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February 25, 2011

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-11048

Subject: Amended MHI's Response to US-APWR DCD RAI No. 103-1448 REVISION 0 (SRP Section 05.02.02)

Reference: 1) "Request for Additional Information No. 103-1448 Revision 0, SRP Section: 05.02.02 – Overpressure Protection", dated November 20, 2008.
2) "MHI's Response to US-APWR DCD RAI No. 103-1448 Revision 0, UAP-HF-08303", dated December 25, 2008

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. 103-1448 Revision 0."

Enclosed is the response to the RAI contained within Reference 1.

This response amend the previously transmitted response to Question 05.02.02-5 submitted under MHI's Reference UAP-HF-08303 on December 25, 2008 (Reference 2) in order to correct description of responses to US-APWR DCD RAI No. 103-1448 Revision 0.

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of the submittals. His contact information is below.

Sincerely,

Y. Ogata

Yoshiki Ogata
General Manager- APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

Enclosures:

1. Amended Response to Request for Additional Information No. 103-1448 Revision 0

D081
NRO

CC: J. A. Ciocco
C. K. Paulson

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Enclosure 1

UAP-HF-11048
Docket Number 52-021

Amended Response to Request for Additional Information
No. 103-1448 REVISION 0

February 2011

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

02/25/2011

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 103-1448 REVISION 0**
SRP SECTION:	**05.02.02 – Overpressure Protection**
APPLICATION SECTION:	**5.2.2**
DATE OF RAI ISSUE:	**11/20/2008**

QUESTION NO.: 05.02.02-5

RAI 5.2.2-5
In Subsection 5.2.2.1.2, the applicant states that the system satisfies the BTP 5-2 requirement that, "The design of the system should use Institute of Electrical and Electronics Engineers (IEEE) Standard 603 as guidance." In which the system may be manually enabled; however, an alarm should be provided to alert the operator to enable the system at the correct plant condition during cooldown. Positive indication should be provided to indicate when the system is enabled. An alarm should activate when the protective action is initiated. Identify the plant (condition) parameter that is monitored during cooldown to alert the operator to enable the system and, if applicable, the technical specifications (TS) related to the parameter.

ANSWER:

The LTOP system for US-APWR consists of the CS/RHR pump suction relief valves (RHS-VLV-003A, B, C, D in Figure 5.4.7-2), which are passive spring-loaded relief valves connected to the RHR suction line. There are no isolation valves or other means to separate the LTOP relief valves from the RHR suction line. The LTOP system is enabled whenever the RHR system is connected to the RCS (CS/RHR Pump Hot Leg Isolation Valves open). The LTOP system is disabled whenever the RHR system is isolated from the RCS (CS/RHR Pump Hot Leg Isolation Valves closed). That is, the LTOP system cannot be manually enabled by itself, but rather depends on the status of the RHR system.

Operation of the RHR system (and LTOP system) is locked-out based on the RCS water temperature. The LTOP system (i.e., RHR system) is operable below the enable temperature, defined as the RCS water temperature of at least RT(NDT) + 90°F at the beltline location (see DCD Section 5.2.2.1.2, 2nd bullet). The specific arming temperature is documented in the Pressure and Temperature Limit Report (PLTR) as discussed in Technical Specification Section B 3.4.12 for the LTOP system.

The LTOP system is enabled whenever the CS/RHR Pump Hot Leg Isolation Valves (RHS-MOV-001A, B, C, D and RHS-MOV-002A, B, C, D) are open. Though there is no specific alarm to alert the operator to enable the system at the correct plant condition during cooldown, once these valves are opened below the RCS temperature 350°F (which is higher than the LTOP arming temperature) the LTOP system is automatically enabled. Therefore, the operator can find the status that the LTOP system is available by the status of the CS/RHR Pump Hot Leg Isolation Valves indicated in the control room. Furthermore, the CS/RHR pump suction relief valves are equipped with direct position indication in accordance with a requirement of Section II.D.3 of the TMI Action Plan. When an LTOP event occurs, these relief valves operate automatically and the valve position alarm alerts the operator.

In order to ensure the LTOP system is enabled at the correct plant condition during cooldown, the technical specifications require surveillance of these status conditions (Reference DCD Chapter 16, SR 3.4.12.1 through 3.4.12.7):

- Number of available Safety Injection (SI) pumps
- Number of available Charging pumps
- Accumulators are isolated
- RHR suction motor-operated valves are open
- RHR suction motor-operated valves are locked open with operator power removed

Impact on DCD

There is no impact on the DCD.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.