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

SUBJECT: LER 93-004-00:on 930512,while operating at 100% power, primary plant leakage rate increased to 11.2 gpm & unsual event declared.Due to vibration,causing valve setpoint adjustment to change.Lock nuts tightened.W/930714 ltr.

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

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	REG FILE 02	1	1	RES/DSIR/EIB	1	1
	RGN2 FILE 01	1	1			
EXTERNAL:	EG&G BRYCE,J.H	2	2	L ST LOBBY WARD	1	1
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Carolina Power & Light Company

ROBINSON NUCLEAR PLANT
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JUL 14 1993

Robinson File No: 13510C

Serial: RNP/93-1584

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
LICENSEE EVENT REPORT NO. 93-004-00

Gentlemen:

The enclosed Licensee Event Report (LER), is submitted in accordance with 10CFR50.73 and NUREG 1022 including Supplements No. 1 and 2.

Very truly yours,

W. J. Flanagan, Jr.
Acting Plant General Manager
Robinson Nuclear Plant

DHB:lst

Enclosure

cc: Mr. S. D. Ebneter
Mr. W. T. Orders
INPO

9307220251 930714
PDR ADOCK 05000261
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Enclosure to Serial: RNP/93-1585

NRC FORM 366 (5-92) — U.S. NUCLEAR REGULATORY COMMISSION — APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95

LICENSEE EVENT REPORT (LER)

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)	PAGE (3)
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2	05000 261	1 OF 4

TITLE (4)
Unusual Event Caused By Reactor Coolant System Leakage

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
05	12	93	93	-- 004 --	00	07	14	93		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N
POWER LEVEL (10)	100

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

	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)	X	OTHER
	20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)
	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 (Include Area Code)
David H. Baur - Regulatory Compliance	(803) 383-1296

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	CB	RV	C710	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 15 single-spaced typewritten lines) (16)

This is a voluntary LER and is being submitted to follow-up on Emergency Notifications made to the NRC Operations Center on May 12, 1993.

At approximately 1725 hours on May 12, 1993, with the H. B. Robinson Unit No. 2[1] operating at 100 percent power, the unit entered AOP-016, Excessive Primary Plant Leakage, and a 12-hour to hot shutdown Limiting Condition for Operation (LC0) required by Technical Specifications. The actual leakage rate at 1725 hours was 3.6 gallons per minute (gpm) and at 1812 hours on May 12, 1993, had increased to 11.2 gpm, which required declaration of an Unusual Event due to leakage greater than 10 gpm. At 2113 hours, the leakage was identified as coming from a positive displacement Charging Pump Suction Relief Valve. With the Charging Pump isolated, RCS leakage decreased to less than 1 gpm. The leakage through the 3/4-inch Crosby JRAK-B Relief Valve has been attributed to vibration causing the valve setpoint adjustment to change. Corrective actions will provide additional guidance for tightening the adjusting bolt lock nut.

[1]H. B. Robinson Unit No. 2 is a Pressurized Water Reactor in commercial operation since March, 1971.

NRC FORM 366A (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
H. B. Robinson Steam Electric Plant, Unit No. 2	05000	93	-- 004 --	00	2 OF 4

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

I. DESCRIPTION OF EVENT

At approximately 1725 hours on May 12, 1993, with the H. B. Robinson Unit No. 2 operating at 100 percent power, the unit entered AOP-016, Excessive Primary Plant Leakage, and a 12-hour to hot shutdown LCO required by Technical Specifications 3.1.5.1 due to leakage greater than 1 gallon per minute (gpm) with source unknown. The actual leakage rate at 1725 hours was 3.6 gpm and at 1812 hours on May 12, 1993, had increased to 11.2 gpm, which required declaration of an Unusual Event due to leakage greater than 10 gpm. The Emergency Response Organization was contacted and the Technical Support Center (TSC) was activated at 1958 hours on May 12, 1993. The leakage was identified as going to the No. 1 Sump Tank in the Auxiliary Building, but the actual source was unknown. Sections of systems were systematically isolated to identify the source of the leak. At 2113 hours, the leakage was identified as coming from a positive displacement Charging Pump Suction Relief Valve. With the Charging Pump isolated, RCS leakage decreased to less than 1 gpm. The Unusual Event was terminated and the TSC deactivated at 2236 hours on May 12, 1993. The Robinson Plant continued to operate at 100 percent power through the emergency.

II. CAUSE OF EVENT

The cause of the Unusual Event is the Charging Pump Relief Valve lifted at about ten (10) pounds and allowed Volume Control Tank (VCT) water to flow to the No. 1 Sump Tank.

The leakage through the Relief Valve has been attributed to Charging Pump induced vibration causing the adjusting bolt lock nut, and subsequently, the adjusting bolt, to back off allowing the valve setpoint to drift to a setpoint of zero (0) to ten (10) pounds per square inch (psi) while the normal setpoint is 76 ± 2 psi. The relief valve in question is a 3/4-inch Crosby JRAK-B Valve.

NRC FORM 366A (5-92) U.S. NUCLEAR REGULATORY COMMISSION

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
H. B. Robinson Steam Electric Plant, Unit No. 2	05000	93	-- 004 --	00	3 OF 4

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

III. ANALYSIS OF EVENT

This is a voluntary LER and is being submitted to follow-up on Emergency Notifications made to the NRC Operations Center on May 12, 1993.

There have been no recorded past failures of this type in these relief valves in this application either at H. B. Robinson or at other Pressurized Water Reactors plants.

The Robinson Plant design is such that there was more than sufficient makeup capability to ensure that a loss of Reactor Coolant inventory would not occur at the leakage rate present. However, because the leak originated at one of the Charging Pumps and was directed to the No. 1 Sump, totally outside the Containment Vessel, a measurable release did occur. However, the release was less than 1 mrem for whole body and child thyroid at the site boundary and at no time was the health and safety of the general public in jeopardy.

A contributing factor to the valve failure could have been that the lock nut may not have been tight enough. Plant Corrective Maintenance Procedures did not provide a torque value for this lock nut. However, it could not be determined whether the lock nut had been tightened sufficiently and vendor maintenance procedures provide no specific guidance beyond obtaining metal to metal contact.

IV. CORRECTIVE ACTIONS

The relief valve was removed from the system and tested to determine the as-found setpoint. The valve was disassembled and inspected and parts were repaired or replaced as necessary. The valve was reassembled and satisfactorily tested. The valve was reinstalled in the system and the charging pump returned to service.

Due to the relatively high vibration inherent to positive displacement, Charging Pumps Procedure, CM-102, Nozzle Relief Valve Maintenance, will be revised to provide additional guidance for tightening the adjusting bolt lock nut for valves in this application to prevent recurrence of this event. The method of capture will be applied to Valves CVC-2080, CVC-2081, and CVC-2082 prior to the end of Refueling Outage No. 15.

NRC FORM 366A (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
H. B. Robinson Steam Electric Plant, Unit No. 2	05000	93	-- 004 --	00	4 OF 4

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

V. ADDITIONAL INFORMATION

1. Failed Component Identification

   Relief Valve - 3/4-inch Crosby JRAK-B Valve

2. Previous Similar Events

   None