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PG&E Letter DCL-98-138

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Docket No. 50-275, OL-DPR-80  
Docket No. 50-323, OL-DPR-82  
Diablo Canyon Units 1 and 2  
Revision of Equipment Control Guidelines to Support 24-Month Fuel Cycles

Dear Commissioners and Staff:

This letter is submitted for your information to report the results of PG&E's evaluation of revisions planned for three Diablo Canyon Power Plant (DCPP) equipment control guidelines (ECG) discussed below. The revisions will extend surveillance frequencies from 18 months to 24 months to support 24-month fuel cycles. PG&E evaluated extending these surveillance frequencies in accordance with 10 CFR 50.59 and concludes that none of the surveillance frequency extensions result in an unreviewed safety question (USQ).

- **ECG 4.1, "ATWS Mitigation System Actuation Circuitry (AMSAC)"**

PG&E letter DCL-88-049, "Additional Information on the AMSAC Design for DCPP," dated March 2, 1988, states that AMSAC surveillance testing would be performed every 18 months. NRC letter dated August 15, 1988, "Safety Evaluation of the AMSAC System, PG&E's Proposed Method of Implementing the Requirements of 10 CFR 50.62 (ATWS) for Diablo Canyon," states that performing the AMSAC surveillance approximately every 18 months is consistent with current refueling cycles as defined in DCPP's Technical Specifications.

A review of AMSAC operating, maintenance, and surveillance histories shows no time or cycle dependent effects that would prevent AMSAC from performing its design function if surveillance testing were extended from 18 months to 24 months. In addition, AMSAC functional testing is performed quarterly, and AMSAC has an internal self checking feature that

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continually monitors its status and provides alarm annunciation if the self check results are not acceptable. These additional checks provide early warning of problems that could affect the ability of AMSAC to perform its design function.

PG&E has concluded the change in the surveillance frequency is not a USQ because the original intent, documented in the 1988 correspondence discussed above, was to perform AMSAC surveillance testing on a refueling interval. Also, reviews of operating, maintenance, and surveillance test histories support continued system reliability when it is tested on a 24-month frequency.

- **ECG 4.4, "Turbine Overspeed Protection System"**

The NRC staff's acceptance criterion for turbine reliability is a turbine missile generation probability of less than  $1.0 \text{ E-}05$  per year for an unfavorably oriented turbine, such as the DCPD turbines. This criterion is stated in a letter from the NRC (C. E. Rossi) to Westinghouse (J. A. Martin) dated February 2, 1987. The methodology for calculating the probability of DCPD turbine missile ejection is given in Westinghouse report WCAP-11525, "Probabilistic Evaluation of Reduction in Turbine Valve Test Frequency," dated June 1987. The NRC accepted the WCAP-11525 methodology, and PG&E's commitment to address future changes in the turbine valve failure database, in an NRC letter dated July 10, 1989, which issued DCPD License Amendments (LA) 42 (Unit 1) and 41 (Unit 2).

Westinghouse report, "Update of BB-95/96 Turbine Valve Failure Rates and Effect on Destructive Overspeed Probabilities," dated August 6, 1993, provides an update of industry turbine valve failure rates, and the following annual probabilities of a destructive turbine overspeed event for 18-month and 24-month surveillances of the turbine overspeed trip system:

18 months =  $1.49 \text{ E-}06$   
24 months =  $1.70 \text{ E-}06$

Although extending the surveillance for the turbine overspeed protection system from 18 months to 24 months results in a slight increase in the probability of turbine failure, it is still well below the NRC acceptance criterion of  $1.0 \text{ E-}05$  per year.



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A review of operating, maintenance, and surveillance histories for this system show no time or cycle dependent effects that would prevent the system from performing its design function if surveillance testing were extended from 18 months to 24 months.

PG&E has concluded that the change in the surveillance frequency is not a USQ because the probability of turbine failure remains well below the NRC acceptance criterion, documented in DCPD LAs 42 and 41, and reviews of operating, maintenance, and surveillance test histories support continued system reliability when it is tested on a 24 month frequency.

- **ECG 7.7, "Reactor Vessel Head Vents"**

PG&E's letter to the NRC dated December 14, 1983, "New Technical Specification 3/4.4.11, Reactor Vessel Head Vents," stated that surveillance testing of the reactor vessel head vents would be performed every 18 months during cold shutdown or refueling.

A review of operating, maintenance, and surveillance histories for the reactor vessel head vents show no time or cycle dependent effects that would prevent them from performing their design function if surveillance testing were extended from 18 months to 24 months.

PG&E has concluded that the change in the surveillance frequency is not a USQ because the original intent was to perform the surveillance testing on a refueling interval. Also, reviews of operating, maintenance, and surveillance histories support continued reliability of the reactor vessel head vents when they are tested on a 24-month frequency.

In summary, PG&E has evaluated extending the surveillance frequencies for these three ECGs and in each case, has determined that the extension does not result in a USQ. If there are any questions regarding this letter, please contact Terence L. Grebel at (805) 545-4720.

Sincerely,



David H. Oatley





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