NRC Form 366
(9/83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2	0 5 0 0 0 3 6 1	1 OF 0 2

TITLE (4)
REACTOR TRIP - LOOP COLD LEG TEMPERATURE DIFFERENCE

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQ. NUMBER	REV. NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
0 4	1 6	8 5	8 5	0 2 4	0 0	0 5	1 5	8 5		0 5 0 0 0

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

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

	20.402(b)		20.405(c)	X	50.73(a)(2)(iv)		73.71(b)
	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		
	20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		
	20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
J. G. HAYNES, STATION MANAGER	7 1 4 — 4 9 2 - 7 7 0 0

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 (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On 4/16/85, at 0833, with Unit 2 in Mode 2 at 1 1/2% reactor power and operating with one Main Steam Isolation Valve (MSIV) open and one shut, the reactor tripped in response to low Departure from Nucleate Boiling Ratio (DNBR) trip signals from Core Protection Calculators (CPC's) A and B. The low DNBR signals were generated due to a temperature difference between Reactor Coolant System (RCS) loop cold leg temperatures. All control and safety systems were verified to have functioned properly.

The reactor trip resulted from penalty factors applied by the CPC's which are based on plant operation at 20 percent or above. As corrective action, CPC operation using penalty factors based on actual unit power will be evaluated. Additionally, appropriate procedures will be revised to facilitate plant control when operating with one MSIV open and one shut.

There are no reasonable or credible circumstances which could have increased the severity of this event.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQ. NUMBER	REV. NUMBER	
SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2	0 5 0 0 0 3 6 1	8 5	- 0 2 4	- 0 0	0 2 OF 0 2

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

On April 16, 1985, at 0833, Unit 2 was in Mode 2 and operating at approximately 1 1/2 percent power with one Main Steam Isolation Valve (MSIV) (EIIS Component Code ISV) open and one MSIV shut. A combination of manual and automatic controls were being used to control steam generator (EIIS Component Code SG) level.

The temperature difference between the Reactor Coolant System (RCS)(EIIS System Code AB) cold leg which resulted from one MSIV being shut increased due to the difficulty of controlling the plant in this configuration while feeding using the main feedwater (MFW) (EIIS System Code SJ) system. The Core Protection Calculator (CPC) (EIIS Component Code CPU) setpoint on cold leg temperature difference was reached and an automatic low Departure from Nucleate Boiling Ratio (DNBR) plant trip resulted. All systems which operated as a result of the plant trip were verified to have operated satisfactorily.

Corrective action to prevent a recurrence of this will include both procedure changes and changes to the CPC's. Operating Instructions SO23-2-9, "Placing Main Steam Leads in Service," SO23-9-6, "Feedwater Regulating System Operations," and SO23-5-1.3.1, "Plant Startup From Hot Standby to Minimum Load," will be revised to facilitate plant control when operating with one MSIV open and one shut.

CPC's currently use penalty factors which apply at 20% to all power levels below 20%. This is extremely conservative. This was a contributing cause to the automatic plant trip discussed above. CPC operations will be evaluated to determine if elimination of these unnecessarily conservative penalty factors is warranted.

Because of the extremely conservative penalty factors existing in the CPC at the time of the plant trip, this event had minimal safety significance. Neither the health and safety of plant personnel nor the health and safety of the public were affected by this event.

Southern California Edison Company

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SAN CLEMENTE, CALIFORNIA 92672

J. G. HAYNES
STATION MANAGER

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May 15, 1985

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

Subject: Docket No. 50-361
30-Day Report
Licensee Event Report No. 85-024
San Onofre Nuclear Generating Station, Unit 2

Pursuant to 10 CFR 50.73(a)(2)(iv), this submittal provides the required 30-day written Licensee Event Report (LER) for an occurrence involving the Reactor Protection System. Neither the health and safety of plant personnel nor the health and safety of the public was affected by this event.

If you require any additional information, please so advise.

Sincerely,

JG Haynes

Enclosure: LER No. 85-024

cc: F. R. Huey (USNRC Senior Resident Inspector, Units 1, 2 and 3)
J. P. Stewart (USNRC Resident Inspector, Units 2 and 3)
A. J. D'Angelo (USNRC Resident Inspector, Unit 1)

J. B. Martin (Regional Administrator, USNRC Region V)

Institute of Nuclear Power Operations (INPO)

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