

April 22, 2011

APPLICANT: MITSUBISHI HEAVY INDUSTRIES, LTD.

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

SUBJECT: SUMMARY OF THE DECEMBER 10, 2010, PUBLIC MEETING WITH MITSUBISHI HEAVY INDUSTRIES LTD. TO DISCUSS THE STATUS OF THE UNITED STATES - ADVANCED PRESSURIZED WATER REACTOR DIGITAL INSTRUMENTATION AND CONTROLS DESIGN REVIEW

On December 12, 2010, a 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 the status of the NRC staff's review of United States - Advanced Pressurized Water Reactor Digital Instrumentation and Controls (I&C) Design and for MHI to present its proposed path forward to resolve the key open issues. This meeting was publicly noticed on November 22, 2010, as documented in the Agencywide Documents Access and Management System (ADAMS) under accession number ML103260361. A list of attendees is provided as Enclosure 1.

This meeting focused on the discussion of key open issues that have significant licensing schedule uncertainties and planning for upcoming interactions. After opening comments and schedule discussions, the meeting began with a presentation by the NRC staff which is provided as Enclosure 2 and is located in ADAMS under accession number ML103470457. The major topics included feedback on the Software Program Manuals (SPMs) and other submissions, feedback on the communications independence design issue, commercial grade dedication, and the overall review status.

By letter dated September 30, 2010, MHI submitted revisions to the SPMs as a commitment made in its August 27, 2010, closure plan letter to resolve one of the key issues associated with the I&C system. The NRC staff reviewed the revised SPMs and found that they do not resolve the cited information needs and remain unacceptable to commence a detailed review. Specifically, the SPMs did not provide sufficient information for the NRC staff to make a safety determination regarding software development and that the manuals would need to be revised with more information following established agency guidance. The review results were discussed in detail. Of particular interest was the software verification and validation (V&V) process including the NRC staff performing the V&V and their budget and reporting independence. MHI committed to provide a clearer description which would satisfy the NRC staff.

During the discussion, the NRC staff informed MHI that a letter would be issued formalizing the details of the review. The NRC staff also noted that the estimated time which was necessary to provide acceptable SPMs and time that the NRC staff needs to review them, would make them

the critical path of the review process. Schedule and process variations which would reduce the overall review time were evaluated with MHI stating that they would determine their path forward after the meeting. Meanwhile, the NRC staff will continue their review of other I&C areas.

The NRC staff provided feedback on their findings for the I&C design, specifically, data communications independence. The NRC staff re-iterated their position regarding the complexity of the design and the bi-directional communication between non-safety components and safety systems and the use of Operational Visual Display Units (O-VDUs) to perform safety functions. The NRC staff also reviewed the applicable regulatory requirements such as Title 10 of the *Code of Federal Regulations*, Part 50.55a(h), General Design Criteria 24, Interim Staff Guidance-04, and industry standards. Due to the I&C design complexity, there would be more Requests for Additional Information (RAIs) and a longer review. The NRC staff also reminded MHI that they could improve the review schedule certainty by simplifying the design and providing a better justification for, or eliminating, the bi-directional communications.

The final topic discussed was commercial grade dedication (CGD) and quality assurance (QA). Various approaches to finalizing and closing the CGD and QA issues were considered. No commitments were made during the discussion.

The meeting concluded with a discussion on the path forward, including when the next RAIs would be issued. It was agreed that there should be another public meeting in January 2011, with the mentioning of possible topics to be considered for the meeting agenda. The NRC staff acknowledged that MHI is making progress towards a resolution of the issues and welcomed the plan for more frequent communications to expedite the review.

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:  
As stated

cc w/encl: See next page

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William R. Ward, Senior Project Manager  
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<b>DATE</b>	04/20/11	04/20/11	04/ 21/11	04/22/11

List of Attendees

Meeting 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 on December 10, 2010

<u>NAME</u>	<u>AGENCY/AFFILIATION</u>
Alan Levin	AREVA
Chad Wilhelm	Bechtel
Mark Scansen	Bechtel
Robert Atkinson	Dominion Virginia Power
Timothy Butler	Dominion Virginia Power
Wayne Donne	Dominion Virginia Power
Kenjiro Aono	JNES
Michael Chinworth	JNES
Hitomi Nasu	Mitsubishi Electric Company
Hozumi Kadohara	Mitsubishi Electric Company
Katsumi Akagi	Mitsubishi Electric Company
Makoto Ito	Mitsubishi Electric Company
Yukiko Hirano	Mitsubishi Electric Company
Chad Modro (by phone bridge)	Mitsubishi Electric Power Products, Inc.
Gil Remley	Mitsubishi Electric Power Products, Inc.
Gyota Yasoda	Mitsubishi Electric Power Products, Inc.
Jim Dolfi (by phone bridge)	Mitsubishi Electric Power Products, Inc.
Bruce Geddes	Mitsubishi Heavy Industries, Ltd.
Makoto Takashima	Mitsubishi Heavy Industries, Ltd.
Yuichi Tanaka	Mitsubishi Heavy Industries, Ltd.
C. Keith Paulson	Mitsubishi Nuclear Energy Systems, Inc.
Hiroshi Shirasawa	Mitsubishi Nuclear Energy Systems, Inc.

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Windell Cox	Mitsubishi Nuclear Energy Systems, Inc.
Ken Scarola	Mitsubishi Nuclear Energy Systems, Inc. / NAE
Dinesh Taneja	United States Nuclear Regulatory Commission
Erick Martinez	United States Nuclear Regulatory Commission
Hossein Hamzehee	United States Nuclear Regulatory Commission
Hulbert Li	United States Nuclear Regulatory Commission
Ian Jung	United States Nuclear Regulatory Commission
Joe Ashcraft	United States Nuclear Regulatory Commission
Khoi Nguyen	United States Nuclear Regulatory Commission
Kimberley Corp	United States Nuclear Regulatory Commission
Ngola Otto	United States Nuclear Regulatory Commission
Royce Beacom	United States Nuclear Regulatory Commission
Terry Jackson	United States Nuclear Regulatory Commission
Truong Tung	United States Nuclear Regulatory Commission
William Ward	United States Nuclear Regulatory Commission
Matthew Shakun	Westinghouse

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(Revised 04/19/2011)

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