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

January 31, 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-13021

Subject: MHI's Revised Response to Question #5 from the US-APWR ACRS Subcommittee Meeting on July 9, 2012 Regarding DCD Chapter 15

Reference: 1) "MHI's Responses to the Questions at the US-APWR ACRS Subcommittee Meeting on July 9, 2012 Regarding DCD Chapter 15", UAP-HF-12320, dated December 6, 2012. (ML12346A049)

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") the revised response to one of the questions (#5) discussed during the US-APWR ACRS Subcommittee meeting on July 9, 2012 regarding the US-APWR Design Control Document ("DCD") Chapter 15.

MHI previously provided the responses to the ACRS questions in Reference 1. MHI's response to Item 5 was discussed with the ACRS at the US-APWR ACRS Subcommittee meeting on January 15, 2013 regarding the US-APWR Topical Report MUAP-07009, "Mitsubishi Thermal Design Methodology" and MUAP-07034, "FINDS: Mitsubishi Fuel Assemblies Seismic Analysis Code". As a result, MHI has revised the response to Item 5 to address the ACRS comments from the January 15, 2013 meeting. The responses to the other four items provided in Reference 1 are not changed by this transmittal.

The non-proprietary revised response to Item 5 is enclosed.

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,

Yoshiki Ogata
Director - APWR Promoting Department
Mitsubishi Heavy Industries, Ltd.

D081
NRO

Enclosure:

1. MHI's Revised Response to Question #5 from the US-APWR ACRS Subcommittee Meeting on July 9, 2012 Regarding DCD Chapter 15 (non-proprietary)

CC: J. A. Ciocco
J. Tapia

Contact Information
Joseph Tapia, General Manager of Licensing Department
Mitsubishi Nuclear Energy Systems, Inc.
1001 19th Street North, Suite 710
Arlington, VA 22209
E-mail: joseph_tapia@mnes-us.com
Telephone: (703) 908-8055

Docket No. 52-021
MHI Ref: UAP-HF-13021

ENCLOSURE 1

UAP-HF-13021
Docket No. 52-021

MHI's Revised Response to Question #5 from the US-APWR ACRS Subcommittee Meeting on July 9, 2012 Regarding DCD Chapter 15

January 2013

(Non-Proprietary)

RESPONSE TO ACRS SUBCOMMITTEE QUESTIONS ON JULY 9, 2012

US-APWR Design Control Document

Mitsubishi Heavy Industries, Ltd.

CHAPTER: 15

CHAPTER TITLE: TRANSIENT AND ACCIDENT ANALYSIS

DATE OF MEETING: 07/09/12

QUESTION: Item 5

During the NRC's presentation, the ACRS had a question about the discussion in the SER and DCD that says the single failure of the RTS has no impact because any of the remaining trains will cause a reactor trip. But the ACRS pointed out this is not exactly accurate, although the analysis and conclusion are not impacted. The first sensor can be taken out of service indefinitely because the Tech Spec requires only three channels for most of trip functions. The NRC agreed that the wording in the DCD and SER may not be clear, so they would like to modify it.

ANSWER:

The conformance to single failure criterion for the PSMS, considering the condition where one channel is taken out of service, is discussed in MUAP-07004 Appendix A.5.1, as referred to from DCD Subsection 7.2.3. The detailed evaluation (FMEA) for the reactor trip function is available in MUAP-07004 Appendix G.

As discussed in the above references, the single failure criterion for the PSMS is met even considering the condition where one channel is taken out of service. Only the reactor trip signals which have four channels are credited in the DCD Chapter 15 analyses. Therefore, even if a concurrent single failure of one channel with one channel out of service is assumed, the remaining two channels satisfy the trip function and hence there is no impact on the safety analysis.

MHI will revise the following statement in all DCD event descriptions that assume one train of RTS as the limiting single failure for the event (e.g. Subsection 15.1.2.2) in order to make it clear that RTS satisfies the single failure criterion even considering the condition where one channel is taken out of service in accordance with Technical Specification LCO.

> The limiting single failure for this event is the failure of one train of the RTS. Two trains can be inoperable assuming concurrent single failure and one channel taken out of service in accordance with Technical Specification LCO. However, since the credited reactor trip signals have four channels, the remaining two trains are adequate to provide the protection functions credited in this assessment. Additional details about the RTS are provided in Section 7.2.