



**Pacific Gas and
Electric Company**

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PG&E Letter DCL-04-110

U.S. Nuclear Regulatory Commission
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Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Response to August 30, 2004, NRC Request for Additional Information Regarding License Amendment Request 03-18, "Revision to Technical Specifications 5.5.9, 'Steam Generator (SG) Tube Surveillance Program,' and 5.6.10, 'Steam Generator (SG) Tube Inspection Report,' for 4-volt Alternate Repair Criteria for Steam Generator Tube Repair"

Dear Commissioners and Staff:

PG&E Letter DCL-03-183, dated January 7, 2004, submitted License Amendment Request (LAR) 03-18, "Revision to Technical Specifications 5.5.9, 'Steam Generator (SG) Tube Surveillance Program,' and 5.6.10, 'Steam Generator (SG) Tube Inspection Report,' for 4-volt Alternate Repair Criteria for Steam Generator Tube Repair." LAR 03-18 proposes to revise the Diablo Canyon Power Plant (DCPP) Technical Specifications (TS) to allow application of 4-volt alternate repair criteria at the intersections of the SG tube hot-legs with the 4 lowest SG tube support plates.

PG&E Letter DCL-04-086, "Response to NRC Request for Additional Information Regarding License Amendment Request 03-18, 'Revision to Technical Specifications 5.5.9, 'Steam Generator (SG) Tube Surveillance Program,' and 5.6.10, 'Steam Generator (SG) Tube Inspection Report,' for 4-volt Alternate Repair Criteria for Steam Generator Tube Repair,'" dated July 23, 2004, responded to the staff's questions dated May 28, 2004. PG&E Letter DCL-04-089, "Response to June 14, and July 6, 2004, NRC Request for Additional Information Regarding License Amendment Request 03-18, 'Revision to Technical Specifications 5.5.9, 'Steam Generator (SG) Tube Surveillance Program,' and 5.6.10, 'Steam Generator (SG) Tube Inspection Report,' for 4-volt Alternate Repair Criteria for Steam Generator Tube Repair,'" dated July 30, 2004, responded to the staff's questions dated June 14, and July 6, 2004.

On August 30, 2004, the NRC staff requested additional information required to

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complete the review of LAR 03-18. PG&E's response to the staff's question is provided in Enclosure 1.

This information does not affect the results of the technical evaluation or the no significant hazards consideration determination previously transmitted in PG&E Letter DCL-03-183.

If you have any questions, or require additional information, please contact Stan Ketelsen at (805) 545-4720.

Sincerely,

David H. Oatley
Vice President and General Manager

kjse/4328

Enclosures

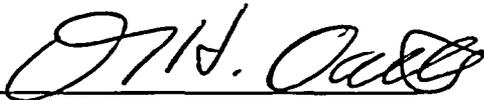
cc: Edgar Bailey, DHS
Bruce S. Mallett
David L. Proulx
Diablo Distribution
cc/enc: Girija S. Shukla

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of PACIFIC GAS AND ELECTRIC COMPANY) Docket No. 50-275) Facility Operating License) No. DPR-80
Diablo Canyon Power Plant Units 1 and 2) Docket No. 50-323) Facility Operating License) No. DPR-82

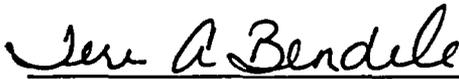
AFFIDAVIT

David H. Oatley, of lawful age, first being duly sworn upon oath says that he is Vice President and General Manager – Diablo Canyon of Pacific Gas and Electric Company; that he has executed this response to the NRC request for additional information on License Amendment Request 03-18 on behalf of said company with full power and authority to do so; that he is familiar with the content thereof; and that the facts stated therein are true and correct to the best of his knowledge, information, and belief.

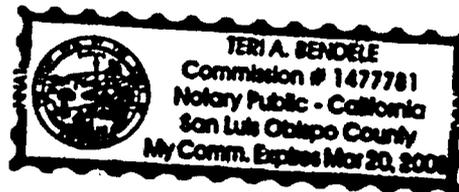


David H. Oatley
Vice President and General Manager – Diablo Canyon

Subscribed and sworn to before me this 3rd day of September 2004.



Notary Public
County of San Luis Obispo
State of California



ENCLOSURE 1

PG&E Response to the August 30, 2004, NRC Request for Additional Information Regarding License Amendment Request 03-18, "Revision to Technical Specifications 5.5.9, 'Steam Generator (SG) Tube Surveillance Program,' and 5.6.10, 'Steam Generator (SG) Tube Inspection Report,' for 4-volt Alternate Repair Criteria for Steam Generator Tube Repair"

NRC Question:

License Amendment Request (LAR) 03-18 proposes to revise the Diablo Canyon Power Plant (DCPP) Technical Specifications to allow application of a 4-volt alternate repair criteria (ARC) at the intersection of steam generator (SG) tube hot-legs with the 4 lowest SG tube support plates (TSPs). The 4-volt ARC is based upon SG tube expansion at TSP intersections to limit the TSP displacements to an acceptable level during a postulated accident event. In its SG TSP displacement analysis, the licensee considered the SG TSP loads from the main steam line break (MSLB), feed line break (FLB), and seismic (safe shutdown earthquake, SSE) events. The licensee noted that, based on Westinghouse Topical Report, WCAP-16170, Revision 0, the hydraulic loads on the TSPs due to MSLB bound those due to FLB, and the seismic loads on the TSPs in the vertical direction are small in comparison to the MSLB pressure loads. Thus, the licensee concluded that the loads to be applied as the design basis for the limited TSP displacement ARC are the small (leak-before-break) MSLB loads. As a result, all the TSP displacement and stress analyses accounted for only the MSLB loads. However, the staff note that, the bounding loads for the limited TSP displacement and stress analyses, including the determination of the required number of expanded tubes, should be based on either MSLB plus SSE or FLB plus SSE loads. Therefore, the existing technical basis for the 4-volt ARC is not sufficient to support the license amendment request. The licensee is requested to consider all transients and potential combination of events before the MSLB can be accepted as the bounding event for such evaluations. (This issue was raised in the NRC staff review of WCAP-14707/14708 as described in the Enclosure to Reference 28 of this LAR 03-18).

PG&E Response to Question:

For the MSLB and FLB loads, a comparison of the pressure drops across the TSPs for the two pipe break events is presented in Section 4.5 of Westinghouse Electric LLC WCAP-16170-NP, Revision 0, "Diablo Canyon SG Alternate Repair Criteria Based On Limited Tube Support Plate Displacement," dated November 2003 (nonproprietary), and WCAP-16170-P, Revision 0, "Diablo Canyon SG Alternate Repair Criteria Based On Limited Tube Support Plate Displacement," dated November 2003 (proprietary). In Section 4.5 of WCAP-16170-P it is concluded that the MSLB loads are bounding compared to the FLB loads. The TSP load results provided in WCAP-16170-P, Revision 0, did not include the seismic loads in addition

to the MSLB loads, since the seismic loads were determined not to be significant as clarified in the following discussion. In addition, the nature of the seismic loads with respect to the MSLB and FLB loads is such that the FLB plus seismic loads remains bounded by the MSLB plus seismic loads. There are no other transients or events which will generate additional loads across the TSPs.

DCPP has two accident condition seismic events included in the design basis, the Double Design Earthquake (DDE) and the HOSGRI earthquake. In terms of vertical excitation, the limiting event is the HOSGRI earthquake (hereafter referred to as the Safe Shutdown Earthquake (SSE) to be consistent with standard terminology) with a peak vertical acceleration of approximately 1.6g, or 1.6 times the acceleration due to gravity. The approximate weight of a TSP is 1,300 pounds. Thus, the load applied to a single TSP in the vertical direction is on the order of 2,100 pounds. For a MSLB load, the vertical load on the TSP is a function of the TSP area times the pressure drop across the TSP. For the DCPP SGs, the loads applied to the TSPs vary from the bottom of the SG tube bundle to the top. For the top TSP, the TSP with the highest load, the maximum load applied is approximately 26,550 pounds. The load applied to the bottom (first) TSP, the TSP with the lowest load, is approximately 12,930 pounds. The load applied to the fourth from the bottom (fourth) TSP, the highest TSP where displacement results are considered, is 15,770 pounds.

The combination of accident conditions is performed using the square root of the sum of the squares. For the first TSP, the combined MSLB+SSE load becomes 13,100 pounds, an increase of approximately 1.3 percent. For the fourth TSP, the combined MSLB+SSE load is approximately 15,910 pounds, an increase of approximately 0.9 percent. The limiting MSLB TSP displacement was calculated to be 0.1184 inch for the fourth TSP. Under combined MSLB+SSE loads, the maximum TSP displacement becomes approximately 0.1195 inch, which remains less than the maximum allowable TSP displacement of 0.15 inch which was considered for the 4-volt ARC functional requirements as discussed in Section 10.3 of WCAP-16170-P. Thus, it is concluded that seismic loads have an insignificant effect on the calculated TSP displacements. Since the stresses and deflections for the supporting structures are a function of the TSP displacements, they will also be minimally affected by the inclusion of the seismic loads. In summary, the seismic loads are concluded to have an insignificant effect on the calculated deflections and stresses for the TSP displacement analysis, and therefore their inclusion would not impact the WCAP-16170-P results and the WCAP-16170-P conclusions remain valid.