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

APPROVED BY OMB NO. 3150-0104

EXPIRES 04/30/99

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 4

TITLE (4)

Requirement to Enter Technical Specification Limiting Condition for Operation 3.0.3 Following Discovery of Ice Blockage in Common Service Water Strainer Backwash Discharge Line Not Recognized

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
2	5	96	96	-- 003 --	01	09	04	98	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)					
POWER LEVEL (10)	100	20.2201(b)	20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
		20.2203(a)(1)	20.2203(a)(3)(i)		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 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)
R. G. Joshi, MP2 Regulatory Compliance Manager	(860) 440-2080

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 February 5, 1996 at 1330, it was determined that a plant shutdown should have been initiated in accordance with Technical Specification (TS) Limiting Condition for Operation (LCO) 3.0.3 during an event that had occurred on January 8, 1996. At the time of the latter event, the inoperability of both loops of the Service Water (SW) system was not recognized and, therefore, the required actions of TS LCO 3.0.3 were not initiated. TS LCO 3.0.3 requires that the unit initiate shutdown actions if a LCO cannot be satisfied. Since it was determined that a required entry into TS LCO 3.0.3 was not performed, this event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(i) as any operation or condition prohibited by the plant's Technical Specifications.

On February 9, 1996, an Event Review Team (ERT) was established to investigate the events and conditions associated with the backwash discharge line freeze. The ERT investigation report concluded that the cause of this event was attributed to a non-conservative determination of SW operability and identified several contributing causal factors. The report recommended several corrective actions which have since been completed. These included actions to improve methods for effectively implementing change, implementation of an Operability Determination procedure, preparation of safety system design basis summary documents to provide adequate technical guidance and non-TS system operability impacts, and the conduct of operability training to appropriate station personnel involved in operability determinations.

This LER supplement is a complete rewrite of the original submittal and incorporates the results of the ERT findings.

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

I. Description of Event

On February 5, 1996 at 1330, it was determined that a plant shutdown should have been initiated in accordance with Technical Specification (TS) Limiting Condition for Operation (LCO) 3.0.3 during an event that had occurred on January 8, 1996. At the time of the latter event, the inoperability of both loops of the Service Water (SW) system [BI] was not recognized and, therefore, the required actions of TS LCO 3.0.3 were not initiated. TS LCO 3.0.3 requires that the unit initiate shutdown actions if a LCO cannot be satisfied. At the time of discovery of this event and during the January event, the plant was operating in Mode 1 at 100 percent power.

The January 8, 1996 event involved ice blockage of the common backwash discharge line for the SW system strainers [STR]. It was later determined that this blockage would have prevented the strainers from backwashing. Details of this event were provided in LER 96-002-00. At the time of this event, operators evaluated the operability of the SW system and determined that the system was operable based on normal system flow, acceptable strainer differential pressure, compensatory measures that could be taken to bypass the ice plug, and the fact that actions were being taken to clear the line.

A subsequent follow-up review of the SW operability determination was conducted on February 5, 1996. The review questioned the determination and concluded that a non-conservative decision had been made. It was concluded that the Operators involved failed to recognize that SW strainer backwashing was a necessary support function and that loss of this function would result in both service water trains being inoperable. On February 9, 1996, an Event Review Team (ERT) was established to investigate the events and conditions associated with the backwash discharge line freeze. The ERT investigation report was completed on April 6, 1996 that detailed the causes and recommended corrective actions for this event.

Since it was determined that a required entry into TS LCO 3.0.3 was not performed, this event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(i) as any operation or condition prohibited by the plant's Technical Specifications.

II. Cause of Event

From the ERT investigation, a number of causal factors were identified that contributed to the overall cause of this event (failure of the operators to recognize the inoperability of the SW system). These included:

- Inadequate problem identification methods in-place resulted in failure(s) to properly identify the SW strainer backwash system as an integral TS support subsystem and to modify applicable procedures and/or philosophies to appropriately address this impact.

- Despite the unusual plant condition that existed, the Shift Manager failed to consult with the Operations Manager, Duty Officer, or other available resource personnel prior to making a decision on SW system operability.

- Management had failed to adequately convey their expectations to plant personnel regarding change involving the incorporation of higher standards, e.g., conservative decision-making, crew teamwork, and specific roles and responsibilities for the Condition Report review and operability determination processes.

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III. Analysis of Event

The SW system provides the source of cooling water for several systems including the reactor building closed cooling water system and the diesel generators. Its source of water is the Long Island Sound seawater (the ultimate heat sink). Automatic strainer assemblies are located on the discharge of each service water pump to remove solids from the raw water and automatically eject the collected material without interrupting the general flow of strained water. When the differential pressure across the strainer reaches a specified setpoint, a rotating drive motor on the strainer is activated and the backwash valve opens that allows flushing water to flow backwards through the strainer elements to drain piping. At the time of the event, the backwash from each strainer flowed into a common discharge line that drained into the Long Island Sound.

In Mode 1, TS 3.7.4.1 requires the operability of two (2) independent service water loops. The associated LCO action statement addresses the condition where one (1) service water loop is inoperable. When both service water loops are determined to be inoperable, TS 3.0.3 must be entered. TS LCO 3.0.3 applies when a Limiting Condition for Operation is not met, except as provided in the associated Action requirements. In this instance, TS LCO 3.0.3 required that action be initiated within one hour to place the unit in Hot Standby within the next 6 hours, Hot Shutdown within the following 6 hours, and Cold Shutdown within the subsequent 24 hours.

The blockage of the common backwash discharge line was corrected approximately 9 hours after the problem was first identified. During this 9-hour time period, the SW system was operating with normal system flow and acceptable strainer differential pressure. As a result, there was reasonable assurance that the SW systems' normal and accident mitigating safety functions would not have been adversely impacted by this event. In addition, the unit did not experience an accident condition that challenged the functionality of the SW system. Consequently, although there was safety significance involved, there were no safety consequences as a result of this event.

IV. Corrective Action

As a result of this event, the following corrective actions have been performed:

1. Design Basis Summary Documents have been prepared to identify Technical Specification safety systems cross-referenced to their appropriate support systems. These summaries serve as a reference tool to those individuals performing operability determinations.

2. The Operations Manager has communicated the expectations to the Shift Managers regarding Operability Determinations and reaffirmed the expectations regarding the importance of conservative decision making.

3. To improve methods for effectively implementing change at Millstone, a number of programmatic methods, such as Configuration Control Process, Design Control, Corrective Action Program, Self-Assessment, Independent Oversight, Procedural Adherence and Upgrade, and the Employee Concerns Program, have been instituted at the station and are addressed in the Millstone Unit 2 Operational Readiness Plan. In addition, the Operations Department Excellence Plan was developed to create an atmosphere that recognizes the need for changes to raise plant-operating standards, to raise management standards, and to improve the conduct of plant operations.

4. An Operability Determination procedure has been implemented that contains the appropriate guidance on performing operability determinations including initiation, review, approval and acceptability.

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5. Training of Operations personnel has been completed which addressed the impact of various non-Technical Specification support systems upon safety systems. In addition, appropriate station personnel have received Operability Determination training.

V. Additional Information

Two additional LERs are associated with the January 8, 1996 event involving the ice blockage of the common backwash discharge line for the service water system strainers.

LER 96-002-00: "Loss of Capability to Backwash Service Water Strainers Due to Formation of an Ice Plug"

This LER was submitted based on the potential of the blocking of the common backwash discharge line discovered on January 8, 1996 which would prevent the service water system from performing its safety related function.

LER 96-004-01: "Service Water Strainer Backwash System Susceptibility to Freezing Following a Loss of Intake Structure Non-Vital Heating"

This LER was submitted to document the discovery that the common backwash discharge line would be susceptible to freezing if the non-vital intake structure heating system failed to operate.

Manufacturer Data

None

Energy Industry Identification System (EIIS) codes for systems and components mentioned in the text are below:

System	EIIS Code
Service Water	BI

Component	EIIS Code
Strainer	STR