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JUN 7 1996

SERIAL: BSEP 96-0238  
10 CFR 50.73

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 1  
DOCKET NO. 50-325/LICENSE NO. DPR-71  
LICENSEE EVENT REPORT 1-96-007

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Part 50.73, Carolina Power & Light Company submits the enclosed Licensee Event Report. This voluntary report fulfills the requirement for a written report within thirty (30) days of a reportable occurrence.

Please refer any questions regarding this submittal to Mr. Mark Turkal at (910) 457-3066.

Sincerely,

W. Levis  
Director - Site Operations  
Brunswick Nuclear Plant

SFT/sft

Enclosures

1. Licensee Event Report
2. Summary of Commitments

cc: Mr. S. D. Ebnetter, Regional Administrator, Region II  
Mr. D. C. Trimble, NRR Project Manager - Brunswick Units 1 and 2  
Mr. C. A. Patterson, Brunswick NRC Senior Resident Inspector  
The Honorable H. Wells, Chairman - North Carolina Utilities Commission

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NRC FORM 366 (4-95)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98 <small>ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REG. 1.50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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.</small>						
<b>LICENSEE EVENT REPORT (LER)</b> (See reverse for required number of digits/characters for each block)											
FACILITY NAME (1) Brunswick Steam Electric Plant, Unit 1					DOCKET NUMBER (2) 05000325			PAGE (3) 1 OF 3			
TITLE (4) High Pressure Coolant Injection System Inoperable Due to Steam Supply Valve Packing Leak											
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	09	96	96	-- 07 --	00	06	08	96		05000	
									FACILITY NAME	DOCKET NUMBER	
										05000	
OPERATING MODE (9)		1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)							
				20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)	
POWER LEVEL (10)		100		20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)	
				20.2203(a)(2)(i)		20.2203(a)(3)(iii)		50.73(a)(2)(iii)		73.71	
				20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER	
				20.2203(a)(2)(iii)		50.36(c)(1)		X 50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A	
				20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)			
LICENSEE CONTACT FOR THIS LER (12)											
NAME Steve Tabor, Sr. Analyst, Regulatory Affairs								TELEPHONE NUMBER (Include Area Code) (910) 457-2178			
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	BQ	VLV	A391	Y							
SUPPLEMENTAL REPORT EXPECTED (14)								EXPECTED SUBMISSION DATE (15)			
X	YES (If yes, complete EXPECTED SUBMISSION DATE).				NO				MONTH	DAY	YEAR
									12	15	96
<b>ABSTRACT</b> (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)  On May 9, 1996, with Unit 1 operating at rated power, a small steam leak developed in the High Pressure Coolant Injection (HPCI) room while stroke time testing the HPCI system isolation valves. An Auxiliary Operator discovered steam in the HPCI room and notified the Control Room. Operations manually isolated and depressurized the HPCI steam line to minimize the release of steam into the HPCI room. HPCI was declared inoperable at 2033 hours.  Review of the sequence of events prior to the event and HPCI room temperature data determined that the HPCI Steam Supply Valve, 1-E41-F001 was the most probable source of the steam leak. On May 10, 1996, at 0015 hours, Maintenance personnel inspected the valve and discovered the valve's packing was damaged.  On May 11, 1996, following completion of repairs to the 1-E41-F001, testing to satisfy stroke time testing and packing leakage requirements was completed satisfactorily. On May 12, 1996, at 0342 hours, OPT-09.2, HPCI System Operability Test, was satisfactorily performed with no leakage observed at the 1-E41-F001 valve stem.  The cause of the packing leak is valve stem galling. Further investigation into the cause of the stem galling will be determined during disassembly and inspection of the valve which is planned for the Unit 1 B111R1 refuel outage scheduled for the fall of 1996. The results of this investigation and additional corrective actions if needed will be provided in a supplement to this report.											

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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Brunswick Steam Electric Plant, Unit 1	05000325	96	--	07	2 OF 3
		--	--	00	

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

TITLE

High Pressure Coolant Injection System Inoperable Due to Steam Supply Valve Packing Leak

INITIAL CONDITIONS

Unit 1 was operating at rated power. Stroke time testing of the High Pressure Coolant Injection (HPCI) system (BQ) isolation valves was in progress. The Automatic Depressurization, Core Spray, Low Pressure Coolant Injection and the Reactor Core Isolation Cooling systems were operable.

EVENT NARRATIVE

On May 9, 1996, while stroke time testing the HPCI system isolation valves, a small steam leak developed in the HPCI room. An Auxiliary Operator discovered steam in the HPCI room and notified the Control Room. Operations manually isolated the HPCI steam line and depressurized the line to minimize the release of steam into the HPCI room. HPCI was declared inoperable at 2033 hours. In accordance with the requirements of 10 CFR 50.72(b)(2)(iii)(D) an event notification was initiated at 2351 hours.

Review of the sequence of events prior to the event and HPCI room temperature data determined that the HPCI Steam Supply Valve, 1-E41-F001 (BQ/ISV) was the most probable source of the steam leak. On May 10, 1996, at 0015 hours, Maintenance personnel inspected the valve and discovered the valve's stem packing was damaged due to stem galling.

On May 11, 1996, following completion of repairs to the 1-E41-F001, testing to satisfy stroke time testing and packing leakage requirements was completed satisfactorily. On May 12, 1996, at 0342 hours, OPT-09.2, HPCI System Operability Test, was satisfactorily performed with no leakage observed at the 1-E41-F001 valve stem.

This event is being reported in accordance with the requirements of 10 CFR 50.73(a)(2)(v)(D) in that the manual isolation of the HPCI system due to steam leakage resulted in the manual isolation of a single train system and thereby prevented the fulfillment of the safety function of that system.

CAUSE OF EVENT

The 1-E41-F001 steam leak was caused by degradation of the valve stem packing. Valve inspection determined that the valve stem was not centered in the stuffing box with the packing removed. This condition caused wear of the packing and eventual contact of the stem with either the gland follower or the bore of the valve bonnet, resulting in galling of the valve stem. The galling of the stem caused the damage to the valve packing.

The cause of the valve stem misalignment could not be determined without complete disassembly of the valve. The valve is scheduled for disassembly and rebuild during the B111R1 refueling outage which will provide an opportunity for further investigation.

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

CORRECTIVE ACTIONS

The 1-E41-F001 valve stem was repaired and the valve packing replaced. This type of repair has been effective at correcting packing problems on other valves including valves of similar design. The repair is expected to prevent further galling of this stem. Following repair, the valve was satisfactorily stroke tested, evaluated using VOTES testing equipment, and then inspected during and after turbine operation. The current configuration will allow performance of system testing and any required operation of HPCI for transient or accident response for the remainder of the operating cycle.

Further investigation into the cause of the 1-E41-F001 valve stem galling will be performed during the B111R1 refuel outage. The results of this investigation and any corrective actions taken will be provided in a supplement to this report.

SAFETY ASSESSMENT

This event has minimal safety significance in that at the time of the event the Automatic Depressurization, Core Spray, Low Pressure Coolant Injection and the Reactor Core Isolation Cooling systems were operable.

The limiting concern for a steam leak in the HPCI room is the automatic isolation of the HPCI system which by design would occur once HPCI room temperature reached 165 °F. During the leak, the room temperature reached equilibrium at approximately 130 °F. There was one Residual Heat Removal (RHR) system room cooler providing nominally 3980 scfm to the HPCI room during the leakage with the other RHR room cooler in standby. The normal Reactor Building Ventilation system was also in service with a design flow of 3400 scfm to the HPCI room.

Had an event occurred requiring HPCI injection concurrent with the packing leak, both of the RHR room coolers would have started once HPCI room temperature reached design actuation setpoints (120 and 145°F respectively). Engineering evaluation has determined that with two RHR room cooler fans operating at the maximum expected cooler outlet temperature, HPCI room temperature would have remained below the HPCI system room temperature isolation setpoint. Consequently, the observed leakage would not have been expected to cause the isolation of the HPCI system and thus the HPCI system would have remained capable of performing its intended safety function.

PREVIOUS SIMILAR EVENTS

Previous events involving the inoperability of the HPCI system due to equipment degradation were reported in Licensee Event Reports 1-95-022 (HPCI system discharge flow element gasket leak) and 2-95-02 (failed resistor in the HPCI governor speed control circuit power supply).

EIIS COMPONENT IDENTIFICATION

<u>System/Component</u>	<u>EIIS Code</u>
High Pressure Coolant Injection System 1-E41-F001	BQ BQ/IS

Enclosure  
List of Regulatory Commitments

The following table identifies those actions committed to by Carolina Power & Light Company in this document. Any other actions discussed in the submittal represent intended or planned actions by Carolina Power & Light Company. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager-Regulatory Affairs at the Brunswick Nuclear Plant of any questions regarding this document or any associated regulatory commitments.

Commitment	Committed date or outage
Investigation to determine the cause of the 1-E41-F001 valve stem galling will be completed and corrective actions determined.	B111R1
A supplement to this report will be submitted to provide the results of the investigation to determine the cause of the 1-E41-F001 valve stem galling and any corrective actions taken.	12/15/96