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TOKYO, JAPAN

August 26, 2009

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-09431

Subject: MHI's Responses to US-APWR DCD RAI 436-3267 Revision 1

Reference: 1) "REQUEST FOR ADDITIONAL INFORMATION 436-3267 REVISION 1, SRP Section: 10.04.02 – Main Condenser Evacuation, Application Section: 10.4.2, dated July 30, 2009.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Responses to Request for Additional Information 436-3267 Revision 1."

Enclosed are the responses to a 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 below.

Sincerely,

Y. Ogata

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

Enclosure:

1. Responses to Request for Additional Information 436-3267 Revision 1

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

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Docket No. 52-021
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Enclosure 1

UAP-HF-09431
Docket No. 52-021

Responses to Request for Additional Information No. 436-3267
Revision 1

August 2009

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

8/26/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 436-3267 REVISION 1

SRP SECTION: 10.04.02 MAIN CONDENSER EVACUATION SYSTEM

APPLICATION SECTION: 10.4.2

DATE OF RAI ISSUE: 7/30/2009

QUESTION NO.: 10.04.02-2

US-APWR Supplemental RAI 10.4.2-1
In order to conform to GDC 60 requirements, as related to control releases of radioactive materials from the main condenser evacuation system (MCES), in US-APWR RAI 10.4.2-1, the staff requested the applicant to provide additional information regarding unacceptable levels of radiation and alarm set points to preclude significant releases of radiation in the MCES vacuum pump effluents discharged to the atmosphere. Further, the staff requested that the applicant provide further details with respect to the location of the detectors and routing of the MCES effluents.

In its response, dated March 30, 2009, the applicant stated that a statement regarding the unacceptable levels of radiation and alarm setpoints to preclude significant radiation are addressed in DCD Subsection 11.5.2.4.2, "Condenser Vacuum Pump Exhaust Line Radiation Monitors..." Regarding the radiation monitoring, the applicant stated that the location of the detectors is shown in Figure 11.5-1i, "Typical Line Radiation Monitor Schematic.," and Figure 11.5-2C, "Location of Radiation Monitors at Plant..." The staff reviewed the DCD Section 11.5.2.4.2, and also reviewed the DCD Figures 11.5-1i and 11.5-2c as described in applicant's response. The staff finds that the applicant adequately addressed the GDC 60 and 64 requirements, as related to the control releases and monitoring of the radioactive materials from the MCES to the environment. However, evaluation of the acceptable levels of radiation in the MCES and its monitoring, as described in Section 11.5.2.4.2, is not provided in the DCD Section 10.4.2. Further in its response, the applicant indicated no revisions to the DCD Section 10.4.1 to direct the reader to Section 11.5.2.4.2 for the noted discussion. Therefore, the staff requests the applicant to revise Section 10.4.1 to reflect the details provided in its response as described above.

ANSWER:

In order to reflect the US-APWR RAI response 10.4.2-1 dated March 30, 2009, MHI provides revision in Subsection 10.4.2.2.1 as follows:

"*A discussion of the radiological aspects of primary-to-secondary leakage, including anticipated release from the system, is included in Chapter 11. The statement regarding the key elements, unacceptable levels of radiation and alarm set points to preclude significant releases radiation is*

addressed in Subsection 11.5.2.4.2. Furthermore, the statement regarding the location of the detectors is shown in Figure 11.5-1i and Figure 11.5-2c.

Impact on DCD

The fifth paragraph in Subsection 10.4.2.2.1 will be revised as follows:

10.4.2.2.1 General Description

The noncondensable gases removed from the main condenser and exhausted by the vacuum pumps are directed to the vent of the MCES. The exhaust flow is monitored for radioactivity prior to exhaust to environment. The noncondensable gases that are exhausted to the environment from the MCES are not normally radioactive. However, it is possible for the noncondensable gases to become contaminated in the event of primary-to-secondary system leakage. When an unacceptable radioactivity level is detected in the exhaust flow, adequate operating procedures are implemented. A discussion of the radiological aspects of primary-to-secondary leakage, including anticipated release from the system, is included in Chapter 11. The statement regarding the key elements, unacceptable levels of radiation and alarm set points to preclude significant releases radiation is addressed in Subsection 11.5.2.4.2. Furthermore, the statement regarding the location of the detectors is shown in Figure 11.5-1i and Figure 11.5-2c.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.