

## OPEN ITEMS 16.4.11

09/16/2009

### US-APWR Design Certification

#### Mitsubishi Heavy Industries

Docket No. 52-021

#### SRP Section: 16.4.11 – Electrical Power Systems Technical Specifications Branch

**[Open Item 16-134-1825/26]** This question is related to RAI 16-134-1825/26.

- In RAI-SRP-16-CTSB-134-1825 Question 16-26 (EEB RAI 16-2), the staff asked the applicant to provide justification why there is no required action equivalent to the STS NUREG-1431 LCO 3.8.1 REQUIRED ACTION A.2 for the LCO 3.8.1 CONDITION A in the US-APWR TS to provide assurance that an event with a coincident single failure will not result in a complete loss of redundant required safety functions associated with critical two-train safety loads.

The applicant responded that the “condition that one required feature composed of four trains becomes inoperable during the existence of Condition A, furthermore if a single failure of one GTG is caused, features in redundant three trains would keep their one hundred and fifty percent capacity which satisfies the required function,” and therefore the Required Action to declare required feature inoperable was not required.

The STS LCO 3.8.1 Condition A requires a cross check among the redundant safety divisions to determine how many trains of a given system are unavailable. The applicant did not include this cross check; therefore the staff believes Required Action A.2 should be added. This is an open item, OI-SRP-16-CTSB-134-1825 Question 16-26 (EEB RAI 16-2).

**[Open Item 16-134-1825/27]** This question is related to RAI 16-134-1825/27.

In RAI-SRP-16-CTSB-134-1825 Question 16-27, the staff asked the applicant to provide justification for the performance frequency of 24 months for the automatic and manual bus transfer surveillance test SR 3.8.1 and US-APWR Class 1E GTG refueling cycle surveillance tests SR 3.8.1.8 through SR 3.8.1.18. The industry operating experience with DGs may not directly translate over for GTGs. The applicant based the Class 1E GTG reliability performance and SR frequency on operating experience of non-nuclear GTGs, presented in Technical Report MUAP-07024. This is an open item, OI-16-CTSB-134-1825 Question 16-134-1825/27.

**[Open Item 16-72-853]** This question is related to RAI 16-72-853.

- In RAI No 72-853 Question 16-8 (EEB), the staff asked the applicant to confirm that 0.9 is the designed load power factor that the CTG will experience during accident loading.

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The applicant responded that the load power factor does not exceed 0.9. In chapter 8, Table 8.3.1.4 the average of load power factors during accident loading is approximately 0.85. Therefore, the applicant described load power factor  $\leq 0.9$  in DCD TS surveillance requirement (SR) 3.8.1.9.

Given that the accident loading is roughly 0.85 power factor, the staff recommends that 0.9 be used as an upper bound, but that a statement be added that the loading should be as close to 0.85 as is practical. This is an OPEN ITEM, OI-SRP-16.3.8-EEB-08.