

February 28, 2013

Mr. Yoshiki Ogata, General Manager
APWR Promoting Department
Mitsubishi Heavy Industries, Ltd.
16-5, Konan 2-Chome, Minato-Ku
Tokyo, 108-8215 Japan

SUBJECT: UNITED STATES - ADVANCED PRESSURIZED WATER REACTOR
TECHNICAL SPECIFICATIONS

Dear Mr. Ogata:

The purpose of this letter is to document the U.S. Nuclear Regulatory Commission (NRC or Commission) staff's position that the Safety Injection System (SIS) availability and containment closure, during shutdown and refueling operations when the refueling cavity is not flooded, requires a Technical Specification (TS).

The core damage frequency and large release frequency of the United States - Advanced Pressurized Water Reactor (US-APWR), assuming the above two mitigation paths are absent, may exceed the Commission's goals for new reactors. The NRC staff issued two RAIs related to MHI's application of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.36(c)(2)(ii)(D), Criterion 4 to the US-APWR systems, structures and components (SSCs). RAI 669-5219, Question 19-494, requested that MHI consider adding shutdown TS for SSCs in accordance with 10 CFR 50.36(c)(2)(ii)(D), Criterion 4, in order to satisfy the Commission's goals. RAI 161-1812, Question 16-117, requested information regarding how MHI applied 10 CFR 50.36(c)(2)(ii)(D), Criterion 4, and what SSCs were added as a result. In its response dated February 8, 2012, MHI listed three systems that did not meet the Commission's goals when unavailable: alternate alternating current Gas Turbine Generators (GTGs) during power operation providing back up to the Class 1E GTGs; the demineralized water storage tank during power operation providing back up to the emergency feed water pits water source; and the safety injection pump and associated water source during cold shutdown and refueling conditions providing reactor system makeup water (which is the only water source for this function). MHI proposed that administrative controls be applied to these systems in order to meet the Commission's goals. Due to the risk significance and operating experience relating to the need for reactor system makeup water and containment closure during reduced inventory operations, the staff concludes that options for the TS Limiting Condition of Operations (LCOs), for the SIS and containment closure when the refueling cavity is not flooded are required under 10 CFR 50.36(c)(2)(ii)(D), Criterion 4.

Additionally, Generic Letter 88-17, which provides guidance and the NRC staff's position regarding the need for standby injection and containment closure during reduced inventory operation, supports the NRC staff's conclusion that TS are appropriate in this case.

Y. Ogata

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Please submit revised responses to RAI 161-1812, Question 16-117 (Chapter 16), and RAI 669-5219, Question 19-494 (Chapter 19), to include a technical specification covering safety injection system and containment closure during reduced inventory operations.

Please direct any inquiries to Jeffrey Ciocco at 301-415-6391, or via e-mail at Jeff.ciocco@nrc.gov.

Sincerely,

/RA/

Jeffrey Ciocco, Senior Project Manager
Licensing Branch 2
Division of New Reactor Licensing
Office of New Reactors

Docket No.: 52-021

cc: See next page

Y. Ogata

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