

REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8704270007 DOC. DATE: 87/04/20 NOTARIZED: NO DOCKET #
 FACIL: 50-323 Diablo Canyon Nuclear Power Plant, Unit 2, Pacific Co 05000323
 AUTH. NAME AUTHOR AFFILIATION
 SISK, D. P. Pacific Gas & Electric Co.
 SHIFFER, J. D. Pacific Gas & Electric Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-003-00: on 870321, main steam isolation valve FCV-41 shut w/ensuing transient resulting in high steam flow coincident w/low steam line pressure safety injection & subsequent reactor trip. Caused by faulty valve. W/870420 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

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	NRR/DREP/RAB	1 1	NRR/DREP/RPB	2 2
	NRR/PMAS/ILRB	1 1	NRR/PMAS/PTSB	1 1
	<u>REG FILE</u> 02	1 1	RES SPEIS, T	1 1
	RGN5 FILE 01	1 1		
EXTERNAL:	EG&G GROH, M	5 5	H ST LOBBY WARD	1 1
	LPDR	2 2	NRC PDR	1 1
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TOTAL NUMBER OF COPIES REQUIRED: LTR 44 ENCL 42



LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) DIABLO CANYON UNIT 2										DOCKET NUMBER (2) 05000131231				PAGE (3) 1 OF 4	
TITLE (4) MECHANICAL FAILURE OF CLOSURE POSITION SWITCH FOR MAIN STEAM ISOLATION VALVE RESULTS IN A HIGH STEAM FLOW COINCIDENT WITH LOW STEAM LINE PRESSURE SAFETY INJECTION															
EVENT DATE (8)			LER NUMBER (8)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (9)					
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)		
03	21	87	87	01013	010	04	21	87					050001		
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (11)													
POWER LEVEL (10)		<input checked="" type="checkbox"/> 10 CFR 50.73(a)(2)(iv) <input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 365A) Special Report													
1															
100															

LICENSEE CONTACT FOR THIS LER (12)										TELEPHONE NUMBER			
DAVID P. SISK, REGULATORY COMPLIANCE ENGINEER										80559517351			
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)													

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC
X	S	B33	N01071	Y					

SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO														

ABSTRACT (16)

On March 21, 1987, at 0743 PST, with Unit 2 in Mode 1 (Power Operation), operating at 100 percent power, main steam isolation valve FCV-41 shut with the ensuing transient resulting in a high steam flow coincident with low steam line pressure safety injection and subsequent reactor trip. An Unusual Event was declared, and the unit was stabilized in Mode 3 (Hot Shutdown) in accordance with approved plant procedures. The one-hour NRC notification required by 10 CFR 50.72 was completed at 0805 PST.

This was the eighth emergency core cooling system actuation cycle that resulted in a discharge of water into the reactor coolant system.

This event was determined to have been caused by the failure of the valve closure position switch POS-821 following a rainstorm. The failure was caused by water entering the switch housing, which shorted a switch contact and produced the necessary logic to vent the valve actuator and close FCV-41.

To prevent recurrence, the failed switch was replaced with a newer design switch with improved housing seals. The remaining switches of the same model and service as the one that failed will be replaced during the current refueling outage for Unit 2 and during the next refueling outage for Unit 1.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) DIABLO CANYON UNIT 2	DOCKET NUMBER (2) 0 5 0 0 0 3 2 3	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 7	- 0 0 3	- 0 0	0 2	OF 0 4

TEXT (If more space is required, use additional NRC Form 368A's) (17)

I. Initial Conditions

Unit 2 was in Mode 1 (Power Operation) at 100 percent power.

II. Description of Event

A. Event:

On March 21, 1987, at 0743 PST, main steam isolation valve (MSIV) FCV-41 (SB) (FCV) shut with the ensuing transient resulting in a high steam flow coincident with low steam line pressure safety injection and subsequent reactor trip. An Unusual Event was declared, and the unit was stabilized in Mode 3 (Hot Shutdown) in accordance with approved plant procedures. The one-hour NRC notification required by 10 CFR 50.72 was completed at 0805 PST.

B. Inoperable structures, components or systems that contributed to the event:

None

C. Dates and approximate times for major occurrences:

1. March 21, 1987, at 0743 PST: Event and discovery date.
2. March 21, 1987, at 0804 PST: Plant stabilized in Mode 3.
3. March 21, 1987, at 0805 PST: Significant Event Report completed.

D. Other systems or secondary functions affected:

None

E. Method of discovery:

The event was immediately apparent due to alarms and indications in the control room.

F. Operator actions:

The operators followed the appropriate procedures and placed the unit in a stable condition.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

G. Safety system responses:

1. The reactor (AA) tripped.
2. The turbine (TA) tripped.
3. The emergency core cooling systems (BQ, BP) aligned and provided required boration and core cooling.
4. Phase "A" containment isolation (JM) occurred.
5. All three diesel generators (EK)(DG) started, but per design did not load.
6. Main feedwater (SJ) isolation and auxiliary feedwater (BA) initiation occurred.
7. Auxiliary building ventilation (VF) switched to "buildings and safeguards" mode.

III. Cause of Event

A. Immediate cause:

Main steam isolation valve FCV-41 (SB)(FCV) closed, causing high steam flow in the other three steam lines. The high steam flow signal coincident with the low steam line pressure signal produced by the transient provided the necessary logic to produce a safety injection signal.

B. Root cause:

This event was caused by the failure of a gasket to keep water out of the closure position switch housing [POS-821 (SB)(33)] for main steam isolation valve FCV-41. Water entered the switch housing and shorted out internal contacts, which provided the logic to vent the valve actuator and close FCV-41.

IV. Analysis of Event

A malfunction of a position switch housing seal resulted in the actuation of the reactor protection system and engineered safety features. All safety systems responded as designed and returned the plant to a safe shutdown condition. The design basis for the MSIVs includes the ability to close at 130 percent design flow with no damage to the valve or associated piping. In addition, a safety injection from 100 percent power is a previously analyzed Condition II event. Thus, no adverse safety consequences or implications resulted from this event.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

V. Corrective Actions

1. To prevent recurrence, the failed switch was replaced with a newer design switch with improved seals.
2. To prevent similar occurrences, the remaining switches of the same model and service as the one that failed will be replaced during the current refueling outage for Unit 2 and the next refueling outage for Unit 1.

VI. Additional Information

A. Failed components:

Closed position switch POS-821

Manufacturer: NAMCO Controls

Model Number: EA770-90004

B. Previous LERs on similar events:

None



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PACIFIC GAS AND ELECTRIC COMPANY

PG&E + 77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

JAMES D. SHIFFER
VICE PRESIDENT
NUCLEAR POWER GENERATION

April 20, 1987

PGandE Letter No.: DCL-87-078

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

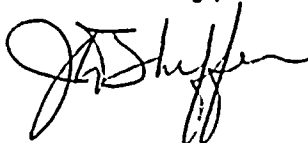
Re: Docket No. 50-323, OL-DPR-82
Diablo Canyon Unit 2
Licensee Event Report 2-87-003-00
Mechanical Failure of Closure Position Switch For Main Steam Isolation
Valve Results in a High Steam Flow Coincident with Low Steam Line
Pressure Safety Injection

Gentlemen:

Pursuant to 10 CFR 50.73(a)(2)(iv), PGandE is submitting the enclosed Licensee Event Report concerning a safety injection. This event has in no way affected the public's health and safety.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,



Enclosure

cc: L. J. Chandler
J. B. Martin
M. M. Mendonca
P. P. Narbut
B. Norton
C. M. Trammell
CPUC
Diablo Distribution
INPO

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