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)
DNBR REACTOR TRIP

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 8	0 8	8 4	8 4	0 4 3	0 0	0 9	0 6	8 4		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	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
J. G. HAYNES, STATION MANAGER	AREA CODE 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	
X	J C	J X	C 4 9 0	Y							

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 August 8, 1984 at 1710, with Unit 2 in Mode 1 at 100% power, a penalty factor from Control Element Assembly Calculator (CEAC 1) caused the CPC's to generate low Departure from Nucleate Boiling Ratio (DNBR) trip signals to the Reactor Protection System. The reactor tripped, and the Emergency Feedwater System actuated on low steam generator level due to shrink.

The CEAC 1 penalty factor resulted from spurious rod position indications due to an Analog Input Power Supply failure in CPC B. Each Control Element Assembly (CEA) has two Reed Switch Position Transmitter (RSPT) stacks. Each stack supplies CEA position indication to one CEAC and one CPC. The failure of the power supply in CPC B caused a feedback through this common circuit to CEAC 1 such that the CPC B target CEA's indicated partially inserted and CEAC 1 calculated a penalty factor based on these erroneous indications. The defective power supply was replaced. Additionally, computer technicians have been directed to set the CEAC INOP flag in the CPC's when performing CPC maintenance which requires deenergizing a CPC power supply.

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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 4	- 0 4 3	- 0 0	0 2 OF 0 2

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

On August 8, 1984 at 1710, with Unit 2 in Mode 1 at 100 percent power, a penalty factor from Control Element Assembly Calculator (CEAC) (EIIS Component Identifier CPU) 1 caused the Core Protection Calculators (CPC's) (EIIS Component Identifier CPU) to generate low Departure from Nucleate Boiling Ratio (DNBR) trip signals to the Reactor Protection System (EIIS System Identifier JC). The reactor tripped, and the Emergency Feedwater System (EIIS System Identifier BA) actuated on low steam generator level due to shrink.

The CEAC 1 penalty factor resulted from spurious rod position indications due to an Analog Input Power Supply (EIIS Component Identifier JX) in CPC B. Each Control Element Assembly (CEA) (EIIS Component Identifier ROD) has two Reed Switch Position Transmitter (EIIS Component Identifier ZT) stacks. Each stack supplies position indication to one CEAC and one CPC. The failure of the power supply in CPC B caused a feedback through this common circuit to CEAC 1 such that the CPC B target CEA's indicated partially inserted. CEAC 1 transmitted a DNBR penalty factor to the CPC's based on these erroneous CEA indications. The failed power supply in CPC B was replaced. Computer technicians have been directed to set the CEAC INOP flag in the CPC's when performing maintenance which requires deenergizing a CPC power supply. The CPC's will not accept spurious penalty factors from a CEAC when the CEAC INOP flag is set.

Since Unit 2 was at a 100 percent power, there are no reasonable alternative conditions under which this event would have been more severe.

Southern California Edison Company

SAN ONOFRE NUCLEAR GENERATING STATION
P.O. BOX 128
SAN CLEMENTE, CALIFORNIA 92672

J. G. HAYNES
STATION MANAGER

TELEPHONE
(714) 492-7700

September 6, 1984

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

Subject: Docket No. 50-361
30-Day Report
Licensee Event Report No. 84-043
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 actuation of the Reactor Protection System and the Emergency Feedwater System. Neither the health and safety of the public nor plant personnel were affected by this event.

If you require any additional information, please so advise.

Sincerely,

J G Haynes/HEM

Enclosure: LER No. 84-043

cc: A. E. Chaffee (USNRC Senior Resident Inspector, Units 1, 2 and 3)
J. P. Stewart (USNRC Resident Inspector, Units 2 and 3)

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

Institute of Nuclear Power Operations (INPO)

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