

  
**MITSUBISHI HEAVY INDUSTRIES, LTD.**  
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TOKYO, JAPAN

January 21, 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-10015

**Subject:** MHI's Response to US-APWR DCD RAI No.501-4004 Revision 2

**References:** 1) "Request for Additional Information No.501-4004 Revision 2, SRP Section: 06.04 – Control Room Habitability System, Application Section: DCD Section 6.4" dated December 1, 2009.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Response to Request for Additional Information No.501-4004 Revision 2".

Enclosed is the response to one 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,



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

Enclosure:

1. Response to Request for Additional Information No. 501-4004, Revision 2

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

Contact Information

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NRW

Docket No. 52-021  
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Enclosure 1

UAP-HF-10015  
Docket Number 52-021

Response to Request for Additional Information  
No. 501-4004, Revision 2

January, 2010

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**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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01/21/2010

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

**RAI NO.:** NO.501-4004 REVISION 2  
**SRP SECTION:** 06.04 – CONTROL ROOM HABITABILITY SYSTEM  
**APPLICATION SECTION:** DCD SECTION 6.4  
**DATE OF RAI ISSUE:** 12/01/2009

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**QUESTION NO. : 06.04-10**

The response to RAI No. 338-2325, Question No. 06.04-8 stated that water-tight doors will be employed in the control room. Please provide a general description of the design of the doors and how the water-tight doors will be arranged. Please indicate if identical or similar doors have been used in similar applications elsewhere? Please note which doors will be water-tight. Will the doors be the normal ingress/egress doors or will there be special normally-open water-tight doors staged for closing in the event of a flood? Will they be normally open or closed? To permit evacuation, will the doors be designed to permit opening when there is flooded water outside or inside the doors. Please describe if the doors will be part of the control room envelope and if they will be included in the tracer gas testing.

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**ANSWER:**

The design of water-tight doors is described in DCD Subsection 3.4.1.3. And Water-tight doors are installed to protect against flooding as shown in Figure 3K-1 through 12 of DCD Appendix 3K.

Water-tight doors to be employed for the control room are shown in Figure 3K-5 of DCD Appendix 3K and are normal ingress/egress doors and normally closed.

The water-tight doors for the control room are opened toward outside of control room. In the case of flood inside of control room, doors are permitted opening to evacuate from control room because the hydraulic pressure is exerted toward the open direction.

In the case of flood outside of control room, the hydraulic pressure is exerted against the open direction, so that control room is protected from flood event. In addition, the water-tight door is installed to divide main corridor at Elevation 25'-3" into the east side and west side as shown in Figure 3K-5 of DCD Appendix 3K, thereby one side is protected from flood event. Doorways to connect between the control room and main corridor are installed in each side, so that the evacuation from control room is permitted.

Water-tight doors are installed between main corridor and two short corridors, nearby the control room envelope (CRE). Short corridors will serve as vestibules as described in response to RAI No.49 Question 06.04-6. These vestibules will maintain the air balance of MCR in access by MCR personnel during the emergency pressurization mode of operation, and are not part of the CRE. Therefore, water-tight doors are not employed for CRE boundary, and are not included in the tracer gas testing.

**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.