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10 CFR 50.73

April 10, 2024

Serial: RA-24-0074

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

Subject: Brunswick Steam Electric Plant, Unit No. 1
Renewed Facility Operating License No. DPR-71
Docket No. 50-325
Licensee Event Report 1-2024-001

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 Mr. Mark DeWire, Manager – Nuclear Support Services, at (910) 832-6641.

Sincerely,


A handwritten signature in black ink, appearing to read "John A. Krakuszeski".

John A. Krakuszeski

Enclosure: Licensee Event Report

cc (with enclosure):

Ms. Laura Dudes, NRC Regional Administrator, Region II
Mr. Luke Haeg, NRC Project Manager
Mr. Gale Smith, NRC Senior Resident Inspector

NRC FORM 366 (04-02-2024)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB: NO. 3150-0104			EXPIRES: 04/30/2027											
<div><div>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/)</div></div>										<div>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, Library, and Information Collections Branch (T-6 A10M), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by email to Infocollections.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.</div>									
1. Facility Name Brunswick Steam Electric Plant (BSEP), Unit 1					<input checked="" type="checkbox"/> 050 <input type="checkbox"/> 052		2. Docket Number 00325		3. Page 1 OF 3										
4. Title Primary Containment Penetration Local Leak Rate Testing Failure																			
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		<input type="checkbox"/> 050	Docket Number							
02	17	2024	2024	- 001 -	00	04	10	2024	Facility Name		<input type="checkbox"/> 052	Docket Number							
9. Operating Mode 5						10. Power Level 000													
11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)																			
10 CFR Part 20		<input type="checkbox"/> 20.2203(a)(2)(vi)		10 CFR Part 50		<input checked="" type="checkbox"/> 50.73(a)(2)(ii)(A)		<input type="checkbox"/> 50.73(a)(2)(viii)(A)		<input type="checkbox"/> 73.1200(a)									
<input type="checkbox"/> 20.2201(b)		<input type="checkbox"/> 20.2203(a)(3)(i)		<input type="checkbox"/> 50.36(c)(1)(i)(A)		<input type="checkbox"/> 50.73(a)(2)(ii)(B)		<input type="checkbox"/> 50.73(a)(2)(viii)(B)		<input type="checkbox"/> 73.1200(b)									
<input type="checkbox"/> 20.2201(d)		<input type="checkbox"/> 20.2203(a)(3)(ii)		<input type="checkbox"/> 50.36(c)(1)(ii)(A)		<input type="checkbox"/> 50.73(a)(2)(iii)		<input type="checkbox"/> 50.73(a)(2)(ix)(A)		<input type="checkbox"/> 73.1200(c)									
<input type="checkbox"/> 20.2203(a)(1)		<input type="checkbox"/> 20.2203(a)(4)		<input type="checkbox"/> 50.36(c)(2)		<input type="checkbox"/> 50.73(a)(2)(iv)(A)		<input type="checkbox"/> 50.73(a)(2)(x)		<input type="checkbox"/> 73.1200(d)									
<input type="checkbox"/> 20.2203(a)(2)(i)		10 CFR Part 21		<input type="checkbox"/> 50.46(a)(3)(ii)		<input type="checkbox"/> 50.73(a)(2)(v)(A)		10 CFR Part 73		<input type="checkbox"/> 73.1200(e)									
<input type="checkbox"/> 20.2203(a)(2)(ii)		<input type="checkbox"/> 21.2(c)		<input type="checkbox"/> 50.69(g)		<input type="checkbox"/> 50.73(a)(2)(v)(B)		<input type="checkbox"/> 73.77(a)(1)		<input type="checkbox"/> 73.1200(f)									
<input type="checkbox"/> 20.2203(a)(2)(iii)				<input type="checkbox"/> 50.73(a)(2)(i)(A)		<input checked="" type="checkbox"/> 50.73(a)(2)(v)(C)		<input type="checkbox"/> 73.77(a)(2)(i)		<input type="checkbox"/> 73.1200(g)									
<input type="checkbox"/> 20.2203(a)(2)(iv)				<input type="checkbox"/> 50.73(a)(2)(i)(B)		<input type="checkbox"/> 50.73(a)(2)(v)(D)		<input type="checkbox"/> 73.77(a)(2)(ii)		<input type="checkbox"/> 73.1200(h)									
<input type="checkbox"/> 20.2203(a)(2)(v)				<input type="checkbox"/> 50.73(a)(2)(i)(C)		<input type="checkbox"/> 50.73(a)(2)(vii)													
<input type="checkbox"/> OTHER (Specify here, in abstract, or NRC 366A).																			
12. Licensee Contact for this LER																			
Licensee Contact Mark DeWire, Manager – Nuclear Support Services									Phone Number (Include area code) (910) 832-6641										
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	NH	ISV	A391	Y															
14. Supplemental Report Expected						15. Expected Submission Date				Month	Day	Year							
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date)																			
16. Abstract (Limit to 1326 spaces, i.e., approximately 13 single-spaced typewritten lines) At approximately 08:37 Eastern Standard Time (EST), on February 17, 2024, with Unit 1 in Mode 5 at 0% power during a planned refueling outage, it was determined that the Unit 1 primary containment leakage rate did not meet the 10 CFR 50, Appendix J, requirements, as specified in Technical Specification 5.5.12, due to the as-found Local Leak Rate Testing (LLRT) results of the Reactor Core Isolation Cooling (RCIC) turbine steam supply line penetration (part of the containment boundary). Both the inboard and outboard primary containment isolation valves in this line would not pressurize during LLRT. The inboard and outboard RCIC turbine steam supply line primary containment isolation valves were repaired during the refueling outage. Subsequent LLRT of this containment penetration was satisfactory. There was no impact on the health and safety of the public or plant personnel. This event is being reported in accordance with 10 CFR 50.73(a)(2)(ii)(A) due to a degraded primary containment isolation boundary, and 10 CFR 50.73(a)(2)(v)(C) since this event could have prevented the fulfillment of the safety function of primary containment.																			

**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/>)

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, Library, and Information Collections Branch (T-6 A10M), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by email to Infocollections.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. FACILITY NAME Brunswick Steam Electric Plant (BSEP), Unit 1	<input checked="" type="checkbox"/> 050	2. DOCKET NUMBER 00325	3. LER NUMBER		
	<input type="checkbox"/> 052		YEAR 2024	SEQUENTIAL NUMBER - 001	REV NO. - 00

NARRATIVE

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

Background*Initial Conditions*

At the time of the event, Unit 1 was in Mode 5 (i.e., Refueling), at 0 percent rated thermal power.

Reportability Criteria

This event is being reported in accordance with 10 CFR 50.73(a)(2)(ii)(A) due to a degraded primary containment [NH] isolation boundary discovered by as-found Local Leak Rate Testing (LLRT) of the inboard and outboard primary containment isolation valves [BD] in the Reactor Core Isolation Cooling (RCIC) [BN] turbine steam supply line. In addition, this event is being reported in accordance with 10 CFR 50.73(a)(2)(v)(C) since this event could have prevented the fulfillment of the safety function of primary containment [NH].

The NRC was notified of this event per 10 CFR 50.72(b)(3)(ii)(A) via Event Notification 56974 at 14:07 Eastern Standard Time (EST) on February 17, 2024.

Event Description

At 08:37 EST, on February 17, 2024, with Unit 1 in Mode 5 at 0% power during a planned refueling outage, it was determined that the Unit 1 primary containment leakage rate did not meet the 10 CFR 50, Appendix J, requirements, as specified in Technical Specification (TS) 5.5.12. The RCIC turbine steam supply line penetration inboard and outboard primary containment isolation valves did not pressurize during LLRT resulting in a leak rate greater than the acceptance criteria.

This condition occurred during an Integrated Leak Rate Test (ILRT) outage. Therefore, it is also considered an as-found ILRT failure.

Event Cause

The direct cause of the primary containment leakage rate exceeding the 10 CFR 50, Appendix J, requirements specified in TS 5.5.12 was the RCIC turbine steam supply line penetration inboard and outboard primary containment isolation valves not maintaining test pressure during LLRT. The subject valves are double disc gate valves.

Safety Assessment

There was no adverse impact on the health and safety of the public or plant personnel. The safety significance of this event is minimal. Unit 1 was shutdown at the time, and operation was aligned with TS required actions.

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	<input type="checkbox"/> 052		<table border="1"><thead><tr><th>YEAR</th><th>SEQUENTIAL NUMBER</th><th>REV NO.</th></tr></thead><tbody><tr><td>2024</td><td>- 001</td><td>- 00</td></tr></tbody></table>	YEAR	SEQUENTIAL NUMBER	REV NO.	2024
YEAR	SEQUENTIAL NUMBER	REV NO.					
2024	- 001	- 00					

NARRATIVE**Corrective Actions**

The inboard and outboard RCIC turbine steam supply line primary containment isolation valves were repaired during the refueling outage. Subsequent LLRT of this containment penetration was satisfactory. In addition, the as-left ILRT was satisfactory.

The subject valves are double disc gate valves that are planned to be replaced with a new design. The current plan is to replace these valves prior to startup from the 2028 refueling outage.

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

Previous Similar Events

No previous similar events have occurred within the past 20 years in which the inboard and outboard containment isolation valves in the same containment penetration would not pressurize during LLRT.

Commitments

No regulatory commitments are contained in this report.