



Northeast
Nuclear Energy

Rope Ferry Rd. (Route 156), Waterford, CT 06385

Millstone Nuclear Power Station
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385-0128
(203) 444-4300
Fax (203) 444-4277

The Northeast Utilities System

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

Re: 10CFR50.73

August 2, 1994
MP-94-485

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

Reference: Facility Operating License No. NPF-49
Docket No. 50-423
Licensee Event Report 94-009-00

This letter forwards Licensee Event Report 94-009-00 required to be submitted within thirty (30) days pursuant to 10CFR50.73 (a)(2)(i)(B).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

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

DBM/PLM:clc

Attachment: LER 94-009-00

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

000007

9408110245 940802
PDR ADDCK 05000423
S PDR

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 (R-NBB 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 3

DOCKET NUMBER (2)

05000423

PAGE (3)

1 OF 3

TITLE (4)

Digital Rod Position Indication Failure Due to Equipment Failure

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
07	05	94	94	009	00	08	02	94	FACILITY NAME	DOCKET NUMBER
										05000
OPERATING MODE (9)			THIS REPORT IS BEING SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)							
1										
POWER LEVEL (10)			100%							
			20.402(b)							
			20.405(a)(1)(i)							
			20.405(a)(1)(ii)							
			20.405(a)(1)(iii)							
			20.405(a)(1)(iv)							
			20.405(a)(1)(v)							
			50.73(a)(2)(iv)							
			50.73(a)(2)(v)							
			50.73(a)(2)(vi)							
			50.73(a)(2)(vii)(A)							
			50.73(a)(2)(vii)(B)							
			50.73(a)(2)(viii)							
			50.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)

NAME

William J. Temple, Site Licensing

TELEPHONE NUMBER (Include Area Code)

(203) 437-5904

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS
X	IU	XI	W351	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
(If yes, complete EXPECTED SUBMISSION DATE)	X				

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

On July 5, 1994, with the plant in Mode 1, at 100% power, Control Room Operators identified unreliable control rod position indications. A number of control rods in Control Bank D had unreliable position indications. An immediate shutdown commenced as required by Technical Specification 3.0.3 when more than one rod had questionable indications. The NRC was promptly notified in accordance with 10CFR50.72(b)(1)(i)(A) of the initiation of a shutdown required by Technical Specifications.

This is being reported under 10CFR50.73 (a)(2)(i)(B) since the plant was in a condition prohibited by the Technical Specifications. The condition had low safety significance. Flux mapping confirmed that the rods in Control Bank D were moving together. Additionally, the plant computer has individual rod position indication which was unaffected by this failure.

The cause of the condition was a failed instrument card in the Digital Rod Position Indication (DRPI) system. As corrective action the failed card was replaced before completing the shutdown, surveillances were performed to ensure the system was fully operable, and the plant was returned to 100% power.

NRC Form 366A (5-92)		U.S. NUCLEAR REGULATORY COMMISSION LICENSEE EVENT REPORT (LER) TEXT CONTINUATION		APPROVED BY OMB NO. 3150-0104 EXPIRES: 5/31/95 <small>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.</small>													
FACILITY NAME (1) Millstone Nuclear Power Station Unit 3		DOCKET NUMBER (2) 05000423		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center;">LER NUMBER (6)</th> <th style="text-align: center;">PAGE (3)</th> </tr> <tr> <th style="text-align: center;">YEAR</th> <th style="text-align: center;">SEQUENTIAL NUMBER</th> <th style="text-align: center;">REVISION NUMBER</th> <th></th> </tr> <tr> <td style="text-align: center;">94</td> <td style="text-align: center;">— 009 —</td> <td style="text-align: center;">00</td> <td style="text-align: center;">02 OF 03</td> </tr> </table>		LER NUMBER (6)			PAGE (3)	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		94	— 009 —	00	02 OF 03
LER NUMBER (6)			PAGE (3)														
YEAR	SEQUENTIAL NUMBER	REVISION NUMBER															
94	— 009 —	00	02 OF 03														

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

I. Description of Event

On July 5, 1994, with the plant in Mode 1, at 100 percent power, Control Room Operators identified unreliable control rod position indications. An immediate plant shutdown commenced as required by the Technical Specifications when more than one rod had questionable position indication. The NRC was promptly notified in accordance with 10CFR50.72 (b)(1)(i)(A) of the initiation of a plant shutdown required by Technical Specifications.

The initial condition involved a loss of reliable indication for control rod M12. The Technical Specifications Limiting Condition for Operation Action Statement 3.1.3.2.a.1 for Reactivity Control Systems was entered. While in the Action Statement, troubleshooting indicated that a number of control rods in Control Bank D had different and unreliable position indications. Since this was a condition prohibited by the Technical Specifications, an immediate plant shutdown commenced under Technical Specification 3.0.3. Before completing the shutdown a failed instrument card was identified and replaced, and the plant was returned to 100 percent power.

II. Cause of Event

The cause of the condition was equipment failure. Investigations revealed a failed rod deviation alarm card in the Digital Rod Position Indication (DRPI) system.

III. Analysis of Event

The initial condition involved a loss of reliable indication for control rod M12. The Technical Specification Limiting Condition for Operation Action Statement 3.1.3.2.a.1 for Reactivity Control Systems was entered. This specification requires that the Digital Rod Position Indication System and the Demand Position Indication System shall be OPERABLE and capable of determining the control rod positions within +/- 12 steps. No more than one digital rod position indicator per bank may be inoperable. While in the Action Statement, troubleshooting indicated that a number of control rods in Control Bank D had different and unreliable position indications. Since this was a condition prohibited by the Technical Specifications, an immediate plant shutdown commenced under Technical Specification 3.0.3.

The DRPI system measures rod position by use of two trains of coils mounted at discrete axial intervals around the control rod drive housing. As a rod transits the coil region, a perturbation is created in the electromagnetic flux generated by each coil. This causes a change in the applied voltage to the coil. The voltage signals are converted to rod position and supplied to the main control board DRPI panel and to the plant computer. Panel indication for each rod consists of one display card with 39 light emitting diodes (LEDs) arranged vertically. The 39 LEDs represent six-step intervals from rod at bottom (0 steps) to rod full out (228) steps.

This event is reported under 10CFR50.73 (a)(2)(i)(B) since the plant was in a condition prohibited by the Technical Specifications. The condition had low safety significance. Flux mapping confirmed that the control rods in Control Bank D were moving together. Additionally, the plant computer has individual rod position indication which was unaffected by this failure.

IV. Corrective Action

As corrective action, the failed instrument card was replaced before completing the shutdown, surveillances were performed to ensure the system was fully operable, and the plant was returned to 100 percent power. Additionally, we are evaluating an alternate means of determining rod position information. This would permit the use of the rod position information displayed on the Plant Process Computer System, as an alternate means of determining Technical Specification operability.

EXPIRES: 5/31/95

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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 (MNSB 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)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Millstone Nuclear Power Station Unit 3	05000423	94	— 009 —	00	03 OF 03

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

V. Additional Information

A similar event was reported on March 4, 1988 in LER 88-007-00, "Manual Reactor Trip Due to Inoperable Digital Rod Position Indicator." That condition was caused by a failed displayed card which resulted in faulty position indication for two control rods. The failed display card was different from the current condition which involves a failed rod position deviation alarm card. There have been no other similar events. The failed card is a Westinghouse Rod Position Deviation Board, part number 1047F09G08.

ELIS CodesSystems

Control Rod Drive System - AA
Digital Rod Position Indication System - IU

Components

Control Rod - ROD
Indicator Logic Card - XI