



# Progress Energy

March 9, 2006

SERIAL: BSEP 06-0027

10 CFR 50.73

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

Subject: Brunswick Steam Electric Plant, Unit Nos. 1 and 2  
Docket Nos. 50-325 and 50-324/License Nos. DPR-71 and DPR-62  
Licensee Event Report 1-2006-001

Ladies and Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Part 50.73, Carolina Power & Light Company, now doing business as Progress Energy Carolinas, Inc., submits the enclosed Licensee Event Report. This report fulfills the requirement for a written report within sixty (60) days of a reportable occurrence.

Please refer any questions regarding this submittal to Mr. Leonard R. Beller, Supervisor Licensing and Regulatory Programs, at (910) 457-2073.

Sincerely,

B. C. Waldrep  
Plant General Manager  
Brunswick Steam Electric Plant

LJG/ljg

Enclosure:

Licensee Event Report

Progress Energy Carolinas, Inc.  
Brunswick Nuclear Plant  
P.O. Box 10429  
Southport, NC 28461

JE22

cc (with enclosure):

U. S. Nuclear Regulatory Commission, Region II  
ATTN: Dr. William D. Travers, Regional Administrator  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, SW, Suite 23T85  
Atlanta, GA 30303-8931

U. S. Nuclear Regulatory Commission  
ATTN: Mr. Eugene M. DiPaolo, NRC Senior Resident Inspector  
8470 River Road  
Southport, NC 28461-8869

U. S. Nuclear Regulatory Commission  
ATTN: Ms. Brenda L. Mozafari (Mail Stop OWFN 8G9) **(Electronic Copy Only)**  
11555 Rockville Pike  
Rockville, MD 20852-2738

Ms. Jo A. Sanford  
Chair - North Carolina Utilities Commission  
P.O. Box 29510  
Raleigh, NC 27626-051

<b>NRC FORM 366</b> (6-2004)	<b>U.S. NUCLEAR REGULATORY COMMISSION</b>  <b>LICENSEE EVENT REPORT (LER)</b>  (See reverse for required number of digits/characters for each block)	<b>APPROVED BY OMB NO. 3150-0104</b> <b>EXPIRES 06/30/2007</b> <small>Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to <a href="mailto:infocollects@nrc.gov">infocollects@nrc.gov</a>, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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.</small>
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<b>1. FACILITY NAME</b> Brunswick Steam Electric Plant (BSEP), Unit 1	<b>2. DOCKET NUMBER</b> 05000325	<b>3. PAGE</b> 1 OF 5
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**4. TITLE**  
Control Room Emergency Ventilation (CREV) and Air Conditioning (AC) Inoperable due to Loss of Control Air

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
01	12	2006	2006	-- 001 --	00	03	09	2006	BSEP, Unit 2	05000324
									FACILITY NAME	DOCKET NUMBER
										05000

<b>9. OPERATING MODE</b> 1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (Check one or more)									
<b>10. POWER LEVEL</b> 100	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)						
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER							
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A							

**12. LICENSEE CONTACT FOR THIS LER**

FACILITY NAME Lee J. Grzeck, Senior Engineer – Licensing	TELEPHONE NUMBER (Include Area Code) (910) 457-2487
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
E	VI	CMP	QUINCY	Y					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>				<b>15. EXPECTED SUBMISSION DATE</b>		
YES (If yes, complete EXPECTED SUBMISSION DATE).				X	NO	
					MO	DAY
						YEAR

**ABSTRACT** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

At 0400 hours on January 12, 2006, the 2A Control Building (CB) Instrument Air Compressor was taken out of service for scheduled maintenance. On the same day, at 0920 hours, the Control Room received annunciator, CB INSTR AIR PRESS LOW, and determined that the in-service 2B CB Instrument Air Compressor was not maintaining pressure. Shortly after receiving the annunciator, the Control Room Emergency Ventilation (CREV) and Control Room Air Conditioning (AC) systems shutdown due to the resulting loss of control air. The two CREV subsystems and the three Control Room AC subsystems required by Technical Specifications (TS) 3.7.3 and 3.7.4, respectively, were declared inoperable. This event is being reported in accordance with 10 CFR 50.73(a)(2)(v)(D), as an event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident. Operability of the Control Room AC subsystems and one CREV subsystem was restored at 1014 hours when the 2A CB Instrument Air Compressor was returned to service. The safety significance of this event is considered minimal.

The root cause of this event was determined to be ineffective condition monitoring of compressor oil pressure to detect hydraulic unloader degradation. Preventive Maintenance work orders for inspection and oil change have been initiated. The 2A and 2B CB Instrument Air Compressors have both been replaced with new compressors.

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Brunswick Steam Electric Plant (BSEP), Unit 1	05000325	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 5
		2006	-- 001	-- 00	

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

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

INTRODUCTION

At 0400 hours on January 12, 2006, the 2A Control Building Instrument Air [LD] Compressor was taken out of service for scheduled maintenance. On the same day, at 0920 hours, the Control Room received annunciator, CB INSTR AIR PRESS LOW, and determined that the in-service 2B Control Building Instrument Air Compressor was not maintaining pressure. Shortly after receiving the annunciator, the Control Room Emergency Ventilation (CREV) [VI] and Control Room Air Conditioning (AC) [VI] systems shutdown due to the resulting loss of control air. The two CREV subsystems and the three Control Room AC subsystems required by Technical Specifications (TS) 3.7.3 and 3.7.4, respectively, were declared inoperable. Because Brunswick has a shared Control Room, Units 1 and 2 entered TS 3.7.3 Required Action B.1 (i.e., be in Mode 3 within 12 hours), for two CREV subsystems inoperable, and TS 3.7.4 Required Action E.1 (i.e., enter Limiting Condition for Operation (LCO) 3.0.3 immediately), for three Control Room AC subsystems inoperable.

Operability of the three Control Room AC subsystems and one CREV subsystem was restored at 1014 hours when maintenance activities were completed and the 2A Control Building Instrument Air Compressor was returned to service. No power reduction took place as a result of the LCO 3.0.3 entry.

At 1607 hours, the NRC was notified of this event (i.e., Event Number 42254) in accordance with 10 CFR 50.72(b)(3)(v)(D), as an event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(v)(D), as an event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

EVENT DESCRIPTION

*Initial Conditions*

Prior to the event, both Units 1 and 2 were in Mode 1 operating at approximately 100 percent rated thermal power. All required safety-related systems for both units were operable, with the exception of Reactor Core Isolation Cooling (RCIC) system [BN] on Unit 2, which was out of service for maintenance.

*Discussion*

On January 12, 2006, at 0400 hours, the 2A Control Building Instrument Air Compressor (i.e., 2A Compressor) was taken out of service for scheduled maintenance to replace a relief valve. At 0522 hours, the clearance order removing the 2A Compressor from service was completed. On the same day, at 0920 hours, the Control Room received annunciator, CB INSTR AIR PRESS LOW, and determined that the

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

EVENT DESCRIPTION (continued)

in-service 2B Control Building Instrument Air Compressor (i.e., 2B Compressor) was not maintaining header pressure and providing adequate compressed air. Either one of the Control Building air compressors are designed to provide adequate instrument air pressure. Shortly after receiving the annunciator, the CREV and Control Room AC systems shutdown due to the resulting loss of control air. The two CREV subsystems and the three Control Room AC subsystems required by TS 3.7.3 and 3.7.4, respectively, were declared inoperable. Because Brunswick has a shared Control Room, the following action statements were entered for Units 1 and 2:

- TS 3.7.3 Required Action B.1, be in Mode 3 within 12 hours, for two CREV subsystems inoperable,
- TS 3.7.4 Required Action E.1, enter LCO 3.0.3 immediately, for three Control Room AC subsystems inoperable.

At 0955 hours, the 2A Compressor was placed into service after the maintenance work had been completed and the clearance order was lifted. By 1007 hours, the annunciator had cleared, and the AC units and fans that had shutdown were restarted and returned to service. At 1014 hours, the required CREV and Control Room AC subsystems were declared operable, and the TS 3.0.3 LCO was exited. One CREV subsystem remained inoperable due to the 2B Compressor being inoperable and out of service.

The 2B Compressor was restored to operable status on January 13, 2006, at 1330 hours.

EVENT CAUSE

The root cause of this event is ineffective condition monitoring of the Control Building Instrument Air Compressors. Based on trouble shooting activities associated with the 2B Compressor, it was determined that the January 12, 2006, trip of the compressor was apparently due to age related failure of the hydraulic unloader. This component prevents the compressor from loading and running without adequate oil pressure. Neither Operations nor System Engineering have been performing routine surveillance or trending of compressor oil pressure. Had this monitoring been performed, degradation of the hydraulic unloader would have been detected prior to its failure.

SAFETY ASSESSMENT

The safety significance of this condition is considered minimal. The CREV and Control Room AC systems provide radiation, smoke, and chlorine protection for the Operators, as well as cooling for the Control Room. The condition existed for approximately 54 minutes. The plant staff took immediate and proper actions to return the equipment to service. For the brief time that the CREV and Control Room AC systems were inoperable, performance of plant personnel and equipment in the Control Room was not adversely affected.

**LICENSEE EVENT REPORT (LER)**

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

**SAFETY ASSESSMENT (continued)**

The maximum temperature increase in the Control Room backpanel area during this event was determined to be no more than 4°F (i.e., from an initial temperature of approximately 69°F to a maximum of 73°F). Additionally, the chlorine tank car had previously been moved outside the exclusion area. There was no nuclear or industrial safety consequence from this event.

**CORRECTIVE ACTIONS**

- Operability of the Control Room AC system and one subsystem of the CREV system was restored at 1014 hours on January 12, 2006, when the 2A Compressor was restored to service.
- The 2A and 2B Control Building Instrument Air Compressors have both been replaced with the new model compressors. The 2A Compressor was replaced in December 2005, and the 2B Compressor was replaced in January 2006.
- Preventive Maintenance work orders for inspection and oil change have been initiated.
- Trending parameters (i.e., oil pressure and loading cycles) have been added for the control building system monitoring plan.
- Guidance for monitoring air compressor oil pressure is being added to procedures OOI-03.4, "Unit 0 Outside Auxiliary Operator Daily Check Sheets." The procedure change is scheduled to be completed by May 15, 2006.

**PREVIOUS SIMILAR EVENTS**

A review of LERs and corrective action program condition reports for the past three years identified the following similar events:

- LER 1-2005-004, dated July 11, 2005, documents a condition where the CREV and Control Room AC systems were declared inoperable when electrical power was lost to bus E1, making the 2B Compressor inoperable. The 2A Compressor should have automatically started, but did not start due to a wire lug that had broken and interrupted the control power circuit. The corrective actions associated with LER 1-2005-004 could not have reasonably been expected to prevent the condition reported in this LER.

### LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
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NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

#### PREVIOUS SIMILAR EVENTS (continued)

- Condition Report 179103, initiated on December 16, 2005, documents an event that resulted in the replacement of the 2A Compressor. However, the investigation of the 2A Compressor failure had not been completed at the time of the 2B Compressor failure on January 12, 2006.

#### COMMITMENTS

No regulatory commitments are contained in this report.