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10 CFR 50.73

AUG 08 2016

Serial: BSEP 16-0062

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

Subject: Brunswick Steam Electric Plant, Unit No. 2
Renewed Facility Operating License No. DPR-62
Docket No. 50-324
Licensee Event Report 2-2016-001

In accordance with the Code of Federal Regulations, Title 10, Part 50.73, Duke Energy Progress, Inc., submits the enclosed Licensee Event Report (LER). This report fulfills the requirement of 10 CFR 50.73(a)(1) for a written report within sixty (60) days of a reportable occurrence.

Please refer any questions regarding this submittal to Mr. Lee Grzeck, Manager – Regulatory Affairs, at (910) 457-2487.

Sincerely,

A handwritten signature in black ink, appearing to read 'WRG', written over a white background.

William R. Gideon

SWR/swr

Enclosure: Licensee Event Report 2-2016-001

IE22
NRR

cc (with enclosure):

U. S. Nuclear Regulatory Commission, Region II
ATTN: Ms. Catherine Haney, Regional Administrator
245 Peachtree Center Ave, NE, Suite 1200
Atlanta, GA 30303-1257

U. S. Nuclear Regulatory Commission
ATTN: Ms. Michelle P. Catts, NRC Senior Resident Inspector
8470 River Road
Southport, NC 28461-8869

U. S. Nuclear Regulatory Commission
ATTN: Mr. Andrew Hon (Mail Stop OWFN 8G9A) **(Electronic Copy Only)**
11555 Rockville Pike
Rockville, MD 20852-2738

Chair - North Carolina Utilities Commission **(Electronic Copy Only)**
432 S Mail Service Center
Raleigh, NC 27699-4300
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LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

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 FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollect.Resource@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.

1. FACILITY NAME Brunswick Steam Electric Plant (BSEP) Unit 2	2. DOCKET NUMBER 05000324	3. PAGE 1 OF 3
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4. TITLE
Mispositioned Valves Result in Residual Heat Removal Service Water System Inoperability

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	15	2016	2016	- 001	- 00	08	08	2016	FACILITY NAME	DOCKET NUMBER
										05000
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
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)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<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)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<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)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Lee Grzeck, Manager - Regulatory Affairs	TELEPHONE NUMBER (Include Area Code) (910) 457-2487
--------------------------------------------------------------	--------------------------------------------------------

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 <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR

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

On June 15, 2016, at 05:15 Eastern Daylight Time, Unit 2 was in Mode 1 (i.e., Run mode) at 100 percent of rated thermal power. At that time, Operations personnel were preparing to run the Residual Heat Removal Service Water (RHRSW) system in the suppression pool cooling mode. While performing the valve lineup, an alarm was received on low RHRSW suction pressure. Two instrument valves connected to the "B" and "D" RHRSW pump suctions were found closed. This resulted in the pump start logic being unable to sense RHRSW pump suction pressure, which prevented the pumps from being able to start. With the pumps unable to start, the associated RHRSW division was inoperable. It is most likely that the valves were mispositioned during a previous operation of the "B" RHRSW division. The event resulted from procedures which did not adequately control the position of the instrument valves. Corrective actions for this event included repositioning the valves to their correct configuration and revising applicable procedures.



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

(See NUREG-1022, R.3 for instruction and guidance for completing this form
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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Brunswick Steam Electric Plant (BSEP) Unit 2	05000-324	2016	- 001	- 000

NARRATIVE

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

Background

Initial Conditions

On June 15, 2016, at 05:15 Eastern Daylight Time (EDT), Unit 2 was in Mode 1 (i.e., Run mode) at 100 percent of rated thermal power. No out-of-service equipment contributed to, or affected the course of, this event.

Reportability Criteria

This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) because Unit 2 was operated in a condition prohibited by the Technical Specifications (TS). Specifically, one division of the Residual Heat Removal (RHR) [BO] Service Water (RHRSW) [BI] system was found to be inoperable. The duration of the inoperability was based on the last successful operation of the RHRSW system, or June 4, 2016, at 14:41 EDT. TS Limiting Condition for Operation (LCO) 3.7.1 Condition B says that with one RHRSW subsystem inoperable for reasons other than Condition A (i.e., one pump inoperable), the system must be restored within 7 days or be in Mode 3 (i.e. shut down) within the following 12 hours. The plant was operated until June 15, 2016, at 05:45 EDT in this condition (i.e., 10 days, 15 hours, 4 minutes). Therefore, the plant was operated in a condition prohibited by the TS.

Event Description

On June 15, 2016, at 05:15 EDT, Unit 2 was in Mode 1 (i.e., Run mode) at 100 percent of rated thermal power. Operations personnel were preparing to start the RHRSW system in the suppression pool cooling mode. While opening Nuclear Service Water (NSW) system [BI] valves to supply RHRSW, operators received an annunciator for RHRSW pump suction pressure being low. Personnel then identified two RHRSW instrument valves which were closed and should have been open. The associated instrument lines feed pressure instruments for the suction of the "B" and "D" RHRSW pumps. With the valves closed, suction pressure from NSW could not be sensed, and the RHRSW pumps could not start. Both instrument valves were immediately opened. This restored the affected RHRSW subsystem to operable status at 05:45 EDT on June 15, 2016.

Event Causes

It is most likely that the instrument valve mispositioning occurred during a previous operation of the "B" division of RHRSW on April 6, 2016. Investigators found no evidence of tampering. The RHRSW suction valves were opened on June 4, 2016, at 14:41 EDT, and the low pressure annunciator did not alarm. The absence of the low pressure alarm confirms the "B" and "D" RHRSW pumps could have started. Therefore, the duration of inoperability is conservatively assumed to have begun on June 4, 2016, at 14:41 EDT.



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NARRATIVE

The apparent cause of this event is that procedures lacked sufficient control of the positions of the subject instrument valves. Procedures allowed operators to select which valves to manipulate under certain conditions, creating the possibility that valves might be left in the incorrect position during system restoration.

Safety Assessment

The purpose of the RHRSW system is to provide a heat sink for the RHR system. It normally receives suction from the NSW system supply header and moves cooling water through the RHR heat exchangers. The RHR heat exchangers receive flow from the RHR system. In the suppression pool cooling mode, RHR water is circulated from the suppression pool to the heat exchangers where RHRSW flow cools it.

In this event, one of two RHRSW subsystems was inoperable for a period greater than the allowable seven days. The unaffected division of RHRSW was always operable during this time. Consequently, the safety function of the RHRSW system was maintained.

Based on this analysis, this event had no adverse impact on the health and safety of the public.

Corrective Actions

Any changes to the corrective actions and schedules noted below will be made in accordance with the site's corrective action program.

- The affected instrument valves were placed in the correct position, and the RHRSW system was made operable. This action is complete.
- Procedures governing use of the affected instrument valves will be revised to specifically designate as-left positions, and valve positions will be independently verified. This action will be completed by September 16, 2016.

Previous Similar Events

A review of LERs and the site's corrective action program for the past three years did not identify any previous similar occurrences in which mispositioned components rendered a safety system inoperable.

Commitments

This report contains no regulatory commitments.