

# 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  
HARTFORD, CONNECTICUT 06141-0270  
(203)685-5000

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

April 1, 1992

MP-92-348

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 92-006-00

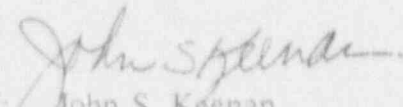
Gentlemen:

This letter forwards Licensee Event Report 92-006-00 required to be submitted within thirty (30) days pursuant to paragraph 10CFR50.73(a)(2)(vii).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: Stephen E. Scace  
Director, Millstone Station

  
BY: John S. Keenan  
Millstone Unit 2 Director

SES/CS:dir

Attachment: LER 92-006-00

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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LICENSEE EVENT REPORT (LER)

Estimated burden per response to comply with this information collection request: 50 (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.

FACILITY NAME (1) Millstone Nuclear Power Station Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 3 6 1	PAGE (3) OF 0 4
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TITLE (4)  
Containment Isolation Valves-Design Deficiency

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 NAMES		
0 3	0 2	9 2	0 2	0 0 6	0 0	0 4	0 1	9 2	0 5 0 0 0 0 0 0 0 0 0 0		
THIS REPORT IS BEING SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following: (1))											

OPERATING MODE (9) 1	POWER LEVEL (10) 11010	20.402(b)	20.402(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)	<input checked="" type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366a)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(vii)(A)	
		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)(ii)	

LICENSEE CONTACT FOR THIS LER (12)  
NAME: Ralph Bates, Ext. 5410  
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	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)  
 YES (if yes, complete EXPECTED SUBMISSION DATE)  NO  
EXPECTED SUBMISSION DATE (15): MONTH 1 2 DAY 3 1 YEAR 0 2

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

While at 100% power on March 2, 1992 at 1645 hours, a design deficiency was discovered for letdown isolation valves 2-C14-089 and 2-CH-516. An internal engineering evaluation postulated a failure of the 24VDC bus in Engineered Safeguards Actuator System (ESAS) Actuation Cabinet RC02C, which would prevent its output relays from energizing and automatically closing the valves. 10CFR50 Appendix A, Criterion 54 requires that the design of piping systems penetrating the containment be provided with leak detection and redundant isolation capabilities.

A Z1 facility valve 2-CH-515, which is in series with 2-CH-089 and 2-CH-516, and which receives a Safety Injection Actuation Signal (SIAS) would close and perform the isolation in the event of a Containment Isolation Actuation Signal (CIAS). This valve is not presently tested under the Local Leak Rate Testing (LLRT) Program, although it is fully operable as demonstrated by periodic surveillance testing, and it is designed as one of two reactor coolant system isolation valves.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

Estimated burden per response to comply with this information collection request is 0.194. Forwards comments regarding burden estimate to the Records and Reports Management Branch (p-630), U.S. Nuclear Regulatory Commission, Washington, DC 20555, 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)  0   5   0   0   0   3   3   6   9   2	LER NUMBER (3)			PAGE (3)  0   2   OF   4
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		9   2	0   0   6	0   0	

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

I. Description of Event

While at 100% power on March 2, 1992 at 1645 hours, a design deficiency was discovered for letdown isolation valves 2-CH-089 and 2-CH-516. An internal engineering evaluation postulated a failure of the 24VDC bus in Engineered Safeguards Actuation System (ESAS) Actuation Cabinet RC02C, which would prevent its output relays from energizing and automatically closing the valves. 10CFR50 Appendix A, Criterion 54 requires that the design of piping systems penetrating the containment be provided with leak detection and redundant isolation capabilities.

A Z1 facility valve 2-CH-515, which is in series with 2-CH-089 and 2-CH-516, and which receives a Safety Injection Actuation Signal (SIAS) would close and perform the isolation in the event of a Containment Isolation Actuation Signal (CIAS). This valve is not presently tested under the Local Leak Rate Testing (LLRT) Program, although it is fully operable as demonstrated by periodic surveillance testing, and it is designed as one of two reactor coolant system isolation valves.

II. Cause of Event

The root cause for the event is believed to be a design error by the Architect Engineer during the initial layout of the plant. Additional reviews show that no other containment penetration has this condition.

III. Analysis of Event

This report is being submitted pursuant to the requirements of 10CFR50.73 (a)(2)(vii)(C), a condition where one independent train or channel could potentially become inoperable in a system designed to control the release of radioactive material. The safety consequence of this condition was the potential inability to automatically isolate the containment penetration for the reactor coolant system (RCS) letdown line piping should a single failure associated with the Z2 actuation power (24VDC) occur. General Design Criterion 54 (10CFR50 Appendix A) requires that piping systems penetrating primary containment shall be provided with leak detection, isolation and containment capabilities having redundancy, reliability and performance capabilities which reflect the importance to safety of isolating these piping systems. Each of these two valves gets its control power from vital 125 volt DC bus 201B (Z2 facility), which upon loss will result in valve closure. Each of these two valves are periodically stroke tested, fail tested and leak tested in accordance with existing plant procedures. The highly unlikely failure of 24 volt DC actuation power could only cause the loss of the automatic closure feature. Since this specific failure does not affect the normal control circuits and does not affect their ability to shut on loss of control power (125VDC), these two valves are still considered operable and capable of providing their intended safety function.

Additional assurance that loss of the Z2 actuation cabinet would not result in the loss of isolation capability is provided by the fact that valve 2-CH-515 also provides isolation capability for this penetration. Valve 2-CH-515 is located just upstream of 2-CH-516 inside containment and is identical to 2-CH-516. Both these valves are identical in operation, internal configuration, and material. Both are seismic Class I, QA Category 1E 1500# ASA rated globe valves. Both these valves fail closed and are normally held open by air pressure. However, 2-CH-515 is powered by the Z1 125VDC facility and receives Z1 SIAS actuation to close. SIAS closure signals are concurrently generated with a CIAS signal (both signals are generated from the same parameters). In the event of a CIAS with a concurrent loss of the Z2 facility, 2-CH-515 would automatically close on the SIAS signal and would provide automatic isolation.

Valve 2-CH-515 is not currently included in the local leak rate test (LLRT) program. Valve 2-CH-515 would automatically shut on the event initiation and any leakage would be expected to be minimal and would likely be contained within the chemical volume and control system (CVCS). Additionally, Emergency Operating Procedures require plant operators to verify CIAS actuation, and to position valves, if required. Specifically, if these two valves fail to close automatically, they would be closed manually, within minutes of the actuation event. Therefore, in the unlikely event that any leakage was not contained within the CVCS, release to the atmosphere would still be insignificant.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

Estimated burden per response to comply with this information collection request: 50 (1) hrs. Forward comments regarding burden estimate to the Records and Reports Management Branch (2-830), U. S. Nuclear Regulatory Commission, Washington, DC 20555, 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)  0   8   0   0   0   3   3   6	LER NUMBER (3)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9   2	0   0   6	0   0	0   3	OF 0   4

TEXT (if more space is required, use optional NRC Form 300A-2) (17)

Based on the the above considerations, the safety consequences were found to be insignificant because of: 1)the highly unlikely occurrence of the loss of the 22 24 volt DC actuators power concurrent with a design basis event; 2)the existing valves design features; 3)the required operator actions; and 4)the additional automatic isolation provided by the third valve 2-CH-515.

IV. Corrective Action

Valve 2-CH-515 will be added to the LLRT program and any necessary changes to the Final Safety Analysis Report (FSAR) and Technical Specifications will be made.

V. Additional Information

Similar LERs - None.  
Sketch - Figure 1

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 Records and Reports Management Branch (p-630), U. S. Nuclear Regulatory Commission, Washington, DC 20585, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

ER NUMBER (3)

PAGE (3)

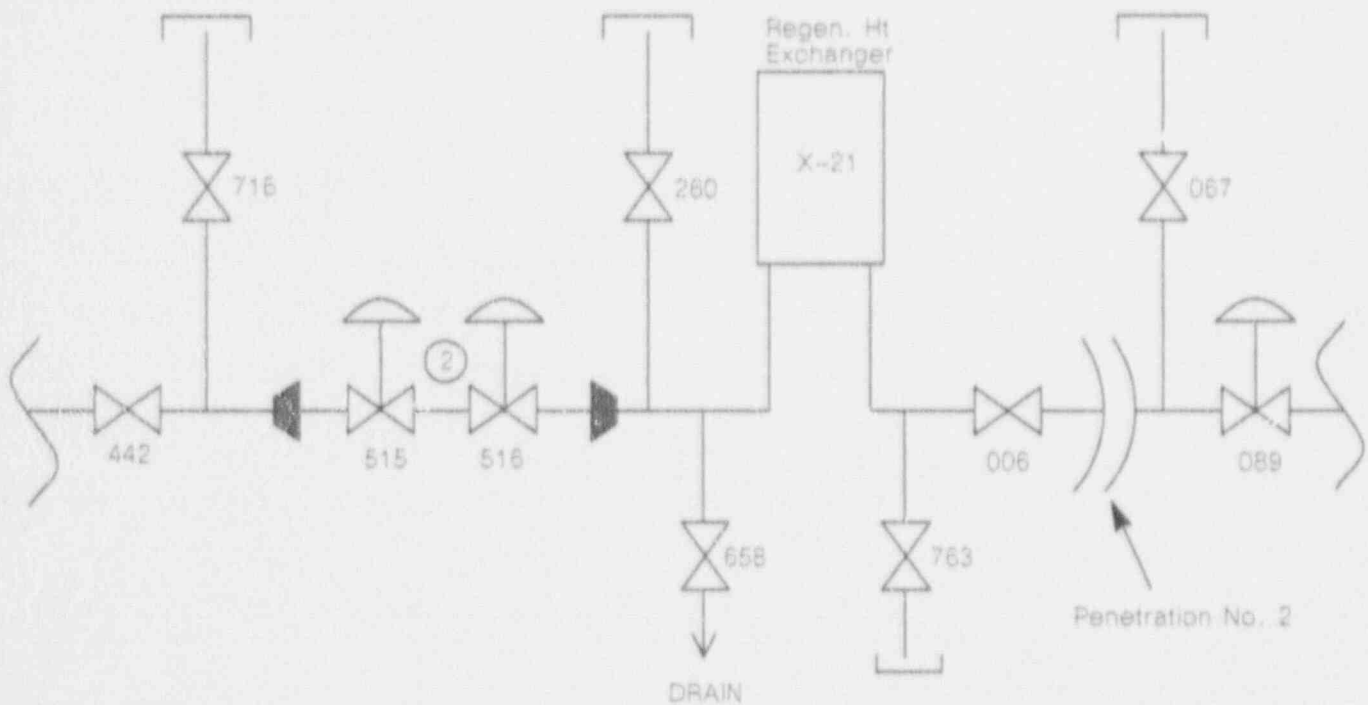
Millstone Nuclear Power Station  
Unit 2

YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
91	006	00

0 6 0 0 0 3 3 6 9 2 - 0 0 6 - 0 0 0 4 OF 0 4

TEXT (If more space is required, use additional NRC Form 360A's (17))

MP2 LETDOWN PIPING AND VALVE ARRANGEMENT



- Note ① all valves are 2-CH-XXX as shown on drawing 25203-26017, Sh. 2
- Note ② piping section here is 3" piping, and balance of letdown piping is 2" piping.
- Note ③ only valves CH-515, CH-516, and CH-089 have remote actuators (air operators), all others shown are manual valves.

FIGURE 1