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FACIL: 50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light Co 05000261
AUTH. NAME AUTHOR AFFILIATION
BAUCOM, C.T. Carolina Power & Light Co.
FLANAGAN, W.J. Carolina Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 93-003-00: on 930406, discovered that secondary channel of heat trace circuit 25 inoperable, resulting in reduced temp of boric acid flowpath. Caused by inability of channel to maintain temp. Heat trace circuit repaired. W/930506 ltr.

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TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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ROBINSON NUCLEAR PLANT
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MAY 06 1993

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RNP/93-1046
(10CFR50.73)

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 NO. 93-003

Gentlemen:

The enclosed Licensee Event Report (LER), is submitted in accordance with
10 CFR 50.73 and NUREG 1022, Supplements No. 1 and 2.

Very truly yours,

W. J. Flanagan, Jr.
Acting General Manager
H. B. Robinson S. E. Plant

CTB:dwm

Enclosure

cc: Mr. S. D. Ebnetter
Mr. L. W. Garner
INPO

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NRC FORM 366 (5-92)			U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95				
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)										
FACILITY NAME (1) H. B. Robinson Steam Electric Plant, Unit No. 2						DOCKET NUMBER (2) 50 - 261		PAGE (3) 1 OF 4		
TITLE (4) Technical Specification 3.0 Entry Due to Reduced Temperature of Boric Acid Flowpath										
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 NAME	DOCKET NUMBER
04	06	93	93	-- 003 --	00	05	06	93	FACILITY NAME	DOCKET NUMBER
										05000
OPERATING MODE (9) N			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10) 100			20.402(b)		20.405(c)		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	
			20.405(a)(1)(iii)		X 50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in	
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		Abstract below	
			20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		and in Text,	
									NRC Form 366A)	
LICENSEE CONTACT FOR THIS LER (12)										
NAME C. T. Baucom - Regulatory Compliance								TELEPHONE NUMBER (Include Area Code) (803) 383 - 1253		
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	FE	EHTR	T185	Y						
SUPPLEMENTAL REPORT EXPECTED (14)										
YES (If yes, complete EXPECTED SUBMISSION DATE).					X	NO				
EXPECTED SUBMISSION DATE (15)						MONTH	DAY	YEAR		
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16) On April 6, 1993, during performance of a routine, daily maintenance surveillance test, it was discovered that the secondary channel of heat trace circuit 25 was inoperable. This circuit is associated with Chemical and Volume Control System (CVCS) piping between the Boric Acid Storage Tanks (BAST) and the Charging Pumps' suction. Although the primary channel of this circuit was functioning and operable, the Technical Specifications (TS) required that a 24 hour Limiting Condition for Operation (LCO) be initiated. As such, the affected heat trace circuit was declared inoperable and the LCO entered at 0558 hours. In order to facilitate troubleshooting and repair of this circuit, it was necessary to remove the insulation pads covering the heat tracing. Although the primary heat trace circuit was operable, the heat loss from the uninsulated piping caused the temperature to decrease below 145 degrees F which is the lower temperature limit for solubility of 13% boric acid solution. Since the secondary heat trace circuit was inoperable, and the primary circuit was unable to maintain the minimum required temperature while the insulation pads were removed, TS 3.0 was entered at 1510 hours on April 6. Subsequently, the insulation pads were replaced, piping temperature was restored to greater than 145 degrees F, and the flowpath was determined to be operable by verifying the flow of boric acid through the affected piping. TS 3.0 was exited at 1901 hours on April 6. Repairs to the secondary heat trace circuit were completed and the 24 hour LCO was exited at 0030 hours on April 7, 1993. As defined within NUREG-1022, including Supplements No. 1 and 2, entry into TS 3.0 is considered to be an operation or condition prohibited by the TS, and is therefore reportable pursuant to 10 CFR 50.73(a)(2)(i)(B).										

NRC FORM 366A
(5-92)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
H. B. Robinson, Unit No. 2	50 - 261	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		93	-- 003 --	00	

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

I. Description of Occurrence

On April 6, 1993, H. B. Robinson, Unit No. 2 was operating at steady-state conditions with reactor power at 100% and net electrical generation at approximately 735 MW. Maintenance Surveillance Test Procedure, MST-101, "Boric Acid Heat Tracing Operability (Daily, 5 Days per Week)," was in progress to test the operability of boric acid heat tracing channels. During the performance of this test, it was identified that the secondary channel of heat trace circuit 25 was reading zero amps. This circuit is associated with Chemical and Volume Control System (CVCS) piping between the Boric Acid Storage Tanks (BAST) and the Charging Pumps' suction. Based upon the failure to satisfy the requirements of MST-101, the secondary channel of heat trace circuit 25 was declared out of service at 0558 hours on April 6, 1993. Although MST-101 had found the primary channel of heat trace circuit 25 to be operable, based upon the inoperability of the secondary channel and the requirements of Technical Specification (TS) 3.2.2.e., a 24 hour Limiting Condition for Operation (LCO) was entered.

At 0840 hours on April 6, the secondary channel of heat trace circuit 25 was configured in accordance with Operations Work Procedure, OWP-005, CVC-8, to facilitate maintenance on the affected circuitry. In order to access the affected circuitry for troubleshooting and repairs, it was necessary to remove the insulation pads from around this circuitry and piping. Since this circuit is further subdivided into three sections (identified as sections "A," "B," and "C"), work activities were initiated by the removal of insulation from section "A" of heat trace circuit 25. Following removal of the insulation, investigation revealed an open circuit; however, during repair of this malfunction, the piping temperature decreased from around 180 degrees F when the insulation was removed to around 120 degrees F. Since the temperature of this piping had dropped below the specified low temperature limit of 145 degrees F for solubility of 13% boric acid solution, the operability of this section of CVCS piping as a boric acid flowpath could not be assured. As such, based upon the inoperability of the secondary channel of heat trace circuit 25, and the inability of the primary channel to maintain temperature above 145 degrees F while the insulation pads were removed for corrective maintenance, TS 3.0 was entered at 1510 hours on April 6.

Upon replacement of section "A" of the secondary channel of heat trace circuit 25, the insulation pads were replaced to allow piping temperature to increase to the required range. The affected section of piping was observed to be above 145 degrees F with an increasing trend at 1855 hours on April 6. At 1901 hours, after flowing boric acid through the piping served by heat trace circuit 25, this flowpath was verified to be open and free, and TS 3.0 was exited. Further, in addition to the troubleshooting and repair efforts mentioned above, sections "B" and "C" of the secondary channel of heat trace circuit 25 were examined and found to be grounded. These circuits were replaced similar to section "A," however, the temperature of the affected piping did not decrease below the lower limit of 145 degrees F during the performance of this corrective maintenance. At 0019 hours on April 7, boric acid flow was verified through the piping served by heat trace circuit 25. At 0030 hours, this circuit was declared operable and returned to service in accordance with OWP-005, CVC-8, and the 24 hour LCO was exited.

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FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)	
H. B. Robinson, Unit No. 2		50 - 261		YEAR	SEQUENTIAL NUMBER
				93	-- 003 --
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

II. Cause of Occurrence

This occurrence involved an entry into TS 3.0 based upon the inoperability of the secondary channel of heat trace circuit 25, and the inability of the primary channel to maintain temperature greater than 145 degrees F while the insulation pads were removed for corrective maintenance.

III. Analysis of Occurrence

As described within Updated Final Safety Analysis Report (UFSAR) Section 9.3.4.2.4.mm, "Electrical Heat Tracing," boric acid heat tracing is installed under the insulation on piping, valves, line-mounted instrumentation, and components normally containing concentrated boric acid solution. The heat tracing is designed to prevent boric acid precipitation, due to cooling, by compensating for heat loss. Duplicate channels of heat tracing on sections of CVCS piping and components normally containing boric acid solution provide standby capacity if the operating or primary heat trace channel malfunctions.

As described above, the performance of daily maintenance surveillance testing identified the failed secondary channel of heat trace circuit 25, while the corresponding primary channel was verified to be operable. However, with the insulation pads removed from this section of piping, the primary channel was unable to maintain temperature above the lower solubility limit for 13% boric acid solution. As such, from 1510 hours to 1855 hours, the temperature of this piping was below the required limit. However, and as demonstrated by the flow of boric acid through this piping at 1901 hours, the reduction in temperature for just under four hours did not appear to reduce or jeopardize the ability to provide concentrated boric acid via this flowpath. In addition, throughout this time period boric acid makeup to the Charging Pumps' suction remained available from the Refueling Water Storage Tank (RWST). As such, the ability to provide negative reactivity insertion by boric acid addition was not appreciably degraded during this time, and the safety significance of this occurrence is considered to be minimal.

As defined within NUREG-1022, including Supplements No. 1 and 2, entry into TS 3.0 is considered to be an operation or condition prohibited by the TS, and is therefore reportable pursuant to 10 CFR 50.73(a)(2)(i)(B).

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

IV. Corrective Actions

Upon identification that the temperature of the affected piping had decreased below the lower limit of 145 degrees F, and following replacement of section "A" of the secondary channel of heat trace circuit 25, the insulation pads were replaced to allow piping temperature to increase to the required range. After the proper piping temperature had been restored, boric acid was flowed through this piping to verify that precipitation had not resulted in blockage of this flowpath. With temperature above 145 degrees F and verification of the operability of the flowpath, TS 3.0 was exited at 1901 hours on April 6, 1993.

In addition, corrective maintenance was completed on the remaining sections ("B" and "C") of the secondary channel of heat trace circuit 25. Following the replacement of affected sections of this circuit and the reinstallation of insulation pads, boric acid was again flowed through the piping served by this circuit. With corrective maintenance completed, and the operability of the flowpath verified, heat trace circuit 25 was returned to service and the 24 hour LCO exited at 0030 hours on April 7, 1993.

V. Additional Information

1. Failed Component Identification:

This occurrence involved the failure of boric acid heat tracing (Reference Cause Code: X, System: FE, Component: EHTR, Manufacturer: T185).

2. Previous Similar Occurrences:

None identified.