MITSUBISHI HEAVY INDUSTRIES, LTD.
16-5, KONAN 2-CHOME, MINATO-KU
TOKYO, JAPAN

October 31, 2013

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

Attention: Mr. Perry Buckberg

Docket No. 52-021
MHI Ref: UAP-HF-13262

Subject: MHI's Supplemental Response to US-APWR DCD RAI No.773-5646 (SRP 19A)

References: 1) "Request for Additional Information No. 773-5646, SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation Appendix A" dated (June 23, 2011).

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "MHI's Supplemental Response to US-APWR DCD RAI No.773-5646."

Enclosed is the supplemental response to the RAI (Question No.19-537) contained within Reference 1.

Please contact Mr. Joseph Tapia, General Manager of Licensing Department, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of the submittal. His contact information is below.

Sincerely,

Yoshiki Ogata,
Executive Vice President
Mitsubishi Nuclear Energy Systems, Inc.
On behalf of Mitsubishi Heavy Industries, LTD.

Enclosure:

1. MHI's Supplemental Response to US-APWR DCD RAI No.773-5646

D081
NRO

CC: P. Buckberg
J. Tapia

Contact Information
Joseph Tapia, General Manager of Licensing Department
Mitsubishi Nuclear Energy Systems, Inc.
11405 North Community House Road, Suite 300
Charlotte, NC 28277
E-mail: joseph_tapia@mnes-us.com
Telephone: (704) 945-2740

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Enclosure 1

UAP-HF-13262
Docket No. 52-021

MHI's Supplemental Response to US-APWR DCD RAI No.773-5646

October 2013

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

10/31/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No.52-021

RAI NO.:	**773-5646**
SRP SECTION:	**19 – Probabilistic Risk Assessment and Severe Accident Evaluation**
APPLICATION SECTION:	**Appendix A**
DATE OF RAI ISSUE:	**6/23/2011**

QUESTION NO. : 19-537

It is stated in Section 19A.1 of the U.S. APWR DCD, Revision 2 that the methodology used for assessing effects of aircraft impact is described in NEI 07-13, "Methodology for Performing Aircraft Impact Assessments for New Plant Designs," Revision 7 (NEI 07-13). NEI 07-13 describes the guidelines for assessing the effects of an aircraft impact that could occur while the plant is producing power. Contrary to the requirements of paragraph (b)(1) of 10 CFR 50.150, Section 19A.4 does not contain a description of design features nor functional capabilities relied upon to ensure that the assessment requirements in paragraph (a)(1) of 10 CFR 50.150 are met while the plant is producing power. Please modify Section 19A.4 to include a description of (1) design features and/or functional capabilities relied upon to ensure that the assessment requirements in paragraph (a)(1) of 10 CFR 50.150 are met while the plant is producing power, and (2) how these design features and/or functional capabilities meet the assessment requirements in paragraph (a)(1) of 10 CFR 50.150.
Specifically, please describe how these key design features are capable of assuring core cooling following a beyond-design-basis aircraft impact event for a sufficient period of time to allow implementation of measures that will assure long term core cooling. The staff considers 24 hours to be a sufficient amount of time to implement mitigation measures for long-term core cooling. Please provide the staff with marked-up copy of Section 19A.4 that shows the required descriptions and include the descriptions in the next Revision of the DCD.
If detailed descriptions of the subject design features are described in sections of the DCD other than 19A.4. Then, in section 19A.4, identify the features and the sections of the DCD containing the descriptions. Please, include descriptions of any success criteria in the U.S. APWR design PRA that are associated with the key design features.

ANSWER (Supplement):

MHI previously provided a response to this RAI question by MHI letter UAP-HF-11268 dated August 22, 2011. In that response, MHI described the addition of a new section 19A.4.4,

"Core Cooling Features" which described the design features for assuring core cooling following a beyond design basis aircraft impact event. All of the changes to Section 19.A.4.4 provided in the previous response were incorporated into DCD Revision 4, with one exception. The purpose of this supplemental response is to explain the reason for this one exception.

One of the design features discussed in the previous RAI response was the containment spray system (CSS). The previous response indicated that the CSS was one of the design features crediting for core cooling and would therefore be added to the DCD in Section 19A.4.4. However, as MHI performed Aircraft Impact Assessments based on the latest US-APWR design information, which is consistent with DCD Revision 4, it was found that the CSS was no longer required for core cooling. As a result, MHI revised the DCD to remove the discussion of the CSS from the first and second paragraphs of Section 19A.4.4. Therefore, Revision 4 of DCD Section 19A.4.4 does not describe the CSS.

Impact on DCD

Revision 4 of DCD Section 19A.4.4 already includes the changes described in the previous response and also the change discussed in the above supplemental response.

Note that a typographical error in the first sentence of the first paragraph of Section 19A.4.4, which was introduced into DCD Revision 4 due to the changes discussed above, will be corrected (remove the "s" from "Sections 5.4.7").

Impact on R-COLA

There is no impact on R-COLA.

Impact on PRA

There is no impact on PRA.

Impact on Topical/Technical Report

There is no impact on Topical and Technical Reports.