Progress Energy

MAY 2 3 2005

SERIAL: BSEP 05-0048 10 CFR 50.73

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

Subject: Brunswick Steam Electric Plant, Unit No. 2
Docket No. 50-324/License No. DPR-62
Licensee Event Report 2-2005-001

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. Edward T. O'Neil, Manager – Support Services, at (910) 457-3512.

Sincerely,

David H. Hinds
Plant General Manager
Brunswick Steam Electric Plant

SFT/sft

Enclosure:

Licensee Event Report

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

IE22

cc (with enclosure):

U. S. Nuclear Regulatory Commission, Region II
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Ms. Jo A. Sanford
Chair - North Carolina Utilities Commission
P.O. Box 29510
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NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES: 06/30/2007

Estimated burden per response to comply with this mandatory 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 Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, 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.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Brunswick Steam Electric Plant (BSEP), Unit 2	05000324	1 of 4

4. TITLE

Compliance with Single Control Rod Withdrawal-Cold Shutdown Technical Specification

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
03	31	2005	2005	-- 001 --	00	05	23	2005	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE	4
10. POWER LEVEL	000

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more)

	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)
	20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)
	20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)
	20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)
	20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		
	20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)		
	20.2203(a)(2)(v)	X	50.73(a)(2)(i)(B)		50.73(a)(2)(vii)		
	20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)		
	20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)		

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
Steven F. Tabor, Lead Engineering Technical Support Specialist	(910) 457-2178

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				

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

On March 31, 2005, at approximately 0545 hours, with Unit 2 in day 26 of a refuel outage and operating in Mode 4, operators were dispatched to disarm a five by five array of control rod drives (CRDs) in accordance with the Technical Specification (TS) 3.10.4, "Single Control Rod Withdrawal-Cold Shutdown," to support replacement of a CRD. During the disarming effort, an error was made that resulted in the failure to disarm one of the required CRDs which ultimately resulted in the failure to comply with TS 3.10.4, Required Actions. At 2245 hours, shortly after initiating the CRD replacement activity, the disarming error was discovered. Immediate actions were taken to establish compliance with the TS. The cause of the error is attributed to a procedural deficiency associated with the equipment control process. The failure of the individuals involved with the disarming activity to meet the work standards for equipment control, as established in procedures and through management expectations, is considered a contributing cause. Corrective actions include providing additional process barriers by establishing an interim Standing Instruction to preclude recurrence until a revision to the equipment control procedure can be implemented. In addition, a review of the event with appropriate individuals will be performed. The significance of this occurrence is considered minimal in that no control rod manipulations were made during the time the condition existed that could have affected reactor core shutdown margins.

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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 March 31, 2005, operators were dispatched to disarm Control Rod Drive (CRD) System Hydraulic Control Units (HCUs) [AA/HCU] in accordance with the Technical Specification (TS) in support of CRD replacement activities. During the disarming effort, an error was made that resulted in the failure to disarm one of the required CRDs, which ultimately resulted in the failure to comply with TS Required Actions. This condition was determined to be reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as an operation or condition prohibited by the TS.

EVENT DESCRIPTION

Initial Conditions

Unit 2 was in day 26 of refueling outage B217R1, operating in Cold Shutdown (i.e., Mode 4), at 0 percent rated thermal power. Control rod (CR) 46-43 could not be properly coupled to its control rod drive mechanism (CRDM), so activities were underway to replace the CRDM, requiring the associated control rod to be fully withdrawn from the reactor core.

Discussion

TS Limiting Condition for Operation (LCO) 3.10.4, "Single Control Rod Withdrawal-Cold Shutdown," allows the reactor mode switch position to be changed from Shutdown to Refuel while operating in Mode 4 and operation considered not to be in Mode 2 (i.e., Startup) to allow withdrawal of a single CR and subsequent removal of the associated CRD provided the following requirements are met:

a. All other CRs are fully inserted;

b. 1. LCO 3.9.2, "Refuel Position One-Rod-Out Interlock," and LCO 3.9.4, "Control Rod Position Indication,"

OR

2. A CR withdrawal block is inserted;

c. 1. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Mode 5 requirements for Functions 1.a, 1.b, 7, 10, and 11 of Table 3.3.1.1-1, and LCO 3.9.5, "Control Rod OPERABILITY—Refueling,"

OR

2. All other CRs in a five by five array centered on the CR being withdrawn are disarmed; at which time LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," Mode 4 requirements, may be changed to allow the single CR withdrawn to be assumed to be the highest worth CR.

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

EVENT DESCRIPTION (continued)

On March 31, 2005, in support of replacing CRDM 46-43, operations personnel implemented the requirements of TS LCO 3.10.4. Removal of the associated CRDM results in inoperability of the associated CR and loss of position indication for that rod. In order to perform the required CRDM 46-43 removal, the following actions were taken.

Time	Action	TS Compliance
0545	Initiated the disarming of a five by five array of CRDs centered on CR 46-43	LCO 3.10.4 c.2. versus c.1.
1749	CR 46-43 fully withdrawn	LCOs 3.10.4 a., 3.10.4 b.1., and 3.10.4 c.1. met
2205	Established a clearance to deactivate HCU 46-43 and thus rendered the associated control rod inoperable	N/A
2208	Inserted control rod withdrawal block	LCO 3.10.4 b.2. versus b.1.

With the completion of these actions, CRDM 46-43 removal activities began.

At 2245 hours, during walkdown activities, operations personnel identified that an error had occurred during disarming of the CRDs to establish the required five by five array. Specifically, CRD 34-47 had been disarmed versus CRD 38-47. Therefore, from 2205 until 2245 hours, the plant was in TS 3.10.4, Condition B, (i.e., LCO 3.10.4 c.2. was not met due to failure to disarm the 5 by 5 array), without having implemented the associated Required Actions. The failure to establish the conditions required by TS resulted in a reportable condition in accordance with 10 CFR 50.73(a)(2)(i)(B) as an operation or condition prohibited by the Technical Specifications.

Upon discovery of the error, operators immediately initiated actions to disarm CRD 38-47 and independently verified that no other discrepancies existed that could have prevented compliance with TS 3.10.4 requirements.

EVENT CAUSE

The cause of this occurrence is attributed to the lack of adequate barriers within the configuration control process used to disarm the CRD five by five array. A contributing cause is the failure of the individuals involved with the disarming activity to meet the work standards as established in procedures and through management expectations for ensuring adequate configuration control.

0AI-58.2, "Equipment Control, Test Status and Caution Tagging," governs the use of equipment control (EC) sheets and tagging. This process did not include provisions for independent verification of EC tags and thereby, relied upon the performance of a single individual to complete an activity required to satisfy TS requirements.

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

Review of the factors affecting human performance during the disarming activity determined that the auxiliary operator with primary responsibility for establishing the EC tag for HCU 38-47 had (1) not attended the pre-job brief conducted for the activity and thus was not fully aware of the potential to affect TS compliance and (2) did not comply with the practice as established in 0OI-01.02, "Shift Routines and Operating Practices," Attachment 19, "Operations Performance Standards," for signing off steps in the process as the steps were completed.

CORRECTIVE ACTIONS

As an interim corrective measure, a Standing Instruction was issued to require independent verification of EC tag hanging on components and systems important to safety.

0AI-58.2 will be revised to require independent verification of EC activities implemented to ensure compliance with TS or other regulatory requirements.

The individuals involved with establishing the 5 by 5 array were coached on tag hanging practices and related expectations as delineated in 0OI-01.02.

A review of the lessons learned from this event will be conducted with appropriate operations shift personnel.

SAFETY ASSESSMENT

The significance of this occurrence is considered minimal in that the noncompliance with the TS occurred for approximately 40 minutes and during that time, no CR manipulations were made. During the period that the disarming error existed, a CR withdrawal block had been established as part of the actions taken to comply with TS LCO 3.10.4 and thus prevented the possibility of manipulating another CR. In considering the potential consequences of this occurrence, even if CR 38-47 had been manipulated during the period of concern, strongest-CR-out testing performed prior to this occurrence confirms that an inadvertent criticality event would not have occurred.

PREVIOUS SIMILAR EVENTS

A review of events occurring within the past three years has not identified any previous similar occurrences. Although previous non-reportable occurrences involving work performance and problems encountered during execution of the equipment control process were identified, none of these occurrences were considered significant in relation to the occurrence reported herein (i.e., the corrective actions taken for the earlier events could not be reasonably expected to have prevented this occurrence).

COMMITMENTS

No regulatory commitments are contained in this report. Those actions discussed in this submittal will be implemented in accordance with corrective action program requirements.