

**REQUEST FOR ADDITIONAL INFORMATION NO. 72-853 REVISION 0**

9/11/2008

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 16 - Technical Specifications

Application Section: Section 16.3.8

EEB Branch

**QUESTIONS**

16-1

RAI - SRP 16.3.8 - EEB-01

The NRC staff finds that the Design Control Document (DCD) Technical Specification (TS) Section 3.8.1, "AC Sources –Operating," is not consistent with NUREG-1431, "Standard Technical Specifications Westinghouse Plants." In that, the limiting condition for operation (LCO) 3.8.1 Condition "A" specifies Actions if one [required] offsite circuit is inoperable. However, DCD TS LCO 3.8.1 Condition "A" specifies Required Actions if only one required offsite circuit is OPERABLE. Provide your justification for not following the NUREG-1431 format in specifying Conditions for inoperable sources.

16-2

RAI - SRP 16.3.8 - EEB-02

NUREG-1431, LCO 3.8.1, If Condition A (one [required] offsite circuit is inoperable) is entered, Required Action A.2 requires actions to declare required feature(s) inoperable when its redundant required feature(s) is inoperable . Modify DCD TS LCO 3.8.1 Condition A to add Required Action A.2 and its associated completion time to be consistent with NUREG-1431 requirement or justify non-conformance.

16-3

RAI - SRP 16.3.8 - EEB-03

TS LCO 3.8.1b and LCO 3.8.4 of the DCD indicate that when in Modes 1, 2, 3, and 4, three of four Class 1E gas Turbine Generators (GTGs) capable of supplying the onsite Class 1E power distribution subsystem(s) and DC electrical power subsystems in three of four trains shall be available. The above indicates that one required CTG and one required DC electrical subsystems can be out-of-service for indefinite period of time. This implies that the plant operation would proceed with less than full compliment of all power sources which is inconsistent with NUREG-1431 which requires redundant trains

## REQUEST FOR ADDITIONAL INFORMATION NO. 72-853 REVISION 0

of power sources must be available in Modes 1, 2, 3, and 4. In addition, the above configuration reduces the defense-in-depth features provided in APWR design. Provide your justification for starting the plant with three of four Class 1E GTGs and three of the DC power subsystems available in Modes 1, 2, 3, and 4.

16-4

RAI - SRP 16.3.8 - EEB-04

The NRC staff notes that throughout the TS LCOs of the DCD, Required Actions for offsite power, emergency CTGs and DC electrical power subsystems invokes TS 5.5.18, "Configuration Risk Management Program," if one of the required power systems is not recovered within the required Completion Time. Although, the application of Configuration Risk Management Program (CRMP) was approved for South Texas as a pilot plant, such an application for your facility was not approved and in particular offsite power system was not included in the pilot program. Provide your justification for using Risk-Informed Completion Times, in the DCD TS for Electrical Power Systems.

16-5

RAI - SRP 16.3.8 - EEB-05

NUREG-1431, LCO 3.8.1C, If Condition C (both [required] offsite circuits are inoperable) is entered, Required Action C.1 requires action to declare required feature(s) inoperable when it's redundant required feature(s) is inoperable. Modify DCD TS LCO 3.8.1 Condition "C" to add Required Action C1 and its associated completion time to be consistent with NUREG-1431 requirement or justify non-conformance.

16-6

RAI - SRP 16.3.8 - EEB-06

NUREG-1431, TS LCO 3.8.1D, contains a Note that states, "Enter applicable Conditions and Required Actions of LCO 3.8.9," to LCO 3.8.1D, "Distribution Systems - Operating," when Condition D is entered with no AC power source to any train." Modify DCD TS LCO 3.8.1D to include the above note or justify non-conformance.

16-7

RAI - SRP 16.3.8 - EEB-07

DCD TS LCO 3.8.1, Condition E, requires if one or less required Class 1E GTGs are operable then restore two required Class 1E GTGs in two trains to operable status within two hours. Define 'one or less required Class 1E GTGs operable'. Also, define 'one or less required ac sources operable' in LCO 3.8.1, Condition H.

**REQUEST FOR ADDITIONAL INFORMATION NO. 72-853 REVISION 0**

16-8

RAI - SRP 16.3.8 - EEB-08

DCD TS Surveillance Requirement (SR) 3.8.1.9 requires, if surveillance is performed with Class 1E CTG synchronized with offsite power, it shall be performed at a power factor  $\leq 0.9$ . Confirm that 0.9 is the designed load power factor that the CTG will experience during accident loading.

16-9

RAI - SRP 16.3.8 - EEB-9

DCD TS SR 3.8.1.12 requires verification that each Class 1E GTG's non-critical automatic trips are bypassed on actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal. However, the SR does not specify the non-critical trips. NUREG-1431, SR 3.8.13, requires verification that each diesel generator's automatic trips are bypassed on [actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal] except:

- a. Engine overspeed,
- b. Generator differential current,
- c. [Low lube oil pressure],
- d. [High crankcase pressure], and
- e. [Start failure relay. ]

Modify DCD TS SR 3.8.1.12 to be consistent with NUREG requirement or justify non-conformance.

16-10

RAI - SRP 16.3.8 - EEB-10

DCD TS LCO 3.8.4, Required Action A.2 and LCO 3.8.5 Required Action A.2, specify a Completion Time of 'once per 24 hours' to verify battery float current  $\leq (5)$  amps when one required battery charger is inoperable. This is not consistent with NUREG -1431 LCO 3.8.4, Required Action A.2 which specifies a Completion Time of 'once per 12 hours' to verify battery float current  $\leq (2)$  amps when one required battery charger is inoperable. Justify the difference in Completion Times as well as the battery float current values from the NUREG-1431 values.

**REQUEST FOR ADDITIONAL INFORMATION NO. 72-853 REVISION 0**

16-11

RAI - SRP 16.3.8 - EEB-11

DCD LCO 3.8.6, Required Action B.2, specify a Completion Time of 'once per 24 hours' to restore battery float current to  $\leq$  (5) amps when one battery on one required train with float current  $>$  (5) amps. This is not consistent with NUREG -1431 LCO 3.8.6, Required Action B.2 which specifies a Completion Time of 'once per 12 hours' to verify battery float current  $>$  (2) amps when One [or two] batter[y][ies on one train] with float current  $>$  [2] amps. Justify the difference in Completion Times as well as the battery float current values from the NUREG-1431 values.