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TOKYO, JAPAN

December 22, 2010

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-10342

Subject: **MHI's Response to US-APWR DCD RAI No.673-5085 Revision 3 (SRP 14.03.12)**

Reference: 1) "Request for Additional Information No. 673-5085 Revision 3, SRP Section: 14.03.12 – Physical Security Hardware-Inspections tests, analysis, and acceptance criteria Application Section: Application Section: Tier 1, Chapter 2, Design Descriptions and ITAAC; Tier 2 Section 14.3.4.12,'ITAAC for Physical Security Hardware.'" dated December 7, 2010.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Response to Request for Additional Information No.673-5085 Revision 3".

Enclosed is the response to one RAI 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. Response to Request for Additional Information No. 673-5085, Revision 3

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NRO

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

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Docket No. 52-021
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Enclosure 1

UAP-HF-10342
Docket Number 52-021

Response to Request for Additional Information
No. 673-5085, Revision 3

December, 2010

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

12/22/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No 52-021

RAI NO.:	**NO. 673-5085 REVISION 3**
SRP SECTION:	**14.03.12 – Physical Security Hardware - Inspections, Tests, Analyses, and Acceptance Criteria**
APPLICATION SECTION:	**TIER 1, CHAPTER 2, DESIGN DESCRIPTIONS AND ITAAC; TIER 2 SECTION 14.3.4.12, "ITAAC FOR PHYSICAL SECURITY HARDWARE"**

DATE OF RAI ISSUE: 12/7/2010

QUESTION NO.: 14.03.12-31

(U) MHI Technical Report (TR) MUAP-1003, Physical Security Hardware ITAAC Abstracts: Describe ITA for verifying the illumination requirements for security within the facility to demonstrate that illumination will meets the requirements of 10 CFR 73.55(i)(6)(ii).

(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. Title 10 CFR 52.48 requires the applications filed will be reviewed for compliance with the standards set out in 10 CFR Part 73. Title 10 CFR 52.80(a) and 52.80(a)(2) requires content of applications to propose ITA and acceptance criteria that are necessary and sufficient to provide reasonable assurance the facility has been constructed and will be operated in conformity with the combined license. The ITAAC contained in the DC must be described for certification and for approval. The requirements for appropriate inspections of construction and installation in accordance with design and specifications must be identified in "Test Methods" and "Acceptance Criteria." Acceptance criteria must be sufficiently detailed to allow for inspection. Title 10 CFR 73.55(i)(6)(ii) requires that all areas of the facility are provided with illumination necessary to satisfy the design requirements of 10 CFR 73.55(b) and to implement the protective strategy. The applicant has described design and performance requirements within the facility that addressed the interior lighting that may be credited by security and safety programs for reliability of illumination necessary response or tasks in the event of a safety/security event.

(U) The NRC staff issued RAI 396-2723, Question No. 4.3.12-12-20 associated with descriptions of appropriate ITA of systems and performances intended to meet the regulatory requirement of 10 CFR 73.55(i)(6)(ii). The applicant has identified, in MHI MUAP-10003, the

ITAAC No. 5, "Isolation Zone and Exterior Protected Area Illumination," as an item to be address by the COL applicant referencing the US-APWR standard design. The ITA described in test abstract provided in MHI TR MUAP-10003 for security lighting only partially address requirement of 10 CFR 73.55(i)(6)(ii) and did not specifically address the verification of the security lighting within facility. Appropriate ITA for plant lighting (emergency and normal) systems credited within facilities is required to verify illumination reliability for security response.

ANSWER:

Technical Report (TR) UAP-SGI-08002, Rev. 2, High Assurance Evaluation Assessment (HAE), states that the US-APWR standard plant design does not provide interior or exterior security lighting. For normal interior illumination, the normal lighting system is provided. Upon loss of the normal lighting system, an emergency lighting system powered by 8-hour batteries is also available. Although not specifically designed for security purposes, these two lighting systems may be utilized by the security force. The HAE also states that if the licensee determines that additional lighting is needed for the interior of the plant, then the licensee can add more lighting as necessary.

There are 16 physical security ITAAC identified in NUREG 0800, SRP Section 14.3.12. The illumination requirement for security lighting is identified in ITAAC #5. This requirement is derived from 10 CFR 73.55(i)(6)(ii) which states:

> The licensee shall provide a minimum illumination level of 0.2 foot-candles, measured horizontally at ground level, in the isolation zones and appropriate exterior areas within the protected area. Alternatively, the licensee may augment the facility illumination system by means of low-light technology to meet the requirements of this section or otherwise implement the protective strategy."

ITAAC #5 focus on exterior lighting requirements only. As stated above, The US-APWR standard plant does not provide exterior lighting requirements as the responsibility of the COL Applicant. Therefore, the ITAAC test abstract for this lighting should be discussed in a separate COL applicant physical security ITAAC test abstract report.

TR MUAP-10003 establishes an acceptable set of test abstracts for the DCD physical security ITAAC. For completeness, this report lists all16 DCD and COL physical security ITAAC's. In this report, the COL test abstracts are identified as "reserved" as they are addressed in a separate COLA ITAAC test abstract report. ITAAC #5 is a COL ITAAC and; therefore, is identified as "reserved" in TR MAUP-10003.

The normal lighting system and the emergency lighting system systems are tested under the preoperational testing program. The normal lighting preoperational testing is identified in the DCD in Section 14.2.12.1.43 and the emergency lighting system preoperational testing is provided in Section 14.2.12.42. This testing provides assurance that either of these lighting systems will be available for use by the security force as they deem necessary.

Impact on DCD

None.

Impact on R-COLA

None.

Impact on S-COLA

None