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ACCESSION NBR:8902080513 DOC.DATE: 89/02/02 NOTARIZED: NO DOCKET #
FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261
AUTH.NAME AUTHOR AFFILIATION
SAYRE,D. Carolina Power & Light Co.
MORGAN,R.E. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 86-009-01:on 860322,during power escalation level in third steam generator began to swell.W/890202 ltr.
W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 4
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

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	NRR/DEST/RSB 8E	1	1	NRR/DEST/SGB 8D	1	1
	NRR/DLPQ/HFB 10	1	1	NRR/DLPQ/QAB 10	1	1
	NRR/DOEA/EAB 11	1	1	NRR/DREP/RAB 10	1	1
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Enclosure to Serial: RNP-89-0481

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2	0 5 0 0 0 2 6 1	1 OF 0 3

TITLE (4)
REACTOR TRIP - HIGH STEAM GENERATOR LEVEL

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 5 0 0 0
0 3	2 2	8 6	8 6	0 0 9	0 1	0 2	0 2	8 9		0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check one or more of the following)* (11)			
POWER LEVEL (10)	0 1 4	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
Don Sayre, Senior Specialist - Regulatory Compliance	8 0 3 3 8 3 - 1 2 4 2

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)

At 0327 hours, March 22, 1986, the reactor was at 13.5 percent power ascending. The feedwater regulating valves for two of the three steam generators were in automatic control. The third steam generator's feedwater regulating valve was in manual due to steam and feed flow indication problems. During power escalation, the level in the third steam generator began to swell. The Operator manually controlling feed flow was unable to compensate quickly enough and the turbine trip setpoint was reached, followed by an automatic turbine trip on high high level and a reactor trip. Three factors contributed to the event: the feed flow sensing line tubing to the third steam generator had been crossed at installation; the steam flow sensing line tubing was blocked by corrosion products; and, a failure to anticipate the effect of the significant decrease in controlling bank rod worth on Plant control during initial turbine loading. The miscrossed tubing has been corrected and the steam flow tubing has been blown down. Operators have been informed of the decrease in controlling bank rod worth. This LER has been routed for licensed Operator review and for discussion with Maintenance mechanical and electrical personnel to ensure an understanding of the potential consequences of miscrossed tubing. This LER is submitted pursuant to 10CFR50.73(a)(2)(iv).

8902080513 890202
PDR ADOCK 05000261
S PNU

IE22

NRC Form 366A
(9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
H. B. ROBINSON S. E. PLANT, UNIT NO. 2	0 5 0 0 0 2 6 1	8 6	0 0 9	0 1	0 2 OF 0 3

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

I. Description of Event

At 0327 hours, March 22, 1986, the reactor was operating at 13.5 percent power ascending, following restart after a refueling.[1] The Main Feedwater regulating valves for Steam Generators "A" and "C" were controlling in automatic, with the Feedwater regulating valve for Steam Generator "B" in manual due to problems with steam flow and feed flow indication. As load was increased on the turbine, the Reactor Coolant System average temperature (RCS Tavg) began to decrease. The reactor Operator attempted to compensate for the decrease in RCS Tavg by control rod withdrawal but the controlling bank rod worth was at Beginning of Cycle values which delayed Tavg recovery and resulted in additional RCS cooldown. By the time the Operator was able to increase reactor power and raise Tavg, the RCS temperature increased more rapidly than expected, causing the Steam Generators' levels to swell. The Operator manually controlling Steam Generator "B" was unable to compensate by closing the Feedwater regulating valve quickly enough and the level reached the turbine trip setpoint. A high high level turbine trip was actuated by Steam Generator "B", resulting in an automatic reactor trip.

II. Cause of Event

A combination of the failure to control Steam Generator "B" levels due to problems with transmitter sensing lines and the failure to anticipate the effect of the significant decrease in controlling bank rod worth on reactor control during initial turbine loading resulted in the actuation of the Reactor Protection System.

The feed flow indication for Steam Generator "B" was in error due to the sensing lines having been inadvertently crossed when new tubing was installed. The steam flow indication for Steam Generator "B" was in error due to the sensing lines being blocked by corrosion products.

III. Analysis of Event

The Engineered Safety Features and Reactor Protection System performed as designed, resulting in an automatic reactor trip on a high high steam generator level turbine trip.

The event identified three areas of concern with regard to the need for more awareness by Plant operations and maintenance personnel of the factors contributing to avoidable challenges to safety systems.

IV. Corrective Actions

The feed flow transmitter sensing lines for Steam Generator "B" were reconnected correctly.

1/ H. B. Robinson Steam Electric Plant, Unit No. 2 is a Westinghouse Pressurized Water nuclear reactor power plant, in commercial operation since March 1971.

*U.S. GPO: 1988-520-589:00070

NRC Form 366A
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
H. B. ROBINSON S. E. PLANT, UNIT NO. 2	0 5 0 0 0 2 6 1	8 6	— 0 0 9	— 0 1	0 3 OF 0 3

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

The steam flow transmitter sensing lines for Steam Generator "B" were blown down to remove the corrosion products.

This LER has been discussed with Maintenance personnel to ensure an understanding of the significance of the cause of the event. Furthermore, Maintenance personnel have been directed to work more closely together in the future to ensure transmitters are operating properly prior to returning them to service.

Plant Operators have been informed of the decrease in controlling bank rod worth at the beginning of cycle and this LER has been routed to all licensed Operators to ensure an understanding of the significance of rod worth in this event.

V. Additional Information

A. Failed Component Identification

None.

B. Previous Similar Events

None.

C. Supplemental Information

The NRC requested the licensee submit a supplement to LER-86-009-00 to address items not adequately addressed originally.[2] Specifically, the licensee was requested to address corrective actions to prevent recurrence, including post maintenance testing after feed flow tubing maintenance, preventive maintenance for steam flow tubing clogging, and operator training in rod worth.

Following the event, the Maintenance Instrumentation and Control (I&C) group committed to becoming involved in retubing when instrument tubing is replaced. The steam flow tubing was recently replaced during Refueling Outage No. 12 with stainless steel piping and root isolation valves to minimize internal corrosion; the I&C group verified the proper tubing to the instrument valves. Instrumentation tubing is routinely blown down to prevent corrosion blockage following cold shutdown outages during startup. These actions will continue and are expected to prevent recurrence and assure that instrumentation tubing is correctly installed and operable.

The licensed operator retraining program includes discussion of rod worth to alert Operators to the importance of understanding Beginning of Cycle controlling bank rod worth.

[2] Letter, C. A. Julian, NRC, to E. E. Utley, CP&L, NRC Inspection Report No. 50-261/88-08, dated August 12, 1988.

*U.S. GPO: 1988-520-589/00070

CP&L
Carolina Power & Light Company

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(10 CFR 50.73)

United States Nuclear Regulatory Commission
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
LICENSEE EVENT REPORT 86-009-01

Gentlemen:

The enclosed Supplemental Licensee Event Report (LER) is submitted in accordance with 10 CFR 50.73 and NUREG-1022 including Supplements No. 1 and 2. This submittal should replace existing copies of the original report of April 21, 1986.

Very truly yours,

R. E. Morgan
General Manager
H. B. Robinson S. E. Plant

DAS:dwm

Enclosure

cc: Mr. M. L. Ernst
Mr. L. W. Garner
INPO

IE22
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