

REQUEST FOR ADDITIONAL INFORMATION 337-2398 REVISION 0

4/13/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 14.02 - Initial Plant Test Program - Design Certification and New License Applicants
Application Section: 14.2 Initial Plant Test Program

QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)

14.02-115

RAI 14.02-115

Section 14.2.12.1.87 of the US-APWR DCD DCD does not adequately document testing of the components listed below:

- Testing of radiation alarms and active functions to close the surge tank valve need to be specifically defined in the preoperational test.
- Testing of coolant flow to the thermal barrier via cross-tie needs to be specifically defined in the preoperational test.
- Flow verification backup water sources including from safety related sources need to be specifically defined.
- Testing of the thermal barrier high flow logic and isolation valves closure needs to be specifically defined.

Please revise Section 14.2.12.1.87 accordingly.

(Technical Branch Chapter 9 Review)

14.02-116

RAI 14.02-116

RAI 14.02-116 follows up MHI's 12/18/2008 response to Question 14.02-102. Question 14.02-102 followed up MHI's original responses to Questions 14.02-78 and 14.02-79. Question 14.02-102 had 9 parts, and MHI's response to the majority of the question was acceptable. However, the staff requests that MHI revise its original responses to parts 1, 2, 3, 6, 7 and 9 of Question 14.02-102, as discussed below.

1. Questions 14.02-78 and 14.02-79 addressed the testing of the Instrument Air (IA), Service Air (SA), and Compressed Gas (CG) Systems. IA and SA testing is described in DCD Subsections 14.2.12.1.91 and 14.2.12.1.92, respectively. There is currently no test to address the CG System. The RAI responses and the DCD commit to RG 1.68.3 for the IA System but not for the SA and CG Systems.

The NRC staff maintains that RG 1.68.3 should be addressed for all three air/gas systems, since these air/gas systems are included within the scope of preoperational testing via RG 1.68, Item C.1 and RG 1.68.3, Item A and footnote 1, page 1. These RG

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requirements include testing of systems used for “normal plant conditions,” and “compressed gas systems that supply loads that could affect the overall safety and performance of the plant.”

Therefore, the staff request that MHI revise its original response to part 1 of Question 14.02-102 to test the IA, SA, and CG Systems to the requirements of RG 1.68.3, except for Subsection C.7 of the RG, since Subsection C.7 is not applicable to the US-APWR.

2. The staff notes that, as documented in the DCD, IA, SA and CG are not safety-related. Key loads supplied by these systems are as follows. IA supplies many safety-related air-operated valves (see DCD Table 9.3.1-1), HVAC dampers, and pneumatic instruments and controls. As documented in the DCD, all safety-related air-operated valves fail safe and IA is not needed to ensure their transition to this safe position. SA serves as a backup to IA and also provides breathing air. CG provides nitrogen to the SI accumulators and other loads. CG provides hydrogen to the VCT in the CVCS System and the waste management system. RG 1.68.3 does not have a separate scope section, but Sections A and B and footnote 1 discuss air systems to which the RG applies. These are generally all systems that supply air or other compressed gases to operate various loads important to safety, or ITS (not the more stringent safety-related). MHI is testing IA to the RG. As discussed above the staff concludes that the IA, SA, and CG Systems fall within the ITS scope of the RG and hence should be tested to the requirements of the RG.

Therefore, the staff requests that MHI revise its original responses to parts 2, 3, 6, 7, and 9 of Question 14.02-102 to be consistent with its revised response to part 1 of Question 14.02-102.

(Follow up to BNL Question 14.02-102)