



Northeast
Nuclear Energy

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The Northeast Utilities System

Donald B. Miller Jr.,
Senior Vice President - Millstone

Re: 10CFR50.73(a)(2)(iv)

September 7, 1995
MP-95-278

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Reference: Facility Operating License No. DPR-65
Docket No. 50-336
Licensee Event Report 95-033-00

This letter forwards Licensee Event Report 95-033-00 required to be submitted within thirty (30) days pursuant to 10CFR50.73(a)(2)(iv).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

Donald B. Miller, Jr.
Senior Vice President - Millstone Station

DBM/JA:clc

Attachment: LER 95-033-00

cc: T. T. Martin, Region I Administrator
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3
G. S. Vissing, NRC Project Manager, Millstone Unit No. 2

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LICENSEE EVENT REPORT (LER)

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Millstone Nuclear Power Station Unit 2										DOCKET NUMBER (2) 05000336		PAGE (3) 1 OF 3		
TITLE (4) Manual Reactor Trip Due to Loss of Atmospheric Dump Valve Control														
EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)					
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME		DOCKET NUMBER			
08	09	95	95	- 033 -	00	09	07	95	FACILITY NAME		DOCKET NUMBER			
OPERATING MODE (9)		3		THIS REPORT IS BEING SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)										
POWER LEVEL (10)		000		20.402(b)		20.406(c)		X		50.73(a)(2)(iv)		73.71(b)		
				20.405(a)(1)(i)		50.36(c)(1)				50.73(a)(2)(v)		73.71(c)		
				20.405(a)(1)(ii)		50.36(c)(2)				50.73(a)(2)(vi)		OTHER		
				20.405(a)(1)(iii)		50.73(a)(2)(i)				50.73(a)(2)(vii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)		
				20.405(a)(1)(iv)		50.73(a)(2)(ii)				50.73(a)(2)(vii)(B)				
				20.405(a)(1)(v)		50.73(a)(2)(iii)				50.73(a)(2)(x)				
LICENSEE CONTACT FOR THIS LER (12)														
NAME Philip J. Lutz, Nuclear Licensing										TELEPHONE NUMBER (Include Area Code) (203) 440-2072				
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)														
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS				
B	SB	CNV	F180	Y										
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)					X	NO								

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

On August 9, 1995, operators initiated a manual trip signal in response to a cool down transient caused by a failed open steam generator atmospheric dump valve (2-MS-190B).

The cause of the failed open dump valve was a blown fuse on a circuit board in the control circuit of the valve. The circuit board was replaced.

This event is being reported pursuant to requirements of 10CFR50.73(a)(3)(iv), any event or condition that results in a manual or automatic actuation of any engineered safety feature, including Reactor Protection System.

EXPIRES: 5/31/95

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)		PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
Millstone Nuclear Power Station Unit 2	05000336	95	— 033 —	00
				02 OF 03

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

I. Description of Event

On August 9, 1995, operators initiated a manual trip signal in response to a cooldown transient caused by a failed open steam generator atmospheric dump valve.

At 0415 hours, with the plant in Mode 3, control of the "B" ADV from the Control Room was lost, resulting in a manual trip. The reactor was shut down with four reactor coolant pumps running, maintaining the reactor coolant system temperature at 533 degrees Fahrenheit by steaming through the "B" atmospheric dump valve (ADV). The "B" ADV valve was in automatic, maintaining 20 to 25% open, while the "A" ADV and main steam isolation valves were closed. Operators heard a noticeable increase in background noise and the primary plant operator noticed level and pressure dropping in the No. 2 steam generator. He notified the Senior Control Room Operator that an uncontrolled cooldown was in progress and emergency boration was commenced with 3 charging pumps. The secondary plant operator attempted to take manual control of the valve at the Control Room control board with no success. When that failed, plant equipment operators were dispatched to manually isolate the ADV by closing its associated isolation valve. Letdown flow was secured to conserve inventory as pressurizer level was decreasing with the cool down. With letdown isolated, pressurizer level started to recover. Feedwater to the No. 2 steam generator also secured and the reactor trip pushbutton depressed. Emergency Operating Procedures 2525, "Standard Post Trip Actions," and 2536, "Excess Steam Demand," were entered. With successful isolation of the "B" ADV, plant parameters were returned to normal using the "A" ADV to maintain steam generator pressure. The cooldown lasted 10 minutes with steam generator No. 2 dropping to a pressure of 570 psia and level of 16%, and the RCS dropping to 489 degrees Fahrenheit and approximately 1800 psia.

II. Cause of Event

The cause of the event was a failed solid state circuit fuse soldered on a Foxboro SPEC 200 current-to-voltage card (10 to 50 ma, input 0 to 10v output, model N-2A1-H2V) located in the "B" ADV's control loop. The fuse that failed is the -15 volt supply fuse, and is one of three that supply +15v, -15v, and +24v to various components on the card. An operational amplifier (OP AMP) located in the card's output stage, is powered by both positive (+) and negative (-) 15v supplies. When the -15v fuse failed, the remaining +15v applied caused the internal circuits of the OP AMP to drive its output to maximum positive voltage. This voltage was interpreted by the ADV's control circuit as a signal to drive the valve full open.

This failure could not have occurred on the "A" ADV because the design of its control circuit does not include this card. Any failed fuses in that circuit would cause the valve to fail closed. The "B" ADV is associated with a remote control panel installed for control of the "B" facility in the event the Control Room could not be used due to an Appendix R fire. The normal current signal coming from the Control Room required an additional card to be converted to a voltage signal in order to accommodate a local controller for the "B" ADV in the remote panel. This results in a uniqueness of the failed circuit card for the "B" ADV.

EXPIRES: 5/31/95

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

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		YEAR 95	SEQUENTIAL NUMBER — 033 —	REVISION NUMBER 00	03 OF 03

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

III. Analysis of Event

This event is being reported pursuant to requirements of 10CFR50.73(a)(2)(iv), any event or condition that results in a manual or automatic actuation of any engineered safety feature, including Reactor Protection System.

There were no safety consequences associated with this event. The reactor was shut down and all control rods were inserted. There was sufficient boron in the reactor coolant system (1700 ppm) to ensure adequate margin during cooldown, and a review of hydraulic effects of four coolant pumps running at 480 degrees Fahrenheit revealed there was a large margin available for uplift stresses of reactor vessel components and fuel assemblies.

Plant maintenance history does not indicate a reliability problem with this model card as only one other failure occurred with this card in a different control circuit in 1988. No reason for that failure is available in history records. Failure histories of a different model current-to-voltage cards were also reviewed. There were approximately 9 failures of this other type card since 1984. At least one card recently examined had a blown fuse. The failure descriptions generally diagnosed problems to the card and not the card component level.

The Nuclear Network and Nuclear Plant Reliability Data System (NPRDS) were also queried. No failed card events were found on the Nuclear Network. NPRDS indicated two current-to-voltage card failures caused by blown circuit board fuses at Kewaunee 1 in 1992. Both these failures occurred when a technician was installing an input bypass connector on the card and not randomly, as at Millstone Two.

Based on the review, the card failure at Millstone Two is considered a random failure.

IV. Corrective Action

The defective card was replaced and the valve returned to service. An Engineering Work Request (EWR) was initiated to evaluate ADV control system design changes that could prevent similar component failures from initiating ADV opening. Operations procedure OP 2316A, "Main Steam System," was changed to clarify steps on manually venting ADVs in order to close the valve faster.

V. Additional Information

Similar LERs: LER 93-004, Reactor Trips on Steam Generator Low Water Level, dealt with the "A" ADV opening due to a failed valve positioner.

ELIS Code: SB CNV F180

Manufacturer: Foxboro

Model: N-2AI-H2V

Component: Current to Voltage Converter