

NORTHEAST UTILITIES



The Connecticut Light And Power Company
Western Massachusetts Electric Company
Holyoke Water Power Company
Northeast Utilities Service Company
Northeast Nuclear Energy Company

General Offices: Selden Street, Berlin, Connecticut

P.O. BOX 270
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(203)665-5000

Re: 10CFR50.73(a)(2)(iv)
December 27, 1990
MP-90-1343

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 89-005-01

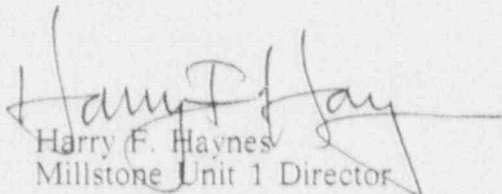
Gentlemen:

This letter forwards update Licensee Event Report 89-005-01.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: Stephen E. Scace
Director, Millstone Station

BY: 
Harry F. Haynes
Millstone Unit 1 Director

SES/KDD:mo

Attachment: LER 89-005-01

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

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NRC Form 366 (6-89)		U. S. NUCLEAR REGULATORY COMMISSION		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92 Estimated burden per response to comply with this information collection request: 50.0 hrs. Forward comments regarding burden estimate to the Records and Reports Management Branch (p-530), U. S. Nuclear Regulatory Commission, Washington, DC 20555, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503.	
LICENSEE EVENT REPORT (LER)					
FACILITY NAME (1) Millstone Nuclear Power Station Unit 2				DOCKET NUMBER (2) 0 5 0 0 0 3 3 6 1 OF 0 3	
TITLE (4) Inadvertent ESAS Actuation Channel 2 SIAS					
EVENT DATE (5)		LER NUMBER (6)		REPORT DATE (7)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
0 3	3 0	8 9	8 9	0 0 5	0 1
				MONTH DAY YEAR 1 2 7 9 0	
OPERATING MODE (9) 2		THIS REPORT IS BEING SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11):			
POWER LEVEL (10) 0 0 0		20.402(b)		20.402(c)	
		20.405(a)(1)(i)		50.36(c)(1)	
		20.405(a)(1)(ii)		50.36(c)(2)	
		20.405(a)(1)(iii)		50.73(a)(2)(i)	
		20.405(a)(1)(iv)		50.73(a)(2)(ii)	
		20.405(a)(1)(v)		50.73(a)(2)(iii)	
		20.405(a)(1)(vi)		50.73(a)(2)(iv)	
		20.405(a)(1)(vii)		50.73(a)(2)(v)	
		20.405(a)(1)(viii)		50.73(a)(2)(vi)	
		20.405(a)(1)(ix)		50.73(a)(2)(vii)	
		20.405(a)(1)(x)		50.73(a)(2)(viii)(A)	
		20.405(a)(1)(xi)		50.73(a)(2)(viii)(B)	
		20.405(a)(1)(xii)		50.73(a)(2)(ix)	
OTHER (Specify in Abstract below and in text, NRC Form 366A)					
LICENSEE CONTACT FOR THIS LER (12)					
NAME Keith D. Deslandes, Engineer, X4421				TELEPHONE NUMBER AREA CODE 2 0 3 4 4 7 - 1 7 9 1	
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	
SUPPLEMENTAL REPORT EXPECTED (14)					EXPECTED SUBMISSION DATE (15)
YES (if yes, complete EXPECTED SUBMISSION DATE)					MONTH DAY YEAR
X NO					
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)					
<p>On March 30, 1989 at 0340 hours, with the reactor critical, power level at 10⁻⁴ percent and the plant in mode 2, at normal temperature and pressure. Instrument and Control personnel were in the process of re-installing the Automatic Test Insertion (ATI) module in the Engineered Safeguard Actuation System (ESAS). The re-installation was being made following troubleshooting on an unrelated problem.</p> <p>The ATI automatically tests the various logic combinations for ESAS signals. It does this by actually sending a 2 millisecond signal through the instrument loop. During reinstallation, the ATI module connector did not mate smoothly with the ESAS cabinet socket. The intermittent connection while sliding the module into position caused the ATI circuit to send signals greater than the normal pulse thus allowing three Safety Injection Actuation Signal (SIAS) modules to actuate.</p> <p>The control room operators immediately responded in accordance with AOP 2571 and verified that the SIAS modules were inadvertently actuated, and that only the equipment controlled by the three modules had been affected [both Boric Acid pumps started, valve 2-CH-514 (Boric Acid pump discharge valve) opened, Chiller X169B started and the "B" and "D" Containment Air Recirc (CAR) fans shifted from fast to slow speed.] The operators then restored the actuated equipment to its normal condition.</p> <p>There were no safety implications because all actuated equipment responded as expected.</p> <p>Similar Events: LER 84-001 and 88-004</p>					

NRC Form 366A (6-89)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92 Estimated burden per response to comply with this information collection request: 50.0 hrs. Forward comments regarding burden estimate to the Records and Reports Management Branch (p-530), U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503.																
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION																				
FACILITY NAME (1) Millstone Nuclear Power Station Unit 2		DOCKET NUMBER (2) 0 5 0 0 0 3 3 6 8 9 - 0 0 5 - 0 1 0 2 OF 0 3		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center;">LER NUMBER (6)</th> <th colspan="2" style="text-align: center;">PAGE (3)</th> </tr> <tr> <th style="width: 20%;">YEAR</th> <th style="width: 40%;">SEQUENTIAL NUMBER</th> <th style="width: 40%;">REVISION NUMBER</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		LER NUMBER (6)			PAGE (3)		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER							
LER NUMBER (6)			PAGE (3)																	
YEAR	SEQUENTIAL NUMBER	REVISION NUMBER																		

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

I. Description of Event

On March 30, 1989 at 0340 hours, with the reactor critical, power level at 10^{-4} percent and the plant in mode 2 at normal temperature and pressure, Instrument and Control personnel were in the process of re-installing the Automatic Test Insertion (ATI) module in the Engineered Safeguard Actuation System (ESAS). The re-installation was being made following troubleshooting on an unrelated problem.

The ATI automatically tests the various logic combinations for ESAS signals. It does this by actually sending a 2 millisecond signal through the instrument loop. During re-installation, the ATI module connector did not mate smoothly with the ESAS cabinet socket. The intermittent connection while sliding the module into position caused the ATI circuit to send signals greater than the normal pulse thus allowing three Safety Injection Actuation Signal (SIAS) modules to actuate.

The control room operators immediately responded in accordance with AOP 2571 and verified that the SIAS modules were inadvertently actuated, and that only the equipment controlled by the three modules had been affected [both Boric Acid pumps started, valve 2-CH-514 (Boric Acid pump discharge valve) opened, Chiller X169B started and the "B" and "D" Containment Air Recirc (CAR) fans shifted from fast to slow speed.] The operators then restored the actuated equipment to its normal condition.

II. Cause of Event

The cause of the event was the sudden power spike during the re-energization of the ATI module.

The root cause of the event is the method required for removing and installing the ATI module and may be termed a hardware design problem. The electrical pins of the module do not engage the socket (located in the ESAS) until the module captive screws are at half travel. The screws are turned down in a sequence so the total module moves in uniformly, otherwise some pins will engage before the others and an inadvertent actuation may occur, as it did in this case.

This is the normal design feature of the ATI module and rarely does the module need to be removed during normal operating conditions.

III. Analysis of Event

This event is being reported pursuant to the requirements of paragraph 50.73 (a)(2)(iv), a condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF).

The Boric Acid pumps and chiller 169-B are normally off during normal operation. Valve 2-CH-514 is normally closed and the B and D Car fans are normally in fast speed. When the modules (AM615, 618 and 625) actuated due to the inadvertent ATI signal, the Boric Acid pumps and Chiller 169-B started, valve 2-CH-514 opened and the B and D Car fans went to slow speed. The equipment went to its respective accident position. The worst case condition would be that the Boric Acid pumps would tend to take the reactor sub-critical. With the CAR fans in slow speed, Containment temperatures might have increased, however operation in response to Containment temperature alarms would correct this condition. Therefore there were no safety consequences as a result of this occurrence.

IV. Corrective Action

A key switch has been installed which will remove power from the ATI in a positive, controlled, manner. Whenever the switch is in the "off" position (power removed) a local indication, and control room annunciator will alarm. The alarm will notify the control room operator and the technician performing the work, that the ATI is disabled.

The removal of power from the module will act as an ATI block, which will greatly reduce the chance of an inadvertent actuation when performing corrective maintenance on the module.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		0 0 5	0 1	0 3	OF	0 3	

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

V. Additional Information

Similar LER'S: 84-001 and 88-004

ESAS Actuation System

Vendor: C560

Model: 9N21-6

Component Function: XC

ESAS MTI Actuation Module

Vendor: C560

Model: 6N91

Component Function: AIK

Boric Acid Pumps

Vendor: G182

Model: 3198MT

Component Function: P

Containment Air Recirc (CAR) fans

Vendor: W121

Model: 366-A7

Component Function: FAN

Valve 2-CH-514

Vendor: V085

Model: P-35142

Component Function: V

Chiller X169B

Vendor: T265

Model: CGWA-4006-MA

Component Function: CHU