# MITSUBISHI HEAVY INDUSTRIES, LTD.

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TOKYO, JAPAN

November 5, 2008

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-08246

#### Subject: MHI's Responses to US-APWR DCD RAI No.80 Revision 0

Reference: 1) "Request for Additional Information No. 80 Revision 0, SRP Section: 09.05.03 – Lighting Systems, Application Section: 9.5.3," dated October 7, 2008.

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.80 Revision 0."

Enclosed are the responses to 3 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 the submittals. His contact information is below.

Sincerely,

U. Ogatu

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

Enclosure:

1. Responses to Request for Additional Information No.80 Revision 0

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

Contact Information

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Docket No. 52-021 MHI Ref: UAP-HF-08246

## **Enclosure 1**

# UAP-HF-08246 Docket Number 52-021

# Responses to Request for Additional Information No.80 Revision 0

November 2008

#### **RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

11/05/2008

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

RAI NO.:	NO.80 REVISION 0
SRP SECTION:	09.05.03 – Lighting Systems
APPLICATION SECTION:	9.5.3
DATE OF RAI ISSUE:	10/7/2008

#### QUESTION NO.: 09.05.03-7

#### RAI 9.5.3-05 S02

In response to RAI 9.5.3-05 S01, you have stated that DCD Section 9.5.3.2.2.1 will be revised to indicate that Class 1E emergency lighting in the MCR and RSC are powered from redundant Class 1E dc. However, you have not provided similar revision to DCD Tier 1 Section 2.6.6.1 and Table 2.6.6-1 items 4 and 5. Revise DCD Tier 1 Section 2.6.6.1 and Table 2.6.6-1 items 4 and 5 to include both MCR and RSC.

#### **ANSWER:**

The description in DCD Tier 1 Section 2.6.6.1 and Table 2.6.6-1 items 4 and 5 will be changed to include both MCR and RSC.

#### Impact on DCD

The description in DCD Tier1 rev.1 Section 2.6.6.1 will be changed to the following.

"Emergency lighting powered by the Class 1E power system in MCR and Remote shutdown console room is powered from the redundant Class 1E dc power systems."

The description in DCD Tier1 rev.1 Table 2.6.6-1 items 4 and 5 will be changed to the following.

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
4. The emergency lighting powered by Class 1E power system in the MCR and Remote shutdown console room is powered from redundant Class 1E dc systems.	<ol> <li>An inspection of the as-built emergency lighting powered by the Class 1E power system in the as-built MCR will be performed.</li> </ol>	4. The as-built emergency lighting powered by the Class 1E power system in the as-built MCR and Remote shutdown console room is powered from redundant Class 1E dc systems.

5. The emergency lighting	5. Type tests and/or analyses will be	5. The results of the type tests
system in MCR and Remote	performed to verify that the	and/or analyses conclude that
shutdown console room	emergency lighting system in the	the emergency lighting system
meets seismic Category I	MCR meets seismic Category I	in the MCR and Remote
requirements.	requirements.	shutdown console room
		meets seismic Category I
		requirements.

### Impact on COLA

There is no impact on COLA.

### Impact on PRA

There is no impact on PRA.

#### **RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

11/05/2008

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

RAI NO.:	NO.80 REVISION 0
SRP SECTION:	09.05.03 – Lighting Systems
APPLICATION SECTION:	9.5.3
DATE OF RAI ISSUE:	10/7/2008

#### QUESTION NO. : 09.05.03-7

#### RAI 9.5.3-08 S02

In response to RAI 9.5.3-08 S01, you have stated that testing and analysis for the isolation device will be added to the ITAAC (Table 2.6.1-3, item 3) to verify that the system meets RG 1.75. The staff understands that this will be updated in a future DCD revision. Provide a copy of the information which will be presented in the DCD revision and identify the revision in which the change will appear.

#### ANSWER:

The description in DCD Tier 1 Table 2.6.1-3 items 3 and Table 2.6.2-2 item 5 will be changed to the following; to verify that the system meets RG 1.75.

Table 2.6.1-3	AC Electric Power Systems Inspections, Tests, Analyses, and Acceptance
	Criteria (Sheet 1 of 4)

	Design Commitment		Inspections, Tests, Analyses		Acceptance Criteria
3.	Independence-is- maintained between Class 1E electric power distribution equipment and non safety-related loads is maintained by Class 1E qualified isolation devices so as to meets RG 1.75.	3.	An inspection of Tests and analyses on the as-built Class 1E electric power distribution equipment will be performed.	3.	The as-built Class 1E electric power distribution equipment is isolated from the as-built non safety-related loads by the Class 1E qualified isolation devices <b>so as to meet RG</b> 1.75.

# Table 2.6.2-2 DC Power Systems Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 1 of 3)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria

5.	Independence-is- maintained between Class 1E dc power system distribution equipment and non safety-related loads is maintained by Class 1E qualified isolation devices so as to meets RG 1.75.	5.	An inspection of Tests and analyses on the as-built Class 1E dc power system distribution equipment will be performed.	5.	The as-built Class 1E dc power system distribution equipment is isolated from the as-built non safety-related loads by the Class 1E qualified isolation devices <b>so as</b> <b>to meet RG 1.75.</b>
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#### Impact on DCD

The description in DCD Tier 1 Table 2.6.1-3 items 3 and Table 2.6.2-2 item 5 will be changed to the following;

Table 2.6.1-3AC Electric Power Systems Inspections, Tests, Analyses, and Acceptance<br/>Criteria (Sheet 1 of 4)

	Design Commitment		Inspections, Tests, Analyses		Acceptance Criteria
3.	Independence-is- maintained between Class 1E electric power distribution equipment and non safety-related loads is maintained by Class 1E qualified isolation devices so as to meets RG 1.75.	3.	An inspection of Tests and analyses on the as-built Class 1E electric power distribution equipment will be performed.	3.	The as-built Class 1E electric power distribution equipment is isolated from the as-built non safety-related loads by the Class 1E qualified isolation devices <b>so as to meet RG</b> <b>1.75</b> .

Table 2.6.2-2	DC Power Systems Inspections, Tests, Analyses, and Acceptance Criteria
	(Sheet 1 of 3)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
5. Independence-is- maintained between Class 1E dc power system distribution equipment and non safety-related loads is maintained by Class 1E qualified isolation devices so as to meets RG 1.75.	5. An inspection of Tests and analyses on the as-built Class 1E dc power system distribution equipment will be performed.	5. The as-built Class 1E dc power system distribution equipment is isolated from the as-built non safety-related loads by the Class 1E qualified isolation devices so as to meet RG 1.75.

#### Impact on COLA

There is no impact on COLA.

#### Impact on PRA

There is no impact on PRA.

#### **RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

11/05/2008

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

RAI NO.:	NO.80 REVISION 0
SRP SECTION:	09.05.03 – Lighting Systems
APPLICATION SECTION:	9.5.3
DATE OF RAI ISSUE:	10/7/2008

#### QUESTION NO.: 09.05.03-7

#### RAI 9.5.3-10 S02

In response to RAI 9.5.3-10 S01, you have stated that two ITAAC will be added in DCD rev. 1, Tier 1. Under Inspection, Tests, Analyses for the items, you have stated that an inspection of the as-built DC self-contained battery pack units will be performed. The staff does not understand how the inspection will verify that DC self-contained battery pack units provide illumination of about 0.5 foot-candles at the floor level for 8-hours. Revise the content under Inspection, Tests, Analyses for both items as "Test will be performed" for both items. Additionally, these two items should have item number 7 and 8.

#### ANSWER:

MHI will change from "inspection" to "test" and number item 7 and 8 of this ITAAC items in DCD rev.1 Tier 1 Tables 2.6.6.-1:

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
7.The DC self-contained battery pack units provide illumination of about 0.5 foot-candles at the floor level for 8-hours.	7.An test the as-built DC self-contained battery pack units will be performed.	7.The as-built DC self-contained battery pack units provide illumination of about 0.5 foot-candles at the floor level for 8-hours.
8. The emergency lighting in the MCR and remote shutdown consoles provides illumination levels in those areas equal to greater than those recommended by the IESNA for at least 8 hours.	8. An test the emergency lighting in the MCR and remote shutdown consoles will be performed.	8. The as-built emergency lighting in the MCR and remote shutdown consoles provides illumination levels in those areas equal to greater than those recommended by the IESNA for at least 8 hours.

#### Impact on DCD

MHI will change from "inspection" to "test" and number item 7 and 8 of this ITAAC items in DCD rev.1 Tier 1 Tables 2.6.6.-1:

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
7.The DC self-contained battery pack units provide illumination of about 0.5 foot-candles at the floor level for 8-hours.	7.An test the as-built DC self-contained battery pack units will be performed.	7.The as-built DC self-contained battery pack units provide illumination of about 0.5 foot-candles at the floor level for 8-hours.
8.The emergency lighting in the MCR and remote shutdown consoles provides illumination levels in those areas equal to greater than those recommended by the IESNA for at least 8 hours.	<ol> <li>An test the emergency lighting in the MCR and remote shutdown consoles will be performed.</li> </ol>	8. The as-built emergency lighting in the MCR and remote shutdown consoles provides illumination levels in those areas equal to greater than those recommended by the IESNA for at least 8 hours.

### Impact on COLA

There is no impact on COLA.

### Impact on PRA

There is no impact on PRA.