



Brunswick Nuclear Plant  
P.O. Box 10429  
Southport, NC 28461-0429

FEB 02 1995

SERIAL: BSEP-95-0060  
10CFR50.73

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

BRUNSWICK NUCLEAR PLANT UNIT 2  
DOCKET NO. 50-324/LICENSE NO. DRP-62  
LICENSEE EVENT REPORT 2-95-001

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 and is submitted in accordance with the format set forth in NUREG-1022, September 1983.

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

Very truly yours,

J. Cowan, Director-Site Operations  
Brunswick Nuclear Plant

SFT/

Enclosures

1. Licensee Event Report
2. Summary of Commitments

cc: Mr. S. D. Ebnetter, Regional Administrator, Region II  
Mr. D. C. Trimble, Acting 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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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 (MNB 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)

Brunswick Steam Electric Plant, Unit 2

DOCKET NUMBER (2)

05000324

PAGE (3)

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TITLE (4)

Invalid Technical Specification Surveillance Due to Improper Assembly of a Hydrogen/Oxygen Analyzer System Drain Valve

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
01	05	95	95	- 01 -	00	02	02	95	FACILITY NAME	DOCKET NUMBER

  

OPERATING MODE (9)	01	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following)(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 Abstract and Text)	
		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

Steve F. Tabor, Regulatory Affairs Specialist

TELEPHONE NUMBER

(910) 457-2178

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs

## 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 fifteen single space typewritten lines) (16)

On January 5, 1995, Units 1 and 2 were operating at 100% power. An ongoing investigation into a failure of the Unit 2 Containment Hydrogen/Oxygen Analyzer Drain Tank drain valve, 2-CAC-SV-4409-5, to pass flow, revealed that the valve had been improperly reassembled during system modification in 1987. As a result, the Unit 2 Primary Containment Leakage Technical Specification surveillances performed on a portion of the Hydrogen/Oxygen Analyzer system since August of 1993 were invalid. The improper reassembly of the valve is attributed to inadequate modification instructions and post modification testing. Corrective actions taken include the proper assembly and testing of the valve and the testing of the other Unit 1 and Unit 2 Containment Hydrogen/Oxygen Analyzer Drain Tank drain valves to ensure their proper operation. A review of the Containment Hydrogen/Oxygen Analyzer Drain Tank drain valve corrective maintenance procedure determined that the procedure is adequate for ensuring proper valve operation following valve assembly. The safety significance of this event is minimal in that operating history indicates that analyzer function was not degraded as a result of improper reassembly of the valve. Furthermore, the recent leakage test of the threaded components downstream of the 2-CAC-SV-4409 performed post repair of the valve did not indicate leakage in excess of acceptable limits. No previous LERs were identified which involved invalid Technical Specification required testing caused by inadequate procedures. The NUREG-1022 cause classification for this event is D, Defective Procedure.

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

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

TITLE

Invalid Technical Specification Surveillance Due to Improper Assembly of a Hydrogen/Oxygen Analyzer System Drain Valve

INITIAL CONDITIONS

On January 5, 1995, Units 1 and 2 were operating at 100% power. An investigation was in progress to determine the validity of the Technical Specification required primary containment leakage surveillance performed on the Unit 2 Hydrogen/Oxygen Analyzer System as related to the failure of the Unit 2 Containment Hydrogen/Oxygen Analyzer Drain Tank drain valve, 2-CAC-SV-4409-5, identified on December 21, 1994.

EVENT NARRATIVE

On December 8, 1994, at 0500 hours, the Unit 2 Division I Containment Hydrogen/Oxygen Analyzer, 2-CAC-AT-4409, was rendered inoperable to support planned corrective and preventive maintenance activities. Following completion of the work activities and during the post maintenance testing the system low-flow annunciator repeatedly alarmed. On December 21, 1994, during troubleshooting of the low flow condition, a problem unrelated to the low flow condition was discovered. The Unit 2 Containment Hydrogen/Oxygen Analyzer Drain Tank valve, 2-CAC-SV-4409-5, would not pass flow although valve position instrumentation indicated the valve to be in the open position.

On December 23, 1994, a Condition Report was generated in accordance with the requirements of the Corrective Action Program to address the 2-CAC-SV-4409-5 failure. An investigation into the cause of the failure was initiated. Furthermore, since the 2-CAC-SV-4409-5 is required to pass flow when cycled to the open position to support performance of Technical Specification required primary containment leakage surveillance, the scope of the investigation included a review of the validity of previous Technical Specification surveillances.

On December 24, 1994, at 1400 hours, the 2-CAC-SV-4409-5 was reassembled and tested to ensure proper operation of the valve. On December 25, 1994, at 1100 hours, following performance of the system functional test, the Unit 2 Hydrogen/Oxygen Analyzer was declared operational. Additionally, the Unit 2 Division II and Unit 1 Divisions I and II Hydrogen/Oxygen Analyzer Drain Tank drain valves were tested to eliminate the possibility of a common mode failure and found to be fully operational.

On January 5, 1995, the root cause investigation determined that the failure of the 2-CAC-SV-4409-5 valve to pass flow resulted from improper reassembly of the valve which occurred during modification of the Hydrogen/Oxygen Analyzer system in 1987. By design, upon opening a sample line isolation valve, the 2-CAC-SV-4409-5 valve auto-opens to allow draining of one of the Hydrogen/Oxygen Analyzer system moisture drain tanks. System operating history does not indicate the occurrence of previous analyzer system operability concerns related to moisture collection problems; consequently, the inability of the valve to open was not recognized until this event.

The investigation also revealed that the Hydrogen/Oxygen Analyzer system primary containment leakage surveillances performed since August of 1993 were invalid due to 2-CAC-SV-4409-5 valve's inability to pass flow. The testing methodology incorporated by the surveillance since August 23, 1993, required the 2-CAC-SV-4409-5 valve to be in

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

the open position to allow pressurization and leak testing of the downstream threaded connections.

Prior to August 23, 1993, the Hydrogen/Oxygen Analyzer system primary containment leakage surveillance methodology was such that the position of the 2-CAC-SV-4409-5 valve could not affect the validity of the test (i.e., with the valve in either the open or closed position the required test pressure was applied to the system). Therefore, although the 2-CAC-SV-4409-5 valve was impaired since modification of the system in 1987, the Technical Specification required leak testing of the Hydrogen/Oxygen Analyzer system was valid until the testing methodology was revised in August of 1993.

This event is being reported in accordance with the requirements of 10 CFR 50.73 (a)(2)(i) in that the invalid Technical Specification surveillance of the Unit 2 Hydrogen/Oxygen Analyzer System leakage performed in May of 1994 constitutes a condition prohibited by the plant's Technical Specification

CAUSE OF EVENT

Investigation into the failure of the Unit 2 Containment Hydrogen/Oxygen Analyzer Drain Tank drain valve, 2-CAC-SV-4409-5, to pass flow, revealed that the valve had been disassembled during system modification in 1987. Disassembly was required due to a failure of the local leak rate test performed on the valve during post modification testing. During valve reassembly the valve's plunger to disc rod alignment tolerances were not maintained rendering the valve incapable of passing flow although valve position instrumentation indicated that the valve was open. The failure to properly reassemble the valve is attributed to inadequate modification installation instructions and post modification testing. The post modification testing relied solely upon position indication rather than a flow check to verify the valve would pass flow when cycled to the open position.

CORRECTIVE ACTIONS

The 2-CAC-SV-4409-5 valve was reassembled and bench tested to ensure proper operation. Following installation, leakage testing of the threaded connections downstream of the 2-CAC-SV-4409-5 valve was performed and no leaks were identified.

The Unit 2 Division II and Unit 1 Division I and II Hydrogen/Oxygen Analyzer Drain Tank drain valves were tested to ensure proper operation. The valves were found to be functioning properly.

A review of installed valves which are similar or identical in design to the 2-CAC-SV-4409-5 was performed. This review provided the assurance that these valves are capable of passing flow when placed in the open position.

Since 1987, a corrective maintenance procedure was generated to proceduralize the process for assembly and bench testing of those valves which are similar or identical in design to the 2-CAC-SV-4409-5 valve. A review of this procedure determined that the incorporated bench test is adequate for ensuring proper valve operation post maintenance. Additionally, a review of the existing plant modification procedures determined that this corrective maintenance procedure would be included in the installation and post modification testing development.

EXPIRES: 5/31/95

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**SAFETY ASSESSMENT**

The safety significance of this event is considered minimal for the following reasons:

Historical evidence does not indicate that the failure of the 2-CAC-SV-4409-5 valve to open and thus drain the Unit 2 Division I Hydrogen/Oxygen Analyzer Drain Tank has prevented the monitor from performing its intended design function during normal plant operation.

The leakage testing of threaded components downstream of the 2-C-SV-4409-5 valve performed following the recent repair of the valve identified no leakage.

**PREVIOUS SIMILAR EVENTS**

No similar events involving invalid Technical Specification testing as a result of inadequate procedures has been previously reported.

**EIIS COMPONENT IDENTIFICATION**

System/Component

Containment Environmental Monitoring System  
2-CAC-SV-4409-5

EIIS Code

IK  
IK\ASV



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
NONE	