MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

March 1, 2013

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Mr. Jeffery A. Ciocco

Docket No. 52-021
MHI Ref: UAP-HF-13040

Subject: Amended MHI's Response to US-APWR DCD RAI No. 694-5355 REVISION 1 (05.03.02)

References: 1) "Request for Additional Information No. 694-5355 Revision 1, SRP Section: 05.03.02 – Pressure – Temperature Limits, Upper-Shelf Energy, and Pressurized Thermal Shock, Application Section: 05.03.02," MUAP-09016 dated February 10, 2011.

2) "MHI's Response to US-APWR DCD RAI No. 694-5355 REVISION 1 (05.03.02)," UAP-HF-11063, dated March 11, 2011.

3) "Revised Design Completion Plan for US-APWR Piping Systems and Components" UAP-HF-12322, dated December 7, 2012.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Amended Response to Request for Additional Information No. 694-5355 REVISION 1"

Enclosed is the amended response to Question No. 05.03.02-11 of the RAI No. 694-5355 contained within Reference 1. This response amends the previously transmitted response submitted under MHI's Letter UAP-HF-11063 dated March 11, 2011 (Reference 2).

In Table-3 of UAP-HF-12322, dated December 7, 2012 (Reference 3) MHI provided the plan for amended RAI responses due to the proposed Technical Reports withdrawal. This amended RAI response is submitted in accordance with the plan.

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,

Y. Ogata

Yoshiki Ogata,
Director, APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

D081
NRO

Enclosure:

1. Amended Response to Request for Additional Information No. 694-5355 Revision 1

CC: J. A. Ciocco
J. Tapia

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Enclosure 1

UAP-HF- 13040
Docket No. 52-021

Amended Response to Request for Additional Information
No. 694-5355 Revision 1

March 2013

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

03/01/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 694-5355 REVISION 1**
SRP SECTION:	**05.03.02 - PRESSURE-TEMPERATURE LIMITS, UPPER-SHELF ENERGY, AND PRESSURIZED THERMAL SHOCK**
APPLICATION SECTION:	**05.03.02, MUAP-09016**
DATE OF RAI ISSUE:	**02/10/2011**

QUESTION NO.: RAI 05.03.02-11

The US-APWR Pressure and Temperature Limits Report (Technical Report MUAP-09016) describes how the P-T limits for the US-APWR reactor vessel have been developed based on the evaluation of the beltline and closure flange regions. However, MUAP-09016 does not mention any consideration given to the vessel nozzles. Clarify how the analyses performed to develop the P-T limits for the US-APWR design has considered the entire reactor vessel, including the beltline, closure flange, and nozzle regions.

ANSWER:

The fracture mechanics evaluation on the US-APWR reactor vessel is subsequently performed using stress analysis results. The fracture mechanics evaluation results including vessel nozzles are attached as Attachment-1 (Refer to Technical Report MUAP-09016 Revision 3), and shows the evaluation for the beltline and closure flange regions is conservative compared with those for vessel nozzles.

Impact on DCD

There is no impact on the DCD.

Impact on R-COLA

There is no impact on the R-COLA.

Impact on S-COLA

There is no impact on the S-COLA.

Impact on PRA

There is no impact on the PRA.

Impact on Technical/Topical Report

There is no impact on a Technical/Topical Report.

Attachment-1
Result of Fracture Mechanics Evaluation for Beltline and Closure Flange Regions Compared to Those for Vessel Nozzles (Referred to Technical Report MUAP-09016 Revision 3)

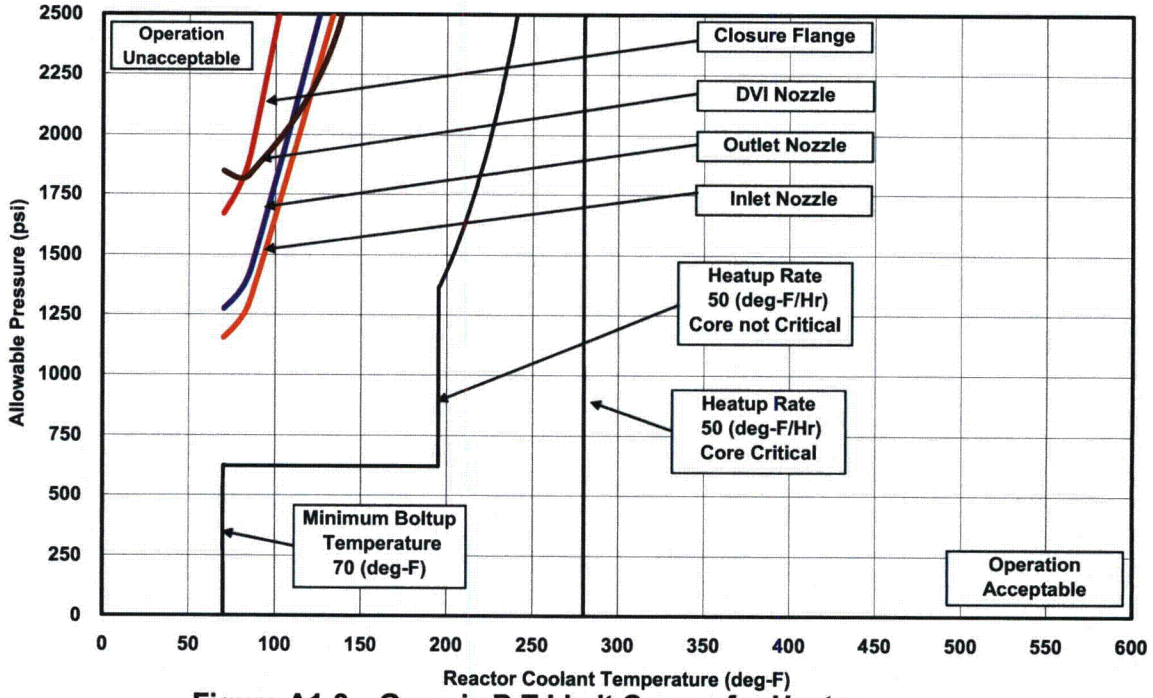

Figure A1-3 Generic P-T Limit Curves for Heatup

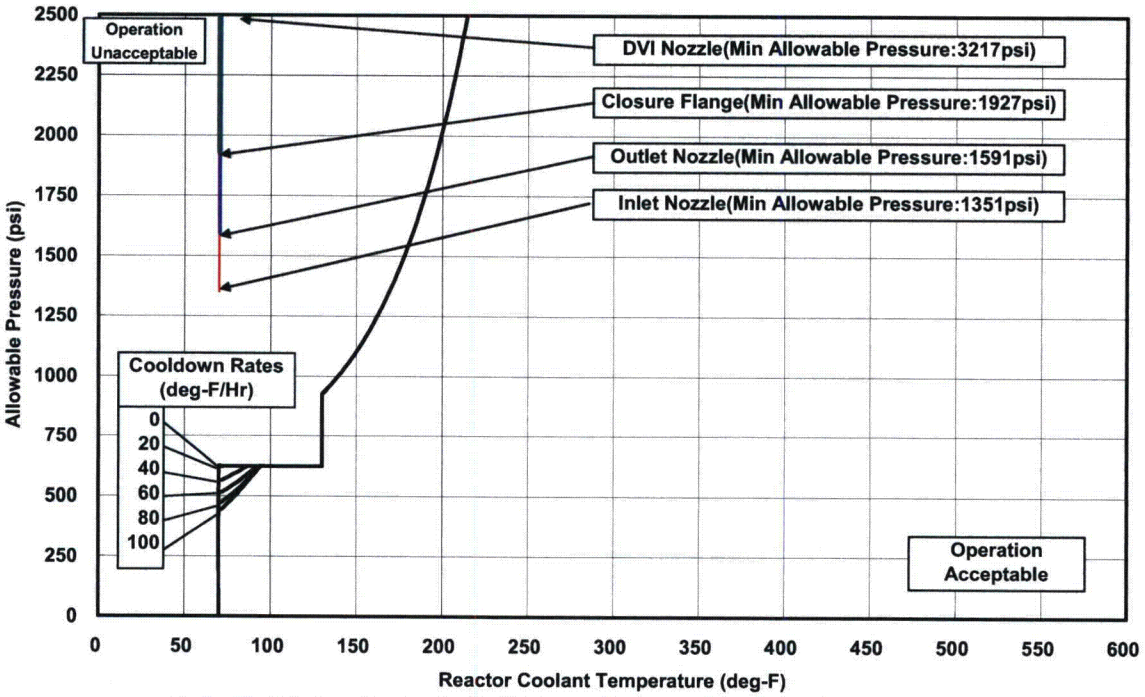

Figure A1-4 Generic P-T Limit Curves for Cooldown