

Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road
Waterford, CT 06385



DominionSM

OCT 19 2010

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

Serial No. 10-585
MPS Lic/LES R0
Docket No. 50-423
License No. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
LICENSEE EVENT REPORT 2010-004-00
INOPERABLE TURBINE DRIVEN AUXILIARY FEEDWATER PUMP DUE TO
DEGRADED RELIEF VALVE

This letter forwards Licensee Event Report (LER) 2010-004-00 documenting a condition discovered at Millstone Power Station Unit 3, on August 21, 2010. This LER is being submitted pursuant to 10 CFR 50.73 (a)(2)(i)(B) as a condition prohibited by Technical Specifications.

If you have any questions or require additional information, please contact Mr. William D. Bartron at (860) 444-4301.

Sincerely,

A. J. Jordan
Site Vice President – Millstone

Attachments: 1

Commitments made in this letter: None

IE22
NRR

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

C. J. Sanders
Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Mail Stop 08B3
Rockville, MD 20852-2738

NRC Senior Resident Inspector
Millstone Power Station

ATTACHMENT

LICENSEE EVENT REPORT 2010-004-00
INOPERABLE TURBINE DRIVEN AUXILIARY FEEDWATER PUMP DUE TO
DEGRADED RELIEF VALVE

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

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

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 Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME

Millstone Power Station - Unit 3

2. DOCKET NUMBER

05000423

3. PAGE

1 OF 3

4. TITLE

Inoperable Turbine Driven Auxiliary Feedwater Pump Due to Degraded Relief Valve

5. EVENT DATE

MONTH	DAY	YEAR
08	21	2010

6. LER NUMBER

YEAR	SEQUENTIAL NUMBER	REV NO.
2010	004	00

7. REPORT DATE

MONTH	DAY	YEAR
10	19	2010

8. OTHER FACILITIES INVOLVED

FACILITY NAME	DOCKET NUMBER
	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"/> 20.2201(b) | <input type="checkbox"/> 20.2203(a)(3)(i) | <input type="checkbox"/> 50.73(a)(2)(i)(C) | <input type="checkbox"/> 50.73(a)(2)(vii) |
| <input type="checkbox"/> 20.2201(d) | <input type="checkbox"/> 20.2203(a)(3)(ii) | <input type="checkbox"/> 50.73(a)(2)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(viii)(A) |
| <input type="checkbox"/> 20.2203(a)(1) | <input type="checkbox"/> 20.2203(a)(4) | <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)(i) | <input type="checkbox"/> 50.36(c)(1)(i)(A) | <input type="checkbox"/> 50.73(a)(2)(iii) | <input type="checkbox"/> 50.73(a)(2)(ix)(A) |
| <input type="checkbox"/> 20.2203(a)(2)(ii) | <input type="checkbox"/> 50.36(c)(1)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(iv)(A) | <input type="checkbox"/> 50.73(a)(2)(x) |
| <input type="checkbox"/> 20.2203(a)(2)(iii) | <input type="checkbox"/> 50.36(c)(2) | <input type="checkbox"/> 50.73(a)(2)(v)(A) | <input type="checkbox"/> 73.71(a)(4) |
| <input type="checkbox"/> 20.2203(a)(2)(iv) | <input type="checkbox"/> 50.46(a)(3)(ii) | <input type="checkbox"/> 50.73(a)(2)(v)(B) | <input type="checkbox"/> 73.71(a)(5) |
| <input type="checkbox"/> 20.2203(a)(2)(v) | <input type="checkbox"/> 50.73(a)(2)(i)(A) | <input type="checkbox"/> 50.73(a)(2)(v)(C) | <input type="checkbox"/> OTHER |
| <input type="checkbox"/> 20.2203(a)(2)(vi) | <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B) | <input type="checkbox"/> 50.73(a)(2)(v)(D) | |

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME

William D. Bartron, Nuclear Station Licensing

TELEPHONE NUMBER (Include Area Code)

860-444-4301

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED

YES (If yes, complete 15. EXPECTED SUBMISSION DATE) NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On August 21, 2010, while operating in MODE 1 at 100 percent power, Millstone Power Station Unit 3's (MPS3) Turbine Driven Auxiliary Feedwater (TDAFW) pump was declared inoperable due to leakage past its associated relief valve's seat. This condition was identified while performing Operations Surveillance Procedure SP 3622.3-001. Further investigation revealed that this condition existed on June 30, 2010. The extended period of inoperability of the TDAFW pump is a condition prohibited by the plant's Technical Specification 3.7.1.2 and is being reported pursuant to 10 CFR 50.73(a)(2)(i)(B).

The cause of the inoperability of the TDAFW pump was a failed relief valve. The relief valve failure was a consequence of minimal margin between the setpoint of TDAFW Pump Discharge Relief Valve 3FWA*RV45 and Auxiliary Feedwater system pressure while on recirculation flow. The reason the event is reportable is the organization failed to recognize that the TDAFW pump was inoperable.

Interim corrective actions included repairing the leaking relief valve. As corrective action to prevent recurrence, design changes are being evaluated to modify the system configuration. To correct the failure to recognize the inoperability of the pump, SP 3622.3-001 was revised to add recirculation flow limits and acceptance criteria in other Operations Surveillance Procedures were reviewed.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Millstone Power Station - Unit 3	05000423	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
		2010	-- 004 --	00	

NARRATIVE

1. Event Description

On August 21, 2010, while operating in MODE 1 at 100 percent power, Millstone Power Station Unit 3's (MPS3) Turbine Driven Auxiliary Feedwater (TDAFW) [BA] [P] pump was declared inoperable due to leakage past its associated discharge relief valve's [V] seat. This condition was identified while performing Operations Surveillance Procedure SP 3622.3-001. Using a Controlotron, measured recirculation flow for this pump was 115 gallons per minute (gpm), as compared with a maximum allowed value of 105.6 gpm. The flow measured at this point is the sum of minimum recirculation flow plus any flow through the discharge relief valve. Exceeding the allowable flow is indicative of relief valve seat leakage.

Further investigation revealed that this condition existed on June 30, 2010. On June 30, 2010, surveillance testing of the TDAFW pump was performed per SP 3622.3-001. Recirculation flow was 107 gpm. Operations Surveillance Procedure SP 3622.3-001 did not specify a high flow limit. Operations personnel did not recognize that the recirculation flow exceeded the upper limit value of 105.6 gpm specified in the quarterly pump in-service test procedure, EN31121-019. Excessive recirculation flow of 115 gpm was identified on August 20, 2010 at 1423, during another performance of this Operations surveillance procedure. As soon as Operations became aware that flow exceeded the acceptance criteria in EN31121-019, the TDAFW pump was declared inoperable.

The extended period of inoperability of the TDAFW pump exceeded the allowed outage time in Technical Specification 3.7.1.2.c of 72 hours, and constitutes a condition prohibited by the MPS3's Technical Specifications. Therefore this condition is being reported pursuant to 10 CFR 50.73(a)(2)(i)(B).

2. Cause

The cause of the inoperability of the TDAFW pump was a failed relief valve. The relief valve failure was a consequence of minimal margin between the setpoint of TDAFW Pump Discharge Relief Valve 3FWA*RV45 and Auxiliary Feedwater system pressure while on recirculation flow.

A contributing cause was the Operations surveillance procedure lacked adequate detail on flow limits. SP-3622.1-003 did not contain reference band values for high recirculation flow that were included in quarterly in-service testing (IST) procedure EN31121-019.

3. Assessment of Safety Consequences

An engineering evaluation has been performed to determine whether the degraded relief valve would have diverted sufficient TDAFW flow to challenge the system's ability to perform its safety function. This evaluation concluded that there was substantial margin available for the required AFW flow to the steam generators during an accident. If the amount of flow passed through the relief valve's seat had risen to 90 gpm, the TDAFW pump would have successfully performed its safety function. With 90 gpm flow assumed through the relief valve's seat, the evaluation showed that delivered AFW flow to the two steam generators would have decreased by a maximum of 2.6%, as compared with a minimum available design margin of 6.7%.

This conclusion is based upon the fact that increased diverted flow seen during the TDAFW Pump Operational Readiness Test was due to a partial relief valve lift and subsequent chatter, and not valve leak-by. Since this surveillance is done with the pump operating at minimum flow, discharge pressure (and, therefore, relief valve leakage) was much higher (1740 psig) than it would be if the pump had been called upon to perform its safety function (1530 psig). Actual valve leakage was determined to be less than 1/2 gpm at 1665 psig during a bench test. With the relief valve failed full open, the pump would still be able to provide adequate flow less than an hour into the event. Therefore it is concluded that the TDAFW Pump would be fully capable of providing the required design flow.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Millstone Power Station - Unit 3	05000423	YEAR	SEQUENTIAL NUMBER	REV NO.	3 OF 3
		2010	- 004	- 00	

NARRATIVE

4. Corrective Action

As interim corrective actions, leaking relief valve 3FWS*RV45 was repaired on August 16, 2010, and a standing order was issued to Operations personnel to ensure that all applicable acceptance criteria for in-service testing of safety related equipment are reviewed prior to declaring the equipment operable.

As corrective action to prevent recurrence of this condition, design changes are being evaluated to modify the system configuration.

Other corrective actions taken to address the failure to recognize the inoperability of the TDAFW pump are:

- Operating Surveillance Procedure SP 3622.3-001 has been revised to definitively specify an upper limit for TDAFW pump recirculation flow, and,
- A review of other Operations Surveillance Procedures has been completed to verify that appropriate acceptance criteria that are already specified in quarterly in-service test procedures are consistently included and clearly specified in the Operations Surveillance Procedures.

Additional corrective actions are being taken in accordance with the station's corrective action program.

5. Previous Occurrences

No previous similar events/conditions were identified.

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