

TOKYO, JAPAN

October 2, 2009

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

Attention: Mr. Jeffrey A. Ciocco

Docket No. 52-021 MHI Ref: UAP-HF-09476

Subject: Amended MHI's Response to US-APWR DCD RAI No.224

References: 1) "Request for Additional Information No. 224 Revision 1, SRP Section: 05.02.03 – Reactor Coolant Pressure Boundary Materials," dated February, 26, 2009

2) "MHI's Response to US-APWR DCD RAI No.224 Revision 1, UAP-HF-09123, dated March, 24, 2009"

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Amended Response to Request for Additional Information No.224 Revision 1."

Enclosed is the response to the Question No.05.02.03-1 of the RAI (Reference 1).

This response amend the previously transmitted answers submitted under MHI Reference UAP-HF-09123 on March 24, 2009 (Reference 2) in order to correct description of Impact on DCD and COLA.

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

Sincerely,

Yoshiki Ogata,

General Manager- APWR Promoting Department

4. Ogatu

Mitsubishi Heavy Industries, LTD.

Enclosure:

1. Amended Response to Request for Additional Information No.224 Revision 1

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

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Docket No. 52-021 MHI Ref: UAP-HF-09476

# **Enclosure 1**

UAP-HF-09476 Docket No. 52-021

Amended Response to Request for Additional Information No.224 Revision 1

October 2009

#### RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

10/2/2009

**PRESSURE** 

COOLANT

# US-APWR Design Certification Mitsubishi Heavy Industries Docket No. 52-021

RAI NO.:

NO.CIB1 224-2067 REVISION 1

SRP SECTION:

05.02.03 - REACTOR

BOUNDARY MATERIALS

**APPLICATION SECTION: 5.2.3** 

**DATE OF RAI ISSUE:** 

2/26/2009

#### QUESTION NO.: 05.02.03-1

a. What recommendation(s) can the applicant make to the combined operating license (COL) applicant(s) referencing the US-APWR standard design with respect to maintaining the primary water chemistry control program current with industry standards? Such recommendations should be captured via a COL information item.

b. Clarify which year edition and revision of the EPRI Primary Water Chemistry Guidelines is consistent with the standard and limiting values for RCS chemical parameters in the US-APWR.

### **Background**

To ensure compatibility of reactor coolant pressure boundary materials with the environment in accordance with GDC 4, and to ensure compliance with GDC 14 by minimizing the probability of gross rupture of the RCPB due to corrosion induced failure, SRP Section 5.2.3 indicates that the chemistry of the reactor coolant and the additives (such as inhibitors) whose function is to control corrosion is reviewed using the guidance of SRP Section 9.3.4. SRP Section 9.3.4 recommends that the reviewer evaluates the proposed chemistry program with respect to that described in the latest version in the Electric Power Research Institute (EPRI) report series, "PWR Primary Water Guidelines."

The US-APWR DCD Section 5.2.3.2.1 stated that the standard and limiting values for RCS chemical additive and impurities are consistent with the EPRI Primary Water Chemistry Guidelines, and referenced the 2003 edition (Rev. 4) of these guidelines. However, the guidelines are periodically updated by EPRI to reflect the latest best practices in water chemistry control. Also, the 2003 edition of the guidelines was actually Revision 5.

#### ANSWER:

As described in NEI 97-06, MHI will refer Revision 6 of EPRI PWR Primary Water Chemistry Guidelines, the latest version at the time of DCD submittal. And also MHI will recommend to COL applicant in DCD Subsection 5.2.3.2.1 to refer the latest version of EPRI PWR Primary Water Chemistry Guideline as SRP Section 9.3.4 recommended.

#### Impact on DCD

In Section 5.2.3.2.1 and 5.2.7 of the DCD, reference 5.2-27 will be change as the Answer above. Subsection 5.2.6 "Combined License Information" will be changed to add COL 5.2(12) and address as the attached mark-up.

## Impact on COLA

There is no impact on the COLA. COL applicant is required to specify the applicable version of the "EPRI primary Water Chemistry Guideline" that will be implemented.

### Impact on PRA

There is no impact on the PRA

# Attachment-1

# COL 5.2(12) EPRI Primary Water Chemistry Guideline

The COL applicant should specify the applicable version of the EPRI "Primary Water Chemistry Guideline" that will be implemented.