



Northeast  
Nuclear Energy

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The Northeast Utilities System

Donald B. Miller Jr.,

Senior Vice President - Millstone

Re: 10CFR50.73(a)(2)(i)(B)

June 7, 1995

MP-95-182

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 95-018-00

This letter forwards Licensee Event Report 95-018-00 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/RJT:lfg

Attachment: LER 95-018-00

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 (MNB 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) Failure To Meet Technical Specification Requirement For Electrical Power Systems - Shutdown														
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			
05	10	95	95	018	00	06	07	95	FACILITY NAME		DOCKET NUMBER			
OPERATING MODE (9)		6		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)		20.405(c)		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)		X 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. Lutzi, 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				
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 May 10, 1995, at 1720 hours, with the plant in Mode 6, it was determined that the plant had entered Mode 6 from a defueled condition without satisfying Technical Specification 3.8.1.2, Electrical Power Systems - Shutdown. The Technical Specification was not met because a design deficiency was found in a contact reader in the Engineered Safety Features Actuation System (ESAS) actuation cabinet. This deficiency invalidated the results of the surveillance requirements for Technical Specification 3.8.1.2.

The cause of the event was a design error by the contact reader's manufacturer.

Corrective action consisted of modifications to ESAS components.

This event is being reported pursuant to requirements of 10CFR 50.73 (a)(2)(i)(B), a condition prohibited by the plant's Technical Specifications.

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	-- J18 --	00	02 OF 03

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

**I. Description of Event**

On May 6, 1995, during performance of a Loss of Normal Power (LNP) test and following extensive modifications, the Engineered Safety Features Actuation System (ESAS) Facility 1 actuation cabinet 5 sequencer failed to load all required components on the first attempt. The sequencer re-sequenced several times before successfully loading all required components. The LNP test was immediately terminated. Subsequent troubleshooting and analysis of the event determined on May 10, 1995, at 1720 hours, that a design flaw existed in the contact reader located in ESAS Facility 1 actuation cabinet 5. This design flaw also existed in Facility 2, and, although it had been tested satisfactorily without the resequencing problem, it was declared inoperable due to the potential failure of the Facility 2 sequencer to satisfy surveillance requirements.

Technical Specification 3.8.1.2 specifies electrical power systems required for Modes 5 and 6. The associated Surveillance Requirement 4.8.1.2 requires that the electrical power sources be demonstrated OPERABLE per Surveillance Requirements 4.8.1.1.1 and 4.8.1.1.2. Surveillance Requirement 4.8.1.1.2.c.2 requires that the automatic time delay sequencer be OPERABLE with specific settings. Due to the design flaw found during testing of Facility 1, the Facility 2 sequencer was deemed to have the potential to not meet Surveillance Requirement 4.8.1.1.2.c.2, even though it had successfully met the sequencer time delay settings when tested with the flawed contact reader installed. Thus, the plant was in violation of a surveillance requirement for Technical Specification 3.8.1.2 when it entered Mode 6 at 2133 hours on April 20, 1995.

**II. Cause of Event**

The cause of this event was inadequate circuit/component design by the manufacturer. The design of the contact reader failed to provide enough voltage margin between the contact reader logic low outputs and the sequencer input gates.

The purpose of the contact reader is to provide input noise suppression for the five sequencer inputs. A "logic low" as read by the contact reader provides a one volt offset voltage into the sequencer which in turn reads the signal as a low. Prior to the introduction of the contact reader, a low would have been approximately 0.2 volts DC as read by the sequencer. The one volt offset reduced the threshold from a guaranteed low as read by the sequencer such that any internal and external noise coupling into this input would cause the sequencer to re-sequence. Thus, the design of the contact reader was inadequate.

It is believed that induced noise on Facility 2 was not significant enough to cause the sequencer in its ESAS actuation cabinet to fail and resequence, allowing this design deficiency to go undetected during the Facility 2 LNP test.

**III. Analysis of Event**

This event is being reported pursuant to requirements of 10CFR 50.73 (a)(2)(i)(B) a condition prohibited by the plant's Technical Specifications.

An assessment has determined there was minimal safety consequence associated with this event. Facility 2 of ESAS had successfully completed the LNP test and was available. Furthermore, the surveillance requirement that was not met is from the more restrictive Technical Specification for Electrical Power Systems in Modes 1, 2, 3 and 4. The Millstone Unit 2 FSAR does not credit any emergency diesel automatic start or sequencing functions in Modes 5 and 6, although, through its surveillance requirement, Technical Specification 3.8.1.2 implies those functions are required. In effect, the section of the surveillance requirement that was not met should have no applicability in Mode 6. A Technical Specification Change Request has been submitted to delete this and other non-applicable surveillance requirements for Technical Specification 3.8.1.2.

EXPIRES: 5/31/95

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

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

Potential consequences of not detecting this deficiency on both facilities in Modes 1-4 could have been more severe. A valid ESAS signal could potentially have been followed by a delay in the sequencing of safety-related components

IV. Corrective Action

The manufacturer of the ESAS performed a design modification which removed components internal to the contact reader to allow the contact reader to input a much lower input voltage for a recognized low condition. This will increase the noise immunity of the sequencer and contact reader assembly. In addition, the manufacturer performed a modification which will desensitize the sequencer such that it will not resequence on very short noise transients. These modifications are complete and have been retested satisfactorily on Facility 1 ESAS actuation cabinet 5. Facility 1 ESAS was declared operable on May 30, 1995.

These same modifications have been made to Facility 2 ESAS actuation cabinet 6 and will be tested prior to exiting Mode 5. A Technical Specification Change Request has been submitted to delete non-applicable surveillance requirements for Technical Specification 3.8.1.2.

V. Additional Information

Similar LER's; None

EIIS Codes

¥JE;XC;c560 - Engineered Safety Actuation System.