



Jack McCoy
Manager
Regulatory and Emergency Planning
225-381-4177

RBG-48368

10 CFR 50.73

July 17, 2025

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

Subject: Licensee Event Report 50-458 / 2025-002-00, Unidentified Drywell Leakage
Increase Results in Shutdown

River Bend Station – Unit 1
NRC Docket Nos. 50-458
Renewed Facility Operating License No. NPF-47

In accordance with 10 CFR 50.73, enclosed is the subject Licensee Event Report.

This document contains no commitments.

Should you have any questions, please contact Mr. Jack McCoy, Regulatory and Emergency
Planning Manager, at 225-381-4177.

Respectfully,

A handwritten signature in black ink, appearing to be 'JM' followed by a stylized flourish.

JM/jdb

Enclosure: LER 50-458 / 2025-002-00

cc: NRC Region IV Regional Administrator - Region IV
NRC Senior Resident Inspector - River Bend Station
NRC Office of Nuclear Security and Incident Response

Enclosure

RBG-48368

Licensee Event Report
50-458/2025-002-00



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
<https://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 Collection Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.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

River Bend Station, Unit 1

☒ 050☐ 052

2. Docket Number

00458

3. Page

1 of 2

4. Title

Unidentified Drywell Leakage Increase Results in Shutdown

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	☐ 050	Docket Number
05	21	2025	2025	002	00	07	17	2025	N/A		
									Facility Name	☐ 052	Docket Number
									N/A		

9. Operating Mode

1

10. Power Level

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)	10 CFR Part 50	☒ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.1200(a)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	☐ 73.1200(b)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	☐ 73.1200(c)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)	☐ 73.1200(d)
☐ 20.2203(a)(2)(i)	10 CFR Part 21	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	10 CFR Part 73	☐ 73.1200(e)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.77(a)(1)(i)	☐ 73.1200(f)
☐ 20.2203(a)(2)(iii)		☒ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(2)(i)	☐ 73.1200(g)
☐ 20.2203(a)(2)(iv)		☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(ii)	☐ 73.1200(h)
☐ 20.2203(a)(2)(v)		☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)		

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

12. Licensee Contact for this LER

Licensee Contact

Jack McCoy, Regulatory and Emergency Planning Manager

Phone Number (Include Area Code)

(225) 381-4177

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

14. Supplemental Report Expected

☐ No ☒ Yes (If yes, complete 15. Expected Submission Date)

15. Expected Submission Date

Month	Day	Year
10	17	2025

16. Abstract (Limit to 1326 spaces, i.e., approximately 13 single-spaced typewritten lines)

On May 21, 2025, at 0324 CDT, with River Bend Station (RBS), Unit 1 operating in Mode 1 at 100% power, unidentified drywell leakage experienced a greater than 2 gallon per minute change over a 24-hour period. Technical Specifications (TS) Limiting Condition of Operations (LCO) 3.4.5 Condition C was entered. The required action to verify the source of unidentified leakage increase could not be completed within the allowable completion time. As a result, a plant shutdown was initiated at 0656 CDT.

While investigating the unidentified leakage source, RBS determined that a degraded condition existed following the examination of the Residual Heat Removal (RHR) "A" injection line testable check valve. The leakage from the RHR 'A' injection line testable check valve was determined to be Reactor Coolant System pressure boundary leakage.

This event is reportable in accordance with 10 CFR 50.73(a)(2)(i)(A) as a Plant Shutdown Required by Technical Specifications, 10 CFR 50.73(a)(2)(ii)(A) as a Degraded or Unanalyzed Condition that resulted in the condition of the nuclear power plant, including its principal safety barriers being seriously degraded, and 10 CFR 50.73(a)(2)(i)(B) as an Operation or Condition Prohibited by Technical Specifications.

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

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

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1. FACILITY NAME		2. DOCKET NUMBER	3. LER NUMBER		
River Bend Station, Unit 1	☒ 050	00458	YEAR	SEQUENTIAL NUMBER	REV NO.
	☐ 052		2025	002	00

NARRATIVE**Event Description**

On May 21, 2025, at 0324 CDT, with River Bend Station (RBS), Unit 1 operating in Mode 1 at 100% power, unidentified drywell leakage experienced a greater than 2 gallon per minute change over a 24-hour period. Technical Specifications (TS) Limiting Condition of Operations (LCO) 3.4.5 Condition C was entered. The required action to verify the source of unidentified leakage increase is not service sensitive type 304, type 316 austenitic stainless steel, or other inter-granular stress corrosion cracking susceptible material within 4 hours, could not be completed within the allowable completion time due to the drywell being inaccessible during plant operation. As a result, a controlled manual plant shutdown was initiated at 0656 CDT. At 1405 CDT, the control room operators placed the mode switch to Shutdown. The control room operators entered the appropriate post scram procedures and appropriately responded to the reactor scram.

This event was reported on May 21, 2025, at 0950 CDT in accordance with 10 CFR 50.72(b)(2)(i), as an event or condition that results in a TS required plant shutdown. (EN 57725)

During the investigation of the unidentified leakage following the shutdown, RBS determined that a degraded condition existed following the performance of a visual examination of E12-AOVF041A (Residual Heat Removal "A" Injection Line Testable Check Valve) [BO:V]. This examination was conducted on May 22, 2025, at 2358 CDT.

This event was reported on May 23, 2025, at 0121 CDT in accordance with 10 CFR 50.72(a)(2)(ii)(A), as Degraded or Unanalyzed Condition that resulted in the condition of the nuclear power plant, including its principal safety barriers being seriously degraded. (EN 57731)

The elevated drywell leakage was determined to be Reactor Coolant System (RCS) [AB] pressure boundary leakage and required actions were not completed within the completion time as required by TS LCO 3.4.5. Therefore, this event is also being reported under 10 CFR 50.73(a)(2)(i)(B) as an Operation or Condition Prohibited by TS.

Event Cause

The apparent cause evaluation for these events is still in progress.

Safety Assessment

The actual consequence of these events was the initiation of a controlled manual plant shutdown. Following the controlled manual plant shutdown, reactor pressure was maintained by the Turbine Steam Drains [TF] and reactor water level was maintained by the Feedwater [SJ] system.

Corrective Actions

Corrective actions will be issued once the apparent cause evaluation is complete.

Previous Occurrences

This section will be updated in the supplemental report following the completion of the investigation.

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