



LG-24-065

June 10, 2024

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

Limerick Generating Station, Unit 1
Renewed Facility Operating License No. NPF-39
NRC Docket No. 50-352

Subject: LER 2024-001-00 Unit 1 'B' Main Steam Isolation Valve Exceeded the Technical Specification Allowable Leak Rate

In accordance with the requirements of 10 CFR 50.73(a)(2)(i)(B), Limerick Generating Station hereby submits the enclosed Licensee Event Report.

There are no commitments contained in this letter.

If you have any questions, please contact Jordan Rajan at (610) 718-3400.

Respectfully,

A handwritten signature in black ink that reads "Michael F. Gillin".

Michael F. Gillin
Vice President – Limerick Generating Station
Constellation Energy Company, LLC

cc: Administrator Region I, USNRC
USNRC Senior Resident Inspector, Limerick Generating Station



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, Library, and Information Collections Branch (T-6 A10M), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by email 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 Limerick Generating Station Unit 1	<input checked="" type="checkbox"/> 050	2. Docket Number 352	3. Page 1 OF 3
	<input type="checkbox"/> 052		

4. Title
Leakage for the Unit 1 `B' Outboard Main Steam Isolation Valve Exceeded Technical Specification Limit

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
04	09	2024	2024	001	00	06	10	2024	Facility Name	<input type="checkbox"/> 050
									Facility Name	<input type="checkbox"/> 052

9. Operating Mode 5	10. Power Level 0
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11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)

<input type="checkbox"/> 10 CFR Part 20	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 10 CFR Part 50	<input 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)	<input type="checkbox"/> 10 CFR Part 21	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 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 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 checked="" 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)		

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

12. Licensee Contact for this LER

Licensee Contact Jordan Rajan	Phone Number (Include area code) 610-718-3400
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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	SB	ISV	A585	Yes					

14. Supplemental Report Expected		15. Expected Submission Date		
<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date)	Month	Day	Year

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

On April 9, 2024, during Local Leak Rate Testing (LLRT) conducted during the Unit 1 refueling outage (1R20), as-found leakage for the `B' Outboard Main Steam Isolation Valve (MSIV) HV-041-1F028B was 208.9 standard cubic feet per hour (scfh), which exceeded the Technical Specification (TS) 3.6.1.2.c limit of 100 scfh for individual MSIV leakage. The affected MSIV was declared inoperable, and the valve was disassembled to perform internal repairs. The as-left leak rate following this maintenance was 1.7 scfh.

Based on the preliminary cause, there is evidence that the condition existed during the last operating cycle for longer than allowed by Technical Specification (TS) 3.6.3.a. This condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.



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

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1. FACILITY NAME Limerick Generating Station Unit 1	<input checked="" type="checkbox"/> 050	2. DOCKET NUMBER 352	3. LER NUMBER		
	<input type="checkbox"/> 052		YEAR 2024	SEQUENTIAL NUMBER 001	REV NO. 00

NARRATIVE

Unit Conditions Prior To The Event

Limerick Generating Station (LGS) Unit 1 was at 0 percent Rated Thermal Power (RTP) in Operating Condition (OPCON) 5 when the condition was discovered.

Event Description

On April 9, 2024, during Local Leak Rate Testing (LLRT) conducted during the Unit 1 refueling outage (1R20), as-found leakage for the 'B' Outboard Main Steam Isolation Valve (MSIV) HV-041-1F028B [EIIIS System / Component Code: SB / ISV] was 208.9 standard cubic feet per hour (scfh), which exceeded the Technical Specification (TS) 3.6.1.2.c limit of 100 scfh for individual MSIV leakage. The affected MSIV was declared inoperable, and the valve was disassembled to perform internal repairs. The as-left leak rate following this maintenance was 1.7 scfh.

The as-found inspection of HV-041-1F028B identified that the pilot poppet to poppet seat interface was the primary source of the leakage path for the LLRT failure due to several linear indications. The poppet seat was machined to remove the linear indications to reestablish acceptable sealing surface contact with the pilot poppet. The main seat and poppet were also reworked in accordance with station procedures to improve sealing surface contact, and the spring and stem were replaced due to normal wear. Based on the as-found condition, there is evidence that the linear indications existed during the last operating cycle for longer than allowed by Technical Specification (TS) 3.6.3.a. This condition is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

Analysis of the Event

This event was determined to be reportable in accordance with 10CFR50.73(a)(2)(i)(B), "Any operation or condition which was prohibited by the plant's Technical Specifications". Specifically, TS 3.6.1.2.c requires the leak rate for each individual MSIV to be less than or equal to 100 scfh and the leak rate for all four Main Steam lines to be less than or equal to 200 scfh. Based on the as-found condition and valve leakage history, the leakage rate for HV-041-1F028B was likely above 100 scfh during the last operating cycle; therefore, the valve was inoperable as a primary containment isolation valve. With one or more of the primary containment isolation valves inoperable, TS 3.6.3.a requires the affected penetration to be isolated by use of at least one de-activated automatic valve secured in the closed position within four hours or be in at least Hot Shutdown within the next 12 hours and Cold Shutdown in the following 24 hours. This action was not met.

This event is not classified as a safety system functional failure since the primary containment isolation capability of the 'B' Main Steam line remained operable.

Safety Consequences

There were no actual consequences to the health and safety of the public for this event. As-found leakage and stroke time testing of the redundant 'B' Inboard MSIV (HV-041-1F022B) was completed in the April 2024 Unit 1 refuel outage with the leak rate below the TS allowable value; thus, the primary containment isolation capability of the 'B' Main Steam line remained operable. Additionally, the as-found minimum path leakage for all four Main Steam lines for the April 2024 Unit 1 refuel outage was below the TS 3.6.1.2 limit of 200 scfh.



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	<input type="checkbox"/> 052		YEAR 2024	SEQUENTIAL NUMBER 001	REV NO. 00

NARRATIVE

Corrective Actions Completed

Corrective maintenance was completed for HV-041-1F028 in accordance with station procedures. The as-left leak rate following this maintenance was 1.7 scfh, which is consistent with historical as left MSIV leak rates following in-body maintenance.

Corrective Actions Planned

1. Complete a corrective action program investigation to determine the cause of the LLRT failure and any required corrective actions.
2. Evaluate submitting a license amendment request to change the Limerick TS requirement for MSIV leakage from a single valve leakage and total valve allowed leakage limit to a steam line leakage and total valve leakage limit consistent with the requirements of NUREG-1433, Standard Technical Specifications - General Electric BWR/4 Plants.

Previous Similar Occurrences

There have been no previous similar licensee event reports in the past ten years.

Component Data

System: SB (Main/Reheat Steam System)
Component: ISV (Valve, Isolation)
Manufacturer: A585 (Attwood & Morrill Company, Inc.)