



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

July 20, 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-10209

Subject: Submittal of Technical Reports "JEXU-1021-6301-P MELTAC Platform Category2 Additional V&V Final Report", "JEXU-1025-3009-P(R0) MELTAC Platform FPGA V&V Final Report" and "JEXU-1022-6301-P(R0) MELTAC Platform Re-evaluation Program Report"

Reference: 1) "MITSUBISHI HEAVY INDUSTRIES, LTD. – REVIEW STATUS OF THE SAFETY SYSTEM DIGITAL PLATFORM -MELTAC-, TOPICAL REPORT MUAP-07005 (TAC NO. MD6878)," dated July 10, 2009.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") completion report for the NRC staff findings regarding MUAP-07005, "Safety System Digital Platform -MELTAC-, Revision 3", revision 0 of the Technical Report JEXU-1021-6301-P "MELTAC Platform Category2 Additional V&V Final Report", revision 0 of the Technical Report "JEXU-1025-3009-P(R0) MELTAC Platform FPGA V&V Final Report" and revision 0 of the Technical Report "JEXU-1022-6301-P(R0) MELTAC Platform Re-evaluation Program Report".

As indicated in the enclosed materials, these documents contains information that MELCO 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 each document is also being submitted in this package. In the non-proprietary version, the proprietary information, bracketed in the proprietary version, is replaced by the designation "[]".

This letter includes a copy of the proprietary versions (Enclosure 5), a copy of the non-proprietary versions (Enclosure 6), and the Affidavits of Katsumi Akagi (Enclosure 1, 2 and 3) which identify the reasons MELCO 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.

DOB
NRW

Sincerely,



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

Enclosure:

1. Affidavit of Katsumi Akagi
2. Affidavit of Katsumi Akagi
3. Affidavit of Katsumi Akagi
4. Completion Report for the NRC Staff Findings regarding MUAP-07005, "Safety System Digital Platform –MELTAC-, Revision 3"
5. CD 1: "JEXU-1021-6301-P(R0) MELTAC Platform Category2 Additional V&V Final Report", "JEXU-1025-3009-P(R0) MELTAC Platform FPGA V&V Final Report" and "JEXU-1022-6301-P(R0) MELTAC Platform Re-evaluation Program Report"
– Version containing Proprietary information
6. CD 2: "JEXU-1021-6301-NP(R0) MELTAC Platform Category2 Additional V&V Final Report", "JEXU-1025-3009-NP(R0) MELTAC Platform FPGA V&V Final Report" and "JEXU-1022-6301-NP(R0) MELTAC Platform Re-evaluation Program Report"
– Version not containing Proprietary information

The files contained in each CD are 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

MITSUBISHI ELECTRIC CORPORATION

AFFIDAVIT

I, Katsumi Akagi, state as follows:

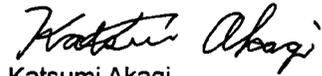
1. I am US-APWR Project Manager, Nuclear Power Department, of Mitsubishi Electric Corporation ("MELCO"), and have been delegated the function of reviewing MELCO's US-APWR documentation to determine whether it contains information that should be withheld from public disclosure pursuant to 10 C.F.R. § 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 "MELTAC Platform Category2 Additional V&V Final Report Revision 0" dated June 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 MELCO 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 V&V report of software for the digital platform "MELTAC", developed by MELCO and not used in the exact form by any of MELCO's competitors. This information was developed at significant cost to MELCO, 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, MELCO knows of no way the information could be lawfully acquired by organizations or individuals outside of MELCO.
7. Public disclosure of the referenced information would assist competitors of MELCO in their design of new nuclear power plants without incurring the costs or risks associated with the design and testing 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 MELCO in the U.S. nuclear plant market:

- A. Loss of competitive advantage due to the costs associated with development and testing of software for the MELTAC. Providing public access to such information permits competitors to duplicate or mimic the MELTAC design 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 MELTAC.

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 14th day of July, 2010.



Katsumi Akagi,
US-APWR Project Manager, Nuclear Power Department
Mitsubishi Electric Corporation

MITSUBISHI ELECTRIC CORPORATION

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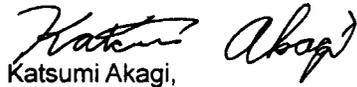
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Katsumi Akagi,
US-APWR Project Manager, Nuclear Power Department
Mitsubishi Electric Corporation

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2. In accordance with my responsibilities, I have reviewed the enclosed document entitled "MELTAC Platform Re-evaluation Program Report Revision 0" dated July 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).
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4. The basis for holding the referenced information confidential is that it describes the Re-evaluation Program report for the digital platform "MELTAC", developed by MELCO and not used in the exact form by any of MELCO's competitors. This information was developed at significant cost to MELCO, since it required the performance of Research and Development and detailed design for its software and hardware extending over several years.
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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 14th day of July, 2010.



Katsumi Akagi,
US-APWR Project Manager, Nuclear Power Department
Mitsubishi Electric Corporation

Enclosure 4

This is in completion report to "SUMMARY OF THE NRC STAFF FINDINGS REGARDING MUAP-07005, "SAFETY SYSTEM DIGITAL PLATFORM –MELTAC-, " REVISION 3" dated July 10, 2009.

In the above document, the NRC staff has identified significant issues in the following areas:

1. Quality Assurance
2. Language Translation
3. Technical

1. Quality Assurance

a) ... the staff disagrees with MHI's claim that the MELTAC system was developed in accordance with 10 CFR Part 50, Appendix B, requirements.

MELTAC Topical Report revision 4 [MUAP-07005(R4)] was submitted at the end of September 2009.

b) MHI's proposed use of operating experience as a surrogate for independent V&V is not acceptable.

The Category2 Additional V&V Final Report revision 0 [JEXU-1021-6301(R0)] was submitted in July 2010.

c) ...MHI and Mitsubishi Electric Co. need to provide objective evidence of a QA program that satisfactorily implements the requirements of 10 CFR Part 50, Appendix B, and demonstrates how the MELTAC platform was developed against that criteria.

The Re-evaluation Program Report revision 0 [JEXU-1022-6301(R0)] including the result of Phase 1, Phase 2 and Phase 3 was submitted in July 2010.

d) During the March 2009 audit, MHI's QA audit team identified several issues with Mitsubishi Electric's Co. QA practices that impact the staff's approval of the platform.

MHI audited MELCO's revised Quality Assurance Program (QAP), including procedures and training. MHI's supplemental QA audit report [PQG1-HD-21021] was submitted at the end of January 2010.

Also MHI's QA audit report [PQG-HD-22021] of the expanded phases was submitted at the end of June 2010.

2. Language Translation

a) The staff's expectation is that all documents needed during an audit should be properly translated into English so that the staff can perform an effective and efficient review of the documents.

The additional documents were translated at the end of January 2010.

b) Equipment labels, technical manuals, and the engineering computer software for MELTAC were not translated into English.

The equipment labels, technical manuals, and the engineering tool displays for MELTAC were translated at the end of June 2010.

3. Technical

a) FPGA firmware should be developed using an approved, QA-based development process similar to safety-related software.

The FPGA V&V Final Report revision 0 [JEXU-1025-3009(R0)] was submitted in July 2010.

b) Need to address in the TR, the basis for a permanent connection between the non-safety engineering tool and the safety-related MELTAC system, and the adequacy of a software-based communication control versus a hardware-based control.

The Software Safety Analysis Report revision 1 [JEXU-1015-1009(R1)] was submitted in October 2009.

c) Need to address in the TR, compliance to 10 CFR 50.55a (h) and 10 CFR Part 50, Appendix B, requirements regarding the identification of safety-related components versus those used in non-safety applications.

Identification of safety and non-safety components for documentation was performed. A module identified using hardware and software documents was produced on May 2010.

ATTACHMENT 1

FILES CONTAINED IN CD 1

**CD 1: "JEXU-1021-6301-P(R0) MELTAC Platform Category2 Additional V&V Final Report", "JEXU-1025-3009-P(R0) MELTAC Platform FPGA V&V Final Report" and "JEXU-1022-6301-P(R0) MELTAC Platform Re-evaluation Program Report"
– Version containing proprietary information**

Contents of CD

<u>File Name</u>	<u>Size</u>	<u>Sensitivity Level</u>
JEXU-1021-6301-P_R0.pdf	0.4MB	Proprietary
JEXU-1025-3009-P_R0.pdf	0.4MB	Proprietary
JEXU-1022-6301-P_R0.pdf	0.9MB	Proprietary

ATTACHMENT 2

FILES CONTAINED IN CD 2

CD 2: "JEXU-1021-6301-NP(R0) MELTAC Platform Category2 Additional V&V Final Report", "JEXU-1025-3009-NP(R0) MELTAC Platform FPGA V&V Final Report" and "JEXU-1022-6301-NP(R0) MELTAC Platform Re-evaluation Program Report"
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Contents of CD

<u>File Name</u>	<u>Size</u>	<u>Sensitivity Level</u>
JEXU-1021-6301-NP_R0.pdf	0.2MB	Non-proprietary
JEXU-1025-3009-NP_R0.pdf	0.2MB	Non-proprietary
JEXU-1022-6301-NP_R0.pdf	0.4MB	Non-proprietary