


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

January 10, 2014

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Mr. Perry Buckberg

Docket No. 52-021
MHI Ref: UAP-HF-14005

Subject: MHI's Responses to US-APWR DCD Section 3.7 and 3.8 RAIs

Reference:

- 1) NRC request for additional information Letter "US-APWR Design Certification Application RAI 1044-7140 (3.8.4)," dated July 8th, 2013, ML13189A012
- 2) NRC request for additional information Letter "US-APWR Design Certification Application RAI 1045-7141 (3.8.5)," dated July 8th, 2013, ML13189A011
- 3) NRC request for additional information Letter "US-APWR Design Certification Application RAI 1050-7218 (3.7.2)," dated Aug 30th, 2013, ML13242A302
- 4) NRC request for additional information Letter "US-APWR Design Certification Application RAI 1051-7176 (3.8.3)," dated Aug 30th, 2013, ML13242A303
- 5) Letter MHI Ref. UAP-HF-13249 from Y. Ogata (MHI) to U.S. NRC, "MHI's Responses to US-APWR DCD Section 3.7 and 3.8," dated October 16th, 2013, ML13301A287.

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 Section 3.7 and 3.8 RAIs". The enclosed responses communicate MHI's answers to those questions posed in References 1 through 5 along with changes to various RAIs listed in attachment 3 to provide clarifications and responses to questions discussed during the November 2013 structural audit in Arlington, Virginia.

This letter includes a copy of the proprietary (non-public) version of RAI responses (Enclosure 2), a copy of the non-proprietary (public) version of the RAI responses (Enclosure 3), and the Affidavit of Katsuhisa Takaura (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 CFR § 2.390 (a)(4).

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

The proprietary version of the document includes certain information designated, pursuant to the Commission guidance, as sensitive unclassified non-safeguards information referred to

DO 81
NRD

as security-related information (SRI), that is to be withheld from public disclosure under 10 CFR § 2.390. The information that is SRI is identified by braces“{ }.” The non-proprietary version of the document omits the SRI and is suitable for public disclosure. In the public version of the document, the SRI is replaced by the designation “Security Related Information – Withheld Under 10 CFR 2.390”.

Attachment 1 provides a listing of files contained on compact disks (CDs) one and two (Enclosures 2 and 3) and a description of information sensitivity contained within responses. Attachment 2 provides a listing of those RAI responses contained in Enclosures 2 and 3. Attachment 3 provides a listing of revised RAI responses which MHI committed to revise during the structural audit.

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. Mr. Tapia's contact information is provided below.

Sincerely,

Handwritten signature of K. Takaura in black ink.

Yoshiki Ogata,
Executive Vice President
Mitsubishi Nuclear Energy Systems, Inc.
On behalf of Mitsubishi Heavy Industries, Ltd.

Enclosures:

1. Affidavit of Katsuhisa Takaura
2. CD1: MHI's Response to US-APWR DCD Section 3.7 and 3.8 RAIs– Proprietary and SRI included version
3. CD 2: MHI's Response to US-APWR DCD Section 3.7 and 3.8 RAIs– Non-Proprietary and SRI excluded version

CC: P. Buckberg
J. Tapia

Contact Information

Joseph Tapia, General Manager of Licensing Department
Mitsubishi Nuclear Energy Systems, Inc.
11405 North Community House Road, Suite 300
Charlotte, NC 28277
E-mail: joseph_tapia@mnes-us.com
Telephone: (704) 945-2740

ATTACHMENT – 1

FILES CONTAINED IN CDs

CD 1: MHI's Response to US-APWR DCD Section 3.7 and 3.8 RAIs – Proprietary version

Contents of CD1

| <u>File Name</u> | <u>Size</u> | <u>Sensitivity Level</u> |
|---|-------------|--------------------------|
| 1. Include proprietary information | | |
| RAI 1040-7139 Q03.08.01-21-P.pdf | 171 KB | Proprietary |
| RAI 905-6311 Q03.08.03-77-P.pdf | 746 KB | Proprietary |
| RAI 1051 7176 Q03.08.03-115-P.pdf | 12.6 MB | Proprietary |
| RAI 1044-7140 Q03.08.04-56-P.pdf | 3.03 MB | Proprietary |
| RAI 1045-7141 Q03.08.05-54-P.pdf | 109 KB | Proprietary |
| RAI 852-6003 Q03.07.02-113-P.pdf | 662 KB | Proprietary |
| 2. Include SRI | | |
| RAI 1024-7053 Q03.08.03-111-P.pdf | 5.46 MB | SRI included |
| 3. Others (No relating proprietary information) | | |
| RAI 1050-7218 Q03.07.02-227-P.pdf | 55.2 KB | None |
| RAI 1050-7218 Q03.07.02-230-P.pdf | 2.31 MB | None |
| RAI 490-3732 Q03.08.01-09-P.pdf | 461 KB | None |
| RAI 1040-7139 Q03.08.01-17-P.pdf | 78.9 KB | None |
| RAI 985-6948 Q03.08.03-104-P.pdf | 94.5 KB | None |
| RAI 1044-7140 Q03.08.04-55-P.pdf | 1.28 MB | None |
| RAI 340-2004 Q03.08.05-13-P.pdf | 60.4 KB | None |
| RAI 340-2004 Q03.08.05-14-P.pdf | 710 KB | None |
| RAI 1045-7141 Q03.08.05-51-P.pdf | 883 MB | None |
| RAI 489-3516 Q03.04.02-05-P.pdf | 68.8 KB | None |

**CD 2: MHI's Response to US-APWR DCD Section 3.7 and 3.8 RAIs – Non-proprietary
version**

Contents of CD2

| <u>File Name</u> | <u>Size</u> | <u>Sensitivity Level</u> |
|---|-------------|--------------------------|
| 1. Includes proprietary information | | |
| RAI 1040-7139 Q03.08.01-21-NP.pdf | 167 KB | Non-proprietary |
| RAI 905-6311 Q03.08.03-77-NP.pdf | 606 KB | Non-proprietary |
| RAI 1051 7176 Q03.08.03-115-NP.pdf | 499 KB | Non-proprietary |
| RAI 1044-7140 Q03.08.04-56-NP.pdf | 2.55 MB | Non-proprietary |
| RAI 1045-7141 Q03.08.05-54-NP.pdf | 106 KB | Non-proprietary |
| RAI 852-6003 Q03.07.02-113-NP.pdf | 660 KB | Non-proprietary |
| 2. Withheld SRI | | |
| RAI 1024-7053 Q03.08.03-111-NP.pdf | 4.43 MB | SRI excluded |
| 2. Others (No relating proprietary information) | | |
| RAI 1050-7218 Q03.07.02-227-NP.pdf | 55.2 KB | None |
| RAI 1050-7218 Q03.07.02-230-NP.pdf | 2.31 MB | None |
| RAI 490-3732 Q03.08.01-09-NP.pdf | 461 KB | None |
| RAI 1040-7139 Q03.08.01-17-NP.pdf | 78.9 KB | None |
| RAI 985-6948 Q03.08.03-104-NP.pdf | 94.5 KB | None |
| RAI 1044-7140 Q03.08.04-55-NP.pdf | 1.28 MB | None |
| RAI 340-2004 Q03.08.05-13-NP.pdf | 60.4 KB | None |
| RAI 340-2004 Q03.08.05-14-NP.pdf | 710 KB | None |
| RAI 1045-7141 Q03.08.05-51-NP.pdf | 883 KB | None |
| RAI 489-3516 Q03.04.02-05-NP.pdf | 68.3 KB | None |

ATTACHMENT – 2
LIST OF RAI RESPONSES

| RAI Letter No. | eRAI No. | Question No. | Question No. (Sub-number) |
|-----------------------|-----------------|---------------------|----------------------------------|
| 1044 | 7140 | 03.08.04-55 | |
| 1044 | 7140 | 03.08.04-56 | |
| 1045 | 7141 | 03.08.05-51 | |
| 1045 | 7141 | 03.08.05-54 | |
| 1050 | 7218 | 03.07.02-227 | |
| 1050 | 7218 | 03.07.02-230 | |
| 1051 | 7176 | 03.08.03-115 | |

ATTACHMENT - 3
LIST OF RAI RESPONSES

(MHI committed to revise during Nov. structural audit)

| RAI Letter No. | eRAI No. | Question No. | Question No. (Sub-number) |
|-----------------------|-----------------|---------------------|----------------------------------|
| 340 | 2004 | 03.08.05-13 | |
| 340 | 2004 | 03.08.05-14 | |
| 489 | 3516 | 03.04.02-05 | |
| 490 | 3732 | 03.08.01-09 | |
| 852 | 6003 | 03.07.02-113 | |
| 905 | 6311 | 03.08.03-77 | |
| 985 | 6948 | 03.08.03-104 | |
| 1024 | 7053 | 03.08.03-111 | |
| 1040 | 7139 | 03.08.01-17 | |
| 1040 | 7139 | 03.08.01-21 | |

Enclosure1

MITSUBISHI HEAVY INDUSTRIES, LTD. AFFIDAVIT

I, Katsuhisa Takaura, state as follows:

1. I am Manager, APWR Project of Global Nuclear Project 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 CFR § 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 Section 3.7 and 3.8 RAIs" dated January 2014, 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 CFR § 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 bases for holding the referenced information confidential are as follows:
 - A. They include the output of analyses used by mathematical models developed at significant cost to MHI, since it required the performance of detailed design calculations, supporting analyses, and testing. The information out of the analyses is not available in public sources and could not be gathered readily from other publicly available information.
 - B. They include the information that is provided to MHI pursuant to licensing agreements with third parties (the "Licensors") for MHI's use and under the obligation to maintain their confidentiality. Furthermore, MHI has an ownership interest in the referenced information by having paid significant sums of money to the Licensors for the rights to the intellectual property therein such that public disclosure of the materials would adversely affect MHI's competitive position.
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 development of the methodology of modeling and analysis for building structure design. Providing public access to such information permits competitors to duplicate or mimic the methodology without incurring the associated costs.

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 10th day of January, 2014.



Katsuhisa Takaura,
Manager- APWR Project
Of Global Nuclear Project Department
Mitsubishi Heavy Industries, LTD