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

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October 29, 1993
MP-93-868

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

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Reference: Facility Operating License No. NPF-49
Docket No. 50-423
Licensee Event Report 93-009-01

Gentlemen:

This letter forwards update Licensee Event Report 93-009-01. Licensee Event Report 93-009-00 was submittted pursuant to 10CFR50.73(a)(2)(v).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: Stephen E. Scace
Vice President - Millstone Station

BY: Harry F. Haynes
Millstone Unit 1 Director

SES/WJT:ljs

Attachment: LER 93-009-01

cc: T. T. Martin, Region I Administrator
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2 and 3
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3

NRC Form 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

APPROVED BY OMB NO. 3150-0104
EXPIRES: 5/31/95

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 (MNBB 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)	DOCKET NUMBER (2)	PAGE (3)
Millstone Nuclear Power Station Unit 3	05000423	1 OF 03

TITLE (4)
SLCRS Potentially Inoperable in Past Cold Weather Periods

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
										05000
06	17	93	93	- 009 -	01	10	29	93	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1	THIS REPORT IS BEING SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
			20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)
POWER LEVEL (10)	100		20.405(a)(1)(i)		50.36(c)(1)	X	50.73(a)(2)(v)		73.71(c)
			20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER
			20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(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)(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 (Include Area Code)
William J. Temple, Site Licensing	(203) 437-5904

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 June 17, 1993, at 1055 hours with the plant in Mode 1 at 100% power, the plant determined that the Supplemental Leak Collection and Release System (SLCRS) may have been inoperable during certain cold weather periods in the past.

This determination was based on the temperature induced pressure gradient phenomena involving the containment Enclosure Building. As outdoor air temperature decreases and building elevation increases the net differential pressure decreases. This phenomena was not accounted for in the plants SLCRS Technical Specification acceptance criteria since the differential pressure was measured at lower elevations and not corrected.

No immediate corrective action was required. SLCRS operation has been verified to meet draw down pressure requirements for the most probable worst case cold weather temperature differentials.

I. Description of Event

On June 17, 1993, at 1055 hours with the plant in Mode 1 at 100% power (2250 psia and 587 degrees Fahrenheit), the plant staff determined that the Supplemental Leak Collection and Release System (SLCRS) may have been inoperable during certain cold weather periods in the past.

The system was operable and able to meet its safety functions at the time of discovery.

This event was based on an evaluation of the effects of temperature induced pressure gradients on creating and maintaining a negative .25 inch water gage pressure differential throughout the Enclosure Building. This phenomena was discussed in NRC Information Notice 88-76. Limited field data indicated that although the Enclosure Building is an unheated, uninsulated structure, a temperature differential does exist between the interior of the Enclosure Building and outside. This temperature differential could result in negative pressures less than .25 inch water gage relative to outside at the upper elevations of the Enclosure Building.

Initial temperature and air flow data for the Enclosure Building indicate that a substantial hot air stream rises up into the building, due to chimney effect, from the Main Steam Valve Building (MSVB) through the open shake space. This air stream travels up near the top of the Enclosure Building before circling back down into the Auxiliary Building through open shake spaces. The result is higher temperatures in the Enclosure Building in the vicinity of the MSVB and Auxiliary Building. Measured temperatures in the opposite side of the Enclosure Building are more reflective of outside temperatures.

II. Cause of Event

The root cause of the event is failure to account for the chimney effect in the Enclosure Building as a result of the open shake space between the MSVB and Enclosure Building. The surveillance test acceptance criteria was not corrected for the effects of temperature induced pressure gradients, and therefore did not adequately verify the system met its intended function of creating and maintaining a negative .25 inch water gage pressure throughout the Enclosure Building.

The Enclosure Building is an unheated, uninsulated structure for which no design temperatures were calculated. Building temperatures were assumed to follow closely with outdoor air temperatures. In fact, the plant's initial review of NRC Info Notice 88-76 was that the building, due to its design, was kept at temperatures at or near outside air temperatures.

III. Analysis of Event

This event is being reported in accordance with 10CFR50.73(a)(2)(v)(c), "any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material." During cold weather periods the negative .25 inch water gage requirement may not have been met at all elevations of the Enclosure Building because no correction factor was employed to the surveillance acceptance criteria.

This event was the subject of an immediate report as required by 10CFR50.72(b)(2)(iii)(c).

The Supplemental Leakage Collection and Release System is designed to minimize the release of radioactive iodines following a design basis accident.

As a result of the October 1992 SLCRS outage the plant investigated ways to improve SLCRS/Auxiliary Building Ventilation operation. It was this investigation that prompted temperature measurements in the Enclosure Building. The limited temperature data indicated that the building temperatures adjacent to the Auxiliary Building and Main Steam Valve Building were elevated from outside temperatures. Temperatures on the opposite side of the Enclosure Building were more reflective of outside air temperatures.

The Safety Significance of this event is low because SLCRS would have functioned to maintain a minimum negative .25 inch water gage pressure differential in those areas where piping systems connected to the RCS or piping systems not designed to ASME Code Class 2 penetrate the containment. This would ensure that air flows are into these areas. This higher temperature air which occupies the upper elevations of the Enclosure Building is from the Main Steam Valve Building which is not expected to contain high amounts of radioactive iodine in a Design Base Accident. Air flows throughout the Enclosure Building, other than the MSVB hot air stream, were into the Auxiliary Building directly or via the Engineered Safety Features Building. This same general flow path would be expected with SLCRS running except that most of the air normally flowing to the Auxiliary Building would be directed to the SLCRS suction ductwork in the Enclosure Building.

IV. Corrective Action

Based on local temperature data SLCRS will meet the negative .25 inch water gage criteria throughout the Enclosure Building until October 31, 1993. The immediate corrective action after determining that the system was currently operable was to issue a four hour report.

A calculation was performed to determine what pressure on the ground floor of the Auxiliary Building would ensure a negative pressure in all areas inside the Secondary Enclosure under most meteorological conditions. A value of negative .4 inches water gage was determined to meet this requirement at least 98% of the time. A Technical Specification change has been submitted for this issue. A design change was implemented in May 1993 to increase SLCRS draw down capacity. The proper operation of the design for cold weather was verified on October 27, 1993.

V. Additional Information

Licensee Event Reports submitted which discuss events where both trains of SLCRS were inoperable are listed below. None of the corrective actions for these LERs would have prevented this event. The phenomena discussed in this event was not considered during design. This report documents the discovery of the applicability of this phenomena on the Millstone 3 design.

LER Number	Title
92-002	Both Trains of Supplemental Leak Collection and Release System Inoperable
91-018	Both Supplemental Leak Collection and Release System Inoperable Due to Design Deficiency

LER 3-92-002 documents an event where the "B" train of SLCRS was declared inoperable due to design deficiencies and the surveillance test used to verify system operability was declared inadequate. A revised surveillance test was performed on the "A" train with unsatisfactory results and the plant was shutdown in accordance with Tech. Spec. LCO 3.0.3. As corrective action the interaction and design of the ventilation systems which impact the SLCRS pressure envelope were modified to meet design requirements.

LER 3-91-018 discusses an event where both trains of SLCRS were unknowingly inoperable when the fusible link for a fire damper in each train was subject to high temperature during a loss of non-vital power. The root cause was design deficiency which allowed the fusible links to be exposed to steam during a loss of non-vital power.

EIIS CODES

Systems	Components
Containment Leakage Control System - BD	N/A