

Dominion Energy Nuclear Connecticut, Inc.
Millstone Power Station
314 Rope Ferry Road, Waterford, CT 06385
DominionEnergy.com



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

Serial No.: 23-163
MPS Lic/JP R0
Docket No.: 50-423
License No.: NPF-49

JUL 27 2023

DOMINION ENERGY NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
LICENSEE EVENT REPORT 2023-001-00

AUTOMATIC REACTOR TRIP DUE TO MAIN GENERATOR OUTPUT BREAKER GROUND FAULT

This letter forwards Licensee Event Report (LER) 2023-001-00, documenting an event that occurred at Millstone Power Station Unit 3, at 04:46 on May 30, 2023. This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in manual or automatic actuation of systems listed in 10 CFR 50.73(a)(2)(iv)(B).

There are no regulatory commitments contained in this letter or its enclosure.
Should you have any questions, please contact Mr. Dean E. Rowe at (860) 444-5292.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. O'Connor".

Michael J. O'Connor
Site Vice President – Millstone

Enclosure: LER 423/2023-001-00

cc: U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road, Suite 102
King of Prussia, PA 19406-1415.

R. V. Guzman
NRC Project Manager Millstone Units 2 and 3
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop 08 C2
11555 Rockville Pike
Rockville, MD 20852-2738

NRC Senior Resident Inspector
Millstone Power Station

ATTACHMENT

LICENSEE EVENT REPORT 2023-001-00

**AUTOMATIC REACTOR TRIP DUE TO MAIN GENERATOR OUTPUT BREAKER
GROUND FAULT**

**MILLSTONE POWER STATION UNIT 3
DOMINION ENERGY NUCLEAR CONNECTICUT, INC.**



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 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; email: oir_submission@omb.eop.gov. 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 Millstone Power Station Unit 3	<input checked="" type="checkbox"/> 050 <input type="checkbox"/> 052	2. Docket Number 423	3. Page 1 OF 3
---	---	------------------------------------	------------------------------

4. Title
Automatic reactor trip due to main generator output breaker ground fault

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
05	30	2023	2023	001	00	07	27	2023	<input type="checkbox"/> 050 <input type="checkbox"/> 052	 Docket Number

9. Operating Mode 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	<input type="checkbox"/> 20.2203(a)(2)(vi)	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 checked="" 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 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)		

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

12. Licensee Contact for this LER

Licensee Contact Dean E. Rowe, Manager Nuclear Emergency Preparedness and Licensing	Phone Number (Include area code) 860-444-5292
---	---

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	EL	BKR	G080	Yes					

14. Supplemental Report Expected

<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date)
--	--

15. Expected Submission Date

Month	Day	Year

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

On May 30, 2023, at 04:46, Millstone Power Station Unit 3 was in Mode 1 at 100 percent reactor power when an automatic reactor trip occurred following a main generator turbine trip caused by a main generator ground fault. The direct cause of the trip was a ground fault on "B" phase of the main generator output breaker (MGOB) due to a flashover event that happened inside the "B" breaker pole fiberglass air supply tube. Air leaks in the breaker air system caused increased air compressor run time resulting in undesired moisture and oil accumulation in the air supply tube that led to flashover. The affected fiberglass air supply tube was replaced and air leaks were fixed in the air supply system. The actuation of the Reactor Protection System and the Auxiliary Feedwater System is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in a manual or automatic actuation of systems listed in 10 CFR 50.73(a)(2)(iv)(B).



**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 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; email: oira_submission@omb.eop.gov. 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 Millstone Power Station Unit 3	<input checked="" type="checkbox"/> 050	2. DOCKET NUMBER 423	3. LER NUMBER		
	<input type="checkbox"/> 052		YEAR 2023	SEQUENTIAL NUMBER 001	REV NO. 00

NARRATIVE

On May 30, 2023, at 04:46, Millstone Power Station Unit 3 was in Mode 1 at 100 percent reactor power when an automatic reactor trip occurred following a main generator turbine trip. The main generator turbine trip was initiated by a main generator protection system actuation from a ground fault. All control rods inserted on the trip. Following the trip, main feedwater was isolated as designed, and auxiliary feedwater was automatically actuated to restore steam generator levels. As designed, turbine bypass valves prevented challenging the main steam safety valves following the reactor trip. All reactor coolant pumps continued to operate and reactor coolant system cold leg temperatures were maintained greater than 550°F following the event.

A four-hour non-emergency notification was made for the actuation of the Reactor Protection System in accordance with 10 CFR 50.72(b)(2)(iv)(B). An eight-hour non-emergency notification was made for the actuation of the Auxiliary Feedwater System in accordance with 10 CFR 50.72(b)(3)(iv)(A) and 10 CFR 50.72(b)(3)(iv)(B).

All systems performed as expected with the exception of the condenser air ejector radiation monitor (ARC-RE21). The radiation monitor momentarily spiked to 2.0E-5 uC/cc, which generated the high alarm until 04:48, when the trend lowered to 5.5E-6 uC/cc to clear the high alarm. At 04:49, ARC-RE21 decreased to its pre-trip value of 3.4E-6 uC/cc. Chemistry sampling performed on May 31, 2023, in accordance with primary to secondary leak rate surveillance procedure (SP 3861), gave no indication of steam generator tube leakage.

The actuation of the Reactor Protection System and the Auxiliary Feedwater System is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event that resulted in a manual or automatic actuation of systems listed in 10 CFR 50.73(a)(2)(iv)(B).

CAUSE

The direct cause of the trip was a ground fault on "B" phase of the MGOB due to a flashover event that happened inside the "B" breaker pole fiberglass air supply tube. The supply tube receives air from a 500 psi pressure reducing cabinet, which is supplied by a 3700 psi air receiver that is filled from either of two MGOB air compressors. Air leaks in the breaker air system caused increased air compressor run time resulting in undesired moisture and oil accumulation in the air supply tube that led to flashover.

ASSESSMENT OF SAFETY CONSEQUENCES

There were no safety consequences related to this event. As designed, turbine bypass valves prevented challenging the main steam safety valves following the reactor trip. The maximum indicated steam generator pressure was 1082 psig, which was well below the nominal opening pressure of the first main steam safety valves of 1185 psig. As designed, following the trip, main feedwater was isolated and auxiliary feedwater responded to restore steam generator levels. All reactor coolant pumps continued to operate and reactor coolant system cold leg temperatures were maintained greater than 550°F following the event.

Following the reactor trip, the minimum post-trip pressurizer pressure was approximately 1980 psia, which is well above the low pressurizer pressure setpoint of 1892 psia. The minimum pressurizer level was 32% immediately following the reactor trip. There was no indication of steam generator tube leakage which was verified by chemistry sampling performed on May 31, 2023 in accordance with SP 3861. No safety functions were challenged, and plant operation was maintained within the bounds of Final Safety Analysis Report Chapter 15: Safety Analysis. This event did not challenge the health and safety of the public or the environment.



**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 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; email: oira_submission@omb.eop.gov. 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 Millstone Power Station Unit 3	<input checked="" type="checkbox"/> 050	2. DOCKET NUMBER 423	3. LER NUMBER		
	<input type="checkbox"/> 052		YEAR 2023	SEQUENTIAL NUMBER 001	REV NO. 00

NARRATIVE

CORRECTIVE ACTIONS

The affected fiberglass air supply tube from MGOB air compressor was replaced. The air supply system to the main generator output breaker was inspected, moisture and oil accumulation were cleaned, and leaks in the air system were repaired. Additional corrective actions will be taken in accordance with the station corrective action program.

PREVIOUS OCCURRENCES

On April 1, 2020, at Millstone Power Station Unit 3, an automatic reactor trip occurred following a main generator turbine trip caused by a main generator ground fault. The cause of reactor trip was a ground fault on the "C" phase of the normal station service transformer isolated phase bus duct due to water intrusion and buildup in an isolated phase bus duct transition section which caused a turbine generator trip, and subsequently a reactor trip. The root cause and faulted component of that event was different and therefore it is not a repeat event.

ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) CODES

EL – MAIN GENERATOR OUTPUT POWER SYSTEM
BRK – BREAKER