

From: Lynch, Steven
Sent: Thursday, January 05, 2012 3:50 PM
To: Schrader, Kenneth
Cc: Lent, Susan; Burkhardt, Janet; Wang, Alan
Subject: RAIs for DCPD Requested Revision to TS 3.8.1, 'AC Sources - Operating,' for TSTF-163 and Exception to RG 1.9 (TAC Nos. ME5939 and ME5940)

Ken,

By letter dated March 28, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML110880202), Pacific Gas and Electric Company (PG&E) submitted PG&E Letter DCL-11-038, "License Amendment Request 11-03, Revision to Technical Specification 3.8.1, 'AC Sources – Operating,' for Traveler TSTF-163, Revision 2, and Exception to Regulatory Guide 1.9, Revision 0."

PG&E submitted a request for revision to Facility Operating License Nos. DPR-80 and DPR-82, revising Technical Specification (TS) 3.8.1, "AC Sources - Operating," to incorporate Technical Specification Task Force (TSTF) Traveler TSTF-163, Revision 2. The proposed changes would also revise the Final Safety Analysis Report Update to identify an exception to Regulatory Guide 1.9, Revision 0.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information provided in your application and determined that the following additional information is required in order to complete its review. This request for additional information (RAI) was discussed with you on November 22, 2011. In a follow-up call with Alan Wang on January 5, 2012, it was agreed that a response to this RAI would be provided by January 31, 2012. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-1524 or via e-mail at Steven.Lynch@nrc.gov. The NRC staff has determined that no security-related or proprietary information is contained herein.

1) The licensee stated the following on page 15 of the enclosure to the license amendment request:

The test data from the 1R5, 2R5, 1 R7, and 2R7 outages establish that there is adequate margin in the 4-second load timer interval to ensure there is no overlapping of loads and that the DG [diesel generator] is capable of starting and accelerating subsequent loads.

For DGs 1-1 and 2-2 Bus H, the AFW [auxiliary feedwater] pump load is followed by the containment spray (CS) pump load. Since the AFW [auxiliary feedwater] pump motor is one of the largest loads sequenced on a bus (600 hp per FSAR [Final Safety Analysis Report] Update Table 8.3-5) and it has one of the longest start (acceleration) times, it is expected that the frequency recovery would require a longer interval than other ESF [engineered safety feature] loads. The frequency response for the AFW pump motors was compared to one another for available data from the 1 R5, 2R5, 1 R7, and 2R7 outages. The AFW pump response was consistent, indicating that the extended frequency recovery was not related to an unusual or degraded DG or AFW pump condition or DG overload. The test data demonstrates that the DG frequency consistently stabilizes within a nominal 2.2 to 2.3 seconds and that the DGs are capable of starting and accelerating the subsequent ESF loads.

a) Provide a summary of the test data from the 1R5, 2R5, 1R7, and 2R7 outages to demonstrate that there is adequate margin in the 4-second load timer interval to ensure that there is no

overlapping of loads, that the DG frequency consistently stabilizes within a nominal 2.2 to 2.3 seconds, and that the DG is capable of starting and accelerating subsequent ESF loads.

b) Provide a discussion that demonstrates that all large loads are strictly dependant on sequencer permissive signals and that the loading sequence is not affected by process signals (e.g., system pressure, temperature, level, etc.), which could lead to overlapping or simultaneous actuation of loads.

c) Clarify whether pumps were in recirculation mode or fully loaded during the testing period. If tested in recirculation mode, explain how the 4-second load time interval is adequate for worst case design basis accident loading conditions.

d) The minimum steady-state frequency proposed in the LAR is 58.8 Hz. Provide details on the magnitude and duration of frequency variation that would be expected during sequencing of large loads when the DG is operating at this frequency.

e) Provide a summary of the impact on EDG loading when operating at extreme values of the TS frequency range (i.e., ≥ 58.8 Hz and ≤ 61.2 Hz). Identify if operating time and performance capabilities of critical motors (pumps) or motor operated valves are affected.

2) According to the Diablo Canyon Final Safety Analysis Report (FSAR) Update, the second level of undervoltage protection for each vital 4.16 kilo-Volt bus is set at approximately 3800 Volts (V). The second level undervoltage setpoint is typically the minimum acceptable voltage for operation of safety-related equipment. In the license amendment request, the licensee is proposing a minimum voltage of 3785 V for sequencing and steady-state operation of the DG.

a) Provide a detailed discussion that demonstrates that equipment required for plant shutdown will perform within the design basis assumptions in the Diablo Canyon accident analyses when the DG is operating at the lowest allowable voltage and frequency.

b) Confirm that the second level undervoltage relay does not have to be reset after actuation to allow the DG breaker to close.

3) TABLE 8.3-8 of the Diablo Canyon FSAR Update contains the following note:

Note 1: Original testing was done using a nominal 5-second load sequence time interval with the KWS relay installed. Since a nominal 4-second load sequence time interval is used in the design basis loading scenario and the EDG loading capability is demonstrated through computer simulation without KWS relays, the test results of Table 8.3-8 are of historical value.

a) Provide details on how the computer simulation results are validated with actual operation of large loads, specifically as related to voltage and frequency variations during sequencing.

Regards,

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