

**Northeast
Nuclear Energy**

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The Northeast Utilities System

MAR 25 1996

Docket No. 50-336
B 15614

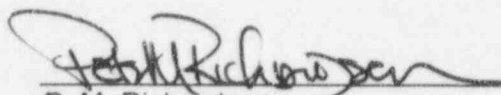
Re: 10 CFR 50.73

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

This letter forwards Licensee Event Report (LER) 96-011-00 documenting an event that occurred at Millstone Nuclear Power Station, Unit No. 2 on February 22, 1996. This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(i).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



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

Attachment: LER 96-011-00

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

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S PDR



LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)

Millstone Nuclear Power Station Unit 2

DOCKET NUMBER (2)

05000336

PAGE (3)

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TITLE (4)

Plant shutdown Required by Technical Specifications Completed and Required Time to Enter Mode 5 was
Exceeded

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
02	22	96	96	011	00	03	25	96	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)		4	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)			<input checked="" type="checkbox"/> 50.73(a)(2)(i)	50.73(a)(2)(viii)
			20.2203(a)(1)			20.2203(a)(3)(i)			<input type="checkbox"/> 50.73(a)(2)(ii)	50.73(a)(2)(x)
			20.2203(a)(2)(i)			20.2203(a)(3)(ii)			<input type="checkbox"/> 50.73(a)(2)(iii)	73.71
			20.2203(a)(2)(ii)			20.2203(a)(4)			<input type="checkbox"/> 50.73(a)(2)(iv)	OTHER
			20.2203(a)(2)(iii)			50.36(c)(1)			<input type="checkbox"/> 50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)			50.36(c)(2)			<input type="checkbox"/> 50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

G. P. van Noordennen, Nuclear Licensing Supervisor

TELEPHONE NUMBER (Include Area Code)

(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)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On February 22, 1996 at 0715 hours, with the plant in mode 4 at 0% power, the shutdown time limits of Technical Specifications (TS) Limiting Condition for Operation (LCO) 3.0.3 were not met. Specifically, cold shutdown (mode 5) was not achieved within the time limits specified in the action requirements of LCO 3.0.3. On February 22, 1996 at 0942, cold shutdown was achieved. This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(A), "The completion of any nuclear plant shutdown required by the plant's Technical Specifications," and 10 CFR 50.73(a)(2)(i)(B), "reporting of any operation or condition prohibited by the plant's Technical Specifications."

The cause of this event was that effective action was not initiated to revise the shutdown cooling (SDC) and cooldown rate monitoring procedures prior to the need to initiate a plant shutdown.

Corrective actions include changes to the plant operating and surveillance procedures, the plant heatup/cooldown monitoring computer program, and the operator training program.

There were no automatic or manually initiated safety systems activated 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 February 22, 1996 at 0715 hours, with the plant in mode 4 at 0% power, the cold shutdown time limits of Technical Specifications (TS) Limiting Condition for Operation (LCO) 3.0.3 were not met. Specifically, cold shutdown (mode 5) was not achieved within the time limits specified in the action requirements of LCO 3.0.3.

On February 20, 1996, as a result of an engineering review, it was postulated that subsequent to certain design basis accident scenarios, there existed the potential for obstruction of flow in the high pressure safety injection (HPSI) subsystem of the emergency core cooling system (ECCS). Since the potential for obstruction affected both ECCS facilities, it was determined that LCO 3.5.2 and its action requirements, which govern the operation of ECCS subsystems (with pressurizer pressure greater than or equal to 1750 psia), could not be satisfied. As a result, on February 20, 1996, at 1816 hours, in accordance with the requirements of LCO 3.0.3, a plant shutdown was initiated. Following the initiation of the plant shutdown, an immediate report was made on February 20, 1996 at approximately 1830, pursuant to the requirements of 10 CFR 50.72(b)(i)(A), "the initiation of any nuclear plant shutdown required by the plant's Technical Specifications."

At 2216 hours, mode 2 was entered with reactor power less than 5%. mode 3 was later entered at 2335 hours. On February 21, 1996 at approximately 0300 hours while in mode 3, pressurizer pressure was reduced below 1750 psia. At 0709 hours, mode 4 was entered. Operations personnel discussed the bases of LCO 3.0.3 regarding the time requirements to reach cold shutdown versus the time limit in the action requirements of LCO 3.5.3. A decision was made to utilize the 37 hours for the plant to be in the cold shutdown mode per the action requirements of LCO 3.0.3. Cooldown continued until 2000 hours, at which time the atmospheric dump valves were fully open and the RCS temperature was stabilized at 260°F.

On February 21, 1996, at 2000 hours, further cooldown was delayed due to concerns that the existing procedures, governing the transition from operation of the reactor coolant pumps to initiating shutdown cooling (SDC), would result in the reactor coolant system cooldown (RCS) rate exceeding TS LCO 3.4.1 (b) limits. At the time, operations personnel believed that the revised procedures would be approved in time to meet cold shutdown requirements of LCO 3.0.3. The cooldown progression was restarted after procedure revisions that provided more conservative monitoring of the cooldown rate were approved. On February 22, 1996 at 0151 hours, reactor coolant pumps 'B' and 'D' were secured and shutdown cooling was initiated shortly thereafter. Once the cooldown restarted, the time limits of LCO 3.0.3 could not be met. On February 22, 1996 at 0942, cold shutdown was achieved. Delaying the cooldown process to facilitate the completion of changes to the SDC procedure and cooldown rate monitoring resulted in exceeding the time limits for achieving cold shutdown.

There were no operator actions required in response to this event. Additionally, there were no automatic or manually initiated safety systems activated as a result of this event.

II. Cause of Event

The cause of this event was that effective action was not initiated to revise the SDC and cooldown rate monitoring procedures prior to the need to initiate a plant shutdown.

III. Analysis of Event

On February 22, 1996 at 0942, cold shutdown was achieved in accordance with the requirements of TS LCO 3.0.3. This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(A), "The completion of any nuclear plant shutdown required by the plant's Technical Specifications."

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

Operations personnel entered LCO 3.03 on February 20, 1996 at 1815 hours, and initiated a plant shutdown. On February 22, 1996, at 0715 hours, the 37 hour time limit of LCO 3.0.3 for reaching cold shutdown, had expired. On February 22, 1996 at 0942 hours, cold shutdown was achieved, 2 hours 27 minutes in excess of the requirements of the Technical Specifications. This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(i)(B), "reporting of any operation or condition prohibited by the plant's Technical Specifications."

The initiation of SDC and resumption of the plant cooldown proceeded in a controlled and orderly manner as described in the TS bases for LCO 3.0.3. The shutdown was performed in an orderly manner that was within the cooldown capabilities of the facility and reduced thermal stresses on components. Exceeding the time limit for achieving cold shutdown was the unplanned result of achieving the goal of a controlled shutdown. Exceeding the cold shutdown time limit accommodated the development and implementation of technical changes to the shutdown cooling system normal operating procedure (OP 2310) and cooldown monitoring surveillance (SP 2602B). These changes resulted in effective monitoring of the cooldown rate, and improved control of the cooldown rate during the transition from reactor coolant pump (RCP) operation to shutdown cooling operation.

TS LCO 3.0.3 provides requirements for "when a Limiting Condition for Operation is not met," and describes the actions that must be initiated to place the unit in a mode, for which the LCO not being met, does not apply. In this event LCO 3.5.2 was applicable from modes 1 to 3 with the RCS pressurizer pressure greater than or equal to 1750 psia. On February 21, 1996 at approximately 0300 hours, pressurizer pressure was reduced below 1750 psia. At this time, the requirements of LCO 3.5.3, which governs ECCS operation when pressurizer pressure is less than 1750 psia, became applicable. The action for LCO 3.5.3 requires that "With no ECCS subsystem OPERABLE, restore at least one ECCS subsystem to OPERABLE status within one hour or be in COLD SHUTDOWN within the next 20 hours." The requirement to enter LCO 3.5.3 was not met; however, the requirement to proceed to cold shutdown was followed.

Analysis of this event was included in the charter of an Event Review Team (ERT), established to investigate an event in which the heatup limits of LCO 3.4.9.1 were exceeded on January 4, 1996 (LER 96-001-00). On February 6, 1996 the ERT investigation recognized that during plant cooldowns, operators were unable to accurately determine the cooldown rate since neither the operating procedures nor the plant process computer calculated RCS cooldown rates utilizing the appropriate temperature sensors. On February 20, 1996 specific historical plant cooldowns were identified in which the cooldown rate was exceeded. LER 96-007-00 reported these historical events. The engineering evaluation conducted for the LER concluded that the exceeded cooldown rates occurred during the plant shutdowns immediately after the transition from RCP operation to SDC operation. Additionally, a subsequent review of the SDC system operating procedure (OP 2310), conducted after the cooldown rate was exceeded at 0715 on February 22, 1996, concluded that the procedure does not provide adequate instructions for establishing SDC. The procedure was determined to be deficient since it did not provide guidance to adequately throttle the reactor building closed cooling water (RBCCW) flow through the SDC heat exchangers in order to control SDC outlet temperature as it is introduced into the RCS.

The actual and potential safety significance of this event was low since the initiation of SDC and resumption of the plant cooldown proceeded in a controlled and orderly manner as described in the TS bases for LCO 3.0.3. Additionally, the shutdown was performed in an orderly manner that was within the cooldown capabilities of the facility and reduced thermal stresses on components.

IV. Corrective Action

The following corrective actions were committed to in LER 96-007-00.

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

Changes to the plant operating and surveillance procedures, the plant heatup/cooldown monitoring computer program, and the operator training program will be implemented to allow operators to properly monitor and control the RCS heatup/cooldown rate. Millstone Unit No. 2 is currently in mode 5. The procedure changes and operator training will be completed prior to entering mode 4.

An evaluation of the use of LCO 3.0.3 and 3.5.3 action requirements will be performed. The results of this evaluation will be reviewed with operations personnel prior to entry into mode 3.

The scope of the ERT was expanded to include evaluation of cooldown events. Additional corrective actions recommended by the ERT will be assessed for implementation.

V. Additional Information

None

Similar Events

LER 96-007-00

LER 96-001-00

Manufacturer Data

None