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10 CFR 50.73

January 21, 2021
Serial: RA-20-0388

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

Subject: Brunswick Steam Electric Plant, Unit Nos. 1 and 2
Renewed Facility Operating License Nos. DPR-71 and DPR-62
Docket Nos. 50-325 and 50-324
Licensee Event Report 1-2020-005

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

This document contains no regulatory commitments.

Please refer any questions regarding this submittal to Ms. Sabrina Salazar, Manager – Nuclear Support Services, at (910) 832-3207.

Sincerely,

John A. Krakuszeski

SBY/sby

Enclosure: Licensee Event Report

cc (with enclosure):

Ms. Laura Dudes, NRC Regional Administrator, Region II
Mr. Andrew Hon, NRC Project Manager
Mr. Gale Smith, NRC Senior Resident Inspector
Chair - North Carolina Utilities Commission

NRC FORM 366 (08-2020) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2023

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LICENSEE EVENT REPORT (LER)

(See Page 3 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/)

1. Facility Name	2. Docket Number	3. Page
Brunswick Steam Electric Plant (BSEP), Unit 1	05000325	1 OF 3

4. Title

Condition Prohibited by Technical Specifications due to Ventilation Charcoal Sample Laboratory Results

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Revision No.	Month	Day	Year	Facility Name	Docket Number
11	25	2020	2020	- 005 -	00	01	21	2021	Brunswick, Unit 2	05000324
									Facility Name	Docket Number 05000

9. Operating Mode	10. Power Level
1	100

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

10 CFR Part 20	☐ 20.2203(a)(2)(vi)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	**10 CFR Part 73**
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(4)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(1)(i)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(i)
☐ 20.2203(a)(2)(iii)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.77(a)(2)(ii)
☐ 20.2203(a)(2)(iv)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	
☐ 20.2203(a)(2)(v)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	

☐ **OTHER** (Specify here, in abstract, or NRC 366A).

12. Licensee Contact for this LER

Licensee Contact	Phone Number (Include area code)
Sabrina Salazar, Manager – Nuclear Support Services	(910) 832-3207

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to IRIS		Cause	System	Component	Manufacturer	Reportable to IRIS
B	VI	ADS		Y						

14. Supplemental Report Expected		15. Expected Submission Date	Month	Day	Year
☒ No	☐ Yes (If yes, complete 15. Expected Submission Date)				

16. Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

At 14:36 Eastern Standard Time on November 25, 2020, with Unit 1 and 2 in Mode 1 at approximately 100% power, the '2B' Control Room Emergency Ventilation (CREV) subsystem was declared inoperable on both units per Unit 1 and Unit 2 Technical Specification (TS) 3.7.3, CREV System, as a result of receiving notification that the '2B' charcoal adsorber efficiency laboratory results were below the acceptance criteria. A sample of the '2B' CREV charcoal adsorber was sent to a vendor laboratory on November 11, 2020, for analysis as part of the Control Building Emergency Filter System Test.

The failure of the '2B' charcoal adsorber to meet acceptance criteria was most likely the result of variations in the charcoal manufacturing process which caused accelerated charcoal surface oxidation. The '2B' charcoal filter trays were replaced on November 27, 2020, and the subsystem was returned to operable on November 28, 2020, following completion of operability testing.

There was no impact on the health and safety of the public or plant personnel. The safety significance of this event is minimal. The '2A' CREV subsystem remained operable during this time period; only one filtering train is required for system operation with the other serving as the fully redundant standby train.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) due to having a condition prohibited by Technical Specifications.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

(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/)

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Brunswick Steam Electric Plant (BSEP), Unit 1	05000- 325	2020	- 005	- 00

NARRATIVE

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

Background

Initial Conditions

At the time of the event, Unit 1 was in Mode 1 (i.e., Power Operation), at approximately 100 percent rated thermal power. Unit 2 was in Mode 1 (i.e., Power Operation), at approximately 100 percent rated thermal power.

Reportability Criteria

This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) due to having a condition prohibited by Technical Specifications. The inoperable condition of the '2B' Control Room Emergency Ventilation (CREV) [VI] subsystem existed at least from when the sample was taken on November 11, 2020, to when the '2B' CREV subsystem was made operable on November 28, 2020. This is longer than the 7 days allowed out of service time allowed by Technical Specification 3.7.3, Condition 'A', combined with the Condition 'C' completion time to be in Mode 3 within 12 hours.

Event Description

At 14:36 Eastern Standard Time on November 25, 2020, with Unit 1 and 2 in Mode 1 at approximately 100% power, the '2B' CREV subsystem was declared inoperable on both units (the CREV System is a shared system) per Unit 1 and Unit 2 Technical Specification (TS) 3.7.3, CREV System, as a result of receiving notification that the '2B' charcoal adsorber efficiency laboratory results were below the acceptance criteria. A sample of the '2B' CREV charcoal adsorber was sent to a vendor laboratory on November 11, 2020, for analysis as part of the Control Building Emergency Filter System Test. The results from this test demonstrated that the charcoal adsorber efficiency for organic iodine was 92.956% efficient, which is less than the acceptance criteria of 95.26% efficient.

Event Cause

The failure of the '2B' charcoal adsorber to meet acceptance criteria was most likely the result of variations in the charcoal manufacturing process which caused accelerated charcoal surface oxidation. The '2B' charcoal adsorber was installed in 2012 and was planned to be replaced in 2022. The increased degradation rate associated with the '2B' charcoal adsorber is atypical, though not outside of industry operating experience.

The untimely identification of the condition was a result of procedural guidance that allowed 31 days from sample removal to receive laboratory sample results.

Safety Assessment

There was no impact on the health and safety of the public or plant personnel. The safety significance of this event is minimal. The '2A' CREV subsystem remained operable during this time period, and only one filtering train is required for system operation with the other serving as the fully redundant standby train. The '2A' CREV subsystem was tested in May of 2020 with Satisfactory results.

Corrective Actions

Replacement of the '2B' CREV subsystem charcoal filter trays was completed on November 27, 2020, and the subsystem was returned to operable on November 28, 2020, following completion of operability testing.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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Brunswick Steam Electric Plant (BSEP), Unit 1	05000- 325	2020	- 005	- 00

NARRATIVE

In addition to the aforementioned completed corrective action, procedure and work order guidance are planned to be updated by June 30, 2021, to include notes and instructions for accelerated sample removal and laboratory test result receipt such that a failure can be corrected, and the unit repaired, within 7 days of the CREV system being initially removed from service.

Any changes to the corrective actions or completion schedules will be made in accordance with the site's corrective action program.

Previous Similar Events

No events have occurred within the past three years in which the CREV charcoal adsorber efficiency laboratory results were below the acceptance criteria.

Commitments

No regulatory commitments are contained in this report.