MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

November 13, 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-09523

Subject: MHI's Response to US-APWR DCD RAI No.473-3801 Revision 1

References: 1) "Request for Additional Information No.473-3801 Revision 1, SRP Section: 06.04 – Control Room Habitability System, Application Section: DCD Section 6.4" dated October 14, 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.473-3801 Revision 1".

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,

Y. Ogata

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

Enclosure:

1. Response to Request for Additional Information No. 473-3801, 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-09523
Docket Number 52-021

Response to Request for Additional Information
No. 473-3801, Revision 1

November, 2009

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

11/13/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	NO.473-3801 REVISION 1
SRP SECTION:	06.04 – CONTROL ROOM HABITABILITY SYSTEM
APPLICATION SECTION:	DCD SECTION 6.4
DATE OF RAI ISSUE:	10/14/2009

QUESTION NO. : 06.04-9

RG 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Regulatory Position 2.5, states that any analysis to demonstrate compliance with GDC 19 should include a value for inleakage that is due to ingress to and egress from the control room envelope, which is combined with the inleakage test value. Section 6.4.2.3 of the DCD states that a total system leakage of ~120 cfm in the pressurization mode will be confirmed by ASTM E-741 testing. The total control room unfiltered inleakage assumed in the DBA dose analyses is 120 cfm. DCD Section 15.6.5.5.1.2 and Tables 14.3-1 & 15.6.5-5 state that the assumed control room unfiltered inleakage of 120 cfm is due to ingress/egress through the vestibule entrance. These statements seem to contradict each other. Clarify how much of the 120 cfm of control room unfiltered inleakage is attributed to inleakage through the control room envelope and subject to the ASTM E-741 testing in the TS 5.5.20 Control Room Envelope Habitability Program and how much is an analysis assumption for vestibule ingress/egress. Please be sure to update any licensing documents to have a clear design basis for ingress/egress as well as clear testing objectives.

Regulatory Guide 1.197 states that the "staff considers 10 cfm as a reasonable estimate for ingress and egress for control rooms without vestibules." If you choose a value other than what is suggested by Regulatory Guide 1.197, please provide a justification for the value and include a description of any design features credited in achieving this value in the FSAR.

ANSWER:

As answered to RAI #38 Question No.15.00.03-16, the total amount of unfiltered inleakage into control room is 120 cfm. This total value includes the inleakage through the control room envelope and unexpected inleakage through the control room envelope such as through ingress to and egress from doors. MHI assumes the 10 cfm as a leakage that is due to ingress to and egress from CRE. This value is based on Regulatory Guide 1.197.

Impact on DCD

DCD Revision 2 Subsection 6.4.2.3 will be revised as follows:

"Total system inleakage in emergency pressurization mode is equal to or less than 120 ft^3/min**, including 10 ft^3/min for egress and ingress.**"

"The ASTM E741 tests confirm ~~total system~~ inleakage **test value of CRE** (~~120~~ **110** ft^3/min) in the emergency pressurization mode and makeup flow rate (~1,200 ft^3/min) in the emergency pressurization mode."

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.