



**Northeast  
Nuclear Energy**

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The Northeast Utilities System

FEB 17 2000

**Docket No. 50-336**  
**B17939**

Re: 10 CFR 50.73(a)(2)(iv)

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

Millstone Nuclear Power Station Unit No. 2  
Licensee Event Report 99-015-01  
"Unanticipated Reactor Protection System Trip Signal Generation On  
Low Steam Generator Level"

This letter forwards supplemental Licensee Event Report (LER) 99-015-01 (Attachment 1), documenting a condition that was originally determined reportable at Millstone Unit No. 2 on October 21, 1999. This LER is submitted pursuant to 10 CFR 50.73(a)(2)(iv).

There are no new or additional commitments in response to this.

Should you have any questions regarding this submittal, please contact Mr. R. G. Joshi at (860) 447-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: C. J. Schwarz  
Station Director

BY:

  
\_\_\_\_\_  
D. S. McCracken  
Assistant Station Director - Safety

cc: See page 2

JE22

Attachment: LER 99-015-01

cc: H. J. Miller, Region I Administrator  
D. P. Beaulieu, Senior Resident Inspector, Millstone Unit No. 2  
J. I. Zimmerman, NRC Project Manager, Millstone Unit No. 2

Corrective Action Group Files (CR M2-99-2482, M2-99-2936)

RWF:rf

Docket No. 50-336  
B17939

Attachment 1

Millstone Nuclear Power Station, Unit No. 2

LER 99-015-01

February 2000

### 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 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)

Millstone Nuclear Power Station Unit 2

DOCKET NUMBER (2)

05000336

PAGE (3)

1 OF 3

TITLE (4)

Unanticipated Reactor Protection System Trip Signal Generation On Low Steam Generator Level

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	
09	19	99	99	-- 015 --	01	2	17	00	FACILITY NAME	DOCKET NUMBER	
<b>OPERATING MODE (9)</b> 3 <b>POWER LEVEL (10)</b> 000											
<b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)</b>											
			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)			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)			X 50.73(a)(2)(iv)		OTHER
			20.2203(a)(2)(iii)			50.36(c)(1)			50.73(a)(2)(v)		Specify in Abstract below Rf NRC Form 366A
			20.2203(a)(2)(iv)			50.36(c)(2)			50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME

R. Joshi, MP2 Acting Regulatory Compliance Supervisor

TELEPHONE NUMBER (Include Area Code)

(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)

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

On September 19, 1999, with the plant in Mode 3 following a normal reactor shutdown, an unanticipated Low Steam Generator(S/G) Water Level actuation signal was received on 4 out of 4 Reactor Protection System (RPS) Channels. The Low S/G Level RPS trip was set consistent with Technical Specifications at 49.5%. S/G Level was being manually controlled between 45 percent (%) and 75% and "maintained in the lower end of the band until cooldown rate reduces" in accordance with plant procedures. Actual S/G water level was decreased to less than 49.5%, constituting an actual plant parameter satisfying the requirement for RPS actuation.

The plant was in a mode for which actuation of the S/G Low Water Level RPS trip was not required to mitigate the consequence of an accident. Additionally, no component changed state as a result of the trip since the control rods had been previously fully inserted and the TCB's had been opened. Subsequent investigation determined that several other RPS bistables tripped as a result of the input process variables having exceeded the trip setpoints for the parameters during this and previous plant cooldowns.

The cause of this event was determined to be organizational and programmatic deficiencies in that operating procedures did not contain warnings for pre-planned ESF or RPS trips. As a result of this event, applicable procedures will be revised to identify pre-planned Engineered Safety Feature (ESF) and Reactor Protection System (RPS) trips.

This event is being reported pursuant to 10CFR50.73(a)(2)(iv), as an event or condition that resulted in an automatic actuation of any Engineered Safety Feature (ESF), including the RPS.

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
Millstone Nuclear Power Station Unit 2	05000336	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		99	- 015 -	01	

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

I. Description of Event

On September 19, 1999, with the plant in Mode 3, with the Trip Circuit Breakers (TCB's) open following a normal reactor [RCT] shutdown, and with a plant cool down in progress, an unanticipated Low Steam Generator Water Level actuation signal was received on four out of four Reactor Protection System (RPS) [JC] Channels. Technical Specification (TS) 3.3.1.1 requires that the Low Steam Generator Level RPS trip be set at greater than or equal to ( $\geq$ ) 48.5% and the actual setpoint was set at 49.5%. Steam Generator Level was being manually controlled between 45 percent (%) and 75% and "maintained in the lower end of the band until cooldown rate reduces" in accordance with the approved plant procedure (OP-2207, Plant Cooldown) at the time of this event.

At the time of the event, the control rods had been fully inserted and the TCB's had been opened as part of the normal plant shutdown and cooldown. Following entry into Mode 3, the Steam Generator Low Water Level trip was not required by TS 3.3.1.1 to be OPERABLE. However, the RPS had not been removed from service at that time. Actual Steam Generator water level was decreased to less than 49.5%, constituting an actual plant parameter satisfying the requirement for RPS actuation. Therefore, the RPS actuation must be considered a valid unplanned ESF actuation even though the shutdown was conducted in accordance with approved plant procedures.

The discrepancy between Low Steam Generator Water Level actuation signal trip setpoint and the guidance contained within the plant cooldown procedure resulted from a change in the analysis of a Loss of Normal Feedwater event. This analysis had been implemented in accordance with the Design Change Process and had been included in Technical Specification Amendment 232.

As the result of the subsequent investigation it was determined that during the plant cooldown conducted on September 19, 1999 several RPS bistables had tripped. A review of the Primary Plant Computer (PPC) data showed that the RPS input process variables had exceeded the trip setpoints for the parameters as a normal result of plant cooldown actions :

The additional RPS bistable trips that had occurred included:

- |                   |                                  |
|-------------------|----------------------------------|
| 1) RCP Underspeed | 3) Steam Generator Pressure Low  |
| 2) RCS Low Flow   | 4) Thermal Margin / Low Pressure |

This event is being reported pursuant to 10CFR50.73(a)(2)(iv), as an event or condition that resulted in an automatic actuation of any Engineered Safety Feature (ESF), including the RPS.

II. Cause of Event

The cause of this event was determined to be organizational and programmatic deficiencies in that operating procedures did not contain warnings for pre-planned ESF or RPS trips. Contributing to this event was the failure to adequately incorporate into plant procedures, changes to the trip setpoint resulting from changes to the plant's Technical Specifications.

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
Millstone Nuclear Power Station Unit 2	05000336	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 3
		99	-- 015 --	01	

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

III. Analysis of Event

The RPS monitors the Nuclear Steam Supply System to effect a reactor shutdown if conditions deviate from a preset operating range. The Steam Generator Water Level - Low Trip provides core protection by preventing the operation with the steam generator water level below the minimum volume required for adequate heat removal capacity and assures that the design pressure will not be exceeded.

The plant was in a mode for which actuation of the Steam Generator Low Water Level RPS trip was not required to mitigate the consequence of an accident and water level was being intentionally lowered in accordance with approved operating procedures. Additionally, no component changed state as a result of the trip since the control rods had been previously fully inserted and the TCB's had been opened. Therefore, this event is not considered safety significant.

The various RPS bistable trips that occurred during the course of the plant cooldown on September 19, 1999 were normal and expected. However, at the time of the evolution, the plant cooldown procedure did not specifically state that these trips were to be expected. In addition, as a result of the investigation it could be concluded that RPS bistable trips occurred historically during the course of previous plant cooldowns.

IV. Corrective Action

As a result of this event, the following actions have been, or will be, implemented:

1. The plant procedure "OP-2207, Plant Cooldown" has been revised to identify pre-planned Engineered Safety Feature (ESF) and Reactor Protection System (RPS) actuations.
2. Applicable operating procedures will be revised to identify pre-planned Engineered Safety Feature (ESF) and Reactor Protection System (RPS) trips. These revisions will be completed by April 18, 2000.
3. Implementation of Technical Specification Amendments 226 and 232 have been reviewed to ensure that setpoint changes have been incorporated and accounted for in the guidance for parameter control within the applicable procedures.

V. Additional Information

Energy Industry Identification System (EIIIS) codes are identified in the text as [XX].

Similar Events

Not Applicable