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December 22, 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-10341

Subject: MHI's Response to US-APWR DCD RAI No. 665-5220 Revision 0 (SRP 07-14)

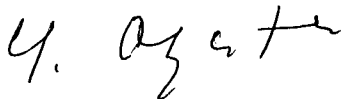
Reference: 1) "Request for Additional Information No. 665-5220 Revision 5, SRP Section: 07-14 Branch Technical Position – Guidance on Software Reviews for Digital Computer-Based Instrumentation and Controls Systems - Application Section: Section B.3.1.9" dated November 22, 2010.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Response to Request for Additional Information No. 665-5220 Revision 5."

Enclosed is the response to a question contained within Reference 1.

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

Enclosure:

1. Response to Request for Additional Information No. 665-5220 Revision 5

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

Contact Information

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Enclosure 1

UAP-HF-10341
Docket No. 52-021

Response to Request for Additional Information No. 665-5220
Revision 5

December, 2010

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

12/22/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 665-5220 REVISION 5

SRP SECTION: 07-14 BRANCH TECHNICAL POSITION - GUIDANCE
ON SOFTWARE REVIEWS FOR DIGITAL COMPUTER-
BASED INSTRUMENTATION AND CONTROLS
SYSTEMS

APPLICATION SECTION: B.3.1.9

DATE OF RAI ISSUE: 11/22/2010

QUESTION NO. : 07-14 Branch Technical Position-42

Criterion III, Design Control, of 10 CFR 50, Appendix B, requires measures to ensure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures and instructions. Also, RG 1.173 specifies additional activities beyond those identified by IEEE Std 1074-1995, which it endorses, to ensure safety system development is consistent with defined system safety analyses.

The MELTAC Basic Software Safety Report, JEXU-1015-1009-P(R3), is found to not be the type of document described by this regulatory guidance, or staff guidance, for a software safety analysis. This is because it does not describe, per RG 1.173, the types of software safety analyses, by inputs, outputs or activity description, or how this analysis was done in each phase of the software development life cycle.

Also, this document does not describe the types of analyses performed as cited in NUREG/CR-6101 by BTP 7-14, Section B.3.1.9.

The safety analyses that were done for the MELTAC Basic Software should be explained in the commercial grade dedication report in each phase, with the differences to all staff guidance noted and adequately explained. Also, for future MELTAC Basic Software development activities, the software safety plan should adequately present the software safety analyses which will be done and how each attribute in staff guidance is met.

Therefore, this document should be retitled "Analysis of the MELTAC Basic Platform to Guidance of ISG-04" as ISG-04 is the only identified guidance within the document, which is not consistent with a software safety analysis, and will only be used by the staff for compliance to ISG-04.

ANSWER:

MELCO has identified three specific requests in the RAI as below.
Our response to each request is as follows.

- 1) Evaluation of the past safety analysis of the MELTAC platform should be in the CGD Report.

MELCO will develop a Software Safety Analysis Re-evaluation (SSAR) Report to evaluate whether past safety analysis of the MELTAC platform conforms to staff guidance (R.G. 1.173

and NUREG/CR-6101). This report will be separate from the current MELTAC Re-evaluation Program (MRP) Report, JEXU-1022-6301.

The current version of the MRP Report includes the results of the evaluation in accordance with the commercial grade dedication guidelines of EPRI-TR106439 and EPRI-TR107330, which do not require an evaluation of conformance to R.G. 1.173 and NUREG/CR-6101.

- 2) The software safety plan (SSP) should be established to ensure that software safety analysis for future MELTAC development will be performed in accordance with staff guidance:
 - R.G. 1.173;
 - BTP 7-14 B3.1;
 - NUREG/CR-6101.

The current SSP documented in Section 3.9 of the MELTAC Platform Basic Software Program Manual (SPM), JEXU-1012-1132 Rev 1, was written to conform to the guidance of BTP 7-14 and R.G. 1.173. But it does not specifically describe conformance to NUREG/CR-6101. MELCO will revise the MELTAC SPM to clearly describe compliance with NUREG/CR-6101. This addition will ensure future MELTAC development activities meet applicable staff guidance.

- 3) The analysis in the current SSR is not in accordance with staff guidance (see No. 2). The document should be retitled to "Analysis of the MELTAC Basic Platform to Guidance of ISG-04" as any other applicable guidelines are not covered.

MELCO will retitle the document "MELTAC Platform Basic Analysis of Software Safety Hazards (including hazards in ISG-04)."

With this title change, other documents that reference this document will need to be updated.

Impact on DCD

There is no impact on the DCD.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.

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