CATEGORY 1

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SUBJECT: LER 96-005-00:on 960519,manual reactor trip initiated.Caused by personnel error.Applicable procedures revised to incorporate lessons learned.W/960708 ltr.

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CATEGORY 1 DOCUMENT

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Pacific Gas and Electric Company

Diablo Canyon Power Plant
P.O. Box 56
Avila Beach, CA 93424
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July 8, 1996

PG&E Letter DCL-96-143

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

Docket No. 50-323, OL-DPR-82
Diablo Canyon Unit 2
Licensee Event Report 2-96-005-00
Manual Reactor Trip Upon Discovery of Digital Rod Position Indicator System Inoperability Due to Personnel Error

Dear Commissioners and Staff:

PG&E is submitting the enclosed licensee event report concerning a manual reactor trip. The reactor was tripped upon discovery that the digital rod position indicator system was inoperable.

This condition does not affect the health and safety of the public.

Sincerely,

Robert P. Powers
Vice President - Diablo Canyon Operations and Plant Manager

cc: Steven D. Bloom
L. J. Callan
Kenneth E. Perkins
Michael D. Tschiltz
Diablo Distribution
INPO

Enclosure

NCR N0001986/DPS/2246

IE22

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Diablo Canyon Unit 2	0 5 0 0 0 3 2 3	1 OF 5

TITLE (4) Manual Reactor Trip Upon Discovery of Digital Rod Position Indicator System Inoperability Due to Personnel Error

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MON	DAY	YR	YR	SEQUENTIAL NUMBER	REVISION NUMBER	MON	DAY	YR	FACILITY NAMES	DOCKET NUMBER (5)
05	19	96	96	- 0 0 5 -	0 0	07	08	96		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR: (11)
	3	

POWER LEVEL (10)	
	0 0 0

X 10 CFR 50.73(a)(2)(iv)

____ OTHER -

(Specify in Abstract below and in text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

	TELEPHONE NUMBER	
	AREA CODE	
Cary Harbor, Senior Regulatory Services Engineer	805	545-4348

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
[ ] YES (If yes, complete EXPECTED SUBMISSION DATE)	[X] NO				

ABSTRACT (16)

On May 19, 1996, with Unit 2 in Mode 3 (Hot Standby), a manual reactor trip (RT) was initiated upon discovery that the digital rod position indicator (DRPI) was inoperable. The discovery was made during a special test (ST) required to verify operability of the DRPI. The ST requires the operator pull the shutdown bank out 24 steps and compare the DRPI rod position indication with the rod demand position indication. When the DRPI did not respond to the rod motion, the rods were driven back 24 steps to the fully inserted position. In accordance with the action requirement of TS 3.10.4, the RT breakers were opened by actuating the manual scram system. The DRPI was immediately restored to operable status.

On June 7, 1996, at 1600 PDT, a technical review group (TRG) met to investigate the cause of the DRPI failure. Since the RT resulted in the opening of the reactor trip breakers, the TRG determined that the manual initiation of the RT, in response to the discovered condition, constituted a reportable event. A 4-hour, non-emergency report was made to the NRC in accordance with 10 CFR 50.72(b)(2)(ii) on June 7, 1996, at 1717 PDT.

This event was caused by personnel error, cognitive, in that the test switch was left in the test position after maintenance. Applicable procedures are being revised to incorporate the lessons learned.

I. Plant Conditions

Unit 2 was in Mode 3, (Hot Standby) during start-up after its seventh refueling outage.

II. Description of Problem

A. Summary:

On May 19, 1996, with Unit 2 in Mode 3, a manual reactor trip was initiated upon discovery that the digital rod position indicator (DRPI) system (AA) was inoperable. The discovery was made during the performance of ST required to verify operability of the DRPI system during plant start-up.

B. Background:

Technical Specification (TS) 3.1.3.3, Position Indication System - Shutdown, requires that one DRPI shall be operable when the reactor trip breakers are closed. With less than the above required position indicators operable, immediately open the reactor trip breakers.

TS 3.10.4, Position Indication System - Shutdown, suspends the limitations of TS 3.1.3.3 during rod drop tests and during the performance of surveillances of the DRPI for operability. With the position indicator systems inoperable, immediately open the reactor trip breakers.

Surveillance Test Procedure (STP) R-1C, Digital Rod Position Indicator Functional Test, verifies the operability of the DRPI system in accordance with the requirements of TS 4.10.4 and/or TS 4.1.3.3.

Instrument and Controls (I&C) Maintenance Procedure (MP) 1.6-1, Logic Test of Digital Rod Position Indication System, provides instructions for testing the logic of the DRPI system.

I&C MP I-1.10-1, DRPI - Detector/Encoder Card Checks, provides instructions for testing the DRPI system detector/encoder cards.

C. Event Description:

On May 19, 1996, with Unit 2 in Mode 3, a manual reactor trip was initiated upon discovery that the DRPI system was inoperable. The discovery was made during the performance of a special test (ST) required to verify operability of the DRPI system during plant start-up.

The ST requires the operator pull the shutdown bank out 24 steps and compare the DRPI system rod position indication with the rod demand position indication. When the DRPI system did not respond to the rod motion, the rods were driven back 24 steps to the fully inserted position. In accordance with the action requirement of TS 3.10.4, the operator opened the reactor trip breakers, by actuating the manual scram system.

The DRPI data board test switches for both data trains were found to be in the "TEST" position. The DRPI system was immediately restored to operable status.

On June 7, 1996, at 1600 PDT, a technical review group (TRG) met to investigate the cause of the failure, review reportability, and determine applicable corrective actions. Since the manual reactor trip resulted in the opening of the reactor trip breakers, the TRG determined that the manual initiation of the reactor trip, in response to the discovered condition, constituted a reportable event. Prior to the TRG, the event had been determined to not be a reactor trip since the rods were already fully inserted prior to the manual reactor trip. A 4-hour, non-emergency report was made to the NRC in accordance with 10 CFR 50.72(b)(2)(ii) on June 7, 1996, at 1717 PDT.

D. Inoperable Structures, Components, or Systems that Contributed to the Event:

None.

E. Dates and Approximate Times for Major Occurrences:

1. May 19, 1996, at 0830 PDT: Reactor trip breakers closed with DRPI system inoperable.
2. May 19, 1996, at 1050 PDT: Event date - Manual reactor trip initiated.
3. May 19, 1996, at 1050 PDT: DRPI test signal removed, STP performed, and DRPI system declared operable.
4. June 7, 1996, at 1600 PDT: Discovery date - TRG conservatively determines event to be a reactor trip.
5. June 7, 1996, at 1717 PDT: Four-hour non-emergency report made in accordance with 10 CFR 50.72(b)(2)(ii).

F. Other Systems or Secondary Functions Affected:

None.

G. Method of Discovery:

The condition was discovered during the performance of STP R-1C as required by TS 3.10.4 to verify operability of the DRPI system.

H. Operator Actions:

Upon discovery of the inoperable DRPI system, the control room operator drove the shutdown bank back to the bottom and then actuated the reactor trip.

I. Safety System Responses:

Upon actuation of the manual reactor trip, the reactor trip breakers opened. Since the control rods were already on the bottom, the only response to the reactor trip was the opening of the reactor trip breakers.

III. Cause of the Problem

A. Immediate Cause:

The DRPI data board test switches for both data trains in the containment DRPI data cabinets were found to be in the "TEST" position. With these switches in "TEST," the DRPI position of the control rods at the display in the control room is strictly a function of the position of the test switches.

B. Root Cause:

This event was caused by personnel error, cognitive, by non-licensed temporary addition (outage) PG&E employees, in that contrary to the requirements of MP I-1.6-1, the test switch was left in the test position after the completion of the maintenance procedure during the Unit 1 seventh refueling outage.

IV. Analysis of the Event

Procedure controlled pre-operation testing discovered the inoperable system prior to pulling more than one shutdown bank and that shutdown bank was only pulled 24 steps. At the time of this event, the boron level in the reactor coolant system was

approximately 2400 ppm. Thus, even if all of the control rods were removed from the core, the reactor would not have become critical.

Therefore, this event did not adversely affect the health and safety of the public.

V. Corrective Actions

A. Immediate Corrective Actions:

1. A manual reactor trip was initiated upon discovery that the DRPI system was inoperable.

2. Upon discovery that the DRPI system test switch was in the test position, the test switch was returned to the normal operation position and the DRPI system was verified to be operable.

B. Corrective Actions to Prevent Recurrence:

1. MP I-1.6-1 and MP I-1.10-1 are being revised to incorporate lessons learned from this event.

2. STP R-1 C will be revised to provide cautions and to provide instructions for operator actions if expected results are not received.

VI. Additional Information

A. Failed Components:

None.

B. Previous LERs on Similar Problems:

None.