

EXPIRES 04/30/98

## 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 (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.

FACILITY NAME (1)

Millstone Nuclear Power Station Unit 3

DOCKET NUMBER (2)

05000423

PAGE (3)

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TITLE (4)

P-6 Bistable Reset Function Set Non-Conservatively Resulting in Technical Specification Violation

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	
05	27	97	97	-- 033 --	00	06	26	97	FACILITY NAME	DOCKET NUMBER	
OPERATING MODE (9)		5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)								
POWER LEVEL (10)		000	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

David A. Smith, MP3 Nuclear Licensing Manager

TELEPHONE NUMBER (Include Area Code)

(860)437-5840

## 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 DATE (15)	MONTH	DAY	YEAR
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## ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On May 27, 1997, with the Unit in Mode 5, a system engineering review of Technical Specification (TS) interlocks concluded that the Intermediate Range Neutron Flux, P-6 interlock was calibrated in a manner that did not comply with TS, Table 2.2-1, "Reactor Trip System Instrumentation Setpoints," Functional Unit 18(a). The P-6 interlock reset value of 5.0 E-11 amps, where the interlock function is automatically reinstated on decreasing power, is set per approved procedures lower, and therefore, less conservative than the Allowable Value specified in TS Table 2.2-1 of greater than or equal to 6.0 E-11 amps. This would result in instances between 5.0 and 6.0 E-11 amps where the Intermediate Range Neutron Flux, P-6 interlock would be bypassed and the Source Range Neutron Flux monitoring instrumentation not re-energized and OPERABLE as required. This condition is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B), as a condition or operation prohibited by the plant's Technical Specifications.

This is an historical event and the cause is indeterminate. The potential impact of the P-6 interlock bistable reset value on TS compliance was only recognized recently during the reviews of design and licensing basis documentation.

The Source Range Neutron Flux trip is not credited within the safety analyses but provides a tertiary backup to the Power Range Neutron Flux - Low Setpoint trip if an uncontrolled rod withdrawal error event from a subcritical or low power condition occurred. Consequently, even though a violation of the TS occurred there were no adverse safety consequences as a result of this event. The Intermediate Range Neutron Flux, P-6 interlock bistable calibration will be brought into compliance with the TS.

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

I. Description of Event

On May 27, 1997, with the Unit in Mode 5, a system engineering review of Technical Specification (TS) interlocks concluded that the Intermediate Range Neutron Flux, P-6 interlock was calibrated in a manner that did not comply with TS, Table 2.2-1, "Reactor Trip System [RTS] Instrumentation Setpoints," Functional Unit 18(a). The P-6 interlock reset value of 5.0 E-11 amps, where the interlock function is automatically reinstated on decreasing power, is set per approved procedures lower, and therefore, less conservative than the Allowable Value (AV) specified in TS Table 2.2-1 of greater than or equal to 6.0 E-11 amps. TS Limiting Condition for Operation (LCO) 2.2.1, Action b states: "With the Reactor Trip System Instrumentation or Interlock Setpoint less conservative than the value shown in the Allowable Values column of Table 2.2-1, ... [which leads to Action b.2 which states] Declare the channel inoperable and apply the applicable ACTION statement of Specification 3.3.1 until the channel is restored to OPERABLE status with its Setpoint adjusted consistent with the Trip Setpoint value." TS Table 3.3-1, "Reactor Trip System Instrumentation," Functional Unit 17(a) specifies that the P-6 interlock is required to be OPERABLE in Mode 2##. The double asterisk notation signifies that the interlock is to be OPERABLE "Below the P-6 (Intermediate Range Neutron Flux Interlock) Setpoint."

The P-6 bistable reset setpoint, as currently set, would allow the Source Range Neutron Flux neutron monitoring instrumentation (NIS) to remain bypassed on decreasing reactor power down to the P-6 interlock bistable reset setpoint of 5.0 E-11 amps, which is less than the AV of 6.0 E-11 amps specified in the TS. This could result in instances between 5.0 and 6.0 E-11 amps where the Intermediate Range Neutron Flux, P-6 interlock would be bypassed and the Source Range Neutron Flux monitoring instrumentation not re-energized and OPERABLE as required. This condition is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B), as a condition or operation prohibited by the plant's Technical Specifications.

A description of the licensing bases for the Intermediate Range Neutron Flux, P-6 interlock is provided in the Bases to the Millstone Unit 3 TS and the Nuclear Regulatory Commission (NRC) Safety Evaluation Report (SER) for Millstone Unit 3. The TS Bases states, "On increasing power P-6 allows manual block of the Source Range trip (i.e., prevents premature block of Source Range trip) and deenergizes the high voltage to the detectors. On decreasing power, Source Range level trips are automatically reactivated and high voltage restored." The NRC SER for Unit 3 states: "The source range trip provides protection during reactor startup and shutdown when the neutron flux channel is below the P-6 interlock setpoint (6 E-11 amp) [Allowable Value for the Intermediate Range Neutron Flux, P-6 interlock]. This trip can be manually blocked above the P-6 interlock setpoint and automatically reinstated when power is reduced below the P-6 interlock setpoint."

The Intermediate Range Neutron Flux, P-6 interlock bistables were first calibrated during preoperational testing of the RTS instrumentation using calibration information supplied by the Nuclear Steam Supply System (NSSS) vendor in accordance with approved plant procedures. This condition has existed since prior to startup. At the time of discovery, there was no immediate impact on equipment operability and immediate corrective actions were not required as the Intermediate Range Neutron Flux, P-6 interlock is required to be OPERABLE in Mode 2 and the plant is currently in Mode 5 in an extended shutdown.

II. Cause of Event

This is an historical event and the cause is indeterminate. The potential impact of the P-6 interlock bistable reset value on TS compliance was only recognized recently during the reviews of design and licensing basis documentation.

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III. Analysis of Event

The Source Range Neutron Flux trip is not credited within the safety analyses but provides a tertiary backup to the Power Range Neutron Flux - Low Setpoint trip if an uncontrolled rod withdrawal error event from a subcritical or low power condition occurred. Consequently, even though a violation of the TS occurred there were no adverse safety consequences as a result of this event.

As described in FSAR Section 15.4.1, "an uncontrolled rod cluster control assembly (RCCA) withdrawal from a subcritical or low power condition is defined as an uncontrolled addition of reactivity to the reactor core caused by withdrawal of RCCA banks resulting in a power excursion. While the occurrence of this type of transient is highly unlikely, such a transient could be caused by a malfunction of the reactor control or control rod drive systems. This could occur with the reactor either subcritical, at hot zero power, or at power. Should a continuous RCCA withdrawal accident occur the transient is terminated by [one of] the following automatic features of the reactor protection system." These features include the Source, Intermediate, Power (low or high settings) Range High Neutron Flux trips or the High Neutron Flux Rate Trip. FSAR Section 15.4.1.2 indicates that the Power Range Neutron Flux (low setting) is credited in the safety analysis for providing the reactor trip to terminate the transient (at an analysis assumed value of 35 percent power). FSAR Section 15.4.1.3 concludes that "the core and [Reactor Coolant System] RCS are not adversely affected since the combination of thermal power and coolant temperature result in a [Departure from Nucleate Boiling Ratio] DNBR greater than the limit value." The reactor power at the P-6 interlock level is extremely low (less than 1 percent), consequently the impact of an accident at that power level compared to the FSAR 15.4.1 analysis results is negligible.

IV. Corrective Action

No immediate corrective actions were required as the Intermediate Range Neutron Flux, P-6 interlock is only required to be OPERABLE in Mode 2 (as described previously) and the plant is currently in an extended shutdown.

The following corrective actions will be taken, prior to entry into Mode 4:

1. The Intermediate Range Neutron Flux, P-6 interlock bistable calibration will be brought into compliance with the Technical Specifications.

V. Additional Information

None

Similar Events

LER 97-031-00 identified an historical condition where the bistables in the Residual Heat Removal System had been set nonconservatively resulting in a violation of Technical Specification requirements.

LER 97-031-00    Residual Heat Removal System Valve Low Pressure Open Permissive Bistable Setting Set Non-Conservatively

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Manufacturer Data

ELIS System Code

Plant Protection System.....JC

ELIS Component Code

Control Device, Permissive.....69