



**Pacific Gas and  
Electric Company**

**David H. Oatley**  
Vice President  
Diablo Canyon Operations

Diablo Canyon Power Plant  
PO Box 56  
Avila Beach, CA 93424

805 545 4350  
Fax 805 545 4234

August 9, 2002

PG&E Letter DCL-02-091

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Docket No. 50-275, OL-DPR-80  
Diablo Canyon Unit 1  
Licensee Event Report 1-2002-005-00  
Technical Specification 3.4.10 Not Met During Pressurizer Safety Valve  
Surveillance Testing Due to Random Lift Setting Spread

Dear Commissioners and Staff:

PG&E is submitting the enclosed licensee event report regarding the pressurizer code safety valves being outside Technical Specification 3.4.10 tolerance due to random lift setting spread.

This event was not considered risk significant and did not adversely affect the health and safety of the public.

Sincerely,

David H. Oatley

for DHO

ccs/2246/A0559624

Enclosure

cc: Ellis W. Merschoff  
David L. Proutx  
Girija S. Shukla  
Diablo Distribution  
INPO

IE22

# LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <b>Diablo Canyon Unit 1</b>										DOCKET NUMBER (2) <b>0 5 0 0 0 2 7 5</b>					PAGE (3) <b>1 OF 5</b>		
TITLE (4) <b>Technical Specification 3.4.10 Not Met During Pressurizer Safety Valve Surveillance Testing Due to Random Lift Setting Spread</b>																	
EVENT DATE (5)			LER NUMBER (6)					REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)						
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER			REVISION NUMBER	MO	DAY	YEAR	FACILITY NAME				DOCKET NUMBER		
<b>06</b>	<b>10</b>	<b>2002</b>	<b>2002</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>08</b>	<b>09</b>	<b>2002</b>				
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (11)															
<b>1</b>		<div style="display: flex; justify-content: space-between;"> <span><b>X</b> 10 CFR</span> <span><b>50.73(a)(2)(i)(B)</b></span> </div>															
POWER LEVEL (10)		OTHER															
<b>1 0 0</b>		(SPECIFY IN ABSTRACT BELOW AND IN TEXT, NRC FORM 366A)															
LICENSEE CONTACT FOR THIS LER (12)																	
<b>Roger Russell - Senior Regulatory Services Engineer</b>														TELEPHONE NUMBER			
														AREA CODE	NUMBER		
														<b>805</b>	<b>545-4327</b>		
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																	
CAUSE	SYSTEM	COMPONENT		MANUFACTURER			REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT		MANUFACTURER			REPORTABLE TO EPIX		
<b>X</b>	<b>A</b>	<b>B</b>	<b>R</b>	<b>V</b>			<b>C</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>Yes</b>						
SUPPLEMENTAL REPORT EXPECTED (14)											EXPECTED			MON	DAY	YR	
[ ] YES (If yes, complete EXPECTED SUBMISSION DATE)											[X] NO			SUBMISSION DATE (15)			
ABSTRACT (Limit to 1400 spaces i.e., approximately 15 single-spaced typewritten lines) (16)																	
<p>On June 10, 2002, during a routine, scheduled performance of Surveillance Test Procedure M-77, "Safety and Relief Valve Testing," PG&amp;E identified two of three pressurizer safety valves (PSVs) outside the Technical Specification (TS) 3.4.10, "Pressurizer Safety Valves," tolerance lift setting of greater than 2460 psig and less than 2510 psig.</p> <p>The PSVs were disassembled, inspected, and reset within TS requirements at the offsite test facility.</p> <p>PG&amp;E believes the cause of the PSV lift setting being outside the TS allowance is random lift setting spread.</p> <p>PSV lift setting repeatability has been recognized as an industry-wide problem. PG&amp;E has participated in extensive investigative test programs, both jointly with the nuclear steam supply system vendor, Westinghouse Owners Group, and independently. The results of the industry investigations are documented in WCAP - 12910, "Pressurizer Safety Valve Set Pressure." PG&amp;E has previously enhanced the PSV maintenance activities and testing procedures resulting in improved performance. No further corrective actions are required.</p>																	

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT

### I. Plant Conditions

Unit 1 has operated in various plant modes with the described condition.

### II. Description of Problem

#### A. Background

Technical Specification (TS) 3.4.10, "Pressurizer Safety Valves," requires that three pressurizer safety valves (PSVs)[AB][RV] shall be operable with a lift setting greater than 2460 psig and less than 2510 psig corresponding to ambient conditions of the valve at nominal operating temperature and pressure. This upper and lower pressure limit is based on a nominal pressure of 2485 psig with an upper and lower tolerance limit of  $\pm 1\%$ .

Surveillance Test Procedure (STP) M-77, "Safety and Relief Valve Testing," verifies the PSVs lift setting in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section XI. The initial lift setting is evaluated for TS compliance. STP M-77 requires that the valves lift within the required tolerance in order to declare them operable.

STP M-77 test methodology obtains the as-found lift setting by placing the PSVs in an environmentally controlled enclosure and heating the ambient air to the temperature conditions typical at Diablo Canyon Power Plant (DCPP). The loop seal is also heated to simulate the piping temperature conditions at DCPP. Testing is accomplished by the addition of steam at a defined ramp rate. Steam is added until physical evidence of stem movement is visible on the remote data acquisition display screen. The data is then reviewed to ascertain "first discernible stem movement" and the pressure at which it took place.

#### B. Event Description

Following the Unit 2 ninth refueling outage in October 1999, the PSVs lift settings were set and verified to be within the range required by TS 3.4.10. The PSVs were then returned to warehouse stock. During the Unit 1 tenth refueling outage in October 2000, these three PSVs were placed in service and declared operable without any additional adjustment of the lift settings until the PSVs were tested following removal in April 2002.

On June 10, 2002, two of the three Unit 1 PSVs were identified with lift setting outside TS 3.4.10 requirements. One PSV was found with a lift setting less than 2460 psig and one PSV was found with a lift setting of

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### TEXT

greater than 2510 psig. The valves were found to lift 1.9 percent low and 2.6 percent high, respectively during offsite testing.

PSV lift setting repeatability has been recognized as an industry-wide problem. PG&E has participated in extensive investigative test programs, both jointly with the nuclear steam supply system vendor, Westinghouse Owners Group, and independently. The results of the industry investigations are documented in WCAP – 12910, "Pressurizer Safety Valve Set Pressure."

**C. Inoperable Structures, Systems, or Components that Contributed to the Event**

None.

**D. Other Systems or Secondary Functions Affected**

None.

**E. Method of Discovery**

This condition was discovered by PG&E while performing a routine scheduled surveillance test in accordance with STP M-77.

**F. Operator Actions**

None.

**G. Safety System Responses**

None.

### **III. Cause of the Problem**

**A. Immediate Cause**

Two of three PSVs did not lift within the TS 3.4.10 tolerance.

**B. Root Cause**

The cause of the lift setting change has been determined to be random lift setting spread.

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TEXT

### C. Contributory Cause

None.

### IV. Assessment of Safety Consequences

The limiting event for evaluating the lift setting is the loss of load analysis that requires the maximum reactor coolant system (RCS) pressure of 2750 psia not be exceeded. The RETRAN computer model was run to determine if the RCS pressure would exceed 110 percent of ASME design acceptance criteria, or 2750 psia. The analysis confirmed that the as-found set points would have maintained adequate RCS pressure relief capacity, such that the plant remained bounded by the limiting loss of load analysis provided in Final Safety Analysis Report Update, Section 15.2.7, "Loss of External Electrical Load and/or Turbine Trip." Based on this information, PG&E used the NRC's significance determination process and believes the condition had low risk significance.

Therefore, the event:

- Is of very low risk significance
- was not a Safety System Functional Failure; and
- did not adversely affect the health and safety of the public.

### V. Corrective Actions

#### A. Immediate Corrective Actions

The valves were disassembled, inspected, reset within tolerance, and returned to warehouse stock.

#### B. Corrective Actions to Prevent Recurrence

No corrective action to prevent recurrence was required because this inherent characteristic of the valve is within the analysis basis of DCPD.

### VI. Additional Information

#### A. Failed Components

None.

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT

## B. Previous Similar Events

LER 1-94-009, Revision 2, submitted in PG&E Letter DCL-95-248, dated November 7, 1995, regarding PSVs found outside TS limits during the Unit 1 sixth refueling outage. The root cause of this event was determined to be random lift setting spread. No corrective action to prevent recurrence was required because this inherent characteristic of the valve was within the analysis basis of DCP. However, a prudent action to replace the PSV upper spring washer was recommended. The implementation of this prudent action has been deferred until NRC concerns regarding valve performance can be acceptably resolved.

LER 1-95-016, Revision 2, submitted in PG&E Letter DCL-98-077, dated May 28, 1998, regarding PSVs found outside TS limits during the Unit 1 seventh refueling outage. The root cause of this event was determined to be random lift setting spread. No corrective action to prevent recurrence was required because this inherent characteristic of the valve was within the analysis basis of DCP. However, a prudent action to replace the PSV upper spring washer was recommended. The implementation of this prudent action has been deferred until NRC concerns regarding valve performance can be acceptably resolved.

LER 2-2001-004, submitted in PG&E Letter DCL-01-090, dated August 27, 2001, regarding PSVs found outside TS limits during the Unit 2 tenth refueling outage. The root cause of this event was determined to be random lift setting spread. No corrective action to prevent recurrence was required because this inherent characteristic of the valve was within the analysis basis of DCP.