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)665-5000

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

June 1, 1992
MP-92-579

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 89-010-02

Gentlemen:

This letter forwards Licensee Event Report 89-010-02 pursuant to paragraph 50.73(a)(2)(ii), reporting any event or condition that resulted in the nuclear power plant being in a condition that was outside the design basis of the plant

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

Stephen E. Scace
Director, Millstone Station

SES/GEK:ljs

Attachment: LER 89-010-02

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

LICENSEE EVENT REPORT (LER)

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.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Millstone Nuclear Power Station Unit 2	0 5 0 0 0 3 3 6	1 OF 0 3

TITLE (4)
Inoperable Service Water Strainers

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	
1 1	0 9	8 9	8 9	—	0 1 0	— 0 2	0 6	0 1	9 2		0 5 0 0 0
											0 5 0 0 0

OPERATING MODE (9)	5	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)	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)(vii)	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)(viii)(A)	
		20.405(a)(1)(iv)	X 50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Gary E. Komosky, Engineer, Ext. 4725	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
B	B S	S T R	A 0 6 0	Y							

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 fifteen single-space typewritten lines) (16)

On November 9, 1989, at approximately 1845 hours with the reactor plant in Mode 5 (0% power, 91°F, 0 psig), it was analytically determined that all three Service Water pump discharge strainers were not qualified to the appropriate seismic criteria. As a result of this condition, both Service Water headers, hence both Emergency Diesel Generators and both Shutdown Cooling loops, were declared inoperable. An Unusual Event was declared at 1845 hours. All operations involving core alterations or positive reactivity changes were suspended as required by the plant's Technical Specifications. A total of seven Limiting Conditions for Operation were entered. A Request For Enforcement Discretion was requested and received in order to take exception to the Technical Specification requirement to establish Containment Integrity in accordance with Action Statement 3.8.2.2. A new pipe support was designed and installed at the outlet flange of each of the three Service Water Strainers. All Limiting Conditions for Operation were met and the Unusual Event was terminated on November 14, 1989, at 0310 hours.

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

I. Description of Event

On November 9, 1989 at approximately 1845 hours with the reactor plant in Mode 5 (0% power, 91°F, 0 psig), it was analytically determined that all three Service Water pump discharge strainers were not qualified to the appropriate seismic criteria. As a result of this condition, both Service Water headers, and hence both Emergency Diesel Generators and both Shutdown Cooling loops, were declared inoperable. An Unusual Event was declared at 1845 hours.

While conducting an internal audit of design calculations, an irregularity was identified with the original vendor design calculations for the strainer anchorage. Upon further review, it was speculated that a miscommunication took place between the Architect/Engineer and the strainer vendor that resulted in a strainer anchorage design that was inadequate. In addition, the hilti bolts used to supplement the imbedded anchors for the strainers were not reviewed under the I & E Bulletin 79-02 re-analysis effort at Millstone Unit 2. A re-analysis of the anchor bolts was then performed and it indicated that they did not meet the operability acceptance criteria for 79-02, i.e., their safety factor was less than two. Based on this information, it was decided that the anchorage was inadequate and new supports were required.

Operations personnel complied with the required Technical Specifications; all operations involving core alterations or positive reactivity changes were suspended. Action Statements entered were 3.1.2.1, 3.1.2.3, 3.4.1.3, 3.7.6.1b, 3.8.1.2, 3.8.2.2, and 3.9.15.

There were no automatic system responses as a result of this event.

II. Cause of Event

The root cause of this event is a design deficiency for the original installation. A contributing factor was the failure to include the strainer hilti bolts in the support anchorage review per I&E Bulletin 79-02.

For the design deficiency, it appears that the Architect/Engineer was not aware that the strainer vendor had modeled the section of the Service Water system that included his strainers in order to develop the loading on the strainer. When the system configuration was changed during construction the strainer vendor was not informed and consequently the structural analysis of the strainer was not reviewed to evaluate the resultant impact on the strainers due to these changes.

For the failure associated with the strainer hilti bolts in accordance with I & E Bulletin 79-02 program, the assumption was made that component anchorage utilized embedded anchors as this was the normal practice. In the case of the strainer anchorage, hilti bolts were utilized in combination with embedded anchors.

III. Analysis of Event

This event is reportable in accordance with 10CFR50.73 (a)(2)(ii)(B), reporting any event or condition that resulted in the nuclear power plant being in a condition that was outside the design basis of the plant.

As a result of this condition, both Service Water headers, hence both Emergency Diesel Generators and both Shutdown Cooling loops, were declared inoperable. All operations involving core alterations or positive reactivity changes were suspended as required by the plant's Technical Specifications. This condition resulted in entering a total of seven Technical Specification Limiting Conditions for Operation. A Request For Enforcement Discretion was requested and approved in order to take exception to the Technical Specification requirement to establish Containment Integrity in accordance with Action Statement 3.8.2.2. Application for this request was made so that the containment equipment hatch could be positioned over the containment opening without latching it in place. Positioning the hatch in this manner permitted the services passing through the equipment hatch to remain intact thereby allowing the shut-down work to continue. Credit has been taken for this hatch positioning scenario for containment closure controls following a loss of Shutdown Cooling in response to Generic Letter 88-17.

It was felt that the seismic disqualification of the Service Water system condition was no more limiting than the loss of Shutdown Cooling condition. The installation of the new supports was accomplished with the Service Water system physically operating.

There were no Safety Consequences as a result of this event since the plant experienced no seismic events. By engineering judgement, the original supports would have performed their intended function even though the anchor bolt safety factor did not meet the criteria of I&E Bulletin 79-02.

The Unusual Event was declared on November 9, 1989 at 1845 hours and was terminated on November 14, 1989, at 0310 hours or a total time of four days, nine hours, and twenty-five minutes.

IV. Corrective Action

A new pipe support was designed, fabricated, and installed at the outlet flange of each of the three Service Water Strainers which provides the required support for all Design Basis Events.

To ensure that all other safety related components within the plant were not anchored with an improperly documented combination of embedded anchors and hilti bolts, a review has been completed which verified the existing anchorage. This review was performed on safety related pumps, heat exchangers, and tanks. Based on the review of the drawings, Bechtel seismic calculations and a plant walkdown, the anchorage has been verified to be in accordance with the original design documentation. There were no addition discrepancies found between components' anchorage and design requirements.

The review has confirmed our belief that the strainer anchorage problem was an isolated case as the use of hilti bolts in this manner is not common engineering practice; the common practice is to anchor components of this type exclusively with embedded anchors.

V. Additional Information

RP Adams Co. Model No. VDWS-80 strainer

Similar LER's: None

EIIS Code Identifiers:

Strainer: BS-STR-A060

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