



MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

August 31, 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-12236

Subject: Transmittal of the Technical Report entitled "US-APWR Core Inlet Blockage Test for Test Conditions with Design Changes in Recirculation Water Flow Path to Refueling Water Storage Pit" (MUAP-12004, Revision 0)

- References:**
- 1) Updated Closure Plan for Issues Associated with GSI-191 for the US-APWR Design Certification, UAP-HF-11449, December 2011
 - 2) US-APWR Core Inlet Blockage Test Plan for Test Conditions in 2012, Revision 1, UAP-HF-12104, April 2012
 - 3) MHI's 2nd Amended Response to US-APWR DCD RAI No. 815-5986 Revision 3 (SRP 06.03), UAP-HF-12131, May 2012
 - 4) Request for Additional Information No.815-5986 Revision 3, SRP Section 06.03 - Emergency Core Cooling System Application Section: Chapter 6.3, August 2011
 - 5) Technical Report "US-APWR Additional Core Inlet Blockage Test", MUAP-11022-P Revision 0, October 2011
 - 6) Technical Report "US-APWR Sump Strainer Downstream Effects", MUAP-08013-P Revision 3, May 2012

This letter formally transmits the technical report entitled "US-APWR Core Inlet Blockage Test for Test Conditions with Design Changes in Recirculation Water Flow Path to Refueling Water Storage Pit" (MUAP-12004, Revision 0) from Mitsubishi Heavy Industries, Ltd. ("MHI") to the U.S. Nuclear Regulatory Commission ("NRC").

As proposed in the US-APWR GSI-191 Closure Plan (Reference 1) and CIB Additional Test Plan (Reference 2), this transmittal of MUAP-12004 Revision 0, is submitted to provide the results of the additional core inlet blockage testing which was performed in 2012 as a result of design changes in the recirculation water flow path to refueling water storage pit. The report incorporates MHI's responses (Reference 3) to the NRC's questions (Reference 4) on the technical report "US-APWR Additional Core Inlet Blockage Test", MUAP-11022-P Revision 0 (Reference 5) and "US-APWR Sump Strainer Downstream Effects", MUAP-08013-P Revision 3 (Reference 6).

MUAP-12004, Revision 0 provides confirmation that long-term core coolability is adequately maintained for the US-APWR design. The report includes test conditions and test results that address issues regarding downstream debris build-up within the reactor core.

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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 copies of the proprietary version of the report (Enclosure 2), the non-proprietary version of the 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. Joe Tapia, General Manager of the Licensing Department, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of this submittal. His contact information is below.

Sincerely,

A handwritten signature in black ink, appearing to read 'Y. Ogata', is written in a cursive style.

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

Enclosures:

1. Affidavit of Yoshiki Ogata
2. CD 1: "US-APWR Core Inlet Blockage Test for Test Conditions with Design Changes in Recirculation Water Flow Path to Refueling Water Storage Pit (MUAP-12004-P)"
– Version containing Proprietary information
3. CD 2: "US-APWR Core Inlet Blockage Test for Test Conditions with Design Changes in Recirculation Water Flow Path to Refueling Water Storage Pit (MUAP-12004-NP)"
– Version not containing Proprietary information

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

CC: J. A. Ciocco
J. Tapia

Contact Information

Joseph Tapia, General Manager of Licensing Department
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ENCLOSURE 1

Docket No.52-021
MHI Ref: UAP-HF-12236

MITSUBISHI HEAVY INDUSTRIES, LTD.

AFFIDAVIT

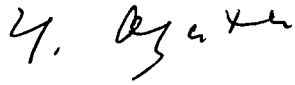
I, Yoshiki Ogata, state as follows:

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 Core Inlet Blockage Test for Test Conditions with Design Changes in Recirculation Water Flow Path to Refueling Water Storage Pit" dated August 2012, and have determined that portions of the document contains 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 information and analysis of the methodology related to testing and analysis, developed by MHI and not used in the exact form by any of 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 US-APWR test methodology and analysis development costs associated with the US-APWR sump strainer analysis.

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 31st day of August, 2012



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

ATTACHMENT 1

FILE CONTAINED IN CD 1

**CD 1: "US-APWR Core Inlet Blockage Test for Test Conditions with Design Changes in Recirculation Water Flow Path to Refueling Water Storage Pit (MUAP-12004-P)"
– Version Containing Proprietary Information**

Contents of CD

<u>File Name</u>	<u>Size</u>	<u>Sensitivity Level</u>
001 MUAP-12004-P(R0)(1_3).pdf	41MB	Proprietary
002 MUAP-12004-P(R0)(2_3).pdf	43MB	Proprietary
003 MUAP-12004-P(R0)(3_3).pdf	43MB	Proprietary

ATTACHMENT 2

FILE CONTAINED IN CD 2

**CD 2: “US-APWR Core Inlet Blockage Test for Test Conditions with Design Changes in Recirculation Water Flow Path to Refueling Water Storage Pit (MUAP-12004-NP)”
– Version Not Containing Proprietary Information**

Contents of CD

<u>File Name</u>	<u>Size</u>	<u>Sensitivity Level</u>
001 MUAP-12004-NP(R0).pdf	0.4 MB	Non-Proprietary