

August 1, 2008

Mr. John Conway  
Senior Vice President - Station  
Generation and Chief Nuclear Officer  
Pacific Gas and Electric Company  
Diablo Canyon Power Plant  
P.O. Box 770000  
San Francisco, CA 94177-0001

SUBJECT: DIABLO CANYON POWER PLANT, UNIT NO. 1- EVALUATION REGARDING  
THE STEAM GENERATOR TUBE INSPECTION REPORTS FOR THE 2007  
(1R14) OUTAGE (TAC No.: MD6690)

Dear Mr. Conway:

By letters dated August 27, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML072420339 and ML072470561), November 26, 2007 (ML073390290), and June 6, 2008 (ADAMS Accession No. ML081700278), Pacific Gas and Electric Company (PG&E, the licensee), submitted information summarizing the results of the 2007 steam generator (SG) tube inspections at Diablo Canyon Power Plant, Unit No. 1 (DCPP-1). These inspections were performed during the fourteenth refueling outage (1R14). In addition to these reports, the U.S. Nuclear Regulatory Commission (NRC) staff summarized additional information concerning the 2007 SG tube inspections at DCPP-1 in an NRC letter to DCPP-1 dated August 8, 2007 (ADAMS Accession No. ML072130034).

The NRC staff has completed its review of these reports and concludes that the licensee provided the information required by their technical specifications. The NRC staff review of the reports is enclosed.

If you have any questions regarding this matter, please contact me at (301) 415-1445.

Sincerely,

/RA by Jack Donohew for/

Alan B. Wang, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-275

cc: See next page

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Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-323

cc: See next page

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U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
SUMMARY OF STAFF REVIEW OF  
2007 STEAM GENERATOR TUBE INSPECTIONS  
DIABLO CANYON POWER PLANT, UNIT NO. 1  
TAC No. MD6690  
DOCKET No. 50-275

By letters dated August 27, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML072420339 and ML072470561), November 26, 2007 (ADAMS Accession No. ML073390290), and June 6, 2008 (ADAMS Accession No. ML081700278), Pacific Gas and Electric Company (PG&E, the licensee) submitted information summarizing the results of the 2007 steam generator (SG) tube inspections at Diablo Canyon Power Plant, Unit No. 1 (DCPP-1). These inspections were performed during the fourteenth refueling outage (1R14). In addition to these reports, the U.S. Nuclear Regulatory Commission (NRC) staff provided additional information concerning the 2007 SG tube inspections at DCPP-1 in an NRC letter to DCPP-1 dated August 8, 2007 (ADAMS Accession No. ML072130034).

The SGs at DCPP-1 are Westinghouse model 51 SGs. Each SG contains 3,388 mill-annealed Alloy 600 tubes. Each tube has a nominal outside diameter of 0.875 inch and a nominal wall thickness of 0.050 inch. The tubes are supported by a number of carbon steel tube support plates and Alloy 600 anti-vibration bars. The tubes were explosively expanded into the tubesheet at both ends for the full length of the tubesheet.

The licensee provided the scope, extent, methods, and results of their SG tube inspections in the documents referenced above. In addition, the licensee described corrective actions (i.e., tube plugging) taken in response to the inspection findings.

As a result of the review of the reports, the NRC staff has the following comments/observations:

No crack-like flaws have ever been identified in the tubes at cold-leg tube support plate elevations where distorted outside diameter bobbin indicators have been reported.

Approximately 31 percent of the inferred bobbin voltages (from the rotating probe data) were non-conservative when compared to the measured bobbin voltages. Some of these indications had measured bobbin voltages of approximately 2 volts.

Sludge lancing was not performed during the 2007 outage, in part, because of the small amount of sludge removed during the previous outage (1R13) and the chemical cleaning performed in the 1R12 outage in which about 19,000 pounds of sludge and scale were removed from the steam generators.

A detailed review of the condition monitoring and operational assessment was not performed for the degradation mechanisms that are not addressed by an alternate tube repair criteria (such as axial primary water stress corrosion cracking indications at tube support plate elevations). However, the results of these assessments appear reasonable given the plug-on-detection approach for crack-like indications and past inspection results.

The 2007 steam generator tube inspections were the last planned tube inspections for these steam generators since the licensee plans to replace them during their next DCP-1 outage (in 2009).

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by their technical specifications. In addition, the NRC staff concludes that there are no technical issues that warrant follow-up action at this time since the inspections appear to be consistent with the objective of detecting potential tube degradation and the inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

Diablo Canyon Power Plant, Units 1 and 2

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