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

Dominion®

JUL 14 2008

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

Serial No. 08-0349
MPS Lic/BAK R0
Docket No. 50-336
License No. DPR-65

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 2
LICENSEE EVENT REPORT 2008-003-00,
FAILED PILOT WIRE CAUSES REACTOR TRIP

This letter forwards Licensee Event Report (LER) 2008-003-00 which documents a condition identified at Millstone Power Station Unit 2 on May 22, 2008. 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).

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

Sincerely,

J. Alan Price
Site Vice President - Millstone

IE22
NRR

Attachments: 1

Commitments made in this letter: None.

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

Ms. 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 1

LICENSEE EVENT REPORT 2008-003-00,
FAILED PILOT WIRE CAUSES REACTOR TRIP

Millstone Power Station Unit 2
Dominion Nuclear Connecticut, Inc. (DNC)

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(9-2007)

APPROVED BY OMB NO. 3150-0104 EXPIRES 08/31/2010

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 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.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
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4. TITLE
Failed Pilot Wire Causes Reactor Trip

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
05	22	2008	2008	–003	– 00	07	14	2008	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)*

20.2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
20.2201(d)	20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)
20.2203(a)(1)	50.36(c)(1)(i)(A)	X 50.73(a)(2)(iv)(A)	73.71(a)(4)
20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)
20.2203(a)(2)(ii)	50.36(c)(2)	50.73(a)(2)(v)(B)	OTHER
20.2203(a)(2)(iii)	50.46(a)(3)(ii)	50.73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A
20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(D)	
20.2203(a)(2)(v)	50.73(a)(2)(i)(B)	50.73(a)(2)(vii)	
20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)	
20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)	

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
William D. Bartron, Supervisor Nuclear Station Licensing	860-444-4301

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES (If yes, complete EXPECTED SUBMISSION DATE). ☒ NO				

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

On May 22, 2008 at 1359 with the Millstone Power Station Unit 2 (MPS2) at 100% power in Mode 1, the reactor automatically shutdown following a loss of load and subsequent turbine trip. Investigation determined that a lightning strike on a transmission line created an over current condition to which the unit responded.

The 345 kV main generator output breakers in the transmission switchyard opened causing a turbine trip on loss of load. A pre-existing mechanical failure of a connecting wire lug created an open circuit in the pilot wire circuitry. The power surge from the lightning strike coupled with this open circuit caused the pilot wire relay to act as an over current protection device which opened the breakers. The transmission switchyard breakers and associated interlocks operated as designed protecting station equipment.

During the event, the in-house electrical buses were automatically transferred from the Normal Station Service Transformer (NSST) to the Reserve Station Service Transformer (RSST) causing a momentary loss of the non-safety grade 120 volt power supplies (VR-11 and VR-21). This affected multiple components which required additional operator actions. The systems functioned as expected based upon the signals received. The operators took actions as trained and in accordance with procedures. No equipment was damaged as a result of this event. The unit was brought to a stable condition in hot-standby (Mode 3) and the lug was repaired.

This event is being reported pursuant to 10CFR50.73(a)(2)(iv)(A) as an event that resulted in manual or automatic actuation of systems listed in 10CFR50.73(a)(2)(iv)(B).

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

1. Event Description

On May 22, 2008 at 1359 with the Millstone Power Station Unit 2 (MPS2) at 100% power in Mode 1, the reactor automatically shutdown following a loss of load and subsequent turbine [TA] trip. Subsequent investigation determined that a lightning strike on a transmission line created an over current condition to which the unit responded.

During the event, the 345kV main generator output breakers [BKR] in the transmission switchyard [FK] opened when an over current situation was detected. This caused a trip of the turbine on loss of load and an automatic transfer of the in-house electrical buses from the Normal Station Service Transformer (NSST) [XFMR] to the Reserve Station Service Transformer (RSST) [EA, XFMR]. Letdown isolated automatically, the reactor trip circuit breakers opened, and all control element assemblies inserted. During the electrical transfer from the NSST to RSST, there was a momentary loss of the non-safety grade 120 volt power supplies (VR-11 and VR-21) [JX] to the annunciators and control boards when they transferred to their alternate power supplies. The steam generator #2 atmospheric dump valve [RV] and the steam generator #1 safety valve (2-MS-247) opened . Additionally, the "A" steam dump valve to the condenser modulated open, however the "B", "C" and "D" dump valves did not quick open due to a momentary loss of power from VR-11. Operators re-established letdown and all the steam dump valves were opened and steaming was re-established to the condenser. The unit was maintained in a stable condition, i.e., hot-standby (Mode 3).

This event is being reported pursuant to 10CFR50.73(a)(2)(iv)(A) as an event that resulted in manual or automatic actuation of systems listed in 10CFR50.73(a)(2)(iv)(B).

2. Cause

The direct cause of the switchyard breakers opening and remaining open was a mechanical failure of a connecting wire lug in the pilot wire circuitry causing an open circuit. Pilot wire relaying is used for primary protection of the 345 kV lines between the switchyard and the main step-up transformers. This open circuit created the conditions that caused a relay [RLY] to act as an over current protection device. The power surge from a lightning strike on the transmission line created the over current condition necessary for the system to react. The breakers and associated interlocks operated as expected protecting station equipment. Had the pilot wire lug been intact, the relay would have acted as a differential current relay and the switchyard breakers would have remained closed and the unit would have stayed on line.

The root cause of the failed lug in the pilot wire circuitry was ductile overload. Laboratory analysis indicated that there was excessive movement of the lug while it was tightly fastened to its contact point. Review of work history and wire configuration suggests the failure mechanism was a latent condition caused by a change in the wiring configuration for the lockout relay that occurred in 1996 as part of a larger cable separation project. Review of previous testing, plant conditions and work activities suggests that the lug most likely failed after the unit shutdown on April 6, 2008.

3. Assessment of Safety Consequences

The event had very low risk significance. The reactor automatically shutdown following a loss of load and subsequent turbine trip. A lightning strike on a transmission line created an over current condition to which the unit responded. The unit responded as required for these conditions. The operators took actions as trained and in accordance with procedures. No equipment was damaged as a result of this event.

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

4. Corrective Action

Short term corrective action was to repair the circuit by installing a new lug on the pilot wire, recalibrating the relay, and performing additional testing.

An investigation into this event was conducted and other appropriate corrective actions are being addressed in accordance with the Millstone Corrective Action Program.

5. Previous Occurrences

No previous similar events/conditions were identified.

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