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May 26, 2011

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-11146

Subject: MHI's Responses to US-APWR DCD RAI No. 743-5392 REVISION 0 (SRP 14.03.03)

Reference: 1) "Request for Additional Information No. 743-5392 REVISION 0, SRP Section: 14.03.03 - Piping Systems and Components - Inspections, Tests, Analyses, and Acceptance Criteria, Application Section: 14.3.3" dated April 27, 2011.

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. 743-5392 Revision 0."

Enclosed are the responses to the RAI 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 the submittals. His contact information is below.

Sincerely,

Atsushi Kumaki for

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

Enclosure:

1. Responses to Request for Additional Information No. 743-5392 REVISION 0

DOB
HW

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

Contact Information

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Docket No. 52-021
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Enclosure 1

UAP-HF-11146
Docket No. 52-021

Responses to Request for Additional Information No. 743-5392
REVISION 0

May 2011

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

05/26/2011

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 743-5392 REVISION 0
SRP SECTION: 14.03.03 - PIPING SYSTEMS AND COMPONENTS -
INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE
CRITERIA
APPLICATION SECTION: 14.3.3
DATE OF RAI ISSUE: 04/27/2011

QUESTION NO. : 14.03.03-24

This question is a follow-up to question 14.03.02-12, RAI 452-3297. In its response, MHI revised #5.b of DCD Tier 2 Table 14.3-2, stating: "Each of the seismic Category I piping, including supports, identified in Table..." In Revision 2 of the DCD, this change is not reflected. The staff requests that the applicant implement the aforementioned change.

ANSWER:

The typographical error was not corrected in the DCD revision 3. MHI will revise to match the generic seismic Category I template.

Impact on DCD

The DCD Tier 2 Table 14.3-2 will be revised as Attachment 1.

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

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

05/26/2011

US-APWR Design Certification

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Docket No. 52-021

RAI NO.: NO. 743-5392 REVISION 0
SRP SECTION: 14.03.03 - PIPING SYSTEMS AND COMPONENTS -
INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE
CRITERIA
APPLICATION SECTION: 14.3.3
DATE OF RAI ISSUE: 04/27/2011

QUESTION NO. : 14.03.03-25

This question is a follow-up to question 14.03.03-22, RAI 404-3063.

In its response, MHI revised DCD Tier 1 Table 2.7.5.1-1, 2.7.5.1-3, 2.7.5.2-1, 2.7.5.1-3, 2.7.5.3-1.

The staff reviewed the response to RAI 14.03.03-22 and DCD Rev. 2 and found that the changes proposed in the response were not implemented in DCD Rev. 2. The staff requests that the applicant update the DCD with the changes proposed in their response to RAI 14.03.03-22.

ANSWER:

The MHI response to RAI 14.03.03-22 (RAI 404-3063) identified main control room (MCR) heating ventilation and air condition (HVAC) air handling unit (AHU) cooling coils as ASME Code Section III Class 3. This is incorrect. These cooling coils are functionally and physically integral components of their respective MCR AHU. The MCR AHU, including their cooling coils, are components of the Seismic Category I MCR HVAC system and are designed and manufactured in accordance with ASME Code AG-1, "Code on Nuclear Air and Gas Treatment."

MCR AHU cooling coils receive cooling water from the Essential Chilled Water System (ECWS). As described in DCD Revision 3 Tier 1 Section 2.7.3.5 and shown in Table 2.7.3.5-2, the ECWS "Main Control Room Air Handling Unit Chilled Water Control Valves," which are part of the ECWS, are Seismic Category I, ASME Code Section III Class 3 valves.

The DCD Tier 1 Table 2.7.5.1-1 entry for AHU cooling coils under "ASME Code Section III" shows a null value, which indicates that ASME Code Section III is not applicable. DCD Tier 2 Table 3.2-2 lists MCR AHU cooling coils as "Equipment Class 3," which requires the coils to be

Seismic Category I, Quality Group C. In the "Codes and Standards" column, the cooling coils are classified category 5, which indicates that the codes and standards that apply to this equipment are "as defined in design bases." DCD Revision 3 Chapter 3 Appendix 3A.2 states that "design and construction of seismic category I HVAC systems conform to AG-1-2003, Code on Nuclear Air and Gas Treatment, including Addendum AG-1a and AG-1b."

MCR AHU are not ASME Code Section III, therefore an ASME Code Section III ITAAC is not required for AHU cooling coils.

The Engineered Safety Features Ventilation System (ESFVS), described in DCD Tier 1 Section 2.7.5.2, and the Containment Ventilation System (CVVS), described in DCD Tier 1 Section 2.7.5.3, are functionally similar with respect to their cooling coils and are categorized in the same manner as the MCR HVAC system.

MCR AHU cooling coils are "components" of the AHU and are not "piping." Neither DCD Revision 3 Tier 1 Section 2.7.3.5 nor Section 2.7.5.1 refer to AHU coils as "piping."

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

Table 14.3-2 Example of ITAAC Table (Sheet 3 of 4)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
5.a The seismic Category I equipment, identified in Table ____, can withstand seismic design basis loads without loss of safety function.	5.a.i Inspections will be performed to verify that the seismic Category I equipment identified in Table ____ is located in a seismic Category I structure.	5.a.i The seismic Category I equipment identified in Table ____ is located in a seismic Category I structure.
	5.a.ii Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment identified in Table ____ will be performed using analytical assumptions, or will be performed under conditions, which bound the seismic design basis requirements.	5.a.ii A report exists and concludes that the seismic Category I equipment identified in Table ____ can withstand seismic design basis loads without loss of safety function.
	5.a.iii Inspections and analyses will be performed to verify that the as-built seismic Category I equipment identified in Table ____ including anchorages, is seismically bounded by the tested or analyzed conditions.	5.a.iii A report exists and concludes that the as-built seismic Category I equipment identified in Table ____, including anchorage, is seismically bounded by the tested or analyzed conditions.
5.b The seismic category piping, including supports, identified in Table ____ can withstand seismic design basis loads without a loss of its safety function.	5.b.i Inspections will be performed to verify that the as-built seismic Category I piping, including supports, identified in Table ____ is supported by a seismic Category I structure(s).	5.b.i The as-built seismic Category I piping, including supports, identified in Table ____ is supported by a seismic Category I structure(s).
	5.b.ii Inspections and analyses will be performed to verify that the as-built seismic Category I piping, including supports, identified in Table ____ can withstand seismic design basis loads without a loss of its safety function.	5.b.ii A report exists and concludes that the as-built seismic Category I piping, including supports, identified in Table ____ can withstand seismic design basis loads without a loss of its safety function.

Category I