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AUTH.NAME AUTHOR AFFILIATION
RUEGER,G.M. Pacific Gas & Electric Co.
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SUBJECT: Responds to Suppl 5 of Generic ltr 89-10, "Inaccuracy of MOV Diagnostic Equipment."

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Pacific Gas and Electric Company

77 Beale Street, Room 1451
P.O. Box 770000
San Francisco, CA 94177
415/973-4684
Fax 415/973-2313

Gregory M. Rueger
Senior Vice President and
General Manager
Nuclear Power Generation

October 4, 1993

PG&E Letter No. DCL-93-234

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

Re: Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Response to Supplement 5 of Generic Letter 89-10

Gentlemen:

PG&E's response to Supplement 5 of Generic Letter 89-10, "Inaccuracy of Motor-Operated Valve Diagnostic Equipment," is enclosed.

Sincerely,

Gregory M. Rueger

Subscribed and sworn to before me this 4th day of October 1993.

Adriane D. Tolefree, Notary Public

Attorneys for Pacific Gas and Electric Company
Howard V. Golub
Christopher J. Warner

Christopher J. Warner

ADRIANE D. TOLEFREE
COMM. # 979198
Notary Public — California
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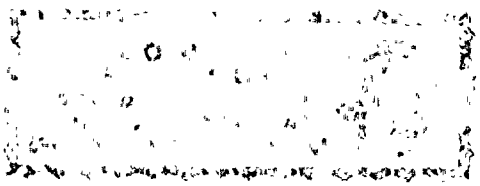

ENCLOSURE

Response to Supplement 5 of Generic Letter 89-10

Supplement 5 to Generic Letter (GL) 89-10, "Inaccuracy of Motor-Operated Valve Diagnostic Equipment," dated June 28, 1993, requested licensees to take the following actions with respect to their motor-operated valve (MOV) programs.

1. On the basis of the new information on MOV diagnostic equipment inaccuracy discussed in this letter, licensees are requested to reexamine their MOV programs and to identify measures taken or planned to account for uncertainties in properly setting valve operating thrust to ensure operability. Licensees should not limit their evaluation to only the specific examples of increased inaccuracy of MOV diagnostic equipment provided in the Discussion section of this GL supplement, but should consider any information reasonably available to them.

2. Licensees are requested to evaluate the schedule necessary (a) to consider the new information on MOV diagnostic equipment inaccuracy and (b) to respond to that information.

Actions to Address Accuracy Concerns

PG&E has reviewed its MOV program to identify measures taken and planned to account for uncertainties in properly setting valve operating thrust to ensure operability. Specific information is provided as follows.

The accuracy concern identified in GL 89-10, Supplement 5, regarding the use of diagnostic equipment that relies on spring pack displacement to estimate stem thrust is not applicable to the diagnostic equipment used by PG&E. PG&E uses the MOV diagnostic Valve Operation Test and Evaluation System (VOTES) equipment supplied by Liberty Technologies as the primary means of measuring thrust during MOV set-up and for obtaining thrust data during MOV static and dynamic testing performed in accordance with PG&E commitments to GL 89-10. In some cases, stem-mounted strain gauges (Quick Stem Sensor-type) supplied by Teledyne Engineering Services are used in conjunction with the VOTES data acquisition equipment. Diablo Canyon Power Plant (DCPP) procedures also allow the use of a PG&E-developed load cell procedure for determining thrust during MOV set-up; however, the load cell method does not provide time history data and is therefore not used for 89-10 static and dynamic testing.

The accuracy concerns identified in GL 89-10, Supplement 5, applicable to the VOTES equipment regarding (1) the possible use of improper stem material constants, and (2) the failure to account for a torque effect when the equipment is calibrated by measuring strain of the threaded portion of a valve stem, were evaluated by PG&E and determined not to affect MOV operability. Both of these effects can cause the thrust indication from the VOTES "force sensor" to read less than the true stem thrust. PG&E initiated corrective actions based on a preliminary notification from Liberty Technologies dated May 27, 1992. These corrective actions included the issuance of an Action

Request, an operability assessment, issuance of a Quality Evaluation, revision of ICE-12, "Preparation of Motor-Operated Valve Sizing and Switch Setpoint Calculations," that controls the engineering evaluation of VOTES test results, and transmittal of the revised material properties, torque correction factors (TCFs), and effective stem diameters (ESDs) to the DCPP Maintenance organization.

The MOVs previously tested in the Unit 2 fourth refueling outage (2R4) in the fall of 1991 were reevaluated using the new information on TCF, ESD, and material properties, and all the MOVs were determined to be operable. (VOTES was not used prior to 2R4 at DCPP.) The revised TCFs, ESDs, and material properties were used for MOV set-up in the Units 1 and 2 fifth refueling outages (1R5 in the fall of 1992, and 2R5 in the spring of 1993). As a result of high TCFs, some of the MOVs tested in 1R5 will be modified to reduce the TCF and will be retested in the Unit 1 sixth refueling outage (1R6). Testing of the corresponding MOVs in Unit 2 was scheduled for 2R6, after stem replacement to reduce the TCF. These MOVs that will be modified in 1R6 and 2R6 have been evaluated and determined to be operable.

During the recent NRC inspection of the implementation of PG&E's GL 89-10 program (NRC Inspection Report Nos. 50-275/93-19 and 50-323/93-19, dated August 17, 1993), the inspectors reviewed PG&E's consideration of VOTES diagnostic equipment inaccuracies and noted PG&E's actions in this area as a strength in the program.

In a letter dated July 21, 1993, Maine Yankee provided an interim 10 CFR 21 report to the NRC regarding an additional accuracy concern with the use of the VOTES equipment. This concern involves the use of the best-fit straight line (BFSL) method of generating calibration curves for the VOTES thrust sensor. The BFSL calibration option was used on six MOVs for GL 89-10 dynamic testing in Units 1 and 2. PG&E has initiated Nonconformance Report DCO-93-EN-N014 to address this concern and, based on a preliminary evaluation, has determined that there are no MOV operability problems as a result of the BFSL issue.

SCHEDULE

As discussed, as a result of high TCFs, some of the MOVs tested in 1R5 will be modified to reduce the TCF and will be retested in 1R6, scheduled for the spring of 1994. Testing of the corresponding MOVs in Unit 2 is scheduled for 2R6 in the fall of 1994.

Based on discussions with Liberty Technologies, PG&E expects that the information required to complete a final evaluation of the BFSL issue will be available in late 1993. PG&E plans to complete the final evaluation by the first quarter of 1994, which is prior to PG&E's commitment to complete the initial GL 89-10 MOV testing by December 1994.