

## US-APWRRRAIsPEm Resource

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**From:** Ciocco, Jeff  
**Sent:** Monday, March 04, 2013 11:03 AM  
**To:** us-apwr-rai@mhi.co.jp; US-APWRRRAIsPEm Resource  
**Cc:** LaVera, Ronald; McCoppin, Michael; Otto, Ngola; Hamzehee, Hossein  
**Subject:** US-APWR Design Certification Application RAI 1010-7039 (14.3)  
**Attachments:** US-APWR DC RAI 1010 RPAC 7039.pdf

MHI,

The attachment contains the subject request for additional information (RAI). This RAI was sent to you in draft form. Your licensing review schedule assumes technically correct and complete responses within 30 days of receipt of RAIs.

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

Jeff Ciocco  
US-APWR Projects  
New Nuclear Reactor Licensing  
301.415.6391  
[jeff.ciocco@nrc.gov](mailto:jeff.ciocco@nrc.gov)



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**Received Date:** 3/4/2013 11:02:57 AM  
**From:** Ciocco, Jeff

**Created By:** Jeff.Ciocco@nrc.gov

**Recipients:**

"LaVera, Ronald" <Ronald.LaVera@nrc.gov>  
Tracking Status: None  
"McCoppin, Michael" <Michael.McCoppin@nrc.gov>  
Tracking Status: None  
"Otto, Ngola" <Ngola.Otto@nrc.gov>  
Tracking Status: None  
"Hamzehee, Hossein" <Hossein.Hamzehee@nrc.gov>  
Tracking Status: None  
"us-apwr-rai@mhi.co.jp" <us-apwr-rai@mhi.co.jp>  
Tracking Status: None  
"US-APWRRRAIsPEm Resource" <US-APWRRRAIsPEm.Resource@nrc.gov>  
Tracking Status: None

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# REQUEST FOR ADDITIONAL INFORMATION 1010-7039

Issue Date: 3/4/2013

Application Title: US-APWR Design Certification - Docket Number 52-021

Operating Company: Mitsubishi Heavy Industries

Docket No. 52-021

Review Section: 14.03.08 - Radiation Protection Inspections, Tests, Analyses, and Acceptance Criteria

Application Section: 14.3

## QUESTIONS

### 14.03.08-1

The acceptance criteria of SRP Section 14.3.8 states 10 CFR 52.47(b)(1), requires that a DC application contain the proposed inspections, tests, analyses, and acceptance criteria (ITAAC) that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a plant that incorporates the design certification is built and should operate in accordance with the design certification, the provisions of the Atomic Energy Act, and the NRC's regulations. This SRP section also states that NRC generic communications and operating experience should be used as part of the bases for establishing ITAAC. This SRP section states that the DC should address instrumentation and control (I&C) equipment that is involved in performing safety functions, including operating experience problems that have been identified (particularly through generic letters or bulletins, and in some cases information notices).

Information Notice No. (IN) 85-66, "Discrepancies Between As-Built Construction Drawings And Equipment Installations," dated August 7, 1985 described how potentially significant generic problem regarding as-built construction drawings not correctly or completely reflecting equipment installations, which, if left uncorrected, could have resulted in the loss or incorrect function of a safety-related component or system. Examples of these discrepancies identified in IN 85-66 included wiring errors, unidentified jumpers, wrong tubing connections, and wrong installed components. NRC Bulletin No. 74-11, "Improper Wiring Of Safety Injection Logic At Zion 1 & 2," dated October 21, 1974 identified wiring errors the wiring error had existed from the time of plant construction, and had gone undetected during functional testing by the supplier and preoperational testing by the licensee. The bulletin states that the preoperational testing procedures were inadequate to detect the miswiring because the logic testing was done in parts similar to the component test done at the factory. NUREG/CR-68 19, Vol. 1, "Common-Cause Failure Event Insights, Emergency Diesel Generators," and NUREG- 1275 Vol. 14, "Causes and Significance of Design-Basis Issues at U.S. Nuclear Power Plants" provide examples of wiring errors that impact the ability of equipment to operate as expected.

The USAPWR Tier 1 DCD does not appear to describe the ITAAC provided for identifying wiring errors between components, such as described in NRC Bulletin No. 74-11. For instance, the acceptance criteria provided in Table 2.7.6.7-5 "Process and Post-accident Sampling System Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 7 of 8)," states 10.b The as-built remotely operated valves identified in Table 2.7.6.7-1 as having PSMS control, perform the active function identified in the table after receiving a simulated signal."

## **REQUEST FOR ADDITIONAL INFORMATION 1010-7039**

Consistent with the requirements of 10 CFR 52.47(b)(1), which requires that a DC application contain the proposed ITAAC that are necessary and sufficient to provide reasonable assurance that the plant is built and should operate in accordance with the design certification, please describe the ITAAC provided in the USAPWR DCD to detect and correct wiring errors, such as those identified in IN 85-66 and Bulletin 74-11.

