



Progress Energy

November 17, 2006

SERIAL: BSEP 06-0121

10 CFR 50.73

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

Subject: Brunswick Steam Electric Plant, Unit No. 1
Docket No. 50-325/License No. DPR-71
Licensee Event Report 1-2006-004, Supplement 1

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 supplement.

Please refer any questions regarding this submittal to Mr. Randy C. Ivey,
Manager – Support Services, at (910) 457-2447.

Sincerely,

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

TMS/tms

Enclosure:

Licensee Event Report

cc (with enclosure):

U. S. Nuclear Regulatory Commission, Region II
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U. S. Nuclear Regulatory Commission
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Ms. Jo A. Sanford
Chair - North Carolina Utilities Commission
P.O. Box 29510
Raleigh, NC 27626-051

1. FACILITY NAME
Brunswick Steam Electric Plant (BSEP), Unit 1

2. DOCKET NUMBER
05000325

3. PAGE
1 OF 3

4. TITLE
As-Found Values for Safety/Relief Valve Lift Setpoints Outside Technical Specification Allowed Tolerance

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
06	02	2006	2006	-- 004	-- 01	11	17	2006	FACILITY NAME	DOCKET NUMBER
										05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more)									
	<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)						
10. POWER LEVEL 100	<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	Specify in Abstract below or in NRC Form 366A					
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)							

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME: Thomas Sherrill, Engineer - Licensing
 TELEPHONE NUMBER (Include Area Code): (910) 457-2703

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

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

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

On June 2, 2006, the Brunswick Steam Electric Plant received the results of as-found testing of 11 safety/relief valves (SRVs) which had been removed from Unit 1 during the spring 2006, refueling outage (i.e., B116R1). These results indicated that four of the 11 valves mechanically actuated at pressures outside of the 3 percent tolerance allowed by Technical Specification 3.4.3, "Safety/Relief Valves." Since Technical Specification 3.4.3 requires 10 of the 11 installed SRVs to be operable, this condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as operation prohibited by the plant's Technical Specifications.

The root cause for the setpoint drift high for valves 1-B21-F013H and F013K was that proper lapping techniques were not fully understood when the BSEP SRV rebuild program began. This led to excessive lapping of the pilot disc. The root cause for the setpoint drift high for valve 1-B21-F013F was determined to be scoring of the pilot rod causing mechanical binding between the pilot rod and the pilot guide. The root cause for the setpoint drift low for valve 1-B21-F013B was leakage. The long term resolution for these items is to incorporate additional industry guidance into the SRV Rebuild Program and to replace the full complement of SRVs for the next Unit1 and Unit 2 refuel outages.

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 3
		2006	-- 004	-- 01	

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

On June 2, 2006, the Brunswick Steam Electric Plant received the results of as-found testing of 11 safety/relief valves (SRVs) [SB/RV] which had been removed from Unit 1 during the spring 2006, refueling outage (i.e., B116R1). These results indicated that four of the 11 valves actuated at pressures outside of the 3 percent tolerance allowed by Technical Specification 3.4.3, "Safety/Relief Valves."

EVENT DESCRIPTION

Initial Conditions

At the time the condition was identified, Unit 1 was in Mode 1, at approximately 100 percent of rated thermal power.

Discussion

During the spring 2006, Unit 1 refueling outage, the 11 Model 7567F Target Rock Two-Stage pilot valve assemblies were replaced with certified spares. The removed SRVs were sent to NWS Technologies for set pressure testing. On June 2, 2006, Engineering personnel received the results of the as-found testing which indicated that four of the 11 valves actuated at pressures outside of the 3 percent tolerance allowed by Technical Specification 3.4.3. The test data is provided in the following table.

Valve Identification	As-Found (psig)	Technical Specification Setpoint (psig)	Percent Difference
1-B21-F013B	1106	1150 ± 34.5	-3.8%
1-B21-F013F	1177	1130 ± 33.9	+4.2%
1-B21-F013H	1184	1140 ± 34.2	+3.9%
1-B21-F013K	1184	1140 ± 34.2	+3.9%

Since Technical Specification 3.4.3 requires 10 of the 11 installed SRVs to be operable, this condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as operation prohibited by the plant's Technical Specifications.

EVENT CAUSE

The root cause for the setpoint drift high for valves 1-B21-F013H and F013K is that proper lapping techniques were not fully understood when the BSEP rebuild program began. This led to excessive lapping

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EVENT CAUSE (continued)

of the pilot disc. This was the select cause from the preliminary investigation. Starting in 2000, BSEP personnel have performed the maintenance on the SRVs without vendor support. Thus, the valves installed in 2001 were the first to be rebuilt by BSEP personnel.

The root cause for valve 1-B21-F013F was determined to be scoring of the pilot rod causing mechanical binding between the pilot rod and the pilot guide. A contributing cause was residue of nickel never seize found in the pilot guide. The SRV pilot rebuild procedure (i.e., 0CM-VSR509) currently contains a note on the amount of nickel never seize to be used on the spherical collar. This note will be replaced with a caution with specific information related to the potential problems associated with using too much nickel never seize.

The root cause for the setpoint drift low for valve 1-B21-F013B was leakage. Valve leakage increases the surface area that steam pressure acts upon thus decreasing the lift setpoint.

SAFETY ASSESSMENT

All of the pilot assemblies currently installed in both units are susceptible to the same failure mechanisms. Therefore, for the next two refuel outages, all 11 pilot assemblies will be removed and refurbished to ensure that the latest rebuild practices are used. The safety significance of this condition is considered minimal. The as-found condition of the Unit 1 SRVs was compared to the current overpressure analysis prepared in support of extended power uprate and it was concluded that this analysis remained bounding. As such, the applicable acceptance criteria for design basis events would have been met and the SRVs remained capable of performing their intended safety function.

CORRECTIVE ACTIONS

Guidance from the forthcoming EPRI Target Rock SRV Model 67F Maintenance Guide will be incorporated into the SRV Rebuild Program and procedure 0CM-VSR509 will be revised to incorporate additional barriers to prevent recurrence. Use of the lapping practices outlined in the guide will minimize ditching of the pilot disc to preclude failures as well as minimize pilot leakage. These actions are expected to be completed on January 18, 2007.

Replace the full complement of SRV pilot assemblies during the next Unit 1 and Unit 2 refuel outages to implement improved rebuild practices on all the pilot assemblies. The Unit 1 replacement is expected to complete on April 3, 2008 and the Unit 2 replacement is expected to complete on April 4, 2007.

PREVIOUS SIMILAR EVENTS

Target Rock SRV setpoint drift has been an industry issue since the early 1980s. The last reportable condition for BSEP occurred on Unit 2 and was reported in LER 2-1999-005, dated June 7, 1999, as supplemented on December 8, 1999.

COMMITMENTS

No regulatory commitments are contained in this report.