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**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**

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03/22/2013

**US-APWR Design Certification**

**Mitsubishi Heavy Industries**

**Docket No. 52-021**

**RAI NO.:** NO. 766-5819 REVISION 3  
**SRP SECTION:** 03.07.02 – Seismic System Analysis  
**APPLICATION SECTION:** 3.7.2  
**DATE OF RAI ISSUE:** 06/09/2011

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**QUESTION NO. RAI 03.07.02-50:**

In MUAP-11002 (R0) Subsection 4.4, "Turbine Pedestal," (page 13) it states "The turbine pedestal is a non-safety, non-seismic, reinforced concrete structure and is located in the center of the T/B. The turbine pedestal is structurally independent of the T/B superstructure and foundation. For the purpose of evaluating the space between the T/B and Electrical Room relative to the R/B and the PS/B, the weight of the turbine pedestal was included in the ACS SASSI model. The pedestal weight was uniformly distributed over the full soil contact area of the pedestal foundation. This will permit the impact of the pedestal weight to be included in the dynamic SSI analyses. Structural features of the turbine pedestal are not included. The bottom of the turbine pedestal was set at the same elevation in the SSI analysis as the bottom of the T/B basemat, elevation -24 feet 7 inches."

The staff noted that while the mass of the turbine pedestal was considered in the analysis, the potential effects of this pedestal on SSI results or on any interaction between it and the T/B foundation is not specifically addressed. No numerical data is included in the report that supports this exclusion of the pedestal. The applicant is requested to describe in detail the design of the joint between the turbine pedestal and the T/B foundation and explain why the effects (other than consideration of the mass) of the pedestal on SSI or other aspects of the analysis are not important, and that by ignoring these effects results in a conservative analysis. Additionally, the applicant should confirm that the weight of the turbine generator is included in the analysis.

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**ANSWER:**

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-11392, dated November 16, 2011 (ML11623A129).

The T/B and the Electrical Room are now founded on a common basemat as described in Subsection 1.1.1 of MUAP-11002 Rev. 2.

While the Turbine Generator (T/G) pedestal was not modeled directly into the SASSI model in MUAP-11002, Rev. 0, the mass of the T/G pedestal and the equipment supported by the turbine pedestal (turbine, generator, etc.) was included in the SASSI analysis in a simplified manner by modeling the T/G pedestal basemat as flat plates and applying uniform loads to the flat plates. The elevation of the bottom of the flat plates is identical to the elevation of the bottom of the Turbine Building (T/B) basemat. Although this simplification is deemed sufficient for the purpose of evaluating the gap between the R/B complex and the T/B complex, in response to the

questions raised above, in Technical Report MUAP-11002 Rev. 2, the T/G pedestal and equipment mass are modeled as a lumped mass stick model (LMSM). MUAP-11002 Rev. 2. Subsection 1.1.4 describes the T/G pedestal structure. Additional details on the LMSM are described in the response to NRC RAI 909-6315, Question number 03.07.02-184.

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**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 a Technical/Topical Report.

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