Northeast
Utilities System

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Northeast Nuclear Energy Company
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April 19, 1996

Docket No. 50-423
B15670

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

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

This letter forwards Licensee Event Report 96-005-00, which is submitted within thirty (30) days in accordance with 10CFR50.73(a)(2)(ii)(B).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

M. H. Brothers
Unit Director, Millstone Unit No. 3

Attachment: LER 96-005-00

cc: T. T. Martin, Region I Administrator
A. C. Cerne, Senior Resident Inspector, Millstone Unit No. 3
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3

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NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Millstone Nuclear Power Station Unit 3	05000423	1 of 2

TITLE (4)
Service Water Booster Pump Auto Start Disabled Due To Inadequate Review

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
03	21	96	96	005	00	04	19	96	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
		20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
POWER LEVEL (10)	100	20.2203(a)(1)	20.2203(a)(3)(i)	[X] 50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
William J. Temple, Nuclear Licensing Supervisor	(860)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	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 March 21, 1996, while the plant was in Mode 1 at 100-percent power, an automatic start feature of a Service Water System (SWP) Booster Pump was discovered disabled. Service Water provides backup emergency cooling to the Motor Control Center (MCC) and Rod Control Area (RCA) air conditioners (ACU).

During construction of Unit 3, it was noted that both trains of Service Water to MCC/RCA ACU outlet isolation valves were in the same fire zone and therefore could both fail closed during a fire. As a result, a decision was made to leave the valves normally open. The original control scheme caused the outlet isolation valves to open on high temperature in the ACU duct or on a Loss of Offsite Power (LOP) signal. An open isolation valve gave a start signal to the booster pump. When the valves were changed to normally open, the booster pumps ran continuously.

A Bypass Jumper (BJ) was installed in 1990 to defeat the pump auto-start on an open isolation valve and it allowed direct pump start on an LOP signal. This jumper, however, also defeated the pump start on high temperature in the ACU duct. This high temperature function deletion was not addressed in the BJ or safety evaluation.

Although the high temperature auto-start feature was defeated, sufficient time and indication was available to start the pumps if required prior to affecting operability of any equipment. The jumper is currently being removed and a permanent plant modification is being installed in accordance with an approved plant design change. This modification will restore all auto-start features and not rely on any operator actions.

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

I. Description of Event

On March 21, 1996, while the plant was in Mode 1 at 100-percent power, an automatic start feature of a Service Water System (SWP) Booster Pump was discovered disabled. Service Water provides backup emergency cooling to the Motor Control Center (MCC) and Rod Control Area (RCA) air conditioners (ACU).

During construction of Unit 3, it was noted that both trains of Service Water to MCC/RCA Area ACUs outlet isolation motor operated valves were in the same fire zone and therefore could both fail closed during a fire. As a result, a determination was made to leave the valves normally open. The original control scheme caused the outlet isolation valves to open on high temperature in the ACU duct or on a Loss of Power (LOP) signal. An open isolation valve gave a start signal to the booster pump. When the valves were changed to normally open, the booster pumps ran continuously.

A Bypass Jumper (BJ) was installed in May 1990 to allow the booster pump not to run unless required. This jumper was installed to defeat the pump start on an open isolation valve, and allow direct pump start on an LOP signal. This jumper, however, also defeated the pump start on high temperature in the ACU duct. This high temperature function deletion was not addressed in the BJ or safety evaluation.

Additionally, Operator actions that were specified as part of the Bypass Jumper "Special Instructions" were not proceduralized. These instructions directed the Operator to start the booster pumps after reset of an LOP to satisfy the requirement that two independent actions are required to stop equipment which was started from an LOP signal.

Upon discovery, the booster pumps were started and run continuously to provide the most conservative level of protection to the plant, and the unit took action to incorporate procedure changes to address appropriate alarm responses to high temperatures in the ACUs.

II. Cause of Event

The original review of the BJ at the Engineer, Supervisor, and Plant Operating Review Committee level failed to identify the entire impact of the BJ. Once installed, there was no subsequent requirement to verify the accuracy of the work.

The operating procedure steps at the time of jumper installation in 1990, addressed Operator response to high temperature in the MCC and Rod Control Area. These procedure steps were deleted in subsequent revisions because the relevance to the existing BJ was not understood.

III. Analysis of Event

Service Water is the emergency backup system to cool the ACU but has not been required in this capacity. The temperatures in the Motor Control Center (MCC) and Rod Control Area change slowly and have not challenged the ability of the cooling system. Service Water normally flows through the ACU units since the outlet isolation valves are in the open position. In this alignment, Service Water supplies adequate cooling in most scenarios without the booster pump. Although the LOP autostart function was still available to the pumps, the high duct temperature start feature was defeated.

An evaluation in 1990 determined that sufficient Service Water flow is available to meet all design requirements during an LOP or Containment Depressurization (CDA) without the booster pumps due to increased header pressure as a result of the isolation of non-safety related Turbine Plant Component Cooling flow. Any other scenario would require loss of normal cooling water (chilled

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

water system) without CDA or LOP. A test of the ACU cooling coils in December 1995 isolated chilled water to the units and established a heat load in the MCC and Rod Control Area using six 480-volt space heaters while all other equipment operated in a normal mode including normal heat loads to the areas. Testing showed that the area temperature could not be raised above 74 degrees Fahrenheit in eight hours with Service Water flowing through the coils and no booster pump in operation. This supported the position that temperature changes in the area are slow.

Per Technical Specification 3/4.7.14, operability of the equipment in the affected area does not become a concern for at least eight hours when temperatures are in the 120-140 degrees Fahrenheit range, or greater than four hours above 140 degrees Fahrenheit. A high temperature in the area, as sensed in the ACU duct, will trip the ACU at 115 degrees Fahrenheit, resulting in a low flow alarm in the Control Room. Although the booster pump start is not a specified action as a response to this alarm, Control Room personnel would be alerted to the high temperature condition in the area. A temperature increase in this area would be slow in a non-CDA or LOP condition and would allow sufficient time for the Operators to take appropriate action to manually start a booster pump if required.

Although the high temperature auto start function of the booster pumps was disabled, the pumps were available to be started manually if required, and the auto-start LOP function was operable.

IV. Corrective Action

Upon discovery on March 21, 1996, the booster pumps were started and run continuously to provide the most conservative level of protection to the plant. Operating procedures were also revised to address appropriate alarm response to high temperature in the ACU.

The jumper is currently being removed and a permanent plant modification is being installed in accordance with an approved plant design change. This modification will restore all auto-start features and not rely on any operator actions.

V. Additional Information

None

Similar Events

In 1990 a condition was discovered where both MCC/RCA Service Water Booster Pumps were found with their breakers left tagged open. This defeated all automatic start functions of the pumps including LOP response. This was performed without an appropriate 10CFR50.59 review and was the subject of a Notice of Violation (NOV 423/89-23-01).

Manufacturer Data

Not applicable.