



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

December 26, 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-11443

Subject: Transmittal of the Technical Report entitled "US-APWR Additional Core Inlet Blockage Test" (MUAP-11022, Revision 0)

- Reference:**
- 1) MHI's response to US-APWR DCD RAI No. 716-5527 Revision 2, UAP-HF-11076, March 2011
 - 2) Technical Report "US-APWR Core Inlet Blockage Test", MUAP-10021-P Revision 0, November 2010
 - 3) Technical Report "US-APWR Sump Strainer Downstream Effects", MUAP-08013-P Revision 2, August 2011
 - 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

This letter formally transmits the technical report entitled "US-APWR Additional Core Inlet Blockage Test" (MUAP-11022, Revision 0) from Mitsubishi Heavy Industries, Ltd. ("MHI") to the U.S. Nuclear Regulatory Commission ("NRC").

This transmittal, MUAP-11022 Revision 0, is submitted to provide the results of additional core inlet blockage test which have been implemented and completed in September 2011. The report incorporates MHI's responses to the NRC's questions (Reference 1) on the technical report "US-APWR Core Inlet Blockage Test", MUAP-10021-P Revision 0 (Reference 2) and "US-APWR Sump Strainer Downstream Effects", MUAP-08013-P Revision 2 (Reference 3).

The report, "US-APWR Additional Core Inlet Blockage Test (MUAP-11022, 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.

The delay time, which is defined as the time for debris to flow from the RWSP to the core, is still under discussion (Reference 4). The report is based on the condition of having a delay time of 850 seconds.

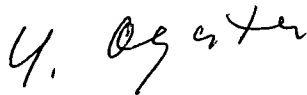
As indicated in the enclosed materials, this document contains information that MHI considers proprietary, and therefore should be withheld from public disclosure pursuant to 10 C.F.R. § 2.390 (a)(4) as trade secrets and commercial or financial information which is privileged or confidential. A non-proprietary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

DOB1
NRC

Enclosed are a copies of the proprietary version (Enclosure 2) and 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,
Director- APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

Enclosures:

1. Affidavit of Yoshiki Ogata
2. CD 1: "US-APWR Additional Core Inlet Blockage Test (MUAP-11022-P)"
– Version containing Proprietary information
3. CD 2: "US-APWR Additional Core Inlet Blockage Test (MUAP-11022-NP)"
– Version not containing Proprietary information

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

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

Contact Information

C. Keith Paulson, Senior Technical Manager
Mitsubishi Nuclear Energy Systems, Inc.
300 Oxford Drive, Suite 301
Monroeville, PA 15146
E-mail: ck_paulson@mnes-us.com
Telephone: (412) 373 – 6466

ENCLOSURE 1

Docket No.52-021
MHI Ref: UAP-HF-11443

MITSUBISHI HEAVY INDUSTRIES, LTD.

AFFIDAVIT

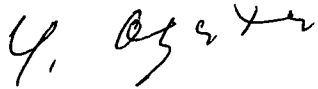
I, Yoshiki Ogata, state as follows:

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 Additional 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 core inlet blockage test, testing results related to the US-APWR specific design, developed by MHI and 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 fuel assembly 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 26th day of December, 2011.

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

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

ATTACHMENT 1

FILE CONTAINED IN CD 1

**CD 1: "US-APWR Additional Core Inlet Blockage Test (MUAP-11022-P)"
– Version Containing Proprietary Information**

Contents of CD

<u>File Name</u>	<u>Size</u>	<u>Sensitivity Level</u>
001 MUAP-11022-P(R0)(1_4).pdf	40MB	Proprietary
002 MUAP-11022-P(R0)(2_4).pdf	45MB	Proprietary
003 MUAP-11022-P(R0)(3_4).pdf	45MB	Proprietary
004 MUAP-11022-P(R0)(4_4).pdf	28MB	Proprietary

ATTACHMENT 2

FILE CONTAINED IN CD 2

**CD 2: "US-APWR Additional Core Inlet Blockage Test (MUAP-11022-NP)"
– Version Not Containing Proprietary Information**

Contents of CD

<u>File Name</u>	<u>Size</u>	<u>Sensitivity Level</u>
001 MUAP-11022-NP(R0).pdf	0.4 MB	Non-Proprietary