MITSUBISHI HEAVY INDUSTRIES, LTD.
16-5, KONAN 2-CHOME, MINATO-KU
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-12125

Subject: **Transmittal of the Technical Report entitled "US-APWR Sump Strainer Performance" (MUAP-08001, Revision 6)**

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 2012.

[3] MHI Letter UAP-HF-12112, "MHI's Response to US-APWR DCD RAI No. 912-6335 Revision 3 (SRP 06.02.02)," dated April 27, 2012 (ML12122A039).

[4] MHI Letter UAP-HF-11286, "Transmittal of the Technical Report entitled 'US-APWR Sump Strainer Performance' (MUAP-08001, Revision 5)", dated August 31, 2011 (ML11255A145)

The purpose of this letter is to formally transmit the revised Technical Report entitled "US-APWR Sump Strainer Performance" (MUAP-08001, Revision 6) from Mitsubishi Heavy Industries, Ltd. ("MHI") to the U.S. Nuclear Regulatory Commission ("NRC") as scheduled in Enclosure 2 (p. 13) of Reference 1.

MHI implemented a design change in the recirculation flow path to close GSI-191 and justify the assumptions used in evaluation of the debris transportation time to the core. The outline of this design change is described in Enclosure 2 of Reference 2. This Technical Report was revised to address the recirculation flow path design change and the resulting impacts of this change, as follows:

1. RWSP water volume and hold-up water volume

   The recirculation flow path change increased the hold-up water volume. Therefore, MHI increased the RWSP water volume to maintain sufficient margin for sump strainer submergence.

2. Debris split ratio among four strainers

   The recirculation flow path change included changes to the RWSP return flow paths. Therefore, the debris split ratio between sump strainers was changed.

3. Chemical debris amount

   The recirculation flow path change increased the estimated maximum recirculation water volume, which in turn increased the chemical debris amount.

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4. Strainer head loss test conditions

   The sump strainer head loss test conditions were impacted due to the changes in debris split ratio and chemical debris amounts.

As proposed in the closure plan (Reference 1), MHI is planning to further revise the report to complete the resolution of GSI-191 upstream issues for the US-APWR. The next revision of the report will be submitted to the NRC by August 31, 2012. The next revision will include additional strainer head loss test results reflecting the change in debris conditions. In addition, MHI received an RAI regarding the use of viscosity scaling to predict head loss at higher temperatures and proposed a strategy to close this issue (Reference 3). MHI will also include this strategy in the next revision of the Technical Report.

The portions of the Technical Report to be updated in the next revision to address additional head loss testing and viscosity scaling are indicated in a separate mark-up included in Enclosure 3 ("Version with Head Loss and Viscosity Scaling Impacts Identified for Next Revision").

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. In addition, the proprietary versions (Enclosures 2 and 3) also include certain information, designated pursuant to the Commission guidance as sensitive unclassified non-safeguards information, referred to as security-related information ("SRI"), that is to be withheld from public disclosure under 10 C.F.R. § 2.390. The information that is SRI is identified by brackets.

A non-proprietary version of the document is also being submitted (Enclosure 4). In the non-proprietary version, both the SRI and proprietary content is omitted. Therefore, this version is suitable for public disclosure. In the public version, the SRI is replaced by the designation "[Security-Related Information – Withheld under 10 CFR 2.390]" and the information identified as proprietary is replaced by the designation "[ ]".

This letter includes a copy of the proprietary and SRI included version (Enclosure 2), a copy of the proprietary and SRI included version with impacts highlighted for the next revision (Enclosure 3), a copy of the non-proprietary and non-SRI version (Enclosure 4), and the Affidavit of Yoshiki Ogata (Enclosure 1) which identifies the reasons MHI respectfully requests that all materials designated as "Proprietary" in Enclosures 2 and 3 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. CD1: US-APWR Sump Strainer Performance (MUAP-08001-P Rev. 6)
   - Version Containing Proprietary Information and SRI

3. CD2: US-APWR Sump Strainer Performance (MUAP-08001-P Rev. 6)
   - Version with Head Loss and Viscosity Scaling Impacts Identified for Next Revision (Proprietary Version with SRI included)

4. CD3: US-APWR Sump Strainer Performance (MUAP-08001-NP Rev. 6)
   - Version **Not** Containing Proprietary Information or SRI

The file contained in each CD is listed in Attachments 1, 2, and 3 hereto.

CC: J. A. Ciocco
J. Tapia

Contact Information
Joseph Tapia, General Manager of Licensing Department
Mitsubishi Nuclear Energy Systems, Inc.
1001 19th Street North, Suite 710
Arlington, VA 22209
E-mail: joseph_tapia@mnes-us.com
Telephone: (703) 908 – 8055

ENCLOSURE 1

Docket No.52-021
MHI Ref: UAP-HF-12125

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 Strainer Performance" 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

FILE CONTAINED IN CD 1

CD 1: "US-APWR Sump Strainer Performance (MUAP-08001-P Rev. 6)" – Version Containing Proprietary Information and SRI

Contents of CD

File Name	Size	Sensitivity Level
001 MUAP-08001-P(R6).pdf	10.6 MB	Proprietary & SRI
002 MUAP-08001-P(R6).pdf	45.7 MB	Proprietary & SRI

ATTACHMENT 3

FILE CONTAINED IN CD 3

CD 3: "US-APWR Sump Strainer Performance (MUAP-08001-NP Rev. 6)" – Version Not Containing Proprietary Information or SRI

Contents of CD

File Name	Size	Sensitivity Level
001 MUAP-08001-NP(R6).pdf	6.0 MB	Non-Proprietary

ATTACHMENT 2

FILE CONTAINED IN CD 2

CD 2: "US-APWR Sump Strainer Performance (MUAP-08001-P Rev. 6)" – Version with Head Loss and Viscosity Scaling Impacts Identified for Next Revision (Proprietary Version with SRI Included)

Contents of CD

File Name	Size	Sensitivity Level
001 MUAP-08001-P(R6)(Impacts).pdf	10.4 MB	Proprietary & SRI
002 MUAP-08001-P(R6)(Impacts).pdf	45.7 MB	Proprietary & SRI