REQUEST FOR ADDITIONAL INFORMATION 376-2849 REVISION 1

5/29/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 06.02.04 - Containment Isolation System Application Section: 6.2.4

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

06.02.04-50

RAI 6.2.4-50:

Clarify use of Low Volume Purge System for cooling or heating containment.

Section B 3.6.3 of Chapter 16 of Revision 1 of the US-APWR DCD states in the 'Background' Section of the 'Bases' that:

"The Low Volume Purge System operates to:

- a. Supply outside air into the containment for ventilation and cooling or heating
- b. Reduce the concentration of noble gases within containment prior to and during personnel access and
- c. Equalize internal and external pressures."

While parts b and c of this statement are consistent with similar statements found in the 'Bases' Sections of NUREG-1431, "Standard Technical Specification Westinghouse Plants," and NUREG-1430, "Standard Technical Specifications Babcock and Wilcox Plants," part a of the statement is novel and appears to contradict acceptance criterion # 2 of Branch Technical Position (BTP) 6-4 which states that "The purge system should not be relied on for temperature and humidity control within the containment."

Part a of the above statement also seems to differ with Surveillance Requirement 3.6.3.2 in Chapter 16 of Revision 1 of the DCD which states: "Verify each 8 inch low volume purge valve is closed, except when the 8 inch containment low volume purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open."

Similarly, Tier 2 Table 9.4-1, "Area Design Temperature and Relative Humidity", indicates that the maximum containment temperature under normal conditions will be *approximately* 120°F ("~120°F"). It also indicates that "the containment purge system" is credited as a containment HVAC service system, annotated with the following footnote:

"(b) 1% exceedance dry bulb and wet bulb temperature of site ambient temperature condition (See Chapter 2)"

1) Clarify if the Low Volume Purge System of the US-APWR is meant to be used for containment cooling or heating, and if so, under what conditions it is meant to be used

for these purposes. Also, if the Low Volume Purge System is to be used for containment cooling or heating, justify such use in light of acceptance criterion # 2 of BTP 6-4.

2) Clarify why the maximum containment temperature under normal conditions is provided as an approximate value in Table 9.4.1.

3) If the Low Volume Purge System is not meant to be used for containment cooling or heating, during normal conditions, clarify Table 9.4.1 to so indicate.

4) Clarify if containment ambient air temperature was used as an input condition in Design Basis or Beyond Design Basis Accident analyses. If so, please include this air temperature as a key assumption in Tier 2 chapter 14.3 revised tables, and include ITAAC sufficient to verify that the Containment Fan Cooler System will be sized to ensure that containment ambient air temperature will not exceed 120°F during normal conditions, without the need to use other sources of containment air cooling. Alternatively, provide explanation why containment ambient air temperature was not chosen as a key design feature to be verified by ITAAC.