


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

April 28, 2010

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-10127

Subject: MHI's Responses to US-APWR DCD RAI No.566-4391 Revision 2

References: 1) "Request for Additional Information No. 566-4391 Revision 2, SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation, Application Section: 19A" dated March 30, 2010.

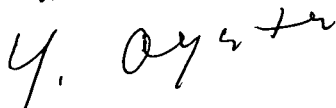
With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Responses to Request for Additional Information No. 566-4391 Revision 2".

Enclosed is the response to the RAI that are contained within Reference 1.

This response is being submitted in two versions. One version (Enclosure 1) includes certain information, designated pursuant to the Commission guidance as sensitive unclassified non-safeguards information, referred to as security-related information ("SRI"), that is to be withheld from public disclosure under 10 C.F.R. § 2.390. The information that is SRI is identified by brackets. The second version (Enclosure 2) omits the SRI and is suitable for public disclosure. In the public version, the SRI is replaced by the designation "[Security-Related Information - Withheld under 10 CFR 2.390].".

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,



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

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MRO

Enclosure:

1. Response to Request for Additional Information No. 566-4391 Revision 2
(SRI included version)
2. Response to Request for Additional Information No. 566-4391 Revision 2
(SRI excluded version)

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

Contact Information

C. Keith Paulson, Senior Technical Manager
Mitsubishi Nuclear Energy Systems, Inc.
300 Oxford Drive, Suite 301
Monroeville, PA 15146
E-mail: ck_paulson@mnes-us.com
Telephone: (412) 373-6466

Enclosure 2

UAP-HF-10127
Docket Number 52-021

Response to Request for Additional Information
No. 566-4391 Revision 2

April 28, 2010

(Security excluded version)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

4/28/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No.52-021

RAI NO.: NO. 566-4391 REVISION 2
SRP SECTION: 19 – Probabilistic Risk Assessment and Severe Accident Evaluation
APPLICATION SECTION: 19A
DATE OF RAI ISSUE: 3/30/2010

QUESTION NO. : 19-429

In DCD Tier 2, Revision 2, Appendix 19A, "US-APWR Beyond Design Basis Aircraft Impact Assessment," Section 19A.4, you refer to Technical Report UAP-SGI-09001 and list this as Reference 3 in Section 19A.6. In accordance with the statements of consideration for the aircraft impact rule (74 FR 28120; June 12, 2009), you are not required to submit the aircraft impact assessment—as opposed to the "description of the identified design features and functional capabilities" required by 10 CFR 50.150(b), to the NRC in your application. In addition, the NRC's decision on an application subject to 10 CFR 50.150 will be separate from any NRC determination that may be made with respect to the adequacy of the impact assessment which the rule does not require be submitted to the NRC. Therefore, the NRC staff requests that you remove the reference to the subject topical report in Section 19A.4 and remove item 3 from the References list in Section 19.A.6 of Appendix 19A of your DCD.

Answer:

MHI accepts the NRC's request and will (1) delete the references to UAP-SGI-09001 in Appendix Section 19A.4 and (2) remove UAP-SGI-09001 from the reference list in Appendix 19A.6.

Impact on DCD

See attached mark-up of DCD Revision-2, page 19A-4.

Impact on COLA

There is no impact on COLA.

Impact on PRA

There is no impact on PRA.

**APPENDIX 19A US-APWR BEYOND DESIGN BASIS
AIRCRAFT IMPACT ASSESSMENT**

19A US-APWR Beyond Design Basis Aircraft Impact Assessment

19A.1 Introduction and Background

The design of the US-APWR takes into account the potential effects of the impact of a large commercial aircraft, which the NRC has determined is a beyond design basis event. In accordance with 10 CFR 50.150(a), a design-specific assessment has been performed for the US-APWR using realistic analysis to demonstrate that, in the event an US-APWR is struck by a large commercial aircraft, design features and functional capabilities exist to ensure that the following functions are maintained:

- The reactor core remains cooled, or the containment remains intact; and
- Spent fuel cooling or spent fuel pool integrity is maintained.

The assessment demonstrates the inherent robustness of the US-APWR design with regard to potential large aircraft impacts.

Specific assumptions used in the US-APWR aircraft impact assessment are based on requirements and guidance provided by the NRC and the Nuclear Energy Institute (NEI). The NRC provided the physical characteristics, including the loading function of the impacting aircraft, in July of 2007 (Reference 19A-1). The methodology for assessing effects for aircraft impact are described in NEI 07-13, "Methodology for Performing Aircraft Impact Assessments for New Plant Designs," Revision 7 (Reference 19A-2).

This appendix describes the design features and functional capabilities of the US-APWR identified in the detailed assessment that assure the reactor core remains cooled or the reinforced concrete containment vessel (PCCV) remains intact, and spent fuel cooling or spent fuel pool integrity is maintained. These identified design features are designated as "key" design features and functional capabilities.

19A.2 Scope of the Assessment

Security-Related Information – Withheld Under 10 CFR 2.390

Security-Related Information – Withheld Under 10 CFR 2.390

19A.3 Assessment Methodology

Security-Related Information – Withheld Under 10 CFR 2.390

19A.4 Assessment Results

Security-Related Information – Withheld Under 10 CFR 2.390

19A.4.1 PCCV

Security-Related Information – Withheld Under 10 CFR 2.390

Security-Related Information – Withheld Under 10 CFR 2.390

19A.4.2 Plant Arrangement

Security-Related Information – Withheld Under 10 CFR 2.390

19A.4.3 Fire Barriers and Fire Protection Features

Security-Related Information – Withheld Under 10 CFR 2.390

Security-Related Information – Withheld Under 10 CFR 2.390

19A.5 Conclusions of Assessment

This assessment concludes that key design features and functional capabilities of the US-APWR ensure adequate protection of public health and safety in the event of an impact of a large commercial aircraft, as defined by the NRC. The postulated aircraft impacts would not impair the US-APWR's core cooling capability, containment integrity, spent fuel pit integrity, or adequate spent fuel cooling. The assessment resulted in identification of key design features and functional capabilities described in Section 19A.4, changes to which are required to be controlled in accordance with 10 CFR 50.150(c).

19A.6 References

1. Letter from D. Matthews, NRC to Dr C. K. Paulson, Mitsubishi Nuclear Energy Systems, Inc, Subject: "Approval of Mitsubishi Nuclear Energy Systems Safeguards Protection Program and Reviewing Official, and Transmittal of Beyond Design Basis, Large Commercial Aircraft Characteristics Specified by Commission," December 7, 2007.
2. NEI 07-13, "Methodology for Performing Aircraft Impact Assessments for New Plant Designs," Revision 7, May 2009.
3. ~~UAP-SGI-09001, "US-APWR Design Certification Aircraft Impact Assessment," April 2009, Mitsubishi Heavy Industries, LTD.~~