MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

June 1, 2012

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-12139

Subject: **Transmittal of the Technical Report entitled "US-APWR Sump Debris Chemical Effects Test Results" (MUAP-08011, Revision 1)**

References:
[1] MHI Letter UAP-HF-11103, "Updated Closure Plan for Issues Associated with GSI-191 for the US-APWR Design Certification," dated December 21, 2011 (ML11362A464)..

[2] MHI Letter UAP-HF-12131, "MHI's 2nd Amended Response to US-APWR DCD RAI No. 815-5986 Revision 3 (SRP 06.03)," dated May 31, 2012.

[3] MHI Letter UAP-HF-12125, "Transmittal of the Technical Report entitled "US-APWR Sump Strainer Performance" (MUAP-08001, Revision 6), dated June, 2012.

[4] MHI Letter UAP-HF-08269, "Transmittal of the Technical Report entitled 'US-APWR Sump Debris Chemical Effects Test Results' (MUAP-08011)," dated November 28, 2008 (ML083390118).

The purpose of this letter is to formally transmit the revised Technical Report entitled "US-APWR Sump Debris Chemical Effects Test Results" (MUAP-08011, Revision 1) from Mitsubishi Heavy Industries, Ltd. ("MHI") to the U.S. Nuclear Regulatory Commission ("NRC") as scheduled on page 13 of Enclosure 2 of Reference 1.

MHI decided to change the post-LOCA Emergency Core Cooling System and Containment Spray System (ECCS/CS) recirculation flow path to the Refueling Water Storage (RWSP) in the containment vessel in order to ensure a certain delay of debris arrival to the reactor core after LOCA occurrence in association with the GSI-191 resolution for the US-APWR design. This design change is outlined in Enclosure 2 of Reference 2.

The following changes were made to the technical report to make its content consistent with the design change and the updates to Reference 3, the latest version (Revision 6) of MUAP-08001 "US-APWR Sump Strainer Performance" transmitted to the NRC on June 1, 2012:

1. Quantities of Debris Sources and Sump Water Chemistry Condition

   Table 3.3-2 "Chemistry Condition for US-APWR", Table 3.3-4 "Sump Debris Sources for US-APWR and Tests", and Table 3.3-5 "Quantity of Chemical Debris Coupons for Tests" were revised according to the change in the maximum recirculation water volume due to the design change.

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2. Sump Water Temperature Profile

   Figure 3.3-1 "Short Term of Recirculation Sump Water Temperature Profile" and Figure 3.3-2 "Long Term of Recirculation Sump Water Temperature Profile" were updated to be consistent with Figure 3-14 of MUAP-08011 Revision 6.

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 "[ ]".

This letter includes a copy of the proprietary version of the technical report (Enclosure 2), a copy of the non-proprietary version of the technical report (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 Mr. Joseph Tapia, General Manager of Licensing Department, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of this submittal. His contact information is provided below.

Sincerely,

Y. Ogata

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

Enclosures:

1. Affidavit of Yoshiki Ogata

2. CD 1: US-APWR Sump Debris Chemical Effects Test Results (MUAP-08011-P Rev.1)
   - Version Containing Proprietary Information

3. CD 2: "US-APWR Sump Debris Chemical Effects Test Results (MUAP-08011-NP Rev.1)
   - Version **Not** Containing Proprietary Information

The files contained on each CD are listed in Attachments 1 and 2 hereto.

CC: J. A. Ciocco
J. Tapia

Contact Information
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ENCLOSURE 1

Docket No.52-021
MHI Ref.: UAP-HF-12139

MITSUBISHI HEAVY INDUSTRIES, LTD.

AFFIDAVIT

I, Yoshiki Ogata, state as follows:

1. I am Director, 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 Sump Debris Chemical Effects Test Results" dated May, 2012, 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 design of the chemical effects evaluation and the strainer head loss and bypass test procedure related to the US-APWR 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 procedure. 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 1st day of June 2012.

Y. Ogata

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

ATTACHMENT 1

FILES CONTAINED IN CD 1

CD 1: "US-APWR Sump Debris Chemical Effects Test Results (MUAP-08011-P Rev. 1)" – Version Containing Proprietary Information

Contents of CD

File Name	Size	Sensitivity Level
001 MUAP-08011-P(R1).pdf	28 MB	Proprietary
002 MUAP-08011-P(R1).pdf	28 MB	Proprietary
003 MUAP-08011-P(R1).pdf	47 MB	Proprietary
004 MUAP-08011-P(R1).pdf	17 MB	Proprietary

ATTACHMENT 2

FILES CONTAINED IN CD 2

CD 2: "US-APWR Sump Debris Chemical Effects Test Results (MUAP-08011-NP Rev. 1)"
– Version Not Containing Proprietary Information

Contents of CD

File Name	Size	Sensitivity Level
001 MUAP-08011-NP(R1).pdf	26 MB	Non-Proprietary
002 MUAP-08011-NP(R1).pdf	28 MB	Non-Proprietary
003 MUAP-08011-NP(R1).pdf	33 MB	Non-Proprietary
004 MUAP-08011-NP(R1).pdf	6 MB	Non-Proprietary