September 4, 1987

Docket Nos.: 50-275
and 50-323

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Mr. J. D. Shiffer, Vice President
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c/o Nuclear Power Generation, Licensing
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Dear Mr. Shiffer:

SUBJECT: GENERIC LETTER 83-28, ITEM 4.2 (TAC NO. 53908)

Item 4.2 of Generic Letter 83-28 requires licensees or applicants to describe their preventative maintenance and surveillance program for ensuring reliable reactor trip breaker operation. Parts 3 and 4 of Item 4.2 pertain to life testing of an acceptable sample size of the breakers, and periodic replacement of the breakers or components consistent with demonstrated life cycles. PG&E submitted responses to Item 4.2 (Parts 3&4) by letters dated July 18, 1986 and November 20, 1986. Our review of these responses has led to the enclosed Request for Additional Information. Your response is requested within 60 days of your receipt of this letter. Please contact us if you should need any clarification of this request.

The reporting and/or recordkeeping requirements of this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

Original signed by

Charles M. Trammell, Project Manager
Project Directorate V
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cc w/enclosure:

See next page

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REQUEST FOR ADDITIONAL INFORMATION
ITEM 4.2 (PARTS 3&4) OF GENERIC LETTER 83-28
DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1,2

Item 4.2 of Generic Letter 83-28 requires licensees or applicants to describe their preventative maintenance and surveillance program for ensuring reliable reactor trip breaker (RTB) operation. Parts 3 and 4 of Item 4.2 pertain to life testing of an acceptable sample size of the breakers, and periodic replacement of the breakers or components consistent with demonstrated life cycles. The licensee submitted responses to Item 4.2 (Parts 3&4) by letters dated July 18, 1986 and November 20, 1986.

In their November 20, 1986 response, the licensee referenced WCAP-10852 "Report of the DB-50 Reactor Trip Breaker Shunt and Undervoltage Trip Attachments Life Cycle Tests." WCAP-10852 addresses only cyclic testing on RTB trip attachments. It neither addresses life qualification of the RTBs nor noncyclic life-limiting or performance-degrading phenomena (i.e., aging) for the trip attachments. Therefore, WCAP-10852 does not constitute an acceptable response to the concern of the generic letter.

In their November 20, 1986 response, the licensee also referenced WCAP-8687, Supp. 2-E62B, Addendum 1, Rev-0 4/86; stating that the report provides details on the equipment qualification (aging and seismic testing) for the shunt trip attachment. This report pertains to the shunt trip attachment only, with limited thermal and mechanical aging.

If it can be demonstrated that the qualified life of the RTB exceeds the life of the plant, then the specific qualified life need not be identified. In a practical sense, the intent of the life testing requirement of the generic letter would be satisfied by demonstrating that the qualified life of the breaker (for the tripping function) exceeds the expected use projected to the next refueling. Cycle testing by the various owners groups, although it does not consider the effects of aging, may provide evidence to support continued use of the RTBs for one additional refueling cycle, provided that the individual breaker has not shown a sign of degradation based on the licensee's Parametric Trend Monitoring Program. In this approach, the actual qualified life is not specifically identified, but is only demonstrated to be adequate.

Ongoing life testing is an acceptable alternative to formal life testing for the purpose of establishing a specific qualified life for RTBs. Ongoing life testing will demonstrate that the qualified life, though not specifically known, is longer (in terms of cycles and time) than the integrated service that will be accumulated through the next refueling interval. The description of an ongoing qualification program should include the following:

(1) an estimate of the number of demands between refueling outages to which the RTB must respond, and the basis for the estimate.

(2) a definition of relevant, end-of-life related failures (Note that random failures occurring during the constant hazard rate portion of the "bathtub curve" (plot of failure rate vs. time) are not relevant to a life test. The licensee should (a) identify the possible failure modes, (b) categorize each failure mode as an end-of-life type or not, and (c) present a general methodology for categorizing future failure modes that may not be included in (a).

(3) the action to be taken upon any failure.

The staff finds that the licensee has not committed to a life testing program. The licensee should qualify their breakers by (a) actual life testing of the breakers, including aging, on an acceptable sample size or (b) establishing an ongoing life testing program. If the first alternative is selected, the licensee should present the results of the life testing to the staff for review. If the second alternative is selected, the licensee should describe their ongoing life testing program, including the three items identified above.

The licensee should also present for staff review a replacement program for the breaker and breaker components based on the results of their life qualification program. For ongoing qualification, the licensee should describe how the ongoing qualification results will be used to establish replacement cycles and times.