MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

May 21, 2010

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-10137

Subject: **MHI's 2nd Response to the NRC's Request for Additional Information on Topical Report MUAP-07013-P (R0) "Small Break LOCA Methodology for US-APWR" on 3/22/2010**

Reference: 1) "REQUEST FOR ADDITIONAL INFORMATION ON TOPICAL REPORT MUAP-07013-P, 'SMALL BREAK LOCA METHODOLOGY FOR US-APWR'," dated March 22, 2010.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") an official document entitled 'MHI's 2nd Response to the NRC's Request for Additional Information on Topical Report MUAP-07013-P (R0) "Small Break LOCA Methodology for US-APWR" on 3/22/2010'. In the enclosed document, MHI provides the 2 (two) out of 7 (seven) items requested in Reference 1. The remaining response to the RAI was transmitted to the NRC by separate correspondence on April 21, 2010 (30 days after the issuance of the formal RAI), as agreed by NRC and MHI.

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 in this package (Enclosure 3). Any proprietary information that is written inside a bracket in the proprietary-version is replaced by the designation "[ ]" without any text, in the non-proprietary-version.

This letter includes a copy of proprietary version (Enclosure 2), a copy of non-proprietary version (Enclosure 3), and the Affidavit of Yoshiki Ogata (Enclosure 1) which identifies the bases of MHI request 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 this submittal. His contact information is provided below.

Sincerely,

Y. Ogata

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

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Enclosures:

1. Affidavit of Yoshiki Ogata

2. MHI's 2nd Response to the NRC's Request for Additional Information on Topical Report MUAP-07013-P (R0) "Small Break LOCA Methodology for US-APWR" on 3/22/2010 (proprietary)

3. MHI's 2nd Response to the NRC's Request for Additional Information on Topical Report MUAP-07013-P (R0) "Small Break LOCA Methodology for US-APWR" on 3/22/2010 (non-proprietary)

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

Contact Information
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ENCLOSURE 1

Docket No.52-021
MHI Ref: UAP-HF-10137

MITSUBISHI HEAVY INDUSTRIES, LTD.

AFFIDAVIT

I, Yoshiki Ogata, being duly sworn according to law, depose and state as follows:

1. I am General Manager, 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 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 "MHI's 2nd Response to the NRC's Request for Additional Information on Topical Report MUAP-07013-P (R0) 'Small Break LOCA Methodology for US-APWR' on 3/22/2010" and have determined that portions of the report 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 technical report 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 in the report identified as proprietary by MHI 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 codes and files developed by MHI for the fuel of the US-APWR and also contains information provided to MHI under license from the Japanese Government. These codes and files were developed at significant cost to MHI, since they required the performance of detailed calculations, analyses, and testing extending over several years. The referenced information is not available in public sources and could not be gathered readily from other publicly available information. MHI knows of no way the information could be lawfully acquired by organizations or individuals outside of MHI and the Japanese Government.

5. 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.

6. 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 of new fuel 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 21st day of May, 2010.

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

ENCLOSURE 3

UAP-HF-10137

MHI's 2nd Response to the NRC's Request for Additional Information on Topical Report MUAP-07013-P (R0) "Small Break LOCA Methodology for US-APWR" on 3/22/2010

May 2010
(Non-Proprietary)

REQUEST LS-4

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RESPONSE

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REQUEST LS-7

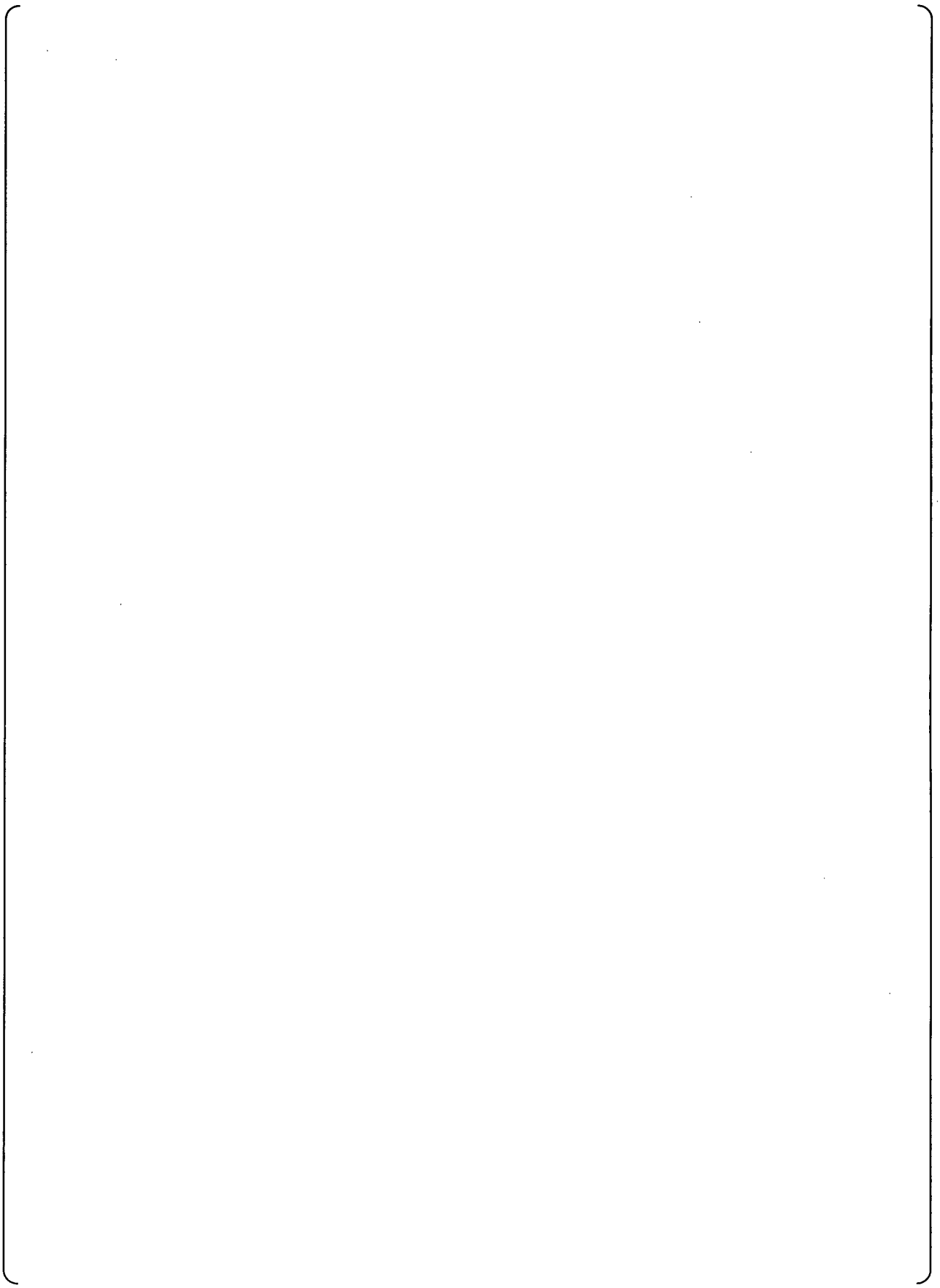
In the plant analysis it is necessary to predict the secondary side pressures from a description of the system characteristics. For both the LOFT and Semiscale assessments, MHI input the secondary pressures as boundary conditions. Explain why MHI performed all of the assessments of integral effects tests by predicting only the primary system response and not the complete system response.

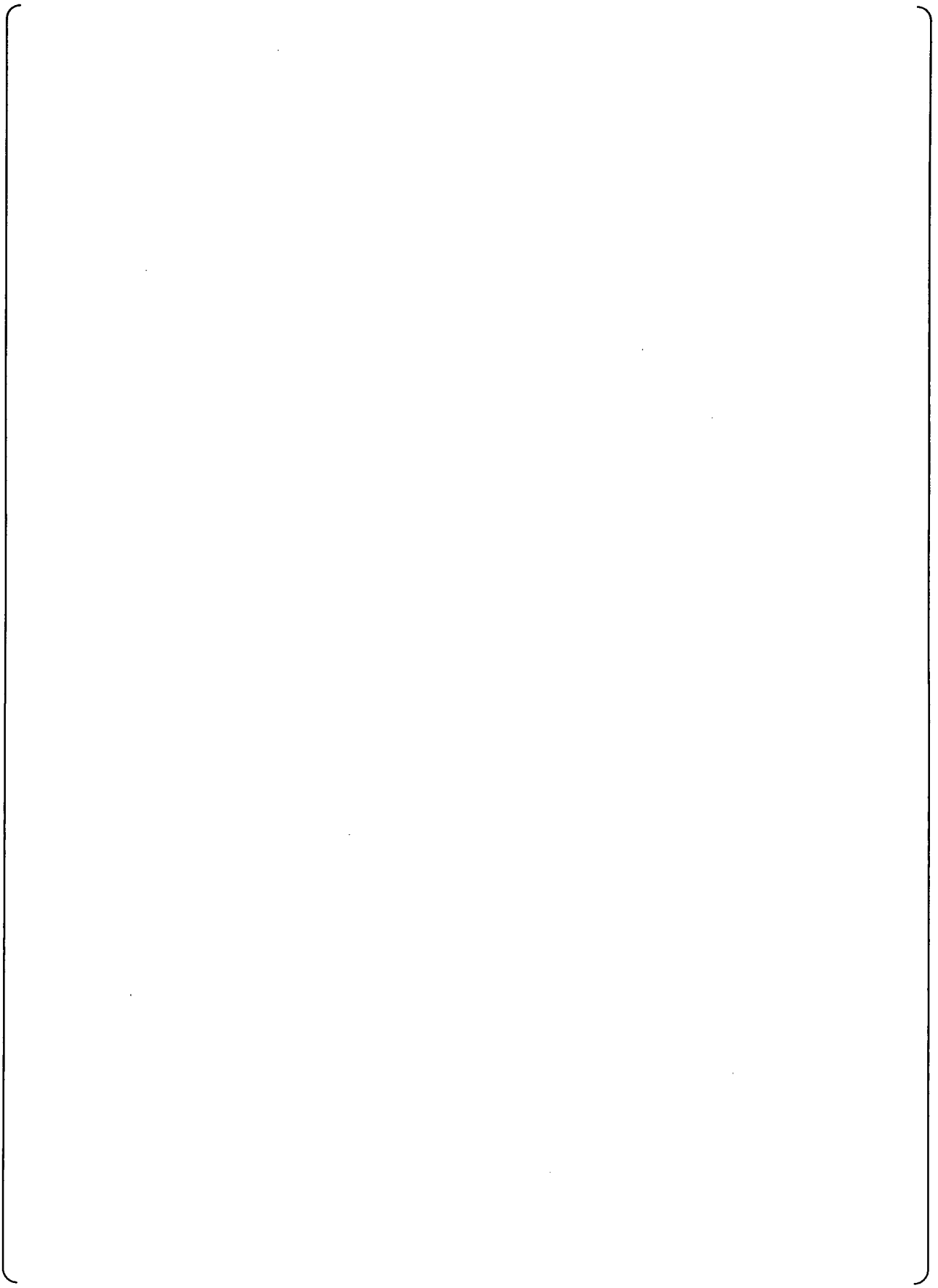
RESPONSE

Please refer to MHI's response to REQUEST LS-4 in the present report.

Appendix A:
Draft Scripts of M-RELAP5 LOFT L3-1 Calculation for MUAP-07013-P (R1)

This appendix explains M-RELAP5 code assessment using the LOFT L3-1 experimental data. Scripts in the present appendix will be inserted as Sections 5.2.2.4 and 8.2.4 in the upcoming revision 1 to the M-RELAP5 topical report MUAP-07013-P.





Appendix B:
Draft Scripts of M-RELAP5 Semiscale S-LH-1 Calculation for MUAP-07013-P (R1)

This appendix explains M-RELAP5 code assessment using the Semiscale SL-H-1 experimental data. Scripts in the present appendix will be inserted as Sections 5.2.2.5 and 8.2.5 in the upcoming revision 1 to the M-RELAP5 topical report MUAP-07013-P.