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KOBE. 652-8585 JAPAN

August 6, 2014

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

Attention: Mr. William Ward

Docket No. 52-021
MHI Ref: UAP-HF-14046

Subject: MHI's Response to US-APWR DCD RAI No. 1095-7582 (SRP 18)

Reference: 1) "Request for Additional Information No. 1095-7582, SRP Section 18 - Human Factors Engineering" dated August 04, 2014

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. 1095-7582."

Enclosed is the response to the question contained within Reference 1.

Please contact Mr. Joseph Tapia, General Manager of Regulatory Services, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of this submittals. His contact information is provided below.

Sincerely,

A handwritten signature in black ink, reading "Atsushi Kumaki". The signature is written in a cursive, flowing style.

Atsushi Kumaki,
Manager, APWR Project Group
Global Nuclear Project Department
Nuclear Energy Systems Division
Energy & Environment Domain
Mitsubishi Heavy Industries, Ltd.

Enclosures:

1. Response to Request for Additional Information No.1095-7582

Handwritten initials in black ink, appearing to be "DOB" over "NRO".

CC: W. Ward
J. Tapia

Contact Information

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Docket No. 52-021
MHI Ref: UAP-HF-14046

Enclosure 1

UAP-HF-14046
Docket Number 52-021

Response to Request for Additional Information No. 1095-7582

August 2014

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

8/6/2014

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 1095 COLB 7582
SRP SECTION: 18 - HUMAN FACTORS ENGINEERING
APPLICATION SECTION:
DATE OF RAI ISSUE: 08/04/2014

QUESTION NO. : 18-266

On June 4, 2014 (ML14164A579), MHI submitted proposed Revision 5 markups for reconciliation of Chapter 18 of the DCD with recently revised Human Factors Engineering (HFE) Implementation Plans. The proposed Revision 5 deleted procedural information in Chapter 18 (Subsection 18.1.3.1, see below for details) that is credited in the safety analysis to address NUREG-0711 criterion 2.4.3(1). This information needs to remain in the DCD, or MUAP-09019 should be revised to include the information.

Revision 4:

18.1.3 HFE Processes and Procedures

HFE activities are performed in accordance with documented processes (i.e., results reports, implementation plans or implementing procedures) that are executed under the Quality Assurance (QA) Program for the US-APWR (Reference 18.1-6). Processes for each HFE program element are described in Sections 18.2-18.12.

18.1.3.1 General Process Procedures

The processes through which the team executes its responsibilities include procedures for:

- Assigning HFE activities to individual team members
- Governing the internal management of the team
- Making management decisions regarding HFE
- Making HFE design decisions
- Governing equipment design changes
- Reviewing HSI designs

All HFE processes and procedures are developed and performed as described in Reference 18.1-6.

Proposed Revision 5:

18.1.3 HFE Processes and Procedures

HFE activities are described in Section 4.0 of the HFE PMP (Reference 18.1-7) and are performed in accordance with documented processes (i.e., results reports, implementation plans or implementing procedures) that are executed under the Quality Assurance (QA)

Program for the US-APWR (Reference 18.1-5). Processes for each HFE program element are described in the individual program element Implementation Plans (References 18.1-8 through 18.1-15).

[Subsection 18.1.3.1 has been deleted.]

DISCUSSION

The staff reviewed MUAP-09019 and found that the technical report addressed each element listed in acceptance criterion 2.4.3(1) and summarized how the functions would be accomplished. It only provided a general and implicit statement that procedures would be available to support the functions listed in the acceptance criterion. A specific and explicit commitment to have internal procedures addressing each function listed in the acceptance criterion (similar to what was provided in DCD, Revision 4) is needed to conform to the acceptance criterion.

<p>Acceptance criterion 2.4.3(1) says,</p> <p>The process should include procedures for:</p> <ul style="list-style-type: none"> • Assigning HFE activities to individual team members • Governing the internal management of the team • Making management decisions regarding HFE • Making HFE design decisions • Governing equipment design changes • Design team review of HFE products 	<p>MUAP-09019, Section 4.0, "Processes and Procedures says,</p> <p>"HFE activities are performed in accordance with this HFE PMP and the IPs referenced below. The HFE PMP and referenced IPs are supported by additional internal implementing procedures.</p>
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ANSWER:

Rev.4 of DCD Section 18.1.3 was developed in correspondence to NUREG-0711 Section 2.4.3 and in coordination with the HFE Program Management Plan (MUAP-09019) Rev. 4 Section 4.1.

NUREG-0711 Section 2.4.3 has the following subsections:

- (1) General Process Procedures
- (2) Process Management Tools
- (3) Integration of HFE and Other Plant Design Activities
- (4) HFE Program Milestones
- (5) HFE Documentation
- (6) Subcontractor HFE Efforts

Since all the subsections of NUREG-0711 have been addressed in Rev. 4 of MUAP-09019, Rev. 4 of DCD Section 18.1.3 has been revised to include simplified descriptions which did not specify those subsections just referring to MUAP-09019 in order to avoid duplicated descriptions of each subsection.

The following procedural description which had existed in Rev.4 of DCD Section 18.1.3.1 will be added in the corresponding section of MUAP-09019 Section 4.1:

18.1.3.1 General Process Procedures

The processes through which the team executes its responsibilities include procedures for:

- Assigning HFE activities to individual team members
- Governing the internal management of the team
- Making management decisions regarding HFE
- Making HFE design decisions
- Governing equipment design changes
- Reviewing HSI designs

All HFE processes and procedures are developed and performed as described in Reference 18.1-6.

The following procedural description which had existed in Rev.4 of DCD Section 18.1.3 has already been addressed in the latest revision (Rev. 4) of MUAP-09019. This portion of the description is not necessarily added nor modified further in MUAP-09019:

DCD Rev.4

18.1.3 HFE Processes and Procedures

HFE activities are performed in accordance with documented processes (i.e., results reports, implementation plans or implementing procedures) that are executed under the Quality Assurance (QA) Program for the US-APWR (Reference 18.1-6). Processes for each HFE program element are described in Sections 18.2-18.12.

MUAP-09019 Rev.4

4.0 HFE PROCESSES AND PROCEDURES

HFE activities are performed in accordance with this HFE PMP and the IPs referenced below. The HFE PMP and referenced IPs are supported by additional internal implementing procedures. HFE activities governed by these documents are executed under the MHI QAM for the US-APWR (Reference 8-13).

Impact on DCD

There is no impact on the DCD

Impact on R-COLA

There is no impact on the R-COLA

Impact on PRA

There is no impact on the PRA

Impact on Technical/Topical Report

MUAP-09019 will be revised to incorporate the following procedural description which had been in Rev.4 of DCD Section 18.1.3.1 as follows:

4.1 General Process Procedures

The processes through which the team executes its responsibilities include procedures for

- Assigning HFE activities to individual team members
- Governing the internal management of the team
- Making management decisions regarding HFE
- Making HFE design decisions
- Governing equipment design changes
- Reviewing HSI designs

All HFE processes and procedures are developed and performed as described in the following subsections.

4.1.1 HFE Team Assignment

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This completes MHI's response to the NRC's question.