MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

January 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-12010

Subject: MHI's Response to US-APWR DCD RAI No. 888-6274 Revision 3 (SRP 15.4.3)

Reference: 1) "Request for Additional Information No. 888-6274 Revision 3, SRP Section: 15.04.03 - Control Rod Misoperation (System Malfunction or Operator Error) - Application Section: 15.4.3", dated January 17, 2012.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") the document entitled "MHI's Response to US-APWR DCD RAI No. 888-6274 Revision 3 (SRP 15.4.3)".

Enclosed is the response to the RAI contained within Reference 1.

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 RAI response (Enclosure 2), a copy of the non-proprietary version of the RAI response (Enclosure 3), and the Affidavit of Yoshiki Ogata (Enclosure 1) which identifies the reasons MHI respectfully requests that all material designated as "Proprietary" in Enclosure 2 be withheld from 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.

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NRO

Enclosures:

1. Affidavit of Yoshiki Ogata
2. MHI's Response to US-APWR DCD RAI No. 888-6274 Revision 3 (SRP 15.4.3) (proprietary)
3. MHI's Response to US-APWR DCD RAI No. 888-6274 Revision 3 (SRP 15.4.3) (non-proprietary)

CC: J. A. Ciocco
J. Tapia

Contact Information

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ENCLOSURE 1

Docket No. 52-021

MHI Ref: UAP-HF-12010

MITSUBISHI HEAVY INDUSTRIES, LTD.

AFFIDAVIT

I, Yoshiki Ogata, being duly sworn according to law, depose and 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 "MHI's Response to US-APWR DCD RAI No. 888-6274 Revision 3 (SRP 15.4.3)", dated January 31, 2012, and have determined that 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 information identified as "Proprietary" should be withheld from public disclosure pursuant to 10 C.F.R. § 2.390 (a)(4).

3. The basis for holding the referenced information confidential is that it describes the unique design of the safety analysis, developed by MHI (the "MHI Information").

4. The MHI Information is 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. Therefore public disclosure of the materials would adversely affect MHI's competitive position.

5. The referenced information has in the past been, and will continue to be, held in confidence by MHI and is always subject to suitable measures to protect it from unauthorized use or disclosure.

6. The referenced information is not available in public sources and could not be gathered readily from other publicly available information.

7. The referenced information is being furnished to the Nuclear Regulatory Commission ("NRC") in confidence and solely for the purpose of supporting the NRC staff's review of MHI's application for certification of its US-APWR Standard Plant Design.

8. Public disclosure of the referenced information would assist competitors of MHI in their design of new nuclear power plants without the costs or risks associated with the design and testing of new systems and components. Disclosure of the information identified as proprietary would therefore have negative impacts on the competitive position of MHI in the U.S. nuclear plant market.

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 January, 2012.

Y. Ogata

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

ENCLOSURE 3

UAP-HF-12010
Docket No. 52-021

MHI's Response to US-APWR DCD RAI No. 888-6274
Revision 3 (SRP 15.4.3)

January 2012

(Non-Proprietary)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

01/31/2012

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 888-6274 REVISION 3**
SRP SECTION:	**15.04.03 – CONTROL ROD MISOPERATION (SYSTEM MALFUNCTION OR OPERATOR ERROR)**
APPLICATION SECTION:	**15.4.3**
DATE OF RAI ISSUE:	**01/17/2012**

QUESTION NO.: 15.04.03-12

Follow-on to RAI 2346, Question No.15.4.3-5 from UAP-HF-09345

What static rod misalignment cases are denoted by the Table 15.4.3-5 footnote in UAP-HF-09345?

Describe the evaluated configurations or specify where, in the reload process/document (MUAP-07026), the description is included.

ANSWER:

In the response to Question 15.4.3-5 of RAI 310-2346, submitted by MHI letter UAP-HF-09345, MHI provided Table 15.4.3-5.1 showing the $F_{\Delta H}^{N}$ evaluation results for one or more misaligned RCCAs. The table used a footnote to state that the values in the table were the maximum values of all combinations of misaligned RCCAs within Control Bank-D. Additional explanation of the evaluated misalignment cases is provided as follows:

The limiting cases (in terms of $F_{\Delta H}^{N}$) for the one, two, and three RCCA misaligned cases are

provided in Table 15.4.3-5.1 in the Question 15.4.3-5 response.

The cases of 12 steps insertion for certain RCCA(s) combined with 12 steps withdrawal for the other RCCA(s) at the same time are not investigated, since these cases were considered to be bounded by or similar to the 24 steps insertion or withdrawal cases described above.

The reload process is described in Section 4.3.3 of MUAP-07026. MHI will revise this section to clearly reflect the evaluated cases denoted by the footnote in the previous RAI response.

Impact on DCD

There is no impact on the DCD.

Impact on R-COLA

There is no impact on the R-COLA.

Impact on S-COLA

There is no impact on the S-COLA.

Impact on PRA

There is no impact on the PRA.

Impact on Technical/Topical Report

MUAP-07026 Section 4.3.3 will be revised as shown below.

4.3.3 Control Rod Misoperation (System Malfunction or Operator Error)

Individual RCCA events include one or more dropped RCCAs, one or more misalignment RCCAs, and uncontrolled withdrawal of a single RCCA at full power.

The key safety input parameters for events that involve individual (single) RCCAs are [ ] Events considered are static misalignment, dropped rods, and rod withdrawal. The evaluation is performed to determine ~~the RCCA that produces~~[ ] considering a single RCCA is fully withdrawn or fully inserted, or one or more RCCAs misaligned by +/-24 steps. The evaluation is performed, at a minimum, for BOC and EOC burnup conditions,[

]

The analysis is performed with a 3D core model.

This completes MHI's response to the NRC's question.