MITSUBISHI HEAVY INDUSTRIES, LTD.

16-5, KONAN 2-CHOME, MINATO-KU

TOKYO, JAPAN

June 7, 2011

Document Control Desk U.S. Nuclear Regulatory Commission Washington, DC 20555-0001

Attention: Mr. Jeffery A. Ciocco

Docket No. 52-021 MHI Ref: UAP-HF-11173

> DD81 NRD

Subject: MHI's Responses to US-APWR DCD RAI No. 739-5552 (SRP 14.02)

Reference: 1) "Request for Additional Information No. 739-5552 Revision 3, SRP Section: 14.02 - Initial Plant Test Program - Design Certification and New License Applicants Application Section: Tier 1, 2.14" dated April 25, 2011.

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. 739-5552, Revision 3."

Enclosed is the response to one RAI contained within Reference 1. This transmittal completes the response to this RAI.

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of this submittal. His contact information is provided below.

Sincerely,

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

Enclosure:

1. Response to Request for Additional Information No. 739-5552, Revision 3

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

Contact Information

C. Keith Paulson, Senior Technical Manager Mitsubishi Nuclear Energy Systems, Inc. 300 Oxford Drive, Suite 301 Monroeville, PA 15146 E-mail: ck_paulson@mnes-us.com Telephone: (412) 373-6466

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Enclosure 1

UAP-HF-11173 Docket No. 52-021

Response to Request for Additional Information No. 739-5552 Revision 3

June, 2011

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

06/07/2011

US-APWR Design Certification	
Mitsubishi Heavy Industries	
Docket No. 52-021	
RAI NO.:	NO. 739-5552 REVISION 3
SRP SECTION:	14.02 - INITIAL PLANT TEST PROGRAM - DESIGN CERTIFICATION AND NEW LICENSE APPLICANTS
APPLICATION SECTION:	TIER 1, 2.14
DATE OF RAI ISSUE:	4/25/2011

QUESTION NO. : 14.02-124

On page 2.14-1 of the Design Control Document (DCD), Revision 3, MHI removed the term "and design criteria" from the startup testing purpose description. Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 states in part that the principal design criteria establishes the necessary design, fabrication, construction, testing, and performance requirements [emphasis added] for structures, systems, and components (SSCs) important to safety and all SSCs are required to be tested to ensure they will perform properly. Therefore, startup testing as well as preoperational testing is performed to demonstrate that the design criteria are met. Furthermore, Criterion XI, "Test Control," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50 requires that a test program be established to assure that testing required to demonstrate that SSCs will perform satisfactorily in service is identified and performed, which incorporate the requirements and acceptance limits contained in applicable design documents [emphasis added]."

ANSWER:

In US-APWR DCD Tier 1, Section 2.14 "Initial Test Program," MHI provides a top-level ITP description.

In DCD Revision 2, regarding startup tests, MHI states, "... Startup tests are performed after completion of preoperational tests to demonstrate that plant systems meet performance requirements and <u>design</u> <u>criteria</u> ..." [emphasis added]

In DCD Revision 3, regarding startup tests, MHI states, "... Startup tests are performed after completion of preoperational tests to confirm the <u>design requirements</u>..." [emphasis added]

Design bases are the underlying "requirements" ("needs") for a design and are often referred to as "design requirements." "Criteria" are stipulated value points used in evaluation for measuring the degree to which the as-built system fulfills "design requirements." Although somewhat synonymous, the term "design requirements" is more technically correct in this usage than "design criteria." RG 1.68, "Initial Test Programs for Water-Cooled Nuclear Power Plants," Rev.3, C.1 (page 7) states:

Pursuant to the requirements of 10 CFR Parts 50 and 52, each applicant or licensee should prepare and conduct an ITP to demonstrate that the plant can be operated in accordance with <u>design requirements</u> [emphasis added] important to safety, as defined by Appendix A to 10 CFR Part 50. Suitable tests should be conducted to verify the performance capabilities, as delineated in Appendix A to 10 CFR Part 50, of SSCs that meet one or more of the following criteria:

The substitution of "design requirements" for "design criteria" in this instance is more technically correct, is consistent with terminology used by RG 1.68, and does not alter the meaning of this text in a way that makes it materially different or less meaningful than the version provided by US-APWR DCD Revision 2. Thus, current US-APWR DCD Revision 3 text is adequate and consistent with RG 1.68 Rev. 3 guidance, hence satisfies 10 CFR 50 Appendix A General Design Criteria and will not be changed.

Impact on DCD

There is no impact on the DCD.

Impact on R-COLA

There is no impact on the R-COLA.

Impact on S-COLA

There is no impact on the S-COLA.

Impact on PRA

There is no impact on the PRA.