

**REQUEST FOR ADDITIONAL INFORMATION 679-4985 REVISION 0**

1/11/2011

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 03.09.04 - Control Rod Drive Systems  
Application Section: 3.9.4

QUESTIONS for Engineering Mechanics Branch 1 (AP1000/EPR Projects) (EMB1)

03.09.04-10

This question is a follow-up to question 03.09.04-5, RAI 570-4428.

In its response to RAI 570-4428, question 03.09.04-5, MHI identified and showed changes to be made in Subsection 4.6.3 in Revision 3 of the DCD. For consistency and completeness, the staff requests that subsection 4.6.3, as it appears in the RAI response, be updated to include "Preoperational tests" as the third bullet, inserted before "Initial startup tests", the fourth bullet. The rest of the response is acceptable.

Reference: MHI's Response to US-APWR DCD RAI No. 570-4428; MHI Ref: UAP-HF-10140; dated May 19, 2010; ML101450199.

03.09.04-11

This question is a follow-up to question 03.09.04-8, RAI 604-4775.

In its response, MHI will incorporate in 3.9.4.4, "On-site checks" with summary of inspection and criteria. This is acceptable.

In addition revisions were made for subsections 14.2.12.1.10 and 14.2.12.1.11.

However, each of the hundred-plus subsections under subsection 14.2.12.1, Preoperational Tests, has a consistent format. The proposed revisions will be inconsistent with this format. In the interest of consistency for Section 14.2, the staff requests that the proposed revisions for 14.2.12.1.10 and 14.2.12.1.11, not be included in the next revision of the DCD as proposed in the response.

Instead, the staff requests that the applicant use the format of existing 'Lead unit test' description in section 3.9.4.4, and add to 3.9.4.4, after the "On-site checks (per response to question 03.09.04-8), but before the "Initial Startup Test" (per response to RAI 570-4428, question 03.09.04-5), a similar description for the Preoperational Tests.

References:

MHI's Response to US-APWR DCD RAI No. 570-4428; MHI Ref: UAP-HF-10140; dated May 19, 2010; ML101450199

MHI's Response to US-APWR DCD RAI No. 604-4775; MHI Ref: UAP-HF-10221; dated July 28, 2010; ML102140340

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03.09.04-12

This question is a follow-up to question 03.09.04-9, RAI 604-4775.

Please provide or make available the following documents:

- 1) The original test report for the "Summary of the Control Rod Drop Function Test Results in Japan," (UAP-HF-09273, Attachment-1) described in the amended response to RAI 107-1293.
- 2) The paper published in Nuclear Engineering International April 1990 Issue, mentioned in the response to RAI 604-4775, question 03.09.04-9.

The control rod drop function test does not provide assurance that latches will function after an earthquake as the tests conducted were under the excitation during the earthquake. The staff requests that the applicant clarify the following statement in Section 3.2, Test Procedures of Attachment-1. "When it was obtained the target amplitude, the insertion time was measured with a rod position indicator (hereinafter called RPI) by dropping the RCCA with the drive rod of CRDM from all withdrawal positions to all insert positions." The staff also requests clarification on the duration of the excitation applied during the rod drops, including timescale in relation to release of latches, and greater detail in general with regards to test procedures, graphs, and data collected during the test.

### References:

MHI's Response to US-APWR DCD RAI No. 604-4775; MHI Ref: UAP-HF-10221; dated July 28, 2010; ML102140340

MHI's Amended Response to US-APWR DCD RAI No. 107-1293; MHI Ref: UAP-HF-09273; dated May 29, 2009; ML091540358