


MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

July 5, 2013

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-13160

Subject: MHI's Response to US-APWR DCD RAI No.1039-7073 (SRP 04.02)

Reference: 1) "REQUEST FOR ADDITIONAL INFORMATION 1039-7073" dated on June 10, 2013

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Response to US-APWR DCD RAI No.1039-7073 (SRP 04.02)".

In the enclosed document, MHI provides a response to Questions 04.02-66 contained within Reference 1.

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 submittal. His contact information is provided below.

Sincerely,

Y. Ogata

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

Enclosures:

1. Response to US-APWR DCD RAI No.1039-7073 (SRP 04.02)

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MRO*

CC: J. A. Ciocco
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Enclosure 1

UAP-HF-13160
Docket No. 52-021

Response to US-APWR DCD RAI No.1039-7073 (SRP 04.02)

July 2013

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

7/4/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 1039-7073
SRP SECTION: 4 – REACTOR
APPLICATION SECTION: 04.02 – FUEL SYSTEM DESIGN
DATE OF RAI ISSUE: 06/10/2013

QUESTION NO. : 04.02-66

As currently documented in Technical Report MUAP-08007, plastic grid deformation is predicted for combined (safe shutdown earthquake plus LBB LOCA) loads. SRP 4.2 Appendix A, Section IV states that 10 CFR 50.46 temperature and oxide limits must be evaluated if combined grid loads exceed P(crit). The current revision to MUAP-08007 includes a SB-LOCA evaluation but does not include the effects of plastic grid deformation on the large break LOCA analysis. What is the basis for not including a LB-LOCA evaluation?

ANSWER:

The US-APWR Fuel Seismic Closure Plan (Reference 1) has been submitted to the NRC and addresses the NRC's concerns regarding the fuel seismic response analysis. Based on discussion with the NRC staff during public meetings on March 13, 2013 (Reference 2) and May 30, 2013 (Reference 3), if combined grids loads exceed P(crit), then MHI will perform an ECCS analysis for the LB-LOCA condition, taking into account the effects of deformed grids; as stated in the closure plan. The analysis conditions and the results of the analysis will be presented a revision to the Technical Report MUAP-08007 (Reference 4), which MHI plans to revise and submit to the NRC as part of the fuel seismic closure plan in December 2013.

REFERENCES:

- [1] Letter (UAP-HF-13133) from Y. Ogata (MHI to U.S. NRC, "US-APWR Fuel Seismic Closure Plan", dated June 14, 2013.
- [2] Letter (ML13059A364) from U.S. NRC, "Notice of Forthcoming Closed Meeting with Mitsubishi Heavy Industries, Ltd., to Discuss Mitsubishi Heavy Industries', Ltd. Technical Report MUAP-08007, "Evaluation Results of US-APWR Fuel System Structural Response to Seismic and LOCA Loads", Dated March 5, 2013.

- [3] Letter (ML13142A463) from U.S. NRC, "Notice of Forthcoming Closed Meeting with Mitsubishi Heavy Industries, Ltd., to Discuss Mitsubishi Heavy Industries', Ltd. Technical Report MUAP-08007, "Evaluation Results of US-APWR Fuel System Structural Response to Seismic and LOCA Loads", Dated May 23, 2013.
- [4] Mitsubishi Heavy Industries, Ltd., "Evaluation Results of US-APWR Fuel System Structural Response to Seismic and LOCA Loads", MUAP-08007-P Revision 2, December 2010.

Impact on DCD

There is no impact on the DCD.

Impact on R-COLA

There is no impact on the R-COLA.

Impact on PRA

There is no impact on the PRA.

Impact on Topical/Technical Report

Technical Report MUAP-08007 will be revised as part of the fuel seismic closure plan, it is planned to be submitted in December 2013.