MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

November 19, 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-10315

Subject: **Transmittal of the Technical Report entitled "US-APWR Sump Strainer Performance" (MUAP-08001, Revision 3)**

Reference: 1) MHI's Response to US-APWR DCD RAI No. 354-2585 Revision 0, UAP-HF-09365, July 2009

2) MHI's Response to US-APWR DCD RAI No. 466-3715 Revision 0, UAP-HF-09534, November 2009

3) MHI's Response to US-APWR DCD RAI No. 422-2823 Revision 0, UAP-HF-10013, January 2010

4) MHI's Response to US-APWR DCD RAI No. 626-4750 Revision 0, UAP-HF-10276, October 2010

5) MHI's Response to US-APWR DCD RAI No. 631-5056 Revision 2, UAP-HF-10284, October 2010

6) MHI's Response to US-APWR DCD RAI No. 637-4988 Revision 0, UAP-HF-10285, October 2010

7) MHI's Response to US-APWR DCD RAI No. 645-4375 Revision 0, UAP-HF-10306, November 2010

8) Public and Closed Meeting with MHI to discuss the US-APWR Strainer Head Loss Test Plan, held on June 2, 2010

9) NRC audit the US-APWR Strainer Head Loss Tests from June 8-9, 2010 (ADAMS accession No. ML102420011)

The purpose of this letter is to formally transmit the revised technical report entitled "US-APWR Sump Strainer Performance" (MUAP-08001, Revision 3) from Mitsubishi Heavy Industries, Ltd. ("MHI") to the U.S. Nuclear Regulatory Commission ("NRC").

The report incorporates outcomes from past public/closed meetings, test audit, and associated MHI responses to NRC questions (RAIs) listed later below "References". Following are the principal changes from previous report:

a. Abandon "bounding evaluation" which was a comparative assessment between U.S. operating plant specific test parameters/results and the US-APWR strainer design parameters in order to demonstrate that the US-APWR strainer head loss was bounded by the other. Instead, the US-APWR plant specific strainer head loss test was conducted to evaluate maximum head loss across the strainer during postulated accident. Adequacy of test plan and test results was incorporated as per associated RAIs.

b. Strainer design improvement was conducted in order to deal with steam flashing issue at

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high fluid temperature raised by the NRC (RAI). The height of the strainer was limited to obtain sufficient submergence and therefore the strainer configuration was re-designed.

c. Applicable methodology of NPSH (Net Positive Suction Head) calculation of safety pumps was evolved, and compliance with regulatory requirements relative to consideration of containment pressure was clearly stated. The information requested by associated RAIs was also incorporated.

d. Additional information requested by the NRC by RAIs or by conference calls was incorporated in order to support the NRC for review in accordance with their review guidance.

With respect to RAI 637-4988 Question 06.02.02-58, which discussing the floating debris observed during strainer head loss test, the information of MHI's response (Reference 6) is partially incorporated, but not yet completed. The information in the response needs to be revised due to the outcome from follow-up conference call with the NRC on November 10, 2010. This issue is still open and will be addressed properly by updating the RAI response by MHI, after submission of this technical report.

As indicated in the enclosed materials, this document contains information that MHI considers proprietary, and therefore should be withheld from public disclosure pursuant to 10 C.F.R. § 2.390 (a)(4) as trade secrets and commercial or financial information which is privileged or confidential. A non-proprietary version of the document is also being submitted with the information identified as proprietary redacted and replaced by the designation "[ ]".

Enclosed are a copy of the proprietary version (Enclosure 2), a copy of the non-proprietary version (Enclosure 3), and the Affidavit of Yoshiki Ogata (Enclosure 1) which identifies the reasons MHI respectfully requests that all materials designated as "Proprietary" in Enclosure 2 be withheld from public disclosure pursuant to 10 C.F.R. § 2.390 (a)(4).

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.

Enclosures:

1. Affidavit of Yoshiki Ogata

2. CD1: US-APWR Sump Strainer Performance (MUAP-08001-P Rev.3)
   - Version Containing Proprietary Information

3. CD2: "US-APWR Sump Strainer Performance (MUAP-08001-NP Rev.3)
   - Version **Not** Containing Proprietary Information

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

Contact Information
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ENCLOSURE 1

Docket No.52-021
MHI Ref: UAP-HF-10315

MITSUBISHI HEAVY INDUSTRIES, LTD.

AFFIDAVIT

I, Yoshiki Ogata, state as follows:

1. I am General Manager, APWR Promoting Department, of Mitsubishi Heavy Industries, LTD ("MHI"), and have been delegated the function of reviewing MHI's US-APWR documentation to determine whether it contains information that should be withheld from public disclosure pursuant to 10 C.F.R. § 2.390 (a)(4) as trade secrets and commercial or financial information which is privileged or confidential.

2. In accordance with my responsibilities, I have reviewed the enclosed document entitled "US-APWR Core Inlet Blockage Test" dated November 2010, and have determined that portions of the document contain proprietary information that should be withheld from public disclosure. Those pages containing proprietary information are identified with the label "Proprietary" on the top of the page and the proprietary information has been bracketed with an open and closed bracket as shown here "[ ]". The first page of the document indicates that all information identified as "Proprietary" should be withheld from public disclosure pursuant to 10 C.F.R. § 2.390 (a)(4).

3. The information identified as proprietary in the enclosed document has in the past been, and will continue to be, held in confidence by MHI and its disclosure outside the company is limited to regulatory bodies, customers and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and is always subject to suitable measures to protect it from unauthorized use or disclosure.

4. The basis for holding the referenced information confidential is that it describes the unique test facilities design of the chemical effect tests and the strainer head loss test, testing results related to the US-APWR specific design, developed by MHI and sub-vendors not used in the exact form by any MHI's competitors. This information was developed at significant cost to MHI, since it required the performance of Research and Development and detailed design for its software and hardware extending over several years.

5. The referenced information is being furnished to the Nuclear Regulatory Commission ("NRC") in confidence and solely for the purpose of information to the NRC staff.

6. The referenced information is not available in public sources and could not be gathered readily from other publicly available information. Other than through the provisions in paragraph 3 above, MHI knows of no way the information could be lawfully acquired by organizations or individuals outside of MHI.

7. Public disclosure of the referenced information would assist competitors of MHI in their design of new nuclear power plants without incurring the costs or risks associated with the design of the subject systems. Therefore, disclosure of the information contained in the

referenced document would have the following negative impacts on the competitive position of MHI in the U.S. nuclear plant market:

A. Loss of competitive advantage due to the costs associated with the development of the test configuration, methodology and the test results. Providing public access to such information permits competitors to duplicate or mimic the methodology without incurring the associated costs.

B. Loss of competitive advantage of the US-APWR created by benefits of enhanced plant safety, and reduced operation and maintenance costs associated with the safety and the plant specific strainer system design.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information and belief.

Executed on this 19th day of November, 2010.

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

ATTACHMENT 1

FILE CONTAINED IN CD 1

CD 1: "US-APWR Sump Strainer Performance (MUAP-08001-P)" – Version Containing Proprietary Information

Contents of CD

File Name	Size	Sensitivity Level
001 MUAP-08001-P(R3).pdf	49.5 MB	Proprietary
002 MUAP-08001-P(R3).pdf	40.2 MB	Proprietary

ATTACHMENT 2

FILE CONTAINED IN CD 2

CD 2: "US-APWR Sump Strainer Performance (MUAP-08001-NP)" – Version Not Containing Proprietary Information

Contents of CD

File Name	Size	Sensitivity Level
001 MUAP-08001-NP(R3).pdf	6.2 MB	Non-Proprietary