Northeast
Nuclear Energy

Rope Ferry Rd. (Route 156), Waterford, CT 06385

Millstone Nuclear Power Station
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385-0128
(860) 444-4300
Fax (860) 444-4277

The Northeast Utilities System

MAY 1 1996

Docket No. 50-336
B15687

Re: 10 CFR 50.73

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

This letter forwards Licensee Event Report (LER) 96-020-00 documenting an event that occurred at Millstone Nuclear Power Station, Unit No. 2 on April 1, 1996. This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(ii) and 10 CFR 50.73(a)(2)(vii).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

For: P. M. Richardson
Director - Millstone Unit No. 2

By: M. J. Wilson
Manager - Operations
Millstone Unit No. 2

Attachment: LER 96-020-00

cc: T. T. Martin, Region I Administrator
P. D. Swetland, Senior Resident Inspector, Millstone Unit No. 2
D. G. McDonald, Jr., NRC Project Manager, Millstone Unit No. 2

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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 2	05000336	1 of 3

TITLE (4)

Potential Loss Of RBCCW Inventory Through The Primary Water Make-up Line

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
04	01	96	96	020	00	05	01	96	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10)	0%	20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
		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)	[X] 50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
G. P. van Noordennen, Nuclear Licensing Supervisor	(860)440-2084

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 April 1, 1996 at 1725 hours, with the plant in Mode 5 at 0% power, a review of the Reactor Building Closed Cooling Water (RBCCW) system concluded that following certain design basis events, both RBCCW trains could become inoperable if inventory were to be lost through the common primary makeup water (PMW) system fill line. Based on a postulated event, both RBCCW trains were determined to be inoperable. This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(ii)(B), and 10 CFR 50.73(a)(2)(vii)(A), (B) and (D).

The cause of this event is an original design deficiency that prevents the RBCCW system from being properly isolated from the PMW system following a design basis event.

Initial action was taken to isolate the RBCCW system from the PMW system. Subsequent action was taken to isolate the RBCCW pump recirculation lines, thus preventing a potential inventory loss while reestablishing the automatic fill function of the PMW system. Additionally, a permanent design change will be implemented to prevent the potential loss of RBCCW inventory.

There were no automatic or manually initiated safety systems actuated as a result of this event.

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

I. Description of Event

On April 1, 1996 at 1725 hours, with the plant in Mode 5 at 0% power, a review of the RBCCW system concluded that following certain design basis events, both RBCCW trains could become inoperable if inventory were to be lost through the common PMW system fill line. Based on the postulated event, both RBCCW trains were determined to be inoperable. The RBCCW system must remain operable to support operability of shutdown cooling. Initial operator action was taken to isolate the RBCCW system from the PMW system and thus assure that a loss of RBCCW inventory would not occur.

On April 1, 1996 at 1805 hours, with the plant in Mode 5 at 0% power, a report was submitted pursuant to the requirements of 10 CFR 50.72(b)(2)(i), "any event, found while the reactor is shut down, that, had it been found while the reactor was in operation, would have resulted in the nuclear power plant, including its principal safety barriers, being seriously degraded or being in an unanalyzed condition that significantly compromises plant safety."

There were no automatic or manually initiated safety systems actuated as a result of this event.

II. Cause of Event

The cause of this event is an original design deficiency that prevents the RBCCW system from being properly isolated from the PMW system following a design basis event.

III. Analysis of Event

This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(ii)(B), "any event or condition that resulted in the nuclear power plant being in a condition that was outside the design basis of the plant." Additionally, this report is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(vii), "any event where a single cause or condition caused at least one independent train or channel to become inoperable in multiple systems or two independent trains or channels to become inoperable in a system designed to: (A) Shutdown the reactor and maintain it in a safe shutdown condition; (B) Remove residual heat; or (D) Mitigate the consequences of an accident."

The RBCCW system provides cooling for various primary plant components credited for normal plant operation and for performance during and following design basis events. The RBCCW functions to transfer heat from the primary components to the service water system. There are two independent trains of RBCCW, each capable of cooling all plant equipment that is required to be operable during and following a design basis event. The RBCCW system has a single surge tank which serves both trains, separated by an installed weir in the tank. This tank provides a storage capacity of approximately 1000 gallons for each train.

There are three RBCCW pumps (one may be aligned to either facility), each having a minimum flow recirculation line that ensures a minimum flow through the pump while it is operating. The isolation of the recirculation lines allows for the continued use of the automatic PMW system to the RBCCW surge tank. Operation of the RBCCW system without the pump recirculation lines is acceptable, since procedural controls ensure a flowpath for the RBCCW pump discharge without crediting the recirculation lines. The recirculation lines from each pump join together to form one line, which returns to the RBCCW surge tank. The PMW supply to the RBCCW surge tank is connected into the recirculation line. The PMW system is not QA or seismically qualified, therefore its operation may not be credited for post accident scenarios. Additionally, there are no valves between the

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

RBCCW and primary water systems which may be credited to automatically reposition to isolate RBCCW from the PMW system during certain design basis events.

It is postulated that following certain design basis events, a loss of RBCCW inventory through the normal make-up supply line could occur. An investigation concluded that the make-up supply line must be assumed to be depressurized during accident scenarios, since the PMW pump is not powered by a vital bus. The make-up supply line isolation valve also has been determined to fail open on loss of air, therefore, isolation would not be maintained. These postulated conditions following certain accident scenarios would divert RBCCW flow to the PMW surge tank, which is vented to the atmosphere. Assuming this loss of inventory, with no make-up source available, it is postulated that both RBCCW trains eventually would be unable to provide heat removal during certain design basis events.

The actual and potential safety significance of this event was low, since there is an installed non-QA check valve within a few feet of the "RBCCW Surge Tank Level Control Valve Air Operator", that would have prevented significant backflow through the PMW line. However, since this is a non-tested/non-QA check valve, its presence is not credited.

IV. Corrective Action

Initial corrective action was taken to reestablish RBCCW operability by closing the PMW isolation valve. These valves are located on the PMW line near its connection to the common portion of the RBCCW pumps recirculation lines. Subsequent action was taken to close valves 2-RB-76A, B and C, which isolate each of the RBCCW recirculation lines from the RBCCW Surge Tank and the PMW isolation valve was reopened to allow the automatic fill make-up system to function normally.

A permanent design change, to prevent the potential loss of RBCCW inventory will be implemented.

V. Additional Information

Similar Events

None

Manufacturer Data

None