MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

June 21, 2011

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-11185

Subject: MHI's Responses to US-APWR DCD RAI No. 736-5644 Revision 2 (SRP 06.02.02)

Reference: [1] "Request for Additional Information No. 736-5644 Revision 2, SRP Section: 06.02.02 – Containment Heat Removal System –Application Section: 6.2." dated April 20, 2011.

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. 736-5644 Revision 2".

Enclosed is the response to Question 06.02.02-63 that is 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.

Enclosures:

1. Response to Request for Additional Information No. 736-5644 Revision 2

D081
NRO

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

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Enclosure 1

UAP-HF-11185
Docket No. 52-021

Responses to Request for Additional Information
No. 736-5644 Revision 2

June 2011

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

6/21/2011

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

RAI NO.:	**NO. 736-5644 REVISION 2**
SRP SECTION:	**06.02.02 – Containment Heat Removal System**
APPLICATION SECTION:	**6.2**
DATE OF RAI ISSUE:	**4/20/2011**

QUESTION NO.: 06.02.02-63

The staff requests that MHI identify the sources of aluminum surface area and the inspections and controls that will be in place for each source to ensure that no more than 810 square feet of aluminum will be exposed to the post-LOCA sump fluid. Report MUAP-08006-P (R1) identifies 810 square feet as the actual plant aluminum surface area. This area was the basis for the chemical effects testing and modeling used to determine the quantity of chemical debris. The staff's review of the chemical effects portion of the US-APWR design is based, in part, on MHI's identification of 810 square feet as part of the licensing basis of the design. DCD Section 6.1.1.2.1 states that the use of aluminum is "limited as much as practicable," but it does not describe how the quantity will be tracked and limited.

ANSWER:

The sources of aluminum surface area are items such as instruments, motors, cranes, and so on. The total aluminum surface area is the sum of that of these components located in the containment. Programmatic controls will be established to ensure that no more than 810 square feet of aluminum will be exposed to the post-LOCA sump fluid. A summary of programmatic controls regarding sump strainer debris is described in DCD Subsection 6.2.2.3. The DCD will be revised to include the total aluminum surface area in these programmatic controls.

Impact on DCD

The following sentence will be added in the second paragraph of DCD Subsection 6.1.1.2.1.

"**Programmatic controls to limit aluminum in the containment are described in Subsection 6.2.2.3.**"

Tenth paragraph of Subsection 6.2.2.3 will be revised as follows:

"Programmatic controls will be established to ensure potential sources of debris introduced into containment (e.g., insulation, coatings, foreign material**, aluminum**), and plant modifications will not adversely impact the ECC/CS recirculation function. Programmatic control**s** will be established consistent with guidance provided in RG 1.82, Rev. 3 to ensure that potential

quantities of post-accident debris are maintained within the bounds of the analyses and design bases that support Emergency Core Cooling (ECC) and Containment Spray (CS) recirculation functions and ensure the long term core cooling requirements of 10 CFR 50.46 are met. "

Impact on R-COLA

There is no impact on the R-COLA.

Impact on S-COLA

There is no impact on the S-COLA.

Impact on PRA

There is no impact on the PRA.