mr. Jeffrey A. Ciocco,

Docket No. 52-021
MHI Ref: UAP-HF-09516

Subject: MHI's Responses to US-APWR DCD RAI No. 481-3756 Revision 0

Reference: 1) "Request for Additional Information No. 481-3756 Revision 0, SRP Section: 14.03.12 – Physical Security Hardware - Inspections, Tests, Analyses, and Acceptance Criteria" dated October 27th, 2009.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Responses to Request for Additional Information No. 481-3756 Revision 0."

Enclosed are the responses to Questions 14.03.12-25 through 14.03.12-30 that are contained within Reference 1.

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of the submittals. His contact information is below.

Sincerely,

Y. Ogata

Yoshiki Ogata,
General Manager- APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

Enclosure:

1. Responses to Request for Additional Information No. 481-3756 Revision 0

CC: J. A. Ciocco
C. K. Paulson

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Enclosure 1

UAP-HF-09516
Docket No. 52-021

Responses to Request for Additional Information No. 481-3756
Revision 0

November 2009

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

11/10/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 481-3756 REVISION 0**
SRP SECTION:	**14.03.12- PHYSICAL SECURITY HARDWARE - Inspections, Tests, Analyses, and Acceptance Criteria**
APPLICATION SECTION:	**DCD Tier 1 Chapter 2, Design Descriptions and ITAAC**
DATE OF RAI ISSUE:	**10/27/2009**

QUESTION NO.: 14.03.12-25

1. MHI Response to RAI 396-2723, Question 14.03.12-19 dated July 17,2009 (Page 14.12-2): Provide revision to ITTAC descriptions that include descriptions in Tier I, Section 2.12, "Physical Security Hardware," and Table 2.12-1, "Physical Security Hardware Inspections, Tests, Analyzes, and Acceptance Criteria," in accordance with NRC revised Standard Review Plan (SRP) 14.3.12 that provides acceptable revised generic ITAAC descriptions. Provide specific revision that will include Section 14.3.7, References, in Tier 2 of the DCD to indicate revised SRP for ITAAC that addresses the current regulation and remove reference that does not address recently revised 10 CFR 73.

Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, requires that information submitted for a design certification (DC) must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant. Tier 1 and Tier 2 descriptions of ITAAC for physical security systems must address new regulatory requirements identified in 73.55(h)(6)(ii), 10 CFR 73.55(e)(7)(i)(C), and 10 CFR 73.55(i)(4)(ii)(H)(iii).

The applicant has responded the question. MHI states that it "will revise it physical security ITAAC." The NRC has reviewed and agrees with the response but part of the response is not complete (e.g., Tier 1 and Tier 2 FSAR change have not been formally submitted and/or no mark-ups of planned changes were submitted with the RAI response). Specific revision should apply generic description of physical security ITAAC of SRP 14.3.12 and must be submitted on the docket.

ANSWER:

MHI has revised the design description and physical security ITAAC in Revision 2 of the Design Control Document for the US-APWR (MHI ref.: UAP-HF-09490) to be consistent with the NRC draft Revision 1 of Standard Review Plan (SRP) Subsection 14.3.12, as commented on by the Nuclear Energy Institute. Subsection 2.12.1 and Table 2.12-1 of Tier 1 of the DCD have been revised to describe the key elements of the physical security system design for the US-APWR

standard plant design and provide related ITAAC consistent with the NRC draft Revision 1 of Standard Review Plan (SRP). Description of site-specific physical security system design and related ITAAC have been deleted from Tier 1, Section 2.12.

Upon formal issuance of Revision 1 of SRP 14.3.12, MHI will review the final version of the revised SRP and make any necessary further revisions to Section 2.12 of Tier 1 of the US-APWR DCD at that time.

Impact on DCD

There is no impact on the DCD.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

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US-APWR Design Certification

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Docket No. 52-021

RAI NO.:	**NO. 481-3756 REVISION 0**
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APPLICATION SECTION:	**DCD Tier 1 Chapter 2, Design Descriptions and ITAAC**
DATE OF RAI ISSUE:	**10/27/2009**

QUESTION NO.: 14.03.12-26

2. MHI Response to RAI 396-2723, Question 14.03.12-20 dated July 17,2009 (Page 14.12-5): Provide revision to the DCD in Tier 2, Section 14.3.12, that include: (a) reference to MHI Technical Report - MUAP-08009, that will be applied for Inspections, Tests and Analyses (ITA) of physical protection systems; (b) description of MHI response in RAI 396-2723, Question 14.03.12-20 regarding applying the processes, controls, and organization stated in Technical Report MUAP-08009 for assurance of adequate ITA of physical protection systems; and (c) reference to revised MHI Technical Report, UAP-SGI-080002, High Assurance Evaluation that will include descriptions of required ITA for verification of physical protection systems (as stated in Impact to HAE).

Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, requires that information submitted for a design certification (DC) must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant. The DCD Tier 2 documentation currently does not provide information on required inspection, test, or analysis (ITA) of physical security systems and components. The regulatory requirement does not exclude physical security systems.

NRC Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants," Section C.I.14, "Verification Programs," states that "In Chapter 14 of the FSAR, the COL Applicant should provide information concerning its initial test program for SSCs [structures, systems and components] and design features for both the nuclear portion of the facility and the balance of the plant." RG 1.206 does not exclude the physical security systems that are relied on to protect and assure safety of plant operations against the design basis threat (DBT). The required ITA of physical security systems within the scope of the DC should be addressed by the MHI.

The applicant has responded to the RAI 396-2723, Question No. 14.03.12-20. The NRC staff has reviewed and agrees with the response but a part of the response is not complete (e.g., Tier 1 and/or Tier 2 DCD changes have not been formally submitted and no mark-ups of planned changes were submitted with the RAI response) or appropriate references and interfaces have not been established in the DCD. MHI stated the following:

"The Testing requirements associated with the physical protection systems and related design features incorporated into the standard US-APWR design will be defined in Revision 1 to MHI Technical Report, UAP-SGI-080002, High Assurance Evaluation. These testing requirements will be consistent with the test abstracts included in Subsection 14.2.12.1."

"This test program description technical report is to be referenced in Section 14.2 of the DCD per the changes identified by MHI in the letter [dated September 30, 2008] transmitting the technical report to the NRC."

". . . test procedure format (for both preoperational and acceptance tests) is consistent with Sub-section 14.2.3.5."

"The HAE will be revised to provide requirements for acceptance testing of physical protection systems and related design features incorporated into the standard US-APWR design consistent with the test abstract included in Section 14.2.12 of the DCD and for this acceptance testing to be performed under the US-APWR test program, described in Technical Report MUAP-080009, "US-APWR Test Program Description."

The staff identified that Revision 1 of the DCD Tier 2 Section 14.2 is titled Initial Test Program for safety-related systems and is not stated as applicable to the physical protection systems. Specific revision needs to clearly reference document and capture MHI RAI response.

ANSWER:

Subsection 14.3.4.12 of the US-APWR DCD will be revised to provide that (1) system tests of US-APWR physical protection systems and related design features are performed as acceptance tests under the US-APWR test program, Technical Report MUAP-08009, "US-APWR Test Program Description," Revision 1 (2009), (2) the organization, processes and controls for system acceptance testing of physical protection systems are as specified by the US-APWR test program, and (3) the descriptions of the specific inspections, tests and analysis for US-APWR physical protection systems are specified in a separate technical report, entitled "US-APWR Physical Protection System Test Abstracts, 2009."

Impact on DCD

See attached marked-up of draft Subsections 14.3.4.12 and 14.3.7.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

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Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 481-3756 REVISION 0**
SRP SECTION:	**14.03.12- PHYSICAL SECURITY HARDWARE - Inspections, Tests, Analyses, and Acceptance Criteria**
APPLICATION SECTION:	**DCD Tier 1 Chapter 2, Design Descriptions and ITAAC**
DATE OF RAI ISSUE:	**10/27/2009**

QUESTION NO.: 14.03.12-27

3. MHI Response to RAI 396-2723, Question 14.03.12-21, dated July 17, 2009 (Page 14.12-7): Provide specific revision to the DCD that incorporate or reference MHI Technical Report MUAP-08009, September 2008, that supplements the US-APWR Test Program Description and capture the RAI responses on how processes and controls will be provided for adequate ITA of physical security hardware (e.g., including construction acceptance tests as stated in the RAI response).

Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, requires that information submitted for a design certification (DC) must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant. The DCD Tier 2 documentation currently does not provide information on required inspection, test, or analysis (ITA) of physical security systems and components. The regulatory requirement does not exclude physical security systems.

NRC Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants," Section C.I.14, "Verification Programs," states that "In Chapter 14 of the FSAR, the COL Applicant should provide information concerning its initial test program for SSCs [structures, systems and components] and design features for both the nuclear portion of the facility and the balance of the plant." RG 1.206 does not exclude the physical security systems that are relied on to protect and assure safety of plant operations against the design basis threat (DBT). The required ITA of physical security systems within the scope of the DC should be addressed by the applicant (MHI).

The applicant has responded to the RAI 396-2723, Question No. 14.03.12-21. The NRC staff has reviewed and agrees with the response but a part of the response is not complete (e.g., Tier 1 and Tier 2 FSAR change have not been formally submitted and no mark-ups of planned changes were submitted with the RAI response) and appropriate references and interfaces have not been established in the DCD. MHI response to RAI 396-2723, Question 14.03.12-21 includes the following concluding statement:

> "These processes would be implemented by the license to ensure proper installation and functionality of security-related hardware within the scope of the standard US-APWR design."

MHI stated RAI responses on how processes and controls will be provided for adequate ITA of physical security hardware must be captured appropriately in the DCD.

ANSWER:

Subsection 14.3.4.12 of the US-APWR DCD will be revised to provide that (1) tests of installed physical security hardware to verify proper installation and functionality of security hardware components are performed as construction acceptance tests and installation tests under the US-APWR test program, Technical Report MUAP-08009, "US-APWR Test Program Description," Revision 1 (2009), and (2) the organization, processes and controls for construction acceptance tests and installation tests are as specified by the US-APWR test program.

Impact on DCD

Refer to the response to Question No. 14.03.12-26.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

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Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 481-3756 REVISION 0**
SRP SECTION:	**14.03.12- PHYSICAL SECURITY HARDWARE - Inspections, Tests, Analyses, and Acceptance Criteria**
APPLICATION SECTION:	**DCD Tier 1 Chapter 2, Design Descriptions and ITAAC**
DATE OF RAI ISSUE:	**10/27/2009**

QUESTION NO.: 14.03.12-28

4. MHI Response to RAI 396-2723, Question 14.03.12-22 dated July 17, 2009 (Page 14.12-8): Confirm whether the proposed revision to COL Information Item COL 14.2(2) is sufficient to address the processes and controls (in addition to the stated information item to reconcile of site-specific organization for test program) for the COL Information Item COL 14.3(3) that will require a COL applicant to propose ITAAC for the facility's physical security hardware not addressed in the DCD. Clarify whether it is the COL applicant's responsibilities to also reconcile the processes and controls, along with organization, for ITAAC not addressed in the DCD.

Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, requires that information submitted for a design certification (DC) must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant. Tier 2 documentation currently does not provide information on required inspection, test, or analysis (ITA) of physical security systems and components. The regulatory requirement does not exclude physical security systems.

The applicant has responded to the RAI 396-2723, Question 14.03.12-22. The NRC staff has reviewed and agrees with the response but a part of the response is not complete (e.g., Tier 1 and Tier 2 FSAR change have not been formally submitted and no mark-ups of planned changes were submitted with the RAI response), and appropriate references and interfaces have not been established in the DCD. MHI response to RAI 396-2723, Question 14.03.12-22 includes the following statement:

> "The US-APWR test program described in Technical Report MUAP-08009, "US-APWR Program Description." Revision 0 (2008), applies to the testing of all plant SSCs following turnover from construction, which would include installation and acceptance testing of physical security systems and credit features for the US-APWR standard plant design. The organization and staffing for the installation and acceptance testing of physical security systems and credited features for the US-APWR standard plant design would be described in MUAP-08009 for the installation and acceptance testing. The COL applicant will reconcile the site-specific organization and staffing per COL 14.2(2), proposed in MHI letter (UAP-HF-08199) to be consistent, to be consistent with MUAP-08009"

Clarification is needed on whether COL Information Item COL 14.2(2) is sufficient to address the processes and controls (in addition to the stated information item to reconcile of site-specific organization for test program) for the COL Information Item COL 14.3(3) that will require a COL applicant to propose ITAAC.

ANSWER:

As stated in the response to Question No. 14.03.12-22, the US-APWR test program described in Technical Report MUAP-08009, "US-APWR Test Program Description", applies to the testing of all plant SSCs. Subsection 14.2.1 of the DCD has been revised in DCD revision 2 (MHI ref.: UAP-HF-09490) to state that a description of the program for testing site-specific components and systems is discussed in MUAP-08009.

Accordingly, the control and processes described in MUAP-08009 already apply to the testing of site specific physical security systems and hardware and no further addition to the COL item 14.2(2) is necessary.

Impact on DCD

There is no impact on the DCD.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

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US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 481-3756 REVISION 0**
SRP SECTION:	**14.03.12- PHYSICAL SECURITY HARDWARE - Inspections, Tests, Analyses, and Acceptance Criteria**
APPLICATION SECTION:	**DCD Tier 1 Chapter 2, Design Descriptions and ITAAC**
DATE OF RAI ISSUE:	**10/27/2009**

QUESTION NO.: 14.03.12-29

5. MHI Response to RAI 396-2723, Question 14.03.12-23 dated July 17, 2009 (Page 14.12-10 to 14.12-11): Provide specific revision to the DCD that includes reference to technical report MUAP-08009 and capture the RAI responses on how processes and controls will be provided for assurance of adequate ITA of physical security hardware (i.e., descriptions and references to MUAP-08009 in Tier 2, Section 14.3.12, ITAAC for Physical Security Hardware).

Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, requires that information submitted for a design certification (DC) must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant. DCD Tier 2 documentation currently does not provide information organization and processes for required inspection, test, or analysis (ITA) of security-related system that supports the Tier 1 descriptions of security ITAAC within the design scope for certification. The FSAR Chapter 14, Sections 14.2.3.1 through 14.2.3.5 establishes test procedures requirements for inspection and testing. Based on MHI responses to RAI No. 52-755, No. 14.03.12-4 and No. 14.03.12-5, clarification, and specific indications of a commitment, is needed to understand whether MHI has integrated verification of security systems (i.e., non-nuclear and non-safety systems) within the umbrella of its initial test program that includes a commitment to verify the design features for the facility and the balance of the plant. Indicate a specific commitment to address physical security systems and credited features.

The applicant has responded to the RAI 396-2723, Question 14.03.12-23. The NRC has reviewed and agrees with the response but a part of the response is not complete (e.g., Tier 1 and Tier 2 FSAR change have not been formally submitted and no mark-ups of planned changes were submitted with the RAI response) or appropriate references and interfaces have not been established in the DCD. MHI response to RAI 396-2723, Question 14.03.12-23 includes the following statement:

> "Testing of plant systems that are not included in the preoperational tests defined in Subsection14.2.12.1, such as the physical security systems and credited features for the US-APWR standard plant design, are performed using construction acceptance tests, installation tests, and acceptance tests are described in Technical Report MUAP-08009, "US-APWR Test Program Description," Revision 0 (2008). As stated in MUAP-08009, the

test procedure format for both preoperational and acceptance tests is consistent with Subsection 14.2.3.5, MUAP-08009, also describes generally the review and approval of acceptance test procedures, the conduct of testing, and the review and approval of test results reports, and test closures and test records."

MHI revision to DCD must include reference to technical report MUAP-08009 and capture statements indicated in the RAI response for how processes and controls will be provided for assurance of adequate ITA of physical security hardware.

ANSWER:

Subsection 14.3.4.12 of the US-APWR DCD will be revised to provide that the testing of plant physical security systems and hardware are performed as construction acceptance tests, installation tests and system acceptance tests as described in the US-APWR test program, Technical Report MUAP-08009, "US-APWR Test Program Description," Revision 1 (2009), and that the processes and controls for such testing are as specified by the US-APWR test program.

Impact on DCD

Refer to the response to Question No. 14.03.12-26.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

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US-APWR Design Certification

Mitsubishi Heavy Industries

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RAI NO.:	**NO. 481-3756 REVISION 0**
SRP SECTION:	**14.03.12- PHYSICAL SECURITY HARDWARE - Inspections, Tests, Analyses, and Acceptance Criteria**
APPLICATION SECTION:	**DCD Tier 1 Chapter 2, Design Descriptions and ITAAC**
DATE OF RAI ISSUE:	**10/27/2009**

QUESTION NO.: 14.03.12-30

6. MHI Response to RAI 396-2723, Question 14.03.12-24 dated July 17, 2009 (Page 14.12-12): Reconcile the statement in RAI 396-2723, Question 14.03.12-24 response that "MUAP-080009 describes and provides for the inspection and testing of non-nuclear and non-safety related systems and components, including physical security systems and credited features of the US-APWR standard plant design for satisfying physical security requirements" with the statement that "this Technical Report provides an outline of the administrative control program used to develop and administer the initial test program (ITP) as defined by Section 14.2 of the US-APWR Design Control Document (DCD). This Technical Report supplements the program description in Section 14.2 of the DCD," indicated in Section 1.0 of the MHI Technical Report MAUP-080009.

(U) Regulatory Basis: Subpart B of Title 10 CFR (10 CFR) 52, § 52.47, requires that information submitted for a design certification (DC) must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and procurement specifications and construction and installation specifications by an applicant. DCD Tier 2 documentation currently does not provide information on organization and processes for required ITA of security-related system that supports the Tier 1 descriptions of security ITAAC within the design scope for certification. The FSAR Chapter 14, Sections 14.2.4 through 14.2.6 provides process for conducting, evaluation, and records requirements for inspections and tests. Based on MHI responses to RAI No. 52-755, Question 14.03.12-4 and Question 14.03.12-5, clarification is needed to understand whether MHI has integrated verification of security system (i.e., non-nuclear and non-safety systems) within the umbrella of its initial test program that includes a commitment to verify the design features for the facility and the balance of the plant.

The applicant has responded to the RAI 396-2723, Question No. 14.03.12-24. The NRC has reviewed and agrees with the response but a part of the response is not complete (e.g., Tier 1 and Tier 2 FSAR change have not been formally submitted and no mark-ups of planned changes were submitted with the RAI response) or appropriate references and interfaces have not been established in the DCD. The NRC staff review of Technical Report MAUP-08009 identify statement are contrary to that stated in the RAI response and requires appropriate reconciliation of plan for implementing processes, controls and organization for ITAAC of non-nuclear and non-safety systems.

ANSWER:

The statements contained in Section 1.0 of MUAP-08009 that "This Technical Report provides an outline of the administrative control program used to develop and administer the initial test program (ITP) as defined by Section 14.2 of the US-APWR Design Control Document (DCD)" and that "This Technical Report supplements the program description in Section 14.2 of the DCD" are accurate. However, the scope of the test program described in MUAP-08009 is not limited to the ITP scope defined in Section 14.2 of the DCD. Specifically, Subsection 4.2.2 of MUAP-08009 describes controls for Acceptance Tests – "system-level and integrated testing performed on systems or components that are outside of the scope of the ITP...as defined in Section 14.2 of the DCD." Additionally, Subsection 4.1.2 of MUAP-08009 provides for the performance of Installation Tests in preparation for acceptance tests; it states in part that "Specification of required installation tests is identified for each system and tracked to completion as prerequisites for preoperational and acceptance tests." Therefore, the descriptions of the administrative controls and responsibilities for the performance of construction acceptance tests, installation tests, and acceptance tests provided in Subsections 4.1.1, 4.1.2 and 4.2.2 of MUAP-08009 are not restricted to systems or components within the ITP scope defined in Section 14.2 of the DCD.

Accordingly, MHI's response to Question No. 14.03.12-24 that "MUAP-08009 describes and provides for the inspection and testing of non-nuclear and non-safety systems and components, including physical security systems and credited features of the US-APWR standard plant design for satisfying physical security requirements" is consistent with the statement quoted in Question No. 14.03.12-30 that MUAP-08009 provides an "outline of the administrative control program used to develop and administer the initial test program (ITP) as defined in Section 14.2 of the DCD" for safety related components and systems. Furthermore, MHI will revise Subsection 14.3.4.12.of the DCD to provide specific reference and commitment to MUAP-08009 for the testing of physical security systems.

Impact on DCD

Refer to the response to Question No. 14.03.12-26.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

provided in SRP 14.3 (Reference 14.3-2) and the applicable generic ITAAC in SRP 14.3.12 (Reference 14.3-16). They provide for verifying that:

- Vital equipment is located only within vital areas.
- The external walls, doors, ceiling and floors in the main control room and the central alarm station are bullet resistant.
- Unoccupied vital areas are locked and alarmed with activated intrusion detection systems that annunciate in the central alarm station.
- Security alarm annunciation and video assessment information are available in the central alarm station.
- The central alarm station is located inside a protected area and the interior of the alarm station is not visible from the perimeter of the protected area.
- The secondary security power supply system for alarm annunciator equipment and non-portable communications equipment is located within a vital area.
- Security alarm devices including transmission lines to annunciators are tamper indicating and self-checking (i.e., an automatic indication is provided when failure of the alarm system or a component occurs or when on standby power), and alarm annunciation indicates the type of alarm (e.g., intrusion alarms, emergency exit alarm, etc.) and location.
- Intrusion detection and assessment systems are designed to provide visual display and audible annunciation of alarms in the central alarm station.
- Intrusion detection systems equipment exists to record onsite security alarm annunciation including the location of the alarm, false alarm, alarm check, and tamper indication and the type of alarm, location, alarm circuit, date, time and disposition of each alarm is recorded.
- Emergency exits through vital area boundaries are alarmed and secured by locking devices that allow prompt egress during an emergency.
- The central alarm station has conventional (land line) telephone service with local law enforcement authorities and a system for communication with the main control room and is capable of continuous communication with security personnel.

System tests of physical protection systems and related design features are performed as acceptance tests under the US-APWR Test Program Description, MUAP-08009 (Reference 14.3-39). Tests of installed physical security hardware to verify proper installation and functionality of security hardware components are performed as construction acceptance tests and installation tests as specified in MUAP-08009 (Reference 14.3-39). The organization, processes and controls for system acceptance tests, construction acceptance tests, and installation tests are as specified by MUAP-08009 (Reference 14.3-39). Descriptions of the specific inspections, tests and analysis

for US-APWR physical protection systems are specified in the US-APWR Physical Protection System Test Abstracts, "LATER" (Reference 14.3-40)

The COL applicant provides proposed ITAAC for the facility's physical security hardware not addressed in the DCD in accordance with RG 1.206 (Reference 14.3-1) as appropriate.

14.3.4.13 ITAAC for the Design Reliability Assurance Program

Section 2.13 of Tier 1, which covers the design reliability assurance program, is prepared in accordance with the guidance in RG 1.206 (Reference 14.3-1), SRP 14.3 (Reference 14.3-2), and SRP 17.4 (Reference 14.3-36).

Section 17.4 describes the design reliability assurance program, which is developed in accordance with guidance in NUREG-0800, SRP 17.4 (Ref 14.3-36). The purposes of this program are to provide reasonable assurance that: (1) the US-APWR is designed, constructed, and operated in a manner that is consistent with the assumptions and risk insights for the SSCs, (2) the risk-significant SSCs do not degrade to an unacceptable level during plant operations, (3) the frequency of transients that challenge risk-significant SSCs is minimized, and (4) the risk-significant SSCs function reliably when challenged. An additional goal is to facilitate communication among the PRA, the design, and the ultimate COL activity to assure that the design is consistent and integrated with the procurement process. To this end, Table 17.4-1 identifies risk-significant SSCs for the US-APWR design.

Section 2.13 of Tier 1 contains a brief summary of the design reliability assurance program based on details provided in Section 17.4. The risk significant SSCs will be identified by introducing site-specific information to the list shown in Table 17.4-1. A single ITAAC is provided to verify that that the design reliability assurance program provides reasonable assurance that the designs of these SSCs are consistent with the assumptions used in the associated risk analyses.

14.3.4.14 ITAAC for the Initial Test Program

Section 2.14 of Tier 1, which addresses the initial test program, is prepared in accordance with the guidance in RG 1.206 (Reference 14.3-1), SRP 14.3 (Reference 14.3-2), and SRP 14.2 (Reference 14.3-37).

Section 14.2 describes the initial test program for the US-APWR plant, which is developed in accordance with guidance in RG 1.68 (Reference 14.3-38), RG 1.206 (Reference 14.3-1) and SRP 14.2 (Reference 14.3-37). Some of the activities associated with the initial test program occur as a part of the initial plant startup.

Section 2.14, of Tier 1 provides a general description of the preoperational and startup test programs and the major program documents that define how the initial test program is to be conducted and controlled. This section also describes the key elements of the initial test program.

14.3-32 'Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants,' "Domestic Licensing of Production and Utilization Facilities," Energy. Title 10, Code of Federal Regulations, Part 50.49, U.S. Nuclear Regulatory Commission, Washington, DC.

14.3-33 "Environmental Radiation Protection Standards for Nuclear Power Operations," Protection of Environment. Title 40, Code of Federal Regulations, Part 190, U.S. Nuclear Regulatory Commission, Washington, DC.

14.3-34 Deleted.

14.3-35 Deleted.

14.3-36 'Reliability Assurance Program (RAP),' "Quality Assurance," Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants. NUREG-0800, SRP 17.4, Initial Issuance, U.S. Nuclear Regulatory Commission, Washington, DC, March 2007.

14.3-37 'Initial Plant Test Program – Design Certification and New License Applicants,' "Initial Test Program and ITAAC – Design Certification," Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants. NUREG-0800, SRP 14.2, Rev. 3, U.S. Nuclear Regulatory Commission, Washington, DC, March 2007.

14.3-38 Initial Test Programs for Water-Cooled Nuclear Power Plants, Regulatory Guide 1.68, Rev. 3, U.S. Nuclear Regulatory Commission, Washington, DC, March 2007.

14.3-39 US-APWR Test Program Description, MUAP-08009, Rev. 1, October 2009.

14.3-40 US-APWR Physical Protection System Test Abstracts, LATER, 2009.