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

03/29/2013

US-APWR Design Certification Mitsubishi Heavy Industries Docket No. 52-021 RAI NO.: NO. 340-2004 REVISION 0 SRP SECTION: 03.08.05 - Foundations APPLICATION SECTION: 3.8.5 DATE OF RAI ISSUE: 04/21/2009

#### QUESTION NO. 03.08.05-12:

In DCD Section 3.8.5.4.4, the first paragraph (Page 3.8-73) states, "The potential for foundation subsidence, or differential displacement, is designed for a maximum 2 in. based on enveloping properties of subsurface materials."

The applicant is requested to provide the following information:

- (a) How was the maximum value of 2 in. determined?
- (b) Do the shear force and bending moments generated from the 2 in. differential displacement combine with those from load cases in DCD Subsections 3.8.1.3 and 3.8.4.3 for the design of the basemat and the super-structures?

#### ANSWER:

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-09363 (ML091900557).

- (a) The settlements of the reactor building (R/B) complex, including differential displacements, were recalculated as explained in the answer to RAI 340-2004, Question 03.08.05-13. The new maximum value for the differential settlement across the R/B complex foundation produced during construction and operational life is 5.5 in.
- (b) The shear forces and bending moments generated in the mat by differential settlements produced during construction will be accounted for in a future revision of the basemat design calculations.

#### Impact on DCD

There is no impact on the DCD.

#### Impact on R-COLA

There is no impact on the R-COLA.

## Impact on S-COLA

There is no impact on the S-COLA.

# Impact on PRA

There is no impact on the PRA.

# Impact on Technical/Topical Report

There is no impact on the Technical/Topical Report.

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