REQUEST FOR ADDITIONAL INFORMATION FOR DIABLO CANYON CHANGES TO AUXILIARY FEEDWATER TECHNICAL SPECIFICATION BASED UPON TSTF 245, 340, 412 AND 439 (TAC NOS. ME6360 AND ME6361)

**SBPB- RAI -1**

On page 8 of the application letter dated June 1, 2011, the licensee, PG&E, states, "under the scenario with one steam supply for the turbine-driven auxiliary feedwater pump (TDAFWP) inoperable and one motor-driven auxiliary feedwater pump(MDAFWP) inoperable, a feed line or steam line rupture could challenge the capability of the auxiliary feedwater (AFW) system to provide feedwater." The staff is evaluating conditions of the plant during scenarios such as a feedwater line break (FWLB) or a main steamline break (MSLB) on steam generator (SG) 3 occurs when the MDAFWP 1-2 for SG1 and SG2 is inoperable and the steam supply from SG2 to the TDAFWP is inoperable. This scenario would leave only SG4 supplied by MDAFWP 1-3 available. In final safety analysis report (FSAR) Table 6.5-2, the licensee requires a minimum of 390 gpm auxiliary feedwater (AFW) flow to 2 of the 4 intact SGs to mitigate a main feed line break. Therefore, in such scenarios the licensee would not meet the design requirement as stipulated in their design basis to mitigate an accident. Hence, the request to continue operations for 24 hours with one steam supply inoperable coincident with an inoperable motor driven pump may result in such postulated scenario that is beyond the current analyzed design basis.

In its draft safety evaluation report (SER) for TSTF-412, dated April 14, 2006, the staff considered the possible credit for operators having the ability to remotely feed other SGs from the control room using the operable MDAFWP. Figure 1 in the letter dated June 1, 2011, does show a possible cross tie line between the discharge headers of MDAFWP's. However, in their application the licensee does not mention using the cross tie line to mitigate accidents when the plant is in a degraded condition.

The staff requests the licensee to justify their proposed TS that allows for continued operations for 24 hours in conditions that result in an unanalyzed condition. Note: the licensee can limit the proposed condition, where the inoperable steam supply could only exist on the SG that can be fed by the operable MDAFWP.

**SBPB- RAI -2**

Based upon the event that happened June 29, 2009, the Eagle control system has a failure mode in which a single failure affects the operability of both MDAFW pumps. The FSAR section 3.3.2.3.2.7, External Design Class I Piping and Valves, evaluated events related to AFW valves. However, there is no discussion on the affects of the Eagle system Loop Calculation Processor (LCP) card failure. The licensee's design basis for emergency core cooling system addresses shared active components and delineates that components must meet the criteria stated in FSAR 3.1.8.8 Criterion 44. Also, FSAR Section 7.2.2.2.9 describes the standards that the Eagle 21 system must meet.

The staff requests the licensee a) provide an evaluation of the Eagle LCP card failure modes, to include consequences of a latent failure, b) Determine how the Eagle system with its card failures satisfies the design requirements described in FSAR Section 7.2.2.2.9, c) determine if the LCP card failure is a limiting failure, d) Evaluate whether the FSAR should include a discussion on this failure mode. Typically, the discharge valve is mostly closed when starting centrifugal pumps. However, the proposed immediate action directs operators to demand LCV valves full open. e) Describe how this action affects the operation of the MDAFWPs. f) Will upgrading the Eagle 21 Process Protection System address this failure mode?

**SBPB- RAI-3**

The licensee is proposing a new condition "B" be added to TS 3.7.5 to accommodate inoperability of the automatic control of the level control valves (LCV) to the SGs from the MDAFWPs. This condition results in both MDAFWP trains being declared inoperable. Current TS follow staff guidance to initiate a plant shutdown when both trains of MDAFWP are inoperable.

The licensee is proposing an immediate action to place both LCVs in manual with a full open demand. The licensee only proposes an immediate action and does not propose a completion time to return the automatic control to operable status. Furthermore, does the immediate action to place both LCVs in manual operation create any other credited actions (and associated completion times) for the "dedicated operator"? In addition the licensee claims it does not have to analyze for additional equipment failures while in the proposed TS Action statement due to inoperable automatic control of the MDAFW LCV(s). The relaxation of meeting the single failure criterion was intended to be temporary. Since the proposed action statement does not stipulate a completion time to return the automatic control, the system could remain in the degraded condition indefinitely. Therefore, for indefinite operating conditions, the staff requires the licensee to evaluate for additional equipment failures while in this degraded condition.

The staff requests the licensee provide an evaluation of additional equipment failures while the control valves automatic ability is inoperable, or provide a completion time to restore the function and its basis.

**SBPB-RAI-4**

In Enclosure 2 of letter dated, June 1, 2011, the licensee provides "example 4", showing how the individual completion times would be limited to less than the 10 day second limiting condition for operation (LCO) time limit. These action statements are based upon existing TS. However, the licensee is also proposing changes to TS 3.7.5 in accordance with TSTF-412 and TSTF-340. The licensee does not provide an assessment the new action statements and completion times that will be allowed with the incorporation of these TSTFs.

The intent of the second action statement was to limit not meeting LCO 3.7.5 to less than 10 days. Since the limit of the previous completion times were 7 days and 3 days, then 10 days could not be exceeded without re-entry into first action statement or shutting down the plant. With the incorporation of TSTF-412 and TSTF-340, there are two provisions under Condition "A" that allow a 7-day completion time. Together, there exist a possible scenario where the LCO could not be met for up to 14-days. For example, coming out of a refueling outage the licensee tests the steam-driven AFW pump and finds a faulty governor and enters an action statement with a 7 day completion time for an inoperable steam driven AFW pump. After 6 days, they retest the pump and the governor is operable. However, during the test one of the steam admission valves fails. The action statement for an inoperable steam supply allows the licensee 7 days to return it to operable status. If the licensee exits the initial 7 day completion time and starts a new 7 day completion time, the AFW system LCO could possibly not be met for greater than the 10 day limit that exists with the second action statement.

The staff requests the licensee to assess implementation of TSTF-439 under the new conditions being proposed within this amendment to justify whether the second completion time can be removed.

**SBPB-RAI-5**

In enclosure 2 of letter dated, June 1, 2011, the licensee states, "The administrative controls will ensure that a single contiguous occurrence of failing to meet the LCO will not be extended beyond the additive Completion Times of the two Required Actions for restoration unless a risk evaluation is performed, and the risk impact is managed."

TS 3.7.5 and TS 3.8.1 include the statement, "LCO 3.0.4b is not applicable." LCO 3.0.4b permits the licensee to perform a risk assessment addressing inoperable systems and components, and based upon the results allows the licensee an exception to the restriction on not changing modes. Based upon the risk importance of AFW and emergency diesel generator (EDG) systems, their respective TS prohibit the use of using a risk assessment to be exempt from the mode change restriction.

The staff requests the licensee justify why administrative controls should allow a risk evaluation for AFW and EDG systems to extend conditions where the system is not meeting the LCO beyond the first completion time.