

Dominion Energy Nuclear Connecticut, Inc.
Millstone Power Station
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DominionEnergy.com



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

Serial No.: 22-069
MPS Lic/DB R0
Docket No.: 50-423
License No.: NPF-49

MAR 24 2022

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

LICENSEE EVENT REPORT 2022-001-00

**EMERGENCY CORE COOLING AND REACTOR PLANT COMPONENT COOLING WATER
SYSTEMS INOPERABLE FOR TIME GREATER THAN ALLOWED BY TECHNICAL
SPECIFICATIONS**

This letter forwards Licensee Event Report (LER) 2022-001-00, documenting a condition that occurred at Millstone Power Station Unit 3 (MPS3), on January 26, 2022, when MPS3 exceeded a Technical Specification required shutdown action statement. During a telephone conversation at 8:30 AM EST on January 26, 2022, the NRC approved a verbal request from DENC that a Notice of Enforcement Discretion (NOED) be issued allowing continued operation for an additional 72 hours beyond the expiration of the TS action statement. This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) as operation or condition prohibited by Technical Specifications.

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 423/2022-001-00

IE22
NRR

cc: U.S. Nuclear Regulatory Commission
Region I
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King of Prussia, PA 19406-2713

R.V. Guzman
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U.S. Nuclear Regulatory Commission
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NRC Senior Resident Inspector
Millstone Power Station

ATTACHMENT

LICENSEE EVENT REPORT 2022-001-00
EMERGENCY CORE COOLING AND REACTOR PLANT COMPONENT COOLING WATER
SYSTEMS INOPERABLE FOR TIME GREATER THAN ALLOWED BY TECHNICAL
SPECIFICATIONS

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



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
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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 e-mail to Infocollections.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk alt: 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

2. Docket Number

05000

423

3. Page

1 OF 4

4. Title
Emergency Core Cooling and Reactor Plant Component Cooling Water Systems Inoperable For Time Greater Than Allowed by Technical Specifications

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
01	26	2022	2022	- 001 -	00	03	24	2022	Facility Name	05000
									Facility Name	Docket Number
										05000

9. Operating Mode

1

10. Power Level

100

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"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	10 CFR Part 73
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.69(g)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(i)	10 CFR Part 21	<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)(1)(i)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 21.2(c)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(i)
<input type="checkbox"/> 20.2203(a)(2)(iii)	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"/> 73.77(a)(2)(ii)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<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"/> 20.2203(a)(2)(v)	<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"/> 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
X	VF	Bearing	FAFNIR	Y					

14. Supplemental Report Expected

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

15. Expected Submission Date

Month Day Year

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

On January 23, 2022, at 1118 hours, the 'B' train Charging Pump and Reactor Plant Component Cooling Water (RPCCW) Pump Area Exhaust Fan, 3HVR*FN13B, failed. This resulted in tripping its supply breaker, 32-1W(F4M), fire alarms, Control Room alarms, and an auto start of the standby fan. Because these fans support operability of the Emergency Core Cooling Systems (ECCS) and RPCCW systems, 72-hour Technical Specification Action Statements (TSAS) were entered for one ECCS subsystem and one RPCCW safety loop being inoperable. When it became evident repairs could not be completed within the Technical Specification Allowed Outage Time (TS AOT), a request was made, and approved, for a Notice Of Enforcement Discretion for 72 hours beyond the TS AOT to provide time to restore the fan and operability of ECCS and RPCCW. ECCS and RPCCW were inoperable for a total of 105 hours and 32 minutes. The cause of the fan failure was a failed motor bearing. The fan was repaired and restored to operable status on January 27, 2022 at 2050 hours.

This condition is being reported pursuant to 10CFR50.73(a)(2)(i)(B) as 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
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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
Millstone Power Station Unit 3	05000-423	YEAR	SEQUENTIAL NUMBER	REV NO.
		2022	001	00

NARRATIVE**1. EVENT DESCRIPTION**

On January 23, 2022, at 1118 hours, the 'B' train Charging Pump and Reactor Plant Component Cooling Water (RPCCW) Pump Area Exhaust Fan, 3HVR*FN13B, failed. This resulted in tripping its supply breaker, 32-1W(F4M), fire alarms, Control Room alarms, and an auto start of the standby fan. This fan provides a support function for the Charging Pumps and RPCCW Pumps, as well as supporting operation of the Auxiliary Building Filter system and Supplemental Leak Collection and Release System (SLCRS). As a result of the fan tripping, Operations personnel entered the following Technical Specification Action Statements (TSAS):

- TSAS 3.5.2.a for one Emergency Core Cooling System (ECCS) subsystem inoperable, which requires the inoperable subsystem to be restored to operable status within 72 hours, or the unit placed in HOT STANDBY within the next 6 hours, and HOT SHUTDOWN within the following 6 hours.
- TSAS 3.7.3 for one RPCCW safety loop inoperable, which requires the inoperable safety loop to be restored to operable status within 72 hours, or the unit placed in HOT STANDBY within the following 6 hours, and COLD SHUTDOWN within the following 30 hours.
- TSAS 3.6.6.1 for one SLCRS system inoperable, which requires the inoperable system to be restored within 7 days, or the unit placed in HOT STANDBY within the next 6 hours, and COLD SHUTDOWN within the following 30 hours.
- TSAS 3.7.9 for one Auxiliary Building Filter system inoperable, which requires the inoperable system to be restored within 7 days, or the unit placed in HOT STANDBY within the next 6 hours, and COLD SHUTDOWN within the following 30 hours.

Millstone Maintenance inspected the fan and found that the motor shaft was bent, causing the fan blades to contact the housing. After the failure was identified, repair activities proceeded on a continuous basis with the goal of completing the repairs and validating operability of the fan prior to expiration of the 72-hour Allowed Outage time (AOT) of TSAS 3.5.2.a and 3.7.3. However, as corrective maintenance activities to replace the fan motor and fan hub assembly progressed, completion of the repairs was forecasted to extend beyond the original 72-hour AOT. Therefore, on January 26, 2022, at approximately 0830 hours, Dominion Energy Nuclear Connecticut (DENC) informed the Nuclear Regulatory Commission (NRC) of the need for a Notice Of Enforcement Discretion (NOED) from the requirements of TS 3.5.2 and 3.7.3 for a period of 72 hours to avoid an unnecessary shutdown while repairs were completed. The NOED request was verbally approved by the NRC on January 26, 2022, at approximately 1034 hours. On January 27, 2022, at 2050 hours, corrective maintenance and post-maintenance testing of the fan was completed satisfactorily, the TSASs were exited, and the period of Notice Of Enforcement Discretion exited.

One ECCS subsystem and one RPCCW safety loop were inoperable for a total of 105 hours and 32 minutes, which exceeds the 72-hour AOT of TSAS 3.5.2.a and 3.7.3. Therefore, this event is being reported in accordance with 10CFR50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

2. CAUSE

Investigation has determined that the fan failure was caused by a motor bearing failure.

The failed bearing is manufactured by FAFNIR and its model number is 314KDD BEARING.

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

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NARRATIVE**3. ASSESSMENT OF SAFETY CONSEQUENCES**

MPS3 Charging Pump and RPCCW Pump Area exhaust fan 3HVR*FN13B is safety related but does not have any direct TS requirements. However, the fan does support the charging pump and RPCCW pump and heat exchangers, as well as the Auxiliary Building Filter and SLCRS systems, which are TS equipment. Therefore, this fan affects the TS for ECCS, RPCCW, SLCRS, and Auxiliary Building Filter System.

The Charging Pump and RPCCW Pump Area supply and exhaust fans are part of the Auxiliary Building Filter System (ABFS). The fans are redundant, 100% capacity each. The fans provide an environment suitable for personnel access and equipment operation. It also controls and minimizes the potential for spread of airborne radioactive material within the building.

In the event of a safety injection signal (SIS) or a containment depressurization actuation (CDA) signal, the auxiliary building general area ventilation is shutdown; the building outlet isolation dampers close; the Charging Pump and RPCCW Pump Area ventilation exhaust dampers close; the auxiliary building filter unit inlet and outlet dampers open; the filter exhaust fans start automatically; and the Charging Pump and RPCCW Pump Area supply and exhaust fans continue to operate venting through the turbine building stack via the Auxiliary Building Filter System (ABFS). An SIS signal also automatically starts operation of SLCRS. During accident conditions, the ABFS and SLCRS operate together to bring the secondary containment enclosure, auxiliary building, engineered safety features (ESF) building, hydrogen re-combiner building, and the main steam valve building to negative pressure within 120 seconds.

Operability of 3HVR*FN13B is required by MPS3 procedures in recognition of the potential for higher (more adverse) ambient temperatures in the area of the charging and RPCCW pumps if the exhaust fan is lost, and also as the suction air source for the ABFS. However, the fan is not included as a TS or Technical Requirements Manual (TRM) required component.

Adequate heat removal has been demonstrated with an Ultimate Heat Sink temperature up to 80 °F (TS 3/4.7.5). During the period 3HVR*FN13B was inoperable, the service water temperature was approximately 41.8 °F and outside air temperatures (winter air temperatures) ensure delivered air is on the lower side of the allowed range. These service water and outside air temperatures provided substantial margin for ensuring pump cooling capacity.

3HVR*FN13A was in service providing the necessary ventilation for normal operation and as the initial condition for accident scenarios. For 3HVR*FN13B being out of service to have had an adverse effect on an analyzed transient, an event initiator would need to be combined with a failure specifically in the 'A' train (either 3HVR*FN13A, 'A' train Emergency Diesel Generator or 4160 Volt Power Supply). Margin in the current FSAR dose consequence analyses to the 10 CFR 50.67 Total Effective Dose Equivalent (TEDE) Limits is shown in the table below. This margin is available to offset the potential for a reduction in the SLCRS drawdown capability following a potential loss of both trains of ABFS. However, all forced flow releases would remain filtered by the SLCRS. During the time spent in the TSAS, including the period of enforcement discretion, the opposite train of ABFS was maintained in service. Therefore, safety margins were maintained.

Dose Location	50.67 TEDE Limits (rem)	FSAR Table 15.0-8 Results (rem)
EAB	25	5.4
LPZ	25	1.1
Control Room	5	3.4

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NARRATIVE

The System Operating Procedure for Auxiliary Building Emergency Ventilation and Exhaust (OP 3314J) provides instruction for the installation and operation of Portable Emergency Ventilation Fan, 3HVR-FN18, and a portable generator. Performance of this procedure satisfies requirements of TRM 7.4.1, Fire Related Safe Shutdown Components. This procedure is the contingency plan in the event of failure of the charging and RPCCW pump area ventilation system. Providing emergency ventilation to the Auxiliary Building in accordance with OP 3314J is modeled as a recovery action given failure of the Charging/RPCCW area ventilation system in the quantitative risk assessment.

The ECCS and RPCCW systems were expected to maintain their ability to perform their safety functions during the period of enforcement discretion. No other structures, systems, or components (SSCs) were affected during the period of enforcement discretion and no limits were imposed on any SSC that hindered their ability to perform their specified function. The independence of the physical barriers to radiological releases were not degraded during the period of enforcement discretion. The planned activities on 3HVR*FN13B did not impact fuel cladding, RCS or Containment integrity. No other SSCs were affected by the proposed period of enforcement discretion, and therefore no limits were imposed on any SSC in performing their specified safety function.

Based on the above, there were no safety consequences associated with 3HVR*FN13B being inoperable for a period of approximately 33.5 hours beyond the TS AOT.

4. CORRECTIVE ACTIONS

The damaged motor was replaced with a spare motor from the warehouse. A like-for-like fan hub and blade assembly was used to replace the damaged hub and blade assembly.

Additional corrective actions will be taken in accordance with the station Corrective Action Program.

5. PREVIOUS OCCURRENCES

There have been no similar events of a fan being inoperable for longer than the TS AOT at Millstone Power Station Unit 3 in the past three years.

6. ENERGY INDUSTRY IDENTIFICATION SYSTEM (EII) CODES

VF - Auxiliary Building Environmental Control System

FAN - Fan