REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8707090542 DOC. DATE: 87/07/01 NOTARIZED: NO DOCKET #
FACIL: 50-323 Diablo Canyon Nuclear Power Plant, Unit 2, Pacific Ga 05000323
AUTH. NAME AUTHOR AFFILIATION
NELSON, T. A. Pacific Gas & Electric Co.
SHIFFER, J. D. Pacific Gas & Electric Co.
RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-001-01: on 870305, automatic reactor trip occurred due to low-low steam generator 2-4 water level. Caused by personnel error. Event issued as operations dept incident rept & reviewed by control room personnel. W/870701 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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	PD5 LA	1	1	PD5 PD	1	1
	SCHIERLING, H	1	1	TRAMMELL, C	1	1
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	AEOD/DOA	1	1	AEOD/DSP/ROAB	2	2
	AEOD/DSP/TPAB	1	1	DEDRO	1	1
	NRR/DEST/ADE	1	0	NRR/DEST/ADS	1	0
	NRR/DEST/CEB	1	1	NRR/DEST/ELB	1	1
	NRR/DEST/ICSB	1	1	NRR/DEST/MEB	1	1
	NRR/DEST/MTB	1	1	NRR/DEST/PSB	1	1
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	NRR/DLPQ/HFB	1	1	NRR/DLPQ/QAB	1	1
	NRR/DOEA/EAB	1	1	NRR/DREP/RAB	1	1
	NRR/DREP/RPB	2	2	NRR/PMAS/ILRB	1	1
	NRR/PMAS/PTSB	1	1	REG FILE 02	1	1
	RES DEPY GI	1	1	RES TELFORD, J	1	1
	RES/DE/EIB	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
	NSIC HARRIS, J	1	1	NSIC MAYS, G	1	1

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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 0 4

TITLE (4)
REACTOR TRIP ON LOW-LOW STEAM GENERATOR WATER LEVEL CAUSED BY PERSONNEL ERROR

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
0 3	0 5	8 7	8 7	0 0 1	0 1	0 7	0 1	8 7		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	2
POWER LEVEL (10)	0 0 4

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (11)

[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
THOMAS A. NELSON, REGULATORY COMPLIANCE ENGINEER	AREA CODE 8 0 5 5 9 5 - 7 3 5 1

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)

At 1727 PST, March 5, 1987, with the unit in Mode 2 (Startup), an automatic reactor trip occurred due to a low-low steam generator (SG) 2-4 water level. The appropriate procedures were followed and the unit was stabilized in Mode 3 (Hot Standby) at 1737 PST, March 5, 1987. The significant event notification required by 10 CFR 50.72 was completed by 1820 PST, March 5, 1987.

Operations personnel were in the process of rolling the main turbine after a short forced outage. The auxiliary feedwater (AFW) pumps were supplying feedwater as the main turbine speed was being increased. The increased steam demand required to accelerate (ramp) the turbine generator was greater than the AFW pumps capacity to supply feedwater causing SG water levels to decrease. Attempts were made to restore SG levels by slowing the ramp and then placing the ramp on hold; however, the actions were taken too late to prevent the low-low SG water level trip.

The root cause is attributed to personnel error in that the operators failed to control the steam demand from the steam generators within the capacity of the AFW system and that miscommunication occurred between the shift foreman and the control operator about when to commence the plant startup. This event was reviewed by all control room personnel.

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I. Initial Conditions

The unit was in Mode 2 (Startup) at 2 percent power.

II. Description of Events

A. Event:

At approximately 1710 PST, March 5, 1987, with the unit in Mode 2 (Startup), operations personnel were in the process of rolling the main turbine following a short forced outage. As allowed by Operating Procedure OP L-2, "Hot Standby to Minimum Load," the normal sequence of steps was altered at the discretion of the Shift Foreman in that only the auxiliary feedwater (AFW) (BA) pumps (P) were used to control steam generator (SG) (AB)(SG) level. Normally both AFW and main feedwater (SJ) systems are used to supply makeup flow to the SGs, but since the main turbine (TA) would be rolled at a low speed for a period of time the crew felt that using only the AFW pumps would be a more stable plant configuration.

Operators initially began increasing main turbine (TA) speed at the rate of 100 RPM per minute. The increased steam demand needed to accelerate (ramp) turbine speed at this rate was greater than the AFW pumps capacity to supply feedwater to the steam generators. The operator noted SG water level decreasing and attempted to recover the level by decreasing the ramp rate. At a turbine speed of 1400 RPM the ramp was stopped but the in-progress transient caused the unit to trip shortly thereafter on low-low level in SG 2-4.

The significant event notification required by 10CFR 50.72 was completed by 1820 PST, March 5,1987.

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

None

C. Dates and approximate times for major occurrences:

March 5, 1987, 1727 PST: Event date

March 5, 1987, 1737 PST: Stable conditions achieved (Mode 3, Hot Standby)

March 5, 1987, 1820 PST: 10 CFR 50.72 notification completed

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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 action:

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

G. Safety system responses:

1. The reactor trip breakers (JC) (BKR) opened.

2. The control rod drive mechanisms (AA) (DRIV) allowed the control rods to drop into the reactor.

3. The turbine (TA) (TBR) tripped.

III. Cause of Event

A. Immediate cause:

Low-low water level in SG 2-4.

B. Root cause:

Personnel error: Failure to properly control the plant - The operators failure to control the total steam demand to within the capacity of the AFW system. As mentioned in Section II.A, "Event," the normal sequencing of steps were altered. A contributing factor to this personnel error was that the implications of the altered sequence were not fully discussed with the control room operators prior to rolling the turbine generator.

Personnel error: Miscommunications - The control operator (CO) and shift foreman (SFM) had a discussion on plant status prior to the shift briefing. Based on this discussion, the CO thought he was to continue to plant startup; however, that was not the intention of the SFM. The SFM left the immediate vicinity to attend the shift briefing, and as a result the pace of the evolution was not appropriately controlled.

IV. Analysis of Event

A reactor trip on low-low steam generator level is a previously analyzed Condition II event (FSAR Update Section 15.2.8). Since all systems functioned as designed there were no unanalyzed safety consequences or implications from this event.

V. Corrective Actions

This event was issued as an Operations Department Incident Report and has been reviewed by control room personnel. This report reinforced the importance of thoroughly discussing off-normal plant evolutions or changes in normal operating practices, and controlling the pace of complex evaluations during shift briefings or turnovers.

VI. Additional Information

A. Failed components:

None

B. Previous LERs on similar events:

None

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PACIFIC GAS AND ELECTRIC COMPANY

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JAMES D. SHIFFER
VICE PRESIDENT
NUCLEAR POWER GENERATION

July 1, 1987

PGandE Letter No.: DCL-87-160

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 2-87-001-01
Reactor Trip on Low-Low Steam Generator Water Level
Caused by Personnel Error

Gentlemen:

Pursuant to 10 CFR 50.73(a)(2)(iv), PGandE is submitting the enclosed Licensee Event Report revision concerning a reactor trip. This revision is being submitted to clarify that miscommunications was a contributing factor in the cause of the event. 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,

for J.D. Shiffer

Enclosure

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

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