Progress Energy

JUN 23 2010

SERIAL: BSEP 10-0076 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
Renewed Facility Operating License No. DPR-71
Docket No. 50-325
Licensee Event Report 1-2010-002

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 (LER). 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 Ms. Annette Pope, Supervisor - Licensing/Regulatory Programs, at (910) 457-2184.

Sincerely,

Edward L. Wills, Jr.
Plant General Manager
Brunswick Steam Electric Plant

MAT/mat

Enclosure:

Licensee Event Report

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

IE22
NRR

cc (with enclosure):

U. S. Nuclear Regulatory Commission, Region II
ATTN: Mr. Luis A. Reyes, Regional Administrator
245 Peachtree Center Avenue, NE, Suite 1200
Atlanta, GA 30303-1257

U. S. Nuclear Regulatory Commission
ATTN: Mr. Philip B. O'Bryan, NRC Senior Resident Inspector
8470 River Road
Southport, NC 28461-8869

U. S. Nuclear Regulatory Commission (Electronic Copy Only)
ATTN: Mrs. Farideh E. Saba (Mail Stop OWFN 8G9A)
11555 Rockville Pike
Rockville, MD 20852-2738

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

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2010

Estimated burden per response to comply with this mandatory collection request: 80 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 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)

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4. TITLE

Operation Prohibited by Technical Specifications - Reactor Protection System (RPS) Instrumentation

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
										05000
04	25	2010	2010	– 002	– 00	06	23	2010	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE

2

10. POWER LEVEL

000

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

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

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
Mark Turkal, Lead Engineer - Licensing	(910) 457-3066

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

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On April 25, 2010, at 2100 hours Eastern Daylight Time (EDT), with the unit in Mode 2 at 900 psig, pressure transmitter 1-B21-PT-N023B was declared inoperable due to reading downscale. This transmitter is part of the instrumentation required for operability of Function 3, "Reactor Vessel Steam Dome Pressure - High," of Technical Specification 3.3.1.1, "Reactor Protection System (RPS) Instrumentation." Table 3.3.1.1-1, "Reactor Protection System Instrumentation," which requires two operable channels when in Modes 1 and 2. It was determined that the inoperability of pressure transmitter 1-B21-PT-N023B was due to valve 1-B21-IV-1384, "B21-PT-N023B Instrument Isolation Valve," being in the closed position. Unit 1 had previously entered Mode 2 at 0313 hours on April 24, 2010, during startup from the Unit 1, Cycle 18 refueling outage. 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 select cause of this event was the failure to effectively use the concurrent verification during the performance of procedure 0MST-EFCV18R, "EFCV Rx Inst Pen Sys Isol Vlv Func Test X53, X82, X49B-A." As a result, valve 1-B21-IV-1384 was left in the closed versus open position. The corrective actions to prevent recurrence will enhance concurrent verification practices through establishing new expectations for Maintenance personnel and procedure improvements.

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NARRATIVE

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

Introduction

Initial Conditions

At the time of the event, Unit 1 was in Mode 2, at 900 psig. Startup from the Unit 1, Cycle 18 refueling outage was in progress.

Reportability Criteria

On April 24, 2010, at 0313 hours Eastern Daylight Time (EDT), Unit 1 entered Mode 2 during startup from the Unit 1, Cycle 18 refueling outage. On April 25, 2010, at 2100 hours, with the unit in Mode 2 at 900 psig, pressure transmitter 1-B21-PT-N023B was declared inoperable due to reading downscale. This transmitter is part of the B1 channel Reactor Protection System [JC] instrumentation required for operability of Function 3, "Reactor Vessel Steam Dome Pressure - High," of Technical Specification (TS) 3.3.1.1, "Reactor Protection System (RPS) Instrumentation." Table 3.3.1.1-1, "Reactor Protection System Instrumentation," which requires two operable channels when in Modes 1 and 2. It was determined that the inoperability of pressure transmitter 1-B21-PT-N023B was due to valve 1-B21-IV-1384, "B21-PT-N023B Instrument Isolation Valve," being in the closed position and that this valve was closed prior to entering Mode 2.

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. Unit 1 entered Mode 2 without satisfying the requirements of Limiting Condition for Operation (LCO) 3.0.4. Additionally, Unit 1 operated in Mode 2 for approximately 41 hours and 47 minutes prior to identifying the condition and entering Condition A of TS 3.3.1.1.

Event Description

On April 25, 2010, at 2100 hours, pressure transmitter 1-B21-PT-N023B was declared inoperable due to reading downscale. The downscale reading was discovered during the normally scheduled performance of procedure 1OI-03.1, "Reactor Operator Daily Surveillance Report," for the Control Room back panel area.

Troubleshooting activities were initiated and it was determined that the inoperability of pressure transmitter 1-B21-PT-N023B was due to valve 1-B21-IV-1384 being in the closed position. The valve was repositioned and, after appropriate testing, pressure transmitter 1-B21-PT-N023B was declared operable at 0309 hours on April 26, 2010.

In addition, it was determined that valve 1-B21-PT-N045B-3, "B21-PT-N045B Instrument Isolation Valve," was also out of position. This rendered pressure transmitter B21-PT-N045B inoperable. This transmitter is part of the instrumentation required for operability of Function 2, "Reactor Vessel Steam

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Event Description (continued)

Dome Pressure - High," of TS 3.3.4.1, "Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation." However, the Applicability for TS 3.3.4.1 is Mode 1 and the issue was identified and corrected prior to entry into Mode 1.

Event Cause

The select cause of this event was the failure to effectively use concurrent verification during the performance of procedure 0MST-EFCV18R, "EFCV Rx Inst Pen Sys Isol Vlv Func Test X53, X82, X49B-A." As a result, valve 1-B21-IV-1384 was left in the closed versus open position. A review was performed to confirm that performance of 0MST-EFCV18R, between March 18 and March 20, 2010, was the only outage activity that could have resulted in the mispositioning of valve 1-B21-IV-1384. 0MST-EFCV18R determines operability of several reactor instrument penetration Excess Flow Check Valves (EFCVs) in conformance with TS Surveillance Requirement 3.6.1.3.7 (i.e., verify a representative sample of reactor instrumentation line EFCVs actuate to the isolation position on an actual or simulated instrument line break signal).

The technicians involved with performing 0MST- EFCV18R were individually interviewed regarding procedure compliance details. The concurrent process consisted of one individual implementing place-keeping and initialing of each step. The second individual, in close proximity and able to concurrently read the step, performed valve manipulations. Gloves were used for potential contamination control while touching the valve handles. This individual would manipulate several valves and after completion of multiple procedure steps, remove the gloves and signoff the completed steps. The occurrence of an error during this evolution cannot be confirmed. However, it is believed that errors in place-keeping occurred that resulted in the step for restoration of the isolation valve for B21-PT-N023B (i.e., and B21-PT-N045B) being missed or otherwise incorrectly performed. This is substantiated by the fact that performance of 0MST-EFCV18R was the only outage activity that could have resulted in the mispositioning of valve 1-B21-IV-1384.

A contributing cause to this event was a lack of sufficient barriers, in the Return to Service section of 0MST-EFCV18R, to ensure proper system alignment at the completion of the surveillance test. The procedure requires the plant to be in Mode 5 and, as such, contains no means to functionally verify proper component operation upon completion of the test. Additionally, the procedure does not contain independent verification of critical steps to verify components are returned to service.

Safety Assessment

The safety significance of this event is considered minimal. Pressure transmitter 1-B21-PT-N023B is part of the instrumentation required for operability of Function 3, "Reactor Vessel Steam Dome Pressure -

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Safety Assessment (continued)

High," of TS 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," which generates a RPS actuation signal. The trip channels for this Function are as follows:

- A1 - 1-B21-PT-N023A
- A2 - 1-B21-PT-N023C
- B1 - 1-B21-PT-N023B
- B2 - 1-B21-PT-N023D

In this case, the B1 channel was inoperable. Due to the one-out-of-two taken twice logic (i.e., A1 or A2 and B1 or B2 will result in a RPS actuation), trip capability was maintained. Therefore, there was no loss of safety function.

Corrective Actions

The following corrective action to prevent recurrence has been identified.

- Operations procedure 0OI-01.02, "Operations Unit Organization and Operating Practices," currently contains proper concurrent verification methodology. Maintenance personnel will use the concurrent verification process described within 0OI-01.02 during performance of maintenance activities requiring concurrent verification. Implementation of this expectation, within the Maintenance organization, has been completed.
- OPS-NGGC-1303, "Independent Verification," is a fleet level procedure that provides instructions for performance of independent verification including concurrent and functional verification for each of Progress Energy's nuclear plants. This procedure will be revised to incorporate the concurrent verification methodology contained in 0OI-01.02. This procedure revision is currently scheduled to be completed by August 19, 2010.

Additional corrective actions include the following.

- Valve 1-B21-IV-1384 was repositioned and, after appropriate testing, pressure transmitter 1-B21-PT-N023B was declared operable at 0309 hours on April 26, 2010.
- Procedure 0MST-EFCV18R will be revised to include requirements for independent verification of critical steps. This procedure revision is currently scheduled to be completed by July 7, 2010.
- Other EFCV surveillance procedures will be revised, as necessary, to include requirements for independent verification of critical steps. The identified procedure revisions are currently scheduled to be completed by July 7, 2010.

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CONTINUATION SHEET

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Previous Similar Events

A review of LERs and corrective action program condition reports for the past three years identified no previous similar events where failure to effectively use the concurrent verification resulted in Unit 1 or Unit 2 operation prohibited by the plant's Technical Specification.

Commitments

No regulatory commitments are contained in this report.