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

August 31, 2009

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-09437

Subject: MHI's Responses to US-APWR DCD RAI No. 433-3001 Revision 0

Reference: 1) "Request for Additional Information No. 433-3001 Revision 0, SRP Section: 19-Probabilistic Risk Assessment and Severe Accident Evaluation," dated July 30, 2009

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document as listed in Enclosures.

Enclosed is the response to the 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 submittal. His contact information is below.

Sincerely,

Y. Ogata

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

Enclosure:

1. "Responses to Request for Additional Information No. 433-3001 Revision 0"

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

DO81
NRO

Docket No. 52-021
MHI Ref: UAP-HF-09437

Enclosure 1

UAP-HF-09437
Docket No. 52-021

Responses to Request for Additional Information
No.433-3001 Revision 0

August 2009

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

8/28/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No.52-021

RAI NO.: NO. 433-3001 REVISION 0

SRP SECTION: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

APPLICATION SECTION: 19.2.4

DATE OF RAI ISSUE: 7/30/2009

QUESTION NO.: 19-390

Follow-up Question to RAI 19-291
Staff Requirements Memorandum to SECY 93-087 states, "use the following deterministic containment performance goal in the evaluation of the passive ALWRs as a complement to the conditional containment failure probability (CCFP) approach approved by the Commission in its SRM of June 26, 1990":

"The containment should maintain its role as a reliable, leak-tight barrier (for example, by ensuring that containments stresses do not exceed ASME Service Level C limits for metal containments, or Factored Load Category for concrete containments) for approximately 24 hours following the onset of core damage under the more likely severe accident challenges and, following this period, the containment should continue to provide a barrier against the uncontrolled release of fission products."

To address the above requirement, the staff requests the applicant to perform a appropriate analyses to demonstrate that the applicant's containment is designed to meet the deterministic acceptance criteria from the ASME Code under severe accident conditions within the containment as explained above. The evaluation has to consider all failure modes and their locations including various penetrations and discontinuities. The evaluation should also include material and geometric discontinuities and non-linearity as well as temperature dependency of materials on their mechanical properties under calculated pressure and temperature conditions appropriate for significant severe accident scenarios.

ANSWER:

MHI will perform appropriate analyses that satisfied with the requirement explained above, and submit the report to evaluate that the containment maintains the role as leak-tight barrier for severe accident conditions by the end of January 2010.

Impact on DCD

There is no impact on the DCD.

Impact on COLA

There is no impact on the COLA.

Impact on PRA

There is no impact on the PRA.