MITSUBISHI HEAVY INDUSTRIES, LTD.

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TOKYO, JAPAN

July 18, 2008

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-08126

Subject: MHI's Response to US-APWR DCD RAI No.9

References: 1) "Request for Additional Information No. 9 Revision 0, SRP Section: 11.01 – Source Terms, Application Section: 11.1," dated June 18, 2008.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Request for Additional Information No. 9 Revision 0."

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

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 provided below.

Sincerely,

C. Ogata

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

Enclosures:

1. Response to Request for Additional Information No.9 Revision 0

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

Contact Information

C. Keith Paulson, Senior Technical Manager Mitsubishi Nuclear Energy Systems, Inc. 300 Oxford Drive, Suite 301 Monroeville, PA 15146 E-mail: ck_paulson@mnes-us.com Telephone: (412) 373-6466

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Docket No. 52-021 MHI Ref: UAP-HF- 08126

Enclosure 1

UAP-HF-08126 Docket No. 52-021

Response to Request for Additional Information No.9 Revision 0

July 2008

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

7/18/2008

US-APWR Design Certification Mitsubishi Heavy Industries Docket No. 52-021

RAI NO.:NO.9 REVISION 0SRP SECTION:11.01 - Source termsAPPLICATION SECTION:11.1DATE OF RAI ISSUE:6/18/2008

QUESTION NO. : 11.01-1

The total primary-to-secondary leakage is listed in DCD Table 11.1-4 as 150 gallons per day (gpd). This is the Technical Specification (TS) 3.4.13 limit for one steam generator. Because there are four steam generators, this value should be 600 gpd. Provide the basis for the primary-to-secondary leakage value used to calculate secondary coolant activity.

ANSWER:

The total primary-to-secondary leakage specified in DCD Table 11.1-4 is intended to be 150 gallons per day (gpd). This leak rate was taken from the operational leakage performance criterion specified in NEI 97-06, "Steam Generator Program Guidelines," January 2001, and the limits proposed in the Technical Specifications Task Force (TSTF)-449, Revision 4, as the highest amount of leakage that could be assumed in any one SG. As discussed below, assuming such a value for leaks in multiple SGs for the purpose of shielding design was not considered reasonable.

The radioactivity concentration for the secondary cooling system calculated by using the parameters cited in DCD Table 11.1-4 are used for shielding design. These parameters are sufficiently conservative based on the following considerations:

- 1. The design-basis source term values used significantly exceed those associated with the more realistic NUREG-0017 based source term values that are used for the evaluation of liquid and gaseous releases against 10CFR50 Appendix I limits.
- 2. SG leakage in the Japanese PWR plants has been very low. Our records show that, from 1995 through 2007 and based on over 800 SG-years of experience, there were no cases of primary to secondary leakage. This performance is due, in part, to the reduction of corrosion and tube fretting wear at anti-vibration bar locations by adopting alloy TT690 as tube material and by improving the design of the anti-vibration bars.

With consideration to the above facts, a leakage rate of 150 gpd from a single SG unit was adopted in order to avoid an overly conservative shielding design. It is recognized that the radiological design basis accident consequences described in Chapter 15 are performed using a total SG leakage value of 600 gpd. These analyses conform to the guidance in SRP 15.0.3 and RG 1.183 and are performed to assure that 10CFR50.34 limits are met.

11.1-1

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

This completes MHI's response to the NRC's question.