



MITSUBISHI HEAVY INDUSTRIES, LTD.
16-5, KONAN 2-CHOME, MINATO-KU
TOKYO, JAPAN

August 2, 2013

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC20555-0001

Attention: Mr. Jeffrey A. Ciocco

Docket No. 52-021
MHI Ref: UAP-HF-13196

Subject: US-APWR Update to the Seismic Closure Plan and Submittals related to DCD Chapter 3

- Reference:**
- 1) "Updated Closure Plan for US-APWR Seismic and Structural Analyses – Schedule Improvement," UAP-HF-13034 (ML13050A601), dated February 15, 2013
 - 2) "NOTICE OF FORTHCOMING PUBLIC AND CLOSED MEETING WITH MITSUBISHI HEAVY INDUSTRIES, LTD. TO DISCUSS UNITED STATES - ADVANCED PRESSURIZED WATER REACTOR SEISMIC ISSUES" (ML13156A295), dated June 5, 2013.
 - 3) "NOTICE OF FORTHCOMING PUBLIC AND CLOSED MEETING WITH MITSUBISHI HEAVY INDUSTRIES, LTD. TO DISCUSS UNITED STATES - ADVANCED PRESSURIZED WATER REACTOR SEISMIC AND STRUCTURAL ANALYSIS ISSUES" (ML13154A148) dated July 3, 2013.
 - 4) "NRC Request for Additional Information No.1018-7083, SRP Section: 03.07.02 – Seismic System Analysis, Application Section: 3.7.2" (ML 13106A111) dated April 16, 2013
 - 5) "Revised RAI Responses to Historical and Outstanding RAIs for US-APWR DCD Sections 3.7 and 3.8," UAP-HF-13154, dated July 8, 2013
 - 6) "US-APWR Fuel Seismic Closure Plan," UAP-HF-13133 (ML12248A005), dated June 14, 2013

With this letter, Mitsubishi Heavy Industries, Ltd. (MHI) is providing updates for the following activities concerning submittals for the remaining items needed for the staff to complete its seismic structural review:

- 1) Updated Seismic Closure Plan (SCP) submitted in Reference 1;
- 2) DCD submittals discussed by MHI during the public meetings with the staff on June 13 and July 17, 2013;
- 3) Response to remaining historical RAIs identified in Reference 1 that require revision and the more recently issued RAIs, received to date, pending MHI response;

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- 4) Revision of the Technical Report, "US-APWR Containment Performance for Pressure Loads" (MUAP-10018); and
 - 5) MHI's activities related to the identification of Tier 2* information in DCD Sections 3.7, 3.8, Appendix 3L and associated Technical Reports.
- 1) MHI has been completing activities and providing submittals to the NRC in accordance with Reference 1. As the SCP activities have progressed, there are several issues that have been identified that have necessitated minor revisions to the schedule. The descriptions of these activities are provided below.
- a. MHI's identification of additional critical sections and the need for further refinement of the containment internal structure (CIS) thermal analysis have delayed the completion date for several documents and require additional changes to the DCD beyond those identified in Reference 1. These issues were discussed with the staff during recent public meetings on June 13 and July 17, 2013 (References 2 and 3) (see Table 1). MHI intends to complete these updates by the end of September 2013.
 - b. In response to Reference 4, after analyzing the SSSI effect of the R/B complex on the response of the T/B, MHI noted higher structural demands for the T/B and Electrical Room structures during the design basis earthquake which resulted in the need to recalculate structural steel member stresses within the T/B calculation. The schedule for completing this work is being developed and will be provided to the NRC by the end of August 2013. MHI will inform the NRC in a separate correspondence when the calculations will be available for NRC audit. MHI suggests that the staff consider tracking this issue as an open item for completion of Phase 2 of the staff's review.
 - c. The revision of the Technical Report, "Summary of Seismic and Accident Load Conditions for Primary Components and Piping," (MUAP-09002) is impacted by resource limitations caused by MHI's work for the Fuel Seismic Closure Plan (Reference 6). As a result, Revision 3 of MUAP-09002 was completed per the original SCP schedule on July 31, 2013; however, portions of the report that involve the reactor vessel dynamic analysis were not included in Revision 3 of the Technical Report but will be included in Revision 4 which will be submitted to the NRC by the end of November 2013.

MHI has reevaluated the completion dates for outstanding items included in the SCP that have yet to be completed and has verified that the commitments for work not already completed remain valid with the exception of the documents discussed above and those listed in Table 1 below (note RAI responses are addressed separately).

Table 1: Update to Documents included in the Seismic Closure Plan

Title	Document Number	Date of Completion	Type
Design Report for the Basic Design of the US-APWR Containment Internal Structure	CIS-13-05-160-003	09/30/2013	Available for Audit
Basic Analysis and Design of CIS	CIS-13-05-230-004	09/30/2013	Available for Audit
Steel Member Stress of T/B Calculation	To be assigned	MHI to provide completion date by 8/31/2013	Available for Audit
Summary of Accident Load Conditions for Primary Components and Piping	MUAP-09002, Rev 4	11/30/2013	Submittal

- 2) During the public meetings with the staff on June 13 and July 17, 2013, MHI discussed plans to provide additional detail in the DCD concerning the critical sections for the R/B complex including the Basemat, CIS and PCCV. MHI also discussed the need to further refine the CIS thermal analysis prior to completing the CIS design calculations and report related to critical sections.

MHI submitted additional changes to DCD Chapter 3 on July 31, 2013, to add Appendix 3L to provide additional detail concerning the critical sections for the complex including the Basemat and PCCV. These changes will be included in DCD Revision 4 to be submitted by August 31, 2013.

Additionally, as discussed with the staff during the July 17, 2013 public meeting, MHI has identified the need to perform additional work to refine the thermal analysis of the CIS. This work will be completed by September 30, 2013. The results of this work will be reflected in markups to the DCD as noted in Table 2 below.

Table 2: Additional DCD Changes related to CIS and Critical Sections

Title	Date to NRC	Reason for change
DCD Section 3.8.3.5.2, Table 3.8.3-5, Figures 3.8.3-7 through 11 and Appendix 3L	9/30/2013	Changes to include additional information concerning CIS critical sections
DCD 3.8.3.4.3, 3.8.3.4.5.4, Figures 3.8.1-12 and -13	9/30/2013	Changes related to the refined thermal analysis of CIS

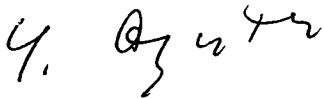
- 3) An update to the status of the remaining historical RAIs identified in Reference 5 and the additional outstanding RAIs that have been issued after the update of the SCP are included in the enclosure to this letter. MHI is providing MUAP page markups with the RAI responses. Rather than to potentially need to revise the MUAPs multiple times, MHI is waiting until all of the associated RAIs have been responded to at which point a schedule can be provided for the MUAP revisions. MHI is tracking the RAI responses that have provided MUAP markups to make sure that all impacted MUAPs are updated. With respect to the list of outstanding RAI responses several adjustments to the submittal dates have been made. The longest schedule delay is associated with RAI 1044-7140, Q03.08.04-56. The delay is caused by the need to develop

additional dynamic ANSYS models and the associated computer run time for numerous analytical cases that had not been fully accounted for when the original duration for providing the RAI response was established.

- 4) The staff has requested that MHI provide an updated schedule for the revision of the Technical Report, "US-APWR Containment Performance for Pressure Loads," (MUAP-10018). MHI had previously communicated to the NRC that the report would be submitted by August 2, 2013; however, refinements in the analysis have impacted the scheduled completion date and the report will now be submitted by the end of August 2013 (see enclosure).
- 5) During the June 13, 2013 public meeting (Reference 2) the staff noted that a number of interactions would be required to finalize the identification of Tier 2* information in Chapter 3 of the DCD. Following the meeting with the staff, MHI undertook the effort to identify Tier 2* information in DCD section 3.8 and Appendix 3L. During the July 17, 2013 public meeting (Reference 3), MHI presented the criteria that had been developed and provided examples to the staff. Based upon discussions during the meeting MHI is developing the schedule for providing Tier 2* DCD markups for DCD Sections 3.7, 3.8, Appendix 3L and related Technical Reports to the staff for their consideration. It is MHI's understanding that the finalization of Tier 2* identification is not necessary to complete Phase 2 and that the staff will continue to review and interact with MHI to finalize Tier 2* as part of the US-APWR review through the completion of Phase 4. MHI intends to provide the schedule for providing Tier 2* DCD markups by the end of August (see enclosure).

Please contact Mr. Joseph Tapia, General Manager of Licensing Department, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of this letter. His contact information is provided below.

Sincerely,



Yoshiaki Ogata,
Executive Vice President
Mitsubishi Nuclear Energy Systems, Inc.
On behalf of Mitsubishi Heavy Industries, LTD.

Enclosure:

1. Updated Status for Seismic Related RAIs and Other Submittal and Schedule Commitments.

CC: J. A. Ciocco
J. Tapia

Contact Information

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ENCLOSURE 1

Docket No. 52-021
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**Updated Status for Seismic Related RAIs
(Sheet 1 of 2)**

Historical RAI Revisions				
RAI Letter Number	RAI Number	RAI Question Number	NRC Due Date	Expected Submittal Date
223	1996	03.08.01-01 (11)	8/30/2013	8/30/2013
342	2000	03.08.04-12	7/31/2013	8/2/2013
490	3732	03.08.01-2	8/30/2013	8/30/2013
852	6003	03.07.02-136	9/30/2013	9/30/2013
852	6003	03.07.02-137	9/30/2013	9/30/2013
858	6126	03.08.03-48	9/30/2013	9/30/2013
894	6270	03.08.03-63	9/30/2013	9/30/2013
950	6575	03.07.03-12	7/31/2013	8/6/2013
958	6608	03.08.03-94	9/30/2013	9/30/2013
958	6608	03.08.03-96	8/30/2013	8/30/2013
977	6899	03.08.03-97	9/30/2013	9/30/2013
977	6899	03.08.03-98	9/30/2013	9/30/2013
977	6899	03.08.03-99	9/30/2013	9/30/2013

Outstanding RAIs				
RAI Letter Number	RAI Number	RAI Question Number	NRC Due Date	Expected Submittal Date
1024	7053	03.08.03-111	9/30/2013	9/30/2013
1024	7053	03.08.03-112	9/30/2013	9/30/2013
1025	7092	03.07.02-225	7/31/2013	8/2/2013
1040	7139	03.08.01-15	8/31/2013	8/2/2013
1040	7139	03.08.01-16	8/31/2013	8/2/2013
1040	7139	03.08.01-17	8/31/2013	8/2/2013
1040	7139	03.08.01-18	8/31/2013	8/2/2013
1040	7139	03.08.01-19	8/31/2013	8/2/2013
1040	7139	03.08.01-20	8/31/2013	8/2/2013
1040	7139	03.08.01-21	8/31/2013	8/2/2013
1040	7139	03.08.01-22	8/31/2013	8/31/2013
1044	7140	03.08.04-53	9/7/2013	8/2/2013
1044	7140	03.08.04-54	9/7/2013	8/2/2013
1044	7140	03.08.04-55	9/7/2013	8/2/2013
1044	7140	03.08.04-56	9/7/2013	10/31/2013
1044	7140	03.08.04-57	9/7/2013	8/2/2013
1044	7140	03.08.04-58	9/7/2013	8/2/2013
1045	7141	03.08.05-46	9/7/2013	9/7/2013
1045	7141	03.08.05-47	9/7/2013	8/2/2013
1045	7141	03.08.05-48	9/7/2013	9/7/2013
1045	7141	03.08.05-49	9/7/2013	8/2/2013
1045	7141	03.08.05-50	9/7/2013	8/2/2013
1045	7141	03.08.05-51	9/7/2013	9/7/2013
1045	7141	03.08.05-52	9/7/2013	8/2/2013
1045	7141	03.08.05-53	9/7/2013	9/7/2013
1045	7141	03.08.05-54	9/7/2013	9/7/2013
1045	7141	03.08.05-55	9/7/2013	9/7/2013

**Updated Status for Seismic Related RAIs, Cont.
(Sheet 2 of 2)**

Outstanding RAIs				
RAI Letter Number	RAI Number	RAI Question Number	NRC Due Date	Expected Submittal Date
1045	7141	03.08.05-56	9/7/2013	9/7/2013
1045	7141	03.08.05-57	9/7/2013	9/27/2013
1045	7141	03.08.05-58	9/7/2013	8/2/2013
1045	7141	03.08.05-59	9/7/2013	9/27/2013
1045	7141	03.08.05-60	9/7/2013	9/27/2013
1045	7141	03.08.05-61	9/7/2013	9/7/2013
1045	7141	03.08.05-62	9/7/2013	8/2/2013
1045	7141	03.08.05-63	9/7/2013	8/2/2013
1045	7141	03.08.05-64	9/7/2013	9/7/2013
1045	7141	03.08.05-65	9/7/2013	8/2/2013
1045	7141	03.08.05-66	9/7/2013	8/2/2013

**Other Submittal and Schedule Commitments
(Sheet 1 of 1)**

Title	Date to NRC	Explanation
US-APWR Containment Performance for Pressure Loads (MUAP 10018)	8/31/2013	Refinements in the analysis have impacted the scheduled completion of 8/2/2013
Provide NRC a schedule for submittal of Tier 2* markups for DCD 3.7 and 3.8 and related MUAPS	8/31/2013	Based on discussions with NRC staff during July 17, 2013 public meeting