

  
**MITSUBISHI HEAVY INDUSTRIES, LTD.**  
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TOKYO, JAPAN

July 17, 2009

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-09390

**Subject:** MHI's Response to US-APWR DCD RAI No. 375-2770

**Reference:** 1) "Request for Additional Information No. 375-2770 Revision 0, SRP Section: 03.09.03 – ASME Code Class 1, 2, and 3 Components, Application Section: 3.9.6," dated 5/21/2009.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Responses to Request for Additional Information No. 375-2770, Revision 0."

Enclosed are the responses to 2 RAIs contained within Reference 1.

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,



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

Enclosure:

1. Responses to Request for Additional Information No. 375-2770, Revision 0

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

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NRC

Contact Information

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Docket No. 52-021  
MHI Ref: UAP-HF-09390

Enclosure 1

UAP-HF-09390  
Docket No. 52-021

Responses to Request for Additional Information No. 375-2770,  
Revision 0

July, 2009

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**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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7/17/2009

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

**RAI NO.:** NO. 375-2770 REVISION 0  
**SRP SECTION:** 03.09.03 – ASME CODE CLASS 1, 2, AND 3 COMPONENTS  
**APPLICATION SECTION:** 3.9.3  
**DATE OF RAI ISSUE:** 05/21/09

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**QUESTION NO. RAI 03.09.03-24:**

In US-APWR DCD, Revision 1, section 3.9.3.4.2.5, the DC applicant stated that "The COL Applicant is to assure snubber functionality in harsh service conditions, including snubber materials (e.g., lubricants, hydraulic fluids, seals)." Past industry experience with snubber failures has demonstrated that the failure modes of mechanical snubbers are not readily discernable by visual inspection or even physical stroking. The service life of snubbers is effected by environments with elevated temperatures. The staff requests that the DC applicant address the method of evaluating the projected life of snubbers.

According to 10 CFR 52.47(b)(1), a DC application must contain the proposed inspections, tests, analyses, and acceptance criteria (ITAAC) that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a plant that incorporates the design certification is built and will operate in accordance with the design certification, the provisions of the Atomic Energy Act, and the NRC's regulations. The staff understands that COL applicants will address the final resolution of the issue. However, the current setup of a Combined License Information Item alone in the Design Certificate application is not sufficient because the staff cannot perform necessary review or inspection confirming that the inservice testing program and examination of snubbers. Thus, the staff finds that an ITAAC is necessary. The staff requests the applicant to add an appropriate ITAAC in Tier 1 of the DCD to address the issue.

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**ANSWER:**

In response to RAI 242-2153, Question No. 14.03.03-6, ITAAC were clarified to require the existence of reports which conclude that ASME Code, Section III piping systems, including supports, are installed, fabricated and inspected in accordance with ASME Code, Section III requirements, and require design reports which conclude the as-built piping systems are reconciled with the design requirements. Inservice testing and examination requirements for snubbers are treated separately from the ASME III piping system ITAAC because they are implemented as operational programs.

MHI's letter to the NRC, "*Transmittal of COL Information Update for US-APWR Design Control Document Revision*," dated November 7, 2008 (UAP-HF-08259) provided proposed updates to COL information items including supplemental DCD information based on comprehensive review of the COL items. Included in the DCD update was supplemental information related to COL Item 3.9(6) that revised DCD Tier 2, Subsection 3.9.6.4 to summarize the IST Program for dynamic restraints (snubbers).

As revised in UAP-HF-08259, DCD Subsection 3.9.6.4.1 includes design and operating information for snubbers to be included as input for the performance of the IST Program. Criteria include the consideration of limiting environmental conditions that could affect service. Preservice and inservice examinations will be performed in accordance with the requirements of the ASME OM Code to determine their operational readiness as described in DCD Subsections 3.9.6.4.2 and 3.9.6.4.3, respectively. Subsection 3.9.6.4.4 provides the methods for predicting the service life for snubbers that will be performed at least once each fuel cycle, with reference to Nonmandatory Appendix F of the ASME OM Code for specific considerations for determining service life. NUREG-0800, SRP Section 14.3 and Regulatory Guide 1.206, C.IV.4 state that ITAAC for operational programs are not required in the COL application if the application "fully describes" the operational program and its implementation. MHI's letter to the NRC discussed above revised DCD Tier 2, Subsection 3.9.6.4 to facilitate a description of the program requirements for snubbers by the COL Applicant. Therefore, additional ITAAC are not required for inservice testing and examination of snubbers.

Refer also to the response to Question 03.09.03-25.

**Impact on DCD**

There is no impact on the DCD.

**Impact on COLA**

There is no impact on the COLA.

**Impact on PRA**

There is no impact on the PRA.

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**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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7/17/2009

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

**RAI NO.:** NO. 375-2770 REVISION 0  
**SRP SECTION:** 03.09.03 – ASME CODE CLASS 1, 2, AND 3 COMPONENTS  
**APPLICATION SECTION:** 3.9.3  
**DATE OF RAI ISSUE:** 05/21/09

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**QUESTION NO. RAI 03.09.03-25:**

In US-APWR DCD, Revision 1, section 3.9.3.4.2.9, the application stated that "Prior to and after plant operation, snubbers are required by Technical Specifications to be examined and tested in accordance with the ASME Code OM, Subsection ISTD (Reference 3.9-13)."

In DCD Section 3.9.6.4, IST Program for Dynamic Restraints, the application stated that "The COL Applicant is to provide the design program plan for IST of dynamic restraints in accordance with ASME OM Code (Reference 3.9-14)."

According to 10 CFR 52.47(b)(1), a DC application must contain the proposed inspections, tests, analyses, and acceptance criteria (ITAAC) that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a plant that incorporates the design certification is built and will operate in accordance with the design certification, the provisions of the Atomic Energy Act, and the NRC's regulations. The staff understands that COL applicants will address the final resolution of the issue. However, the current setup of a Combined License Information Item alone in the Design Certificate application is not sufficient because the staff cannot perform necessary review or inspection confirming that IST program plan of the snubbers is sufficient for safety determination. Thus, the staff finds that an ITAAC is necessary. The staff requests the applicant to add an appropriate ITAAC in Tier 1 of the DCD to address the issue.

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**ANSWER:**

As stated in response to Question 03.09.03-24, MHI's letter to the NRC, "*Transmittal of COL Information Update for US-APWR Design Control Document Revision*," dated November 7, 2008 (UAP-HF-08259) supplemental information related to COL Item 3.9(6) was provided and DCD Tier 2 Subsection 3.9.6.4 was revised to summarize the IST Program for dynamic restraints (snubbers). As revised in UAP-HF-08259, COL Item 3.9(6) refers to Nonmandatory Appendix A of the ASME OM Code for preparation of test plans.

In response to RAI 242-2153, Question No. 14.03.03-6, ITAAC were clarified to require the existence of reports which conclude that ASME Code Section III piping systems, including

supports, are installed, fabricated and inspected in accordance with ASME Code Section III requirements, and require design reports which conclude the as-built piping systems are reconciled with the design requirements.

DCD Subsection 3.9.6.4.1 included design and operating information for snubbers to be included as input for the performance of the IST Program. DCD Subsection 3.9.6.4.2 requires preservice examination and operational readiness testing of snubbers in accordance with the requirements of the ASME OM Code prior to initial plant operation. DCD Subsection 3.9.6.4.3 requires inservice examination and testing in accordance with the requirements of the ASME OM Code at specified intervals. Subsection 3.9.6.4.4 provides the methods for predicting the service life for snubbers, and will be performed at least once each fuel cycle. NUREG-0800, SRP Section 14.3 and Regulatory Guide 1.206 C.IV.4 state that ITAAC for operational programs are not required in the COL application if the application "fully describes" the operational program and its implementation. MHI's letter to the NRC discussed above revised DCD Subsection 3.9.6.4 to facilitate a full description of the program requirements for snubbers by the COL Applicant. Therefore, additional ITAAC are not required for the Inservice Testing Program for snubbers.

Refer also to the response to Question 03.09.03-24.

**Impact on DCD**

There is no impact on the DCD.

**Impact on COLA**

There is no impact on the COLA.

**Impact on PRA**

There is no impact on the PRA.

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This completes MHI's responses to the NRC's questions.