CP&L

Carolina Power & Light Company
P.O. Box 10429
Southport, NC 28461-0429

February 7, 2000 10 CFR 50.73

SERIAL: BSEP 00-0015

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-324
LICENSE NO. DPR-62
LICENSEE EVENT REPORT 2-00-001

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 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. Warren J. Dorman, Manager - Regulatory Affairs, at (910) 457-2783.

Sincerely,

C. J. Gannon
Plant General Manager
Brunswick Steam Electric Plant

CRE/cre

Enclosure: Licensee Event Report

IE22

cc (with enclosure):

U. S. Nuclear Regulatory Commission, Region II
ATTN: Mr. Luis A. Reyes, Regional Administrator
Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, GA 30303-3415

U. S. Nuclear Regulatory Commission
ATTN: Mr. Theodore A. Easlick, NRC Senior Resident Inspector
8470 River Road
Southport, NC 28461-8869

U. S. Nuclear Regulatory Commission
ATTN: Mr. Allen G. Hansen (Mail Stop OWFN 8G9)
11555 Rockville Pike
Rockville, MD 20852-2738

Ms. Jo A. Sanford
Chair - North Carolina Utilities Commission
P.O. Box 29510
Raleigh, NC 27626-0510

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(6-1998)

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Brunswick Steam Electric Plant (BSEP), Unit No. 2	05000 324	1 OF 5

TITLE (4)
Operation Prohibited by Technical Specifications Due to Inoperable Vacuum Breaker

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
										05000
01	07	2000	2000	-- 001 --	00	02	07	2000	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10)	100	20.2201(b)	20.2203(a)(2)(v)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)
		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)(ii)	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)	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	TELEPHONE NUMBER (Include Area Code)
Charles R. Elberfeld, Senior Analyst - Regulatory Affairs	(910) 457-2136

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	LK	PCV	Target Rock Corp	Y					

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED	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)

On January 7, 2000, at approximately 1300 hours, it was determined that a malfunction of the Division 1 Nitrogen Backup subsystem pressure control valve (2-RNA-PCV-5248) which existed from August 28, 1999, to December 3, 1999, resulted in the inoperability of the Division 1 Nitrogen Backup subsystem for the same time period. The inoperability of the subsystem resulted in the Division 1 Reactor Building-to-Suppression Chamber vacuum breaker being inoperable for a time that exceeded required action completion times of Technical Specification (TS) Limiting Condition for Operation (LCO) 3.6.1.5, "Reactor Building-to-Suppression Chamber Vacuum Breakers." Additionally, during the time the vacuum breaker was inoperable, Mode changes were made, which were prohibited by TS LCO 3.0.4.

The cause of this event is attributed to an inadequate level of knowledge, on the part of plant personnel, regarding operability criteria for the Nitrogen Backup subsystems. This resulted in the failure to recognize and correct deficiencies in a timely manner. The safety significance of this event is minimal.

Pressure control valve 2-RNA-PCV-5248 was repaired by replacing internal components. Documentation used for determining and verifying operability of the Nitrogen Backup subsystems and Reactor Building-to-Suppression Chamber vacuum breakers will be enhanced. Training on this event will be provided to the appropriate plant personnel during future scheduled training intervals.

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

INTRODUCTION

On January 7, 2000, at approximately 1300 hours, it was determined that a malfunction of the Division 1 Nitrogen Backup subsystem [LK] pressure control valve [PCV](2-RNA-PCV-5248), manufactured by Target Rock Corporation, Model Number 85M-001, which existed from August 28, 1999, to December 3, 1999, resulted in the inoperability of the Division 1 Nitrogen Backup subsystem for the same period of time. The inoperability of the subsystem resulted in the Division 1 Reactor Building-to-Suppression Chamber [BF] vacuum breaker [VACB](2-CAC-V16) being inoperable for a time that exceeded required action completion times of Technical Specification (TS) Limiting Condition for Operation (LCO) 3.6.1.5, "Reactor Building-to-Suppression Chamber Vacuum Breakers." Additionally, during the time vacuum breaker 2-CAC-V16 was inoperable, Mode changes were made, which were prohibited by TS LCO 3.0.4. At the time of the determination, Unit 2 was operating in Mode 1, at 100 percent of rated power. This condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B), as operation or condition prohibited by the plant's TS.

EVENT DESCRIPTION

On August 28, 1999, Periodic Test 0PT-02.3.2, "Reactor Building To Suppression Chamber Vacuum Breaker And Valve Operability Test," was performed to verify operability of the Reactor Building-to-Suppression Chamber vacuum breakers, isolation valves, and their associated check valves. The test was completed satisfactorily. On August 29, 1999, at approximately 1113 hours, during performance of daily surveillance rounds, a reactor operator noted abnormally low Division 1 Nitrogen Backup subsystem pressure in comparison to the previous day's surveillance. Subsystem pressure had dropped from approximately 1800 to 1200 pounds per square inch gauge (psig) pressure. Required subsystem pressure is greater than or equal to 1130 psig. The drop in pressure was attributed to the performance of 0PT-02.3.2 on the previous day, and a corrective action document was initiated to investigate the cause of the pressure drop after the Division 1 Nitrogen Backup subsystem bottles were replaced. At 1710 hours, an Unusual Event was declared due to the approach of Hurricane Dennis, and at 2346 hours, a manual scram was inserted due to storm conditions. The plant was restarted August 31, 1999, after the hurricane. The Division 1 nitrogen bottles were replaced on September 1, 1999, without investigation of the pressure drop.

On November 20, 1999, at 2130 hours, TS LCO 3.6.1.5 Condition C, "One reactor building-to-suppression chamber vacuum breaker inoperable due to inoperable nitrogen backup subsystem," was entered due to a Division 1 Nitrogen Backup subsystem pressure loss during the performance of 0PT-02.3.2. The Required Action for TS LCO 3.6.1.5 Condition C is to restore the vacuum breaker to operable status, with a Completion Time of 31 days. Troubleshooting activities determined that the pressure control valve 2-RNA-PCV-5248 was not regulating at the desired pressure and, as a result, nitrogen from the subsystem nitrogen bottles was being released through a relief valve whose setpoint was approximately 125 psig. Valve 2-RNA-PCV-5248 was

repaired by replacing internal components. The Division 1 Nitrogen Backup subsystem and vacuum breaker 2-CAC-V16 were tested satisfactorily and on December 3, 1999, at 0211 hours, TS LCO 3.6.1.5 Condition C was exited.

On December 3, 1999, another corrective action document was initiated to address the timeliness of the response to the depressurization of the Division 1 Nitrogen Backup subsystem identified on August 29, 1999, and to address previous operability of the associated equipment. On January 7, 2000, it was determined that firm evidence existed that the Division 1 Nitrogen Backup subsystem was inoperable from August 28 until December 3, 1999, and this resulted in vacuum breaker 2-CAC-V16 being inoperable for the same period. As such, TS LCO 3.6.1.5 Completion Times for Required Actions C.1, G.1 (i.e., be in Mode 3), and G.2 (i.e., be in Mode 4) were not met. A review of plant operating history for the period of vacuum breaker inoperability indicated that, between August 31, 1999, and September 21, 1999, five Mode changes were made that were prohibited by TS LCO 3.0.4 due to the plant being in TS LCO 3.6.1.5 Condition C. These Mode changes were made, generally, in response to hurricanes.

EVENT CAUSE

The cause of this event is attributed to an inadequate level of knowledge, on the part of plant personnel, regarding operability criteria for the Nitrogen Backup subsystems. This resulted in the failure to evaluate the impact of the drop in Division 1 Nitrogen Backup subsystem pressure in a timely manner. Had plant personnel understood the impact on August 29, 1999, when the issue was first identified, the proper actions could have been taken to meet TS LCO requirements and repair pressure control valve 2-RNA-PCV-5248 at that time.

Factors that contributed to the untimely response to the drop in pressure included insufficient information contained in procedures/documentation, distractions due to hurricanes, system engineer specific system-related experience level, and administrative delay due to implementation of new corrective action program software.

CORRECTIVE ACTIONS

1. Pressure control valve 2-RNA-PCV-5248 was repaired by replacing internal components. No specific failure mechanism for the valve was identified.
2. 0PT-02.3.2 will be revised to include consideration of Nitrogen Backup subsystem pressure into testing of Reactor Building-to-Suppression Chamber vacuum breakers and to establish a threshold for Nitrogen Backup subsystem operability based on observed parameters.
3. Engineering personnel will develop information to assist operations personnel in making appropriate operability assessments in regard to Nitrogen Backup subsystem parameters.
4. The information developed by engineering personnel will be incorporated into documents most likely to be consulted to determine if an operability issue exists.
5. Training on this event will be provided to the appropriate plant personnel during future scheduled training intervals.

SAFETY ASSESSMENT

The safety significance of this event is minimal. Although the vacuum breaker 2-CAC-V16 is considered to have been inoperable from August 28, 1999 to December 3, 1999, due to the failed regulating valve in the Nitrogen Backup System, the safety function of the Vacuum Relief system was maintained throughout this time period.

The safety function of the Vacuum Relief system is to protect the drywell and suppression chamber from exceeding their design external pressure of two psig. Reactor Building-to-Suppression Chamber vacuum relief is provided by two lines from the reactor building which merge to a common header connecting to the suppression chamber. These lines are each sized to provide 100% of the requirement for relieving vacuum when primary containment depressurizes below reactor building pressure.

During the time period when 2-CAC-V16 was inoperable, there was an occasion when the 2-CAC-V17 (i.e., Division II) was also inoperable. This was on August 30, 1999, when both divisions of the Nitrogen Backup system were properly removed from service to facilitate a drywell entry while Unit 2 was in Mode 3 due to Hurricane Dennis. In this case, TS requirements for the inoperable system were properly followed.

The Division II Reactor Building-to-Suppression Chamber vacuum breaker 2-CAC-V17 obtains emergency power from emergency bus E4, supplied by Diesel Generator 4. There were eight occasions between August 28, 1999, and December 3, 1999, when the Diesel Generator 4 was inoperable for maintenance and testing. These out of service times ranged from four minutes to two hours and 37 minutes. Normal power was available during each of the Diesel Generator 4 outages. As such, 2-CAC-V17 remained capable of performing its intended safety function.

PREVIOUS SIMILAR EVENTS

LER 2-98-004 documented a December 16, 1998, event in which the High Pressure Coolant Injection system was inoperable due to the performance of maintenance that was initially considered not to affect system operability. LER 2-99-007 documented a July 14, 1999, event in which the redundancy between the Core Spray and Residual Heat Removal systems and the relationship to TS compliance was not recognized. This resulted in a Core Spray system outage being inappropriately authorized to start. Each of these events involved some element of unrecognized subtlety in operation of the plant that, due to increased attention to detail, was recognized, resolved, and the lessons learned retained by documentation and/or training. The corrective actions applied to any of these events could not be reasonably expected to have prevented the event documented in this LER (i.e., 2-00-001).

Additional similar issues, which did not result in reportable events, were identified through review of corrective action program documentation. These issues were addressed by the same approach as the LERs listed above.

COMMITMENTS

Those actions committed to by Carolina Power & Light (CP&L) Company in this document are identified below. Any other actions discussed in this submittal represent intended or planned actions by CP&L. They are described for the NRC's information and are not regulatory commitments. Please notify the Manager - Regulatory Affairs at BSEP of any questions regarding this document or any associated regulatory commitments.

1. 0PT-02.3.2 will be revised to include consideration of Nitrogen Backup subsystem pressure into testing of Reactor Building-to-Suppression Chamber vacuum breakers and to establish a threshold for Nitrogen Backup subsystem operability based on observed parameters. The revision will be implemented by April 14, 2000.

2. Engineering personnel will develop information to assist operations personnel in making appropriate operability assessments in regard to Nitrogen Backup subsystem parameters. The information will be developed by June 16, 2000.

3. The information developed by engineering personnel will be incorporated into documents most likely to be consulted to determine if an operability issue exists. The information will be incorporated into the appropriate documents by September 12, 2000.