UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

June 14, 2000

Gregory M. Rueger, Senior Vice President
and General Manager
Nuclear Power Generation Bus. Unit
Pacific Gas and Electric Company
Nuclear Power Generation, B32
77 Beale Street, 32nd Floor
P.O. Box 770000
San Francisco, California 94177

SUBJECT: DIABLO CANYON INSPECTION REPORT NO. 50-275/ 00-06; 50-323/00-06

Dear Mr. Rueger:

On May 6, 2000, the NRC completed a safety inspection at your Diablo Canyon Nuclear Power Plant, Units 1 and 2, facility. The enclosed results of this inspection were discussed on May 12, 2000, with Mr. David H. Oatley and other members of your staff. The enclosed report presents the results of this inspection.

The inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the ADAMS Public Library component on the NRC Web Site at http://www.nrc.gove/NRC/ADAMS/index.html (The Public Electronic Reading Room).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Linda Joy Smith, Chief
Project Branch E
Division of Reactor Projects

Docket Nos.: 50-275
50-323
License Nos.: DPR-80
DPR-82

Enclosure:
NRC Inspection Report No.
50-275/00-06; 50-323/00-06

cc w/enclosure:
David H. Oatley, Vice President
Diablo Canyon Operations and Plant Manager
Diablo Canyon Nuclear Power Plant
P.O. Box 56
Avila Beach, California 93424

Lawrence F. Womack, Vice President, Power
Generation & Nuclear Services
Diablo Canyon Power Plant
P.O. Box 56
Avila Beach, CA 93434

Dr. Richard Ferguson
Energy Chair
Sierra Club California
1100 llth Street, Suite 311
Sacramento, California 95814

Nancy Culver
San Luis Obispo Mothers for Peace
P.O. Box 164
Pismo Beach, California 93448

Chairman
San Luis Obispo County Board of
Supervisors
Room 370
County Government Center
San Luis Obispo, California 93408

Truman Burns\Mr. Robert Kinosian
California Public Utilities Commission
505 Van Ness, Rm. 4102
San Francisco, California 94102

Robert R. Wellington, Esq.
Legal Counsel
Diablo Canyon Independent Safety Committee
857 Cass Street, Suite D
Monterey, California 93940

Ed Bailey, Radiation Program Director
Radiologic Health Branch
State Department of Health Services
P.O. Box 942732 (MS 178)
Sacramento, CA 94327-7320

Steve Hsu
Radiologic Health Branch
State Department of Health Services
P.O. Box 942732
Sacramento, California 94327-7320

Christopher J. Warner, Esq.
Pacific Gas and Electric Company
P.O. Box 7442
San Francisco, California 94120

Managing Editor
Telegram-Tribune
1321 Johnson Avenue
P.O. Box 112
San Luis Obispo, California 93406

Robert A. Laurie, Commissioner
California Energy Commission
1516 Ninth Street (MS 31)
Sacramento, CA 95814

Electronic distribution from ADAMS by RIV:
Regional Administrator **(EWM)**
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DC Site Secretary **(JWG)**

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.:	50-275 50-323
License Nos.:	DPR-80 DPR-82
Report No.:	50-275/ 00-06 50-323/ 00-06
Licensee:	Pacific Gas and Electric Company
Facility:	Diablo Canyon Nuclear Power Plant, Units 1 and 2
Location:	7 ½ miles NW of Avila Beach Avila Beach, California
Dates:	April 2 through May 6, 2000
Inspectors:	D. L. Proulx, Senior Resident Inspector D. G. Acker, Resident Inspector G. A. Pick, Senior Project Engineer, Region IV
Approved By:	L. J. Smith, Chief, Project Branch E Division of Reactor Projects

ATTACHMENTS:

Attachment 1: Supplemental Information

Attachment 2 NRC's Revised Reactor Oversight Process

SUMMARY OF FINDINGS

Diablo Canyon Nuclear Power Plant
NRC Inspection Report 50-275/00-06; 50-323/00-06 (DRP)

The report covers a 5-week period of resident inspection and a regional project inspection. The significance of issues is indicated by their color (green, white, yellow, and red) and was determined by the Significance Determination Process in Inspection Manual Chapter 0609.

Cornerstone: Mitigating Systems

Green. A design weakness in the control room lamp sockets in both units resulted in multiple failures during 1998 and 1999. The failure of lamp sockets could have resulted in shorting the control power to affected safety-related components during a seismic event. The affected light sockets were replaced.

The licensee performed a detailed risk analysis and concluded that the increased risk was small. Simultaneous failure of multiple sockets in a manner that would result in electrical shorts that prevented function of all of the affected components was considered highly unlikely. An NRC Senior Reactor Analyst reviewed the licensee's seismic risk analysis and concluded that the analysis was adequate to demonstrate that the increased risk (delta core damage and large early release frequencies) was small and of very low risk significance (Section 1R13.2).

Report Details

Summary of Plant Status

Diablo Canyon Unit 1 began this inspection period at 100 percent power and maintained that level until May 1, 2000, when power was reduced to 50 percent for cleaning of the circulating water system tunnels. Unit 1 returned to 100 percent power on May 4 and continued at this level until the end of the inspection period.

Diablo Canyon Unit 2 began this inspection period at 100 percent power and maintained that level throughout the inspection period.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignments

Partial System Walkdown (Unit 1)

a. Inspection Scope

The inspectors performed a partial system walkdown of the component cooling water system on April 18-19, 2000, while component cooling water Pump 1-2 was unavailable for planned maintenance. The inspectors used Operating Valve Identification Diagram 106714, "Component Cooling Water," Revision 47, and Procedure OP F-2:VI "Component Cooling Water System Alignment Verification for Plant Startup," Revision 24, as guidance to ensure system operability. Emergency Operating Procedure E-0, "Reactor Trip or Safety Injection," Revision 0, was also used as guidance for system readiness. The inspectors verified valve positions and ensured that the components were in good material condition for the two operable trains.

b. Issues and Findings

There were no findings identified during the inspection.

1R05 Fire Protection

Monthly Routine Inspection

a. Inspection Scope

The inspectors performed fire protection walkdowns to assess the material condition of plant fire protection equipment and proper control of transient combustibles. Specific risk significant areas inspected included the turbine building, switchgear areas in the auxiliary building, and the intake structure.

b. Issues and Findings

There were no findings identified during the inspection.

1R12 Maintenance Rule Implementation

Routine Reviews

a. Inspection Scope

The inspectors reviewed the licensee's maintenance rule implementation for several equipment performance problems, including:

- Failure of Diesel Engine Generator 1-3 to start during surveillance testing, due to a wiring error.
- Failure of Turbine-Driven Auxiliary Feedwater Pump 1-1 during surveillance testing, due to clogging of the recirculation line.

b. Issues and Findings

There were no findings identified during the inspection.

1R13 Maintenance Risk Assessment and Emergent Work Control

.1 Current Activities

a. Inspection Scope

Throughout the inspection period, the inspectors reviewed daily and weekly work schedules to determine when risk significant activities were scheduled. The inspectors reviewed selected activities regarding risk evaluations and overall plant configuration control. The inspectors discussed emergent work issues with work control personnel and reviewed the potential risk impact of these activities to verify that the work was adequately planned, controlled, and executed. The activities reviewed were associated with: high vibration on centrifugal charging Pump 2-1 coincident with a ground on Vital Battery 1-1, auxiliary saltwater Pump 2-1 maintenance outage, and a maintenance outage window on centrifugal charging Pump 1-1.

b. Issues and Findings

There were no findings identified during the inspection.

.2 (Closed) Unresolved Item 275; 323/99014-02: Plant Outside Design Basis due to Degraded Indicating Lamp Sockets. In August 1999 the licensee identified a potential common cause design related to failure of the multiple control room indicating lamp sockets and initiated a program to inspect and replace the defective sockets. After replacement of the defective lamp sockets, the licensee initiated action to evaluate the potential safety consequences of the multiple socket failures that had occurred in 1998 and 1999. As discussed in NRC Inspection Report 50-275; 323/99-014, an unresolved item was opened for NRC review of the licensee's safety evaluation.

The licensee, in Licensee Event Report (LER) 275; 323/1999-007-01, provided the results of the safety evaluation. The licensee concluded that the only risk from the failed lamp sockets was shorting of associated wiring during a seismic event. The licensee found that the failed sockets affected 23 components in Unit 1 and 32 components in Unit 2. In addition, because vital 480 bus voltage lamp sockets failed in both units, the licensee determined that shorting of these lamp socket modules could affect an additional 27 components in Unit 1 and 21 components in Unit 2. The licensee performed a risk assessment for loss of these components during a seismic/internal event, and concluded that the increase in core damage frequency from the defective lamp sockets was very low (~1E-7 per year). The corresponding increase in the large early release frequency was also very low (<2E-9 per year). Simultaneous failure of multiple sockets in a manner that would result in electrical shorts that prevented function of all of the affected components was considered highly unlikely.

An NRC Senior Reactor Analyst reviewed the licensee's risk evaluation, Calculation File C12, "No Maintenance Base Case for the Combined Seismic/Internal Model," Revision 1, and concluded that the licensee's risk assessment was appropriate for the conditions identified. The licensee's risk assessment included a sensitivity analysis to determine the effect of varying the components' reliability. This also helped to bound the uncertainty of assessing external events. The results of the sensitivity review indicated that the variance in the reliability for the effected components did not substantially change the risk assessment.

The inspectors considered that, because of a design weakness, there had been multiple failures of control room lamp sockets in both units during 1998 and 1999. The failure of lamp sockets could have resulted in shorting the control power to effected safety-related components during a seismic event. The licensee performed a detailed risk analysis and concluded that the increased risk was small. An NRC Senior Reactor Analyst reviewed the licensee's seismic risk analysis and concluded that the analysis was adequate to demonstrate that the increased risk (delta core damage and large early release frequencies) was small and of very low risk significance (GREEN).

.3 (Closed) LER 275; 323/1999-007-00 and 01: Plant Outside Design Basis because of Degraded Indicating Lamp Sockets. This LER was reviewed as discussed in Section 1R13.2

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following operability evaluations and supporting documents:

- Action Requests A0505071 and A0505915, 4kV/480 volt Bus G overvoltage.
- Action Request A0486796, Error in Steam Generator Tube Rupture Analysis

b. Issues and Findings

The inspectors did not identify any significant findings. However, during review of Action Request A0505915, the inspectors reviewed the Improved Technical Specifications Bases for maximum voltage to safety-related components. They found that the maximum voltage specified for the 4160V switchgear would not always result in a conservative voltage at the 480V component level. The licensee initiated a review of the Improved Technical Specification Basis for maximum voltage.

1R19 Postmaintenance Testing

a. Inspection Scope

The inspectors observed and evaluated the following postmaintenance tests to determine if the test adequately demonstrated that the equipment was capable of performing its safety functions:

- STP SIP-12, "Routine Surveillance Test of Safety Injection Pump 1-2," Revision 13, for testing of Safety Injection Pump 1-2 after completion of disassembly and reassembly of mechanical joints in the seal cooling water piping and other minor maintenance activities, April 13, 2000, and

- Procedure STP P-CCP-11, "Routine Surveillance Test of Centrifugal Charging Pump 1-1," Revision 10, performed to verify acceptibility of the lubricating oil pump coupling modification, April 27, 2000.

b. Issues and Findings

There were no findings identified during the inspection.

1R22 Surveillance Testing

a. .Inspection Scope

The inspectors observed all or part of the following surveillance and inservice test activities:

- Surveillance Test Procedure STP P-AFW-11, "Routine Surveillance Test of Turbine-Driven Auxiliary Feedwater Pump 1-1," Revision 10, and

- Surveillance Test Procedure STP V-3R5, "Exercising Steam Supply to Auxiliary Feedwater Pump Turbine Stop Valve," Revision 11, and

- Surveillance Test Procedure STP M-6A, "Routine Surveillance Testing of Control Room Ventilation System," Revision 29A.

b. Issues and Findings

There were no findings identified during the inspection.

4. OTHER ACTIVITIES

4OA2 Performance Indicator Verification

a. Inspection Scope (71151)

The inspectors reviewed the following performance indicators for the period from the first quarter of 1999 through the first quarter of 2000, to assess the accuracy and completeness of the indicator. The inspectors used Nuclear Energy Institute (NEI) guidance NEI 99-02, "Performance Indicator Verification," Revision 0, as guidance for this inspection.

- Unplanned Scrams per 7000 Critical Hours
- Scrams with a Loss of Normal Heat Removal

b. Issues and Findings

There were no findings identified during the inspection.

4OA5 Management Meetings

Exit Meeting Summary

The inspectors presented the inspection results to David H. Oatley and other members of licensee management at the conclusion of the inspection on May 12, 2000. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. R. Becker, Manager, Operations Services
W.G. Crockett, Manager, Nuclear Quality Services
T. L. Grebel, Director, Regulatory Services
D. B. Miklush, Manager, Engineering Services
D. H. Oatley, Vice President and Plant Manager
R. A. Waltos, Manager, Maintenance Services

NRC

D. L. Proulx, Senior Resident Inspector
D. G. Acker, Resident Inspector
G. A. Pick, Senior Project Engineer, Region IV

ITEMS OPENED AND CLOSED

Opened

None

Previous Items Closed

275;323/99014-02	URI	Review risk of multiple control room lamp socket failures (Section 1R13.2)
275;323/1999-007-00 and 01	LER	Multiple control room lamp socket failures (Section 1R13.3)

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
LER	Licensee Event Report
NRC	Nuclear Regulatory Commission
URI	Unresolved Item

ATTACHMENT 2

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	**Radiation Safety**	**Safeguards**
• Initiating Events	• Occupational	• Physical Protection
• Mitigating Systems	• Public	
• Barrier Integrity		
• Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the significance determination process, and assigned colors of GREEN, WHITE, YELLOW, or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, or RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.