

December 6, 2012

MEMORANDUM TO: Hossein Hamzehee, Chief
Licensing Branch 2
Division of New Reactor Licensing
Office of New Reactors

FROM: William Ward, Senior Project Manager */RA/*
Licensing Branch 2
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: AUDIT REPORT REGARDING CHAPTER 7, DIGITAL
INSTRUMENTATION AND CONTROLS, OF THE UNITED STATES -
ADVANCED PRESSURIZED WATER REACTOR DESIGN
CERTIFICATION DOCUMENT

As part of its review of the United States - Advanced Pressurized Water Reactor (US-APWR) Design Certification (DC) application, during the week of December 12 - 16, 2011, a team from the Instrumentation and Controls (I&C) Branches of the Division of Engineering performed an audit at the Mitsubishi Electric Corporation facilities in Kobe, Japan. The purpose of the audit was to examine and evaluate non-docketed details of the digital I&C systems, including development processes that support the staff's reasonable assurance of safety findings in the following areas:

1. Digital data communication independence.
2. Deterministic performance of digital I&C systems.
3. Implementation of watchdog timers.
4. Digital I&C system application software development process.
5. Integration of MELTAC basic software into the US-APWR application software for safety I&C systems.
6. Follow-up on March 2009, US-APWR digital I&C system regulatory audit findings (ML093240406).

The plan for this audit, dated November 22, 2011, is documented and can be found in the Agencywide Document Access and Management System (ADAMS) under accession number ML113220196. The results of the audit are documented in Enclosures 1. A List of Attendees is provided as Enclosure 2. A List of Documents Made Available to the Nuclear Regulatory Commission (NRC) Staff is provided as Enclosures 3. The NRC audit team found the applicant's staff very cooperative and forthcoming in their support of this audit.

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H. Hamzehee

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Docket No. 52-021

Enclosures:

1. Digital Instrumentation and Controls Design Audit Report (Proprietary)
1. Digital Instrumentation and Controls Design Audit Report (Non-Proprietary)
2. Attendees at NRC Digital; Instrumentation and Controls Audit December 12-16, 2011, Kobe, Japan
3. List of Documents made available to NRC Staff (Proprietary)
3. List of Documents made available to NRC Staff (Non-Proprietary)

cc w/ enclosures 1 (Non-Proprietary), 2, 3 (Non-Proprietary)

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 ..ML12291A673 - Enclosure 1 (Non-Proprietary)
 ..ML12218A002 - Enclosure 2
 ..ML12218A003 - Enclosure 3 (Proprietary)
 ..ML12291A798 - Enclosure 3 (Non-Proprietary) via email* NR0-002

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DATE	11/15/2012	11/20/2012	11/15/2012	12/04/2012	12/06/2012

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(Revised 11/28/2012)

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