

# REQUEST FOR ADDITIONAL INFORMATION NO. 66-710 REVISION 0

9/8/2008

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 09.04.04 - Turbine Area Ventilation System

Application Section: Tier 2 FSAR Section 9.4.4

SPCV Branch

## QUESTIONS

09.04.04-1

The following questions from the staff's review of DCD Section 9.4.4 in accordance with SRP 9.4.4, were discussed MHI representatives in a teleconference on May 8, 2008. A separate RAI will capture additional questions generated by the staff following its review of PNNLs draft PSER with RAIs.

RAI 9.4.4-1 Provide additional details for the following section 9.4.4 calculations, including assumptions and margins. Identify any deviations from the recommended calculational procedures in SRP Section 9.4.4, Revision 3, March 2007:

- 9.4.4-1.1 General Mechanical Area – Normal condition – Min. Temperature
- 9.4.4-1.2 General Mechanical Area – Normal condition – Max Temperature
- 9.4.4-1.3 General Mechanical Area – Smoke – Airflow
- 9.4.4-1.4 Electrical Equipment Areas - Normal condition – Min. Temperature
- 9.4.4-1.5 Electrical Equipment Areas - Normal condition – Max. Temperature
- 9.4.4-1.6 Electrical Equipment Areas - SBO – Min. Temperature
- 9.4.4-1.7 Electrical Equipment Areas - SBO – Max. Temperature
- 9.4.4-1.8 Electrical Equipment Areas - LOOP – Min. Temperature
- 9.4.4-1.9 Electrical Equipment Areas - LOOP – Max. Temperature
- 9.4.4-1.10 Electrical Equipment Areas - Smoke – Airflow
- 9.4.4-1.11 Electrical Equipment Areas, battery - Normal condition – Min. Temp.
- 9.4.4-1.12 Electrical Equipment Areas, battery - Normal condition – Max. Temp.
- 9.4.4-1.13 Electrical Equipment Areas, battery - SBO – Min. Temperature
- 9.4.4-1.14 Electrical Equipment Areas, battery - SBO – Max. Temperature
- 9.4.4-1.15 Electrical Equipment Areas, battery - LOOP – Min. Temperature
- 9.4.4-1.16 Electrical Equipment Areas, battery - LOOP – Max. Temperature
- 9.4.4-1.17 Electrical Equipment Areas, battery - Smoke – Airflow
- 9.4.4-1.18 Electrical Equipment Areas, battery – Hydrogen – Airflow
- 9.4.4-1.19 Sampling Room - Normal condition – Min. Temperature
- 9.4.4-1.20 Sampling Room - Normal condition – Max. Temperature
- 9.4.4-1.21 Sampling Room - Normal condition – Min. Relative Humidity
- 9.4.4-1.22 Sampling Room - Normal condition – Max. Relative Humidity

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- RAI 9.4.4-2 The US APWR in Figure 9.4.4-1, sheet 2 shows the non-class 1E battery room as a separate space from the electrical room. In Figure 9.4.4-1 sheet 1 the class 1E Battery Room is listed as a separate area for the Engineered Safety Feature Ventilation System DCD section 9.4.5. SRP 9.4.4 section III.2.A requires a layout drawing review to ensure the drawings clearly indicate the physical divisions between each portion and indicate design classification changes. Provide additional detail to determine if the Electrical Equipment Area described in Table 9.4-1, sheet 3 includes the battery room and the electrical room.
- RAI 9.4.4-3 The US APWR section 9.4.4.1.2 indicates that the General Mechanical Area and Electrical Equipment Area systems have a smoke purge mode of operation as a design basis. But this smoke mode is not shown in Table 9.4-1, sheet 3 as an abnormal condition like LOOP or SBO. SRP 9.4.4 section III.1 requires a review for normal and emergency operations, and the ambient temperature limits for the areas serviced. Clarify if Table 9.4-1 sheet 3 includes an additional smoke purge mode under abnormal conditions.
- RAI 9.4.4-4 US APWR DCD section 9.4.4.2-1 indicates that the sampling room temperature is maintained by a split unit type sampling room HVAC system. SRP 9.4.4 section III.1 requires a review for normal and emergency operations, and the ambient temperature limits for the areas serviced. Clarify if these system parameters should be listed under abnormal conditions in Table 9.4-1, sheet 3 and if the sampling room HVAC system should be listed in Table 9.4.4-1.
- RAI 9.4.4-5 US APWR DCD section 9.4.4.4 invokes the use of American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) standards and Air Conditioning and Refrigeration Institute standards for test purposes, but does not list the specific standards. Section 9.4.8 "References" does not list these standards. Provide the specific standards for this testing and include this in the Reference section 9.4.8.
- RAI 9.4.4-6 US APWR DCD section 9.4.4.2.2 discusses loss of offsite power for the electrical equipment areas HVAC system. This condition is not listed in Table 9.4-1, sheet 3. SRP 9.4.4 section III.1 requires a review for normal and emergency operations, and the ambient temperature limits for the areas serviced. Clarify if this condition should be listed in Table 9.4-1, sheet 3.