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TOKYO, JAPAN

March 30, 2010

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-10087

Subject: MHI's Responses to US-APWR DCD RAI 541-4346 Revision 4

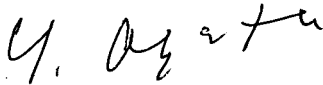
Reference: 1) "REQUEST FOR ADDITIONAL INFORMATION 541-4346 REVISION 4, SRP Section: 09.04.04 – Turbine Area Ventilation System, Application Section: 9.4.4, dated March 2, 2010.

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 541-4346 Revision 4."

Enclosed are the responses to 2 RAIs 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,



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

Enclosure:

1. Responses to Request for Additional Information 541-4346 Revision 4

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

Contact Information

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Docket No. 52-021
MHI Ref: UAP-HF-10087

Enclosure 1

**UAP-HF- 10087
Docket No. 52-021**

**Responses to Request for Additional Information No. 541-4346
Revision 4**

March 2010

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

3/30/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 541-4346 REVISION 4
SRP SECTION: 09.04.04 TURBINE AREA VENTILATION SYSTEM
APPLICATION SECTION: 9.4.4
DATE OF RAI ISSUE: 3/2/2010

QUESTION NO.: 09.04.04-4

OPEN ITEM – New follow-up RAI

In the “Impact on DCD” section of the RAI No.67-715 Revision 0, Question No. 09.04.04-2, RAI 9.4.4-7 (MHI Ref: UAP-HF-08222, dated 10/6/08, ML082830020) the applicant committed to add the following to the DCD:

“Add a last sentence to the first paragraph in Subsection 9.4.4.2.2 as follows.

This HVAC system is powered from the alternate AC power source and operated during SBO and LOOP conditions.”

The last sentence (underlined) of the first paragraph in Subsection 9.4.4.2.2 “Electrical Equipment Areas HVAC System” of Revision 2 of the DCD reads:

“The electrical equipment areas HVAC system consists of two 100% non-Class 1E electrical room air handling units and non-Class 1E battery rooms common exhaust system. This HVAC system is powered from the alternate ac power source and operated during LOOP condition.”

The staff requests further information as to why the applicant failed to include the SBO condition in the amended passage. It is the staff’s understanding that power would be restored to the electrical equipment areas HVAC system via the AAC within one hour of the onset of SBO. Would this not be a requirement since the batteries would again be charging (i.e. generating H² gas) once the AAC is providing power to the system?

ANSWER:

Originally, the non-Class 1E electrical room air handling units which supply cooling and ventilation for the batteries and distribution systems were required to be in service during a SBO event. However, a revision (See DCD Revision 2) relocated the switching circuit to the Power Source Building, which eliminates the need for the non-class 1E electrical room air handling units during a SBO. For this reason, the current description does not include SBO.

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.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

3/30/2010

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

RAI NO.: NO. 541-4346 REVISION 4
SRP SECTION: 09.04.04 TURBINE AREA VENTILATION SYSTEM
APPLICATION SECTION: 9.4.4
DATE OF RAI ISSUE: 3/2/2010

QUESTION NO.: 09.04.04-5

OPEN ITEM – NRC CONFIRMATORY – New follow-up RAI

In the "Impact on DCD" section of the RAI No. 67-715 Revision 0, Question No. 09.04.04-2, RAI 9.4.4-9 (MHI Ref: UAP-HF-08222, dated 10/6/08, ML082830020) the applicant committed to make the following changes to the DCD:

Revise DCD Appendix 9A, Section 9A.3.96 FA6-101 under "#Smoke Control Features" as follows.

"The turbine building area ventilation system is manually actuated to purge the smoke. Supplementary smoke removal can be accomplished by the plant fire brigade using portable fans and ducting and standard fire fighting techniques. Except for isolated rooms, smoke accumulation is not expected to be a problem due to the tremendous internal volume of the building."

Revision 2 of DCD subsection "9A.3.131 FA6-101 Turbine Building" for "Smoke Control Features"

"The T/B is provides with automatic opening smoke vents in the building roof. Supplementary smoke removal can be accomplished by the plant fire brigade using portable fans and ducting. Except for isolated rooms, smoke accumulation is not expected to be a problem due to the tremendous internal volume of the building."

This is the same wording for this passage as contained in Revision 1 of the DCD (see 9A.3.96 FA6-101 Turbine Building). The staff requests that the DCD be amended to the committed to changes of RAI No. 67-715 Revision 0, Question No. 09.04.04-2, RAI 9.4.4-9.

ANSWER:

DCD subsection "9A.3.131 FA6-101 Turbine Building" for "Smoke Control Features" will be revised as requested including further clarification.

Impact on DCD

See attached mark-up of DCD subsection "9A.3.131 FA6-101 Turbine Building" for "Smoke Control Features".

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

9. AUXILIARY SYSTEMS

US-APWR Design Control Document

Fire Zone No.	Designation	Fire Load (Btu/ft ²)
FA6-101-22	Security Room (FA6-101-22)	6.2E+02
FA6-101-23	Security Room (FA6-101-23)	6.2E+02

Fire Detection and Suppression Features

FA6-101-01, FA6-101-02, FA6-101-13, FA6-101-17 FA6-101-04 FA6-101-15 and FA6-101-16 are provided with manual fire alarm pull station. Primary fire suppression is provided from wet-pipe automatic sprinkler system. Secondary suppression is provided from manual fire hose station.

FA6-101-19 is provided with UV/IR flame detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose station. Secondary suppression is provided from portable fire extinguishers.

FA6-101-03 and FA6-101-14 are provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from preaction sprinkler.

Other fire zones are provided with manual fire alarm pull station. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

The T/B is provides with automatic opening smoke vents in the building roof. The turbine building area ventilation system is manually actuated to purge the area of smoke. Supplementary smoke removal can be accomplished by the plant fire brigade using portable fans, and ducting and standard fire fighting techniques. Except for isolated rooms, smoke accumulation is not expected to be a problem due to the tremendous internal volume of the building.

Fire Protection Adequacy Evaluation

The overall fire loading within the T/B is low. Special hazards are protected and a general area fire sprinkler system that is provided for all floor level below the turbine deck will actuate to suppress the a turbine lube oil fire. The structural wall between the T/B and the adjacent R/B is of substantial reinforced concrete construction which provides a fire resistance in excess of a 3-hour ASTM E-119 fire exposure.

Fire Protection System Integrity

The fire protection capability for this area is provided from an automatic sprinkler system and manual hose streams applied by the plant fire brigade. The sprinkler system is designed to code (NFPA 13) the standpipe is designed to code (NFPA 14), and the fire main is designed to code (NFPA 24). These systems have high integrity to guard against inadvertent discharge. Should the fire suppression system discharge, no safety-related