

# 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: Seiden Street, Berlin Connecticut

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January 7, 1993  
MP-93-30

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

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 92-006-01

Gentlemen:

This letter forwards update Licensee Event Report 92-006-01.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

Stephen E. Scace  
Vice President - Millstone Station

SES/CS:dlr

Attachment: LER 92-006-01

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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NRC Form 366 (6-89)		U. S. NUCLEAR REGULATORY COMMISSION		APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92	
<b>LICENSEE EVENT REPORT (LER)</b>					
FACILITY NAME (1) Millstone Nuclear Power Station Unit 2				DOCKET NUMBER (2) 0 5 0 0 0 3 3 6 1 OF 0 4	
TITLE (4) Containment Isolation Valves-Design Deficiency					
EVENT DATE (5)		LER NUMBER (6)		REPORT DATE (7)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
0 3	0 2	9 2	9 2	0 0 6	0 1
				0 1 0 1 0 7 9 3	
OTHER FACILITIES INVOLVED (8)					
FACILITY NAMES					
0 5 0 0 0 0 0 0 0 0					
0 5 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) (11)					
OPERATING MODE (9)		20.402(b)		20.402(c)	
POWER LEVEL (10)		20.405(a)(1)(i)		50.73(a)(2)(iv)	
1 1 0 0		20.405(a)(1)(ii)		50.73(a)(2)(v)	
		20.405(a)(1)(iii)		50.73(a)(2)(vi)	
		20.405(a)(1)(iv)		50.73(a)(2)(vii)(A)	
		20.405(a)(1)(v)		50.73(a)(2)(viii)(B)	
		20.405(a)(1)(vi)		50.73(a)(2)(ix)	
OTHER (Specify in Abstract below and in Text, NRC Form 366A)					
LISCENSEE CONTACT FOR THIS LER (12)					
NAME				TELEPHONE NUMBER	
Ralph Bates, Ext. 5410				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 NPROS	
SUPPLEMENTAL REPORT EXPECTED (14)					
YES (If yes, complete EXPECTED SUBMISSION DATE)					NO
					EXPECTED SUBMISSION DATE (15)
					MONTH DAY YEAR
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)					
<p>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.</p> <p>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.</p>					

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-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)	DOCKET NUMBER (2)	LER NUMBER (6)	PAGE (3)
		YEAR	
		SEQUENTIAL NUMBER	
Millstone Nuclear Power Station Unit 2	0 5 0 0 0 3 3 6 9 2	0 0 6	0 1 0 2 OF 0 4

TEXT (if more space is required, use additional NRC Form 366A-4) (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

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FACILITY NAME (1)  Millstone Nuclear Power Station Unit 2	DOCKET NUMBER (2)  0 5 0 0 0 3 3 6 9 2	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
			0 0 6	0 1	0 3	OF	0 4

TEXT (if more space is required, use additional NRC Form 365A, s) (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 Z2 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

The LLRT Program has been updated to include valve 2-CH-515. The valve was tested, with satisfactory results, during the 1992 Refueling Outage.

Proposed Technical Specification Change Request (PTSCR) No. 2-16-92, which adds valve 2-CH-515 to Technical Specification Table 3.6-2, Containment Isolation Valves, has been submitted for processing.

Proposed change to the Final Safety Analysis Report has been prepared, and will be processed after the Technical Specification Amendment mentioned above has been issued.

V. Additional Information

Similar LERs - None.  
Sketch - Figure 1

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

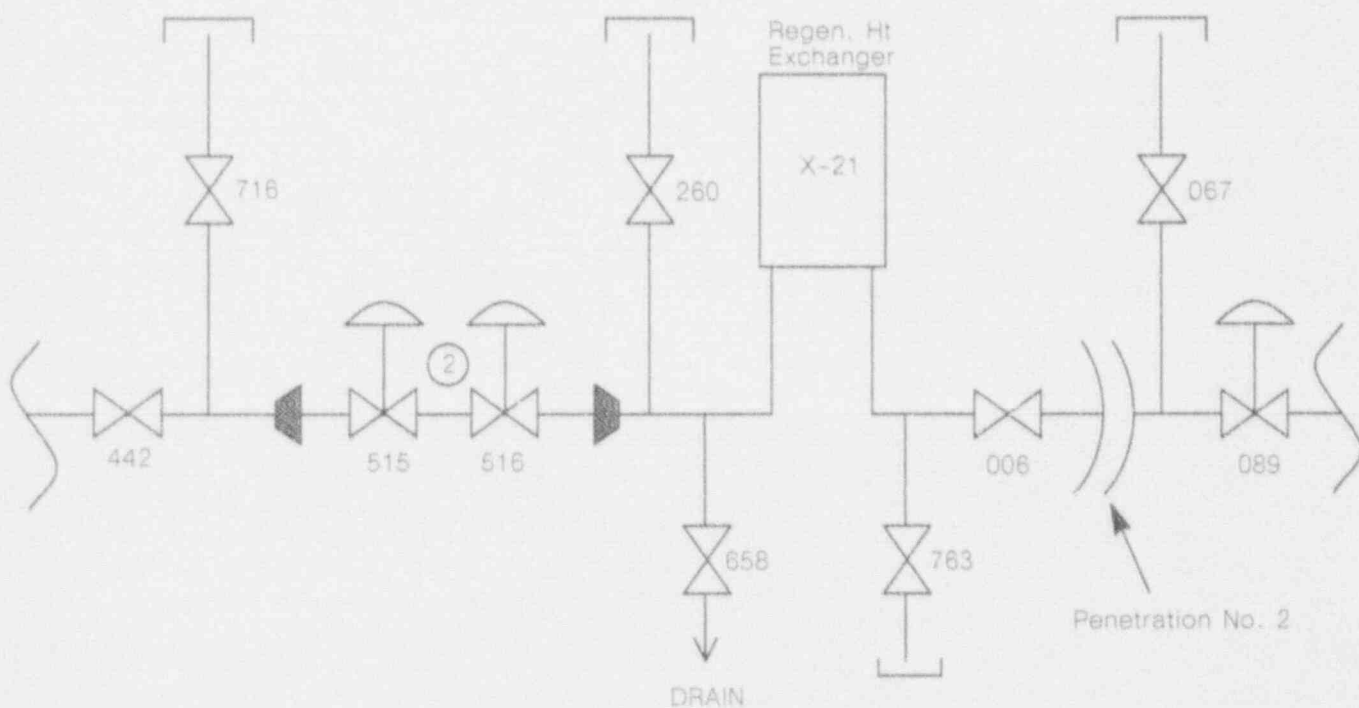
PAGE (3)

Millstone Nuclear Power Station  
Unit 2

0 | 5 | 0 | 0 | 0 | 3 | 3 | 6 | 9 | 2 | 0 | 0 | 6 | 0 | 1 | 0 | 4 | OF | 0 | 4 |

TEXT (If more space is required, use additional NRC Form 766A'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