

January 20, 2012

APPLICANT: MITSUBISHI HEAVY INDUSTRIES, LTD.

APPLICATION: UNITED STATES - ADVANCED PRESSURIZED WATER REACTOR  
DESIGN CONTROL DOCUMENT

SUBJECT: SUMMARY OF THE APRIL 6–7, 2011, CLOSED AND PUBLIC  
MEETING WITH MITSUBISHI HEAVY INDUSTRIES, LTD. TO DISCUSS  
THE REVIEW STATUS AND DESIGN CHANGES RELATED TO THE  
UNITED STATES - ADVANCED PRESSURIZED WATER REACTOR  
DIGITAL INSTRUMENTATION AND CONTROLS

On April 6–7, 2011, a closed Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC), Mitsubishi Heavy Industries, Ltd. (MHI), Mitsubishi Nuclear Energy Systems, Inc., and members of the public. The meeting was held at the NRC Headquarters, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The purpose of the meeting was to discuss issues related to planned design changes and the current status of the NRC staff's review of the United States - Advanced Pressurized Water Reactor (US-APWR) Digital Instrumentation and Controls (DI&C) Design. The meetings were announced on March 24, 2011, as documented in the Agencywide Documents Access and Management System (ADAMS) under accession number ML110830756. A list of attendees is provided as Enclosure 1.

On April 6, 2011, the meeting began as an open meeting to discuss the status of the review of the Software Program Manuals (SPMs). There were two members of the public present. Using Enclosure 2, MHI described how they were accepting staff's suggestion to withdraw the Basic SPM (B-SPM) while moving any required information in it to the Application SPM. Details were discussed and MHI made some commitments regarding the consolidation and future SPM changes. Staff agreed and accepted the approach. Augmented quality issues were then discussed with staff asking a question about equipment classes as defined in existing and planned Design Control Document (DCD) tables and equipment not listed in those tables. MHI took the issue for further review before adding or revising any of the tables.

Data communication issues were discussed, including coordination with DCD Chapter 18 and the Human Factors Engineering (HFE) Topical Report (MUAP-07007). MHI explained their decision to add two new Spatially Dedicated Continuously Visible (SDCV) Visual Display Units (VDUs). Staff discussed how Interim Staff Guidance (ISG)-04 requires that the additional VDUs must enhance reactor safety and this must be demonstrated in the supporting documentation. Also, the newest ISG-04 Conformance Analysis document, JEXU-1015-1009P (R4) Preliminary, should have change bars added so the staff can determine what has changed. The staff pointed out a few examples. There was additional discussion related to draft or planned amended RAI responses, including: interlocks, bypass and permissive logic circuits; terminology clarification; clarification of requirements for Combined License applicants to provide lifecycle documentation on embedded components; automatic non-safety signals to ESFAS & SLS; PSMS manual testing and calibration features.

In the afternoon, the meeting was closed to the public to discuss proprietary details of design features. MHI presented the proprietary presentation, "Explanation for Additional Technical Information Requested in the Previous Discussion," which included details on: interrupts related to self-diagnostics, remaining time diagnostics, and Control Network Firmware Description. The meeting ended with a brief discussion about the status of various planned submittals and the appropriateness and regulatory basis of external event consideration in MHI's Defense-in-Depth and Diversity (D3) Coping Analysis. The staff and MHI will discuss this topic in future meetings.

On April 7, 2011, the meeting began as an open meeting to discuss Post Accident Monitoring (PAM) variables as part of Request for Additional Information (RAI) 568-4588, Question 07.05-18 (see Enclosure 3). Staff discussed the original RAI followed by MHI's presentation on a proposed response (see Enclosure 4). MHI stated that the list is intended as a bounding, not final, list which may be reduced once emergency operating procedures were created. Staff determined that more internal discussion was needed to finalize staff's position on the list. Other portions of the proposed response also need additional discussion/resolution before it can be closed.

The rest of the morning and beginning of the afternoon portion were spent discussing many other RAIs, including proposed responses or the status of staff's review of submitted responses. In many cases, MHI was told that the proposed response was acceptable and that it should be submitted. The discussion also clarified some questions and MHI was instructed how to respond with an amended RAI response. RAIs on the SPMs were discussed, including the effect of the withdrawal of the B-SPM. MHI was reminded that deviations from the standard review plans (NUREG-0800) need to be clear and justified. There was a brief discussion on the future inspection of the B-SPM and MELTAC Platform Re-evaluation Program (MRP) by the inspection branch and the preparations to be made. Action items from prior calls and meetings were reviewed and their status updated. Conference calls will continue once the public notice is issued.

All parties agreed that the next public meeting would be held on May 11 and 12, 2011.

Please direct any inquiries to me at 301-415-7038, or via e-mail at [William.Ward@nrc.gov](mailto:William.Ward@nrc.gov).

Sincerely,

*/RA/*

William R. Ward, Senior Project Manager  
US-APWR Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors

Docket No. 52-021

Enclosures:

1. List of Attendees
2. MHI Position on Basic SPM Withdrawal Issue  
(ADAMS Accession No. ML111010221)
3. RAI 568-4588, Question 07.05-18 – Bases for Pam variables  
(ADAMS Accession No. ML111010570)
4. Response to Questions of PAM  
(ADAMS Accession No. ML111010227)

cc w/encl: See next page

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3. RAI 568-4588, Question 07.05-18 – Bases for Pam variables  
(ADAMS Accession No. ML111010570)
4. Response to Questions of PAM  
(ADAMS Accession No. ML111010227)

cc w/encl: See next page

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**NRC-001**

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<b>DATE</b>	1/20/2012	1/17/2012	1/20 /2012

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List of Attendees

Closed and Public Meetings with Mitsubishi Heavy Industries, Ltd. to Discuss the Status  
of the Digital Instrumentation and Controls Design Review for the United States –  
Advanced Pressurized Water Reactor, Held April 6 - 7, 2011

<u>NAME</u>	<u>AGENCY/AFFILIATION</u>	<u>Apr 6</u>	<u>Apr 7</u>
Jana Bergman	Sciencetech	X	X
William Freebairn	Nucleonics Week	X	
Robert Atkinson	Dominion Virginia Power	X	X
Gina Borsh	Dominion Virginia Power		X
Marc Hotchkiss	Dominion Virginia Power	X	
Robert Reible	Luminant Generation Company, LLC.	X	X
Janardan Amin	Luminant Generation Company, LLC.	X	X
Hozumi Kadohara	Mitsubishi Electric Company	X	X
Makoto Itoh	Mitsubishi Electric Company	X	X
Hitomi Sasaki	Mitsubishi Electric Company	X	
Kazufumi Yoshida	Mitsubishi Electric Company	X	
Jim Dolfi (phone)	Mitsubishi Electric Power Products, Inc.	X	X
Chad Modro (phone)	Mitsubishi Electric Power Products, Inc.	X	X
Gil Remley	Mitsubishi Electric Power Products, Inc.	X	X
Gyota Yasoda	Mitsubishi Electric Power Products, Inc.	X	
Makoto Takashima	Mitsubishi Heavy Industries, Ltd.	X	X
Yuji Maruta	Mitsubishi Heavy Industries, Ltd.	X	X
C. Keith Paulson	Mitsubishi Nuclear Energy Systems, Inc.	X	X
Hiroshi Shirasawa	Mitsubishi Nuclear Energy Systems, Inc.	X	
Ryan Sprengel	Mitsubishi Nuclear Energy Systems, Inc.		X
Ken Scarola	Mitsubishi Nuclear Energy Systems, Inc. / NAE	X	X
Joseph Ashcraft	U.S. Nuclear Regulatory Commission	X	X
Royce Beacom	U.S. Nuclear Regulatory Commission	X	X
Jeff Ciocco	U.S. Nuclear Regulatory Commission	X	
Hossein Hamzehee	U.S. Nuclear Regulatory Commission	X	X
Ian Jung	U.S. Nuclear Regulatory Commission	X	X
Hulbert Li	U.S. Nuclear Regulatory Commission	X	X
Erick Martinez	U.S. Nuclear Regulatory Commission	X	X
Khoi Nguyen	U.S. Nuclear Regulatory Commission	X	X
Sang Rhow	U.S. Nuclear Regulatory Commission		X
Daniel Santos	U.S. Nuclear Regulatory Commission	X	
Dinesh Taneja	U.S. Nuclear Regulatory Commission	X	X
William Ward	U.S. Nuclear Regulatory Commission	X	X

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