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April 18, 1997



Docket Nos.: 50-348
50-364

10 CFR 50.73

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

Joseph M. Farley Nuclear Plant
Licensee Event Report No. 97-005
Failure to Perform Nuclear Instrumentation
Surveillance Requirements Prior to Mode 2 and 3 Entry

Ladies and Gentlemen:

Joseph M. Farley Nuclear Plant - Unit 1 Licensee Event Report No. 97-005 is being submitted in accordance with 10 CFR 50.73. If you have any questions, please advise.

Respectfully submitted,

on morey
Dave Morey

EFB:maf 97-05a.doc

Enclosure

cc: Mr. L. A. Reyes, Region II Administrator
Mr. J. I. Zimmerman, NRR Project Manager
Mr. T. M. Ross, Plant Sr. Resident Inspector

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LICENSEE EVENT REPORT (LER)

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)

Joseph M. Farley Nuclear Plant - Unit 1

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05000348

PAGE (3)

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Title (4)

Failure to Perform Nuclear Instrumentation Surveillance Requirements Prior to Mode 2 and 3 Entry

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		
03	15	97	97	005	00	04	18	97	J. M. Farley - Unit 2		
									05000364		

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more) (11)																	
POWER LEVEL (10)	005	20.2201(b)	20.2203(a)(1)	20.2203(a)(2)(i)	20.2203(a)(2)(ii)	20.2203(a)(2)(iv)	20.2203(a)(3)(i)	20.2203(a)(3)(ii)	20.2203(a)(4)	50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vi)	50.73(a)(2)(vii)	50.73(a)(2)(viii)	73.71	OTHER
		20.2203(a)(2)(i)	20.2203(a)(2)(ii)	20.2203(a)(2)(iii)	20.2203(a)(2)(iv)	20.2203(a)(2)(v)	20.2203(a)(2)(vi)	20.2203(a)(2)(vii)	20.2203(a)(2)(viii)	20.2203(a)(2)(ix)	20.2203(a)(2)(x)	20.2203(a)(2)(xi)	20.2203(a)(2)(xii)	20.2203(a)(2)(xiii)	20.2203(a)(2)(xiv)	20.2203(a)(2)(xv)	20.2203(a)(2)(xvi)	20.2203(a)(2)(xvii)	20.2203(a)(2)(xviii)

LICENSEE CONTACT FOR THIS LER (12)

NAME

R. D. Hill, General Manager - Nuclear Plant

TELEPHONE NUMBER

AREA CODE

334899-5156

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED

MONTH

DAY

YEAR

SUBMISSION

DATE (15)

YES (If yes, complete EXPECTED SUBMISSION DATE)

NO

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-space typewritten lines) (16)

On March 19, 1997, with Unit 1 in mode 6, it was discovered that Farley Nuclear Plant (FNP) had been operated in a condition prohibited by Technical Specifications (TS) in that TS 3.0.4 was not met on March 15, 1997, when Unit 1 entered mode 2 during a unit shutdown without meeting the Source Range surveillance requirements (SR) of TS 4.3.1.1 for functional testing. In addition, TS 3.0.4 was not met when Unit 1 entered mode 3 without meeting the requirement of TS 4.3.1.1 for a channel check. Subsequently, during a review of TS SR required prior to mode changes during plant shutdowns, performed as part of the corrective action for LER 97-003-00 (Shared), it was discovered, on April 8, 1997, that the TS 4.3.1.1 SR for the Power Range high flux low setpoint bistable calibration had not been met prior to Unit 1 entering mode 2 on March 15, 1997. This resulted in Unit 1 entering TS 3.0.3 for approximately 7 minutes until the unit entered mode 3. Although not specifically identified in this LER, the failure to meet TS 4.3.1.1 SR during unit shutdowns have resulted in previous occurrences where Units 1 and 2 have operated in a condition prohibited by TS.

The cause of these events was cognitive personnel error. Failure to meet the TS 4.3.1.1 Source Range functional test requirement resulted from inadequate test procedures, and failure to meet the channel check requirement was due to a failure to identify an inconsistency existing within TS. Specifically, the channel check cannot be performed until the Source Ranges are energized which, due to plant design, does not occur until after mode 3 entry during a shutdown. Failure to meet TS 4.3.1.1 Power Range high flux low setpoint calibration resulted from a failure to ensure the SR for mode changes during a shutdown were incorporated into the procedure. Applicable procedures will be revised. Lessons learned from these events will be provided to the appropriate personnel.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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-8 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.

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

Plant and System Identification

Westinghouse -- Pressurized Water Reactor

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

Description of Event

As a result of the review of FNP's Improved Technical Specifications (ITS) submittal and, as part of the corrective action for LER 97-003-00 (Shared), the review of Technical Specifications (TS) surveillance requirements for mode changes during shutdown, the following occurrences in which FNP had operated in a condition prohibited by TS were discovered.

During the ITS submittal review, on March 19, 1997, with Unit 1 in mode 6 at approximately 85 degrees reactor coolant system (RCS) temperature and 0 psig RCS pressure, it was discovered that Farley Nuclear Plant (FNP) had been operated in a condition prohibited by TS. TS 3.0.4 specifies that entry into an operational mode or other specified condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the Action requirements. Table 4.3-1 Functional Unit 6 for TS 4.3.1.1 Reactor Trip System Instrumentation [JC] - Source Range, Nuclear Flux [IG] specifies that a channel functional test shall be performed quarterly for modes 2, 3, 4, 5, and with reactor trip breakers closed and the control rod drive system capable of rod withdrawal. Table 4.3-1 also specifies that a channel check shall be performed at least once per 12 hours below P-6 interlock (10E-10 Amps in the Intermediate Range). Table 3.3-1 Functional Unit 6 B for TS 3.3.1 Reactor Trip System Instrumentation - Source Range, Nuclear Flux - Shutdown specifies that a minimum of one channel (there are two Source Range, Neutron Flux channels, N-31 and N-32) shall be operable with indication only for modes 3, 4 and 5.

However, at 0030, on March 15, 1997, TS 3.0.4 was not met when Unit 1 entered mode 2, during a unit shutdown, without performing the required channel functional test of TS 4.3.1.1. Subsequently on March 18, 1997, with the plant in mode 5, with the RCS at approximately 100 degrees and 0 psig, the requirement of TS 4.3.1.1 was met when the N-32 functional test was performed satisfactorily. In addition, at 0037, on March 15, 1997, TS 3.0.4 was not met when Unit 1 entered mode 3, during the unit shutdown, without performing the required channel check of TS 4.3.1.1. A boration to cold shutdown was commenced at 0045 and adequate shutdown margin was verified approximately two hours later. The boration met the requirement of the action statement of Table 3.3-1; however, it was not recognized at the time. A subsequent evaluation has determined that Unit 1 did have adequate shutdown margin when mode 3 was entered. The TS 4.3.1.6 channel check cannot be performed until the Source Ranges are energized which, due to plant design, does not occur until

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Joseph M. Farley Nuclear Plant - Unit 1		<table border="1"><tr><th>YEAR</th><th>SEQUENTIAL YEAR</th><th>REVISION NUMBER</th></tr><tr><td>97</td><td>- 005</td><td>- 00</td></tr></table>	YEAR	SEQUENTIAL YEAR	REVISION NUMBER	97	- 005	- 00	<table border="1"><tr><td>3</td><td>OF 6</td></tr></table>	3	OF 6
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TEXT (If more space is required, use additional NRC Form 366) (17)

after mode 3 entry during a shutdown. The unit operating procedure specifies verification of Source Range energization below the P-6 interlock, which was completed as required. This provided Source Range indication in the control room. Although not specifically identified in this LER, the failure to meet the TS 4.3.1.1 surveillance requirements has resulted in previous occurrences where Units 1 and 2 have not met TS 3.0.4 during a unit shutdown.

During the review of TS surveillance requirements for mode changes during shutdowns, on April 8, 1997, with Unit 1 at approximately 85 degrees RCS temperature and defueled, it was discovered that FNP had operated in a condition prohibited by TS. Table 3.3-1 Functional Unit 2.B for TS 3.3.1 Reactor Trip System Instrumentation - Power Range, Neutron Flux [IG] Low specifies that a minimum of three channels (there are four Power Range channels, N-41, N-42, N-43 and N-44) shall be operable for mode 2. However, at 0030 on March 15, 1997, Unit 1 entered mode 2 without performing the surveillance requirement for the high flux low setpoint bistable as required by Table 4.3-1 Functional Unit 2.B for TS 4.3.1.1. Since the channel calibration tests for the high flux low setpoint trip were not performed as required, all four Power Range low setpoint trips were considered inoperable during mode 2, which resulted in Unit 1 entering TS 3.0.3 for approximately 7 minutes until the unit entered mode 3 at 0037. Although not specifically identified in this LER, the failure to meet Table 4.3-1 Power Range surveillance requirement for the high flux low setpoint bistables has resulted in previous occurrences where Units 1 and 2 have entered TS 3.0.3 during a unit shutdown.

Cause of Event

The cause of these events was cognitive personnel error.

Failure to meet TS Table 4.3-1 Functional Unit 6 functional test requirement resulted from inadequate test procedures, and failure to meet the channel check requirement was due to a failure to identify an inconsistency existing within TS.

Failure to meet TS Table 4.3-1 Functional Unit 2.B calibration resulted from a failure to ensure the surveillance requirements for mode changes during a shutdown were incorporated into plant procedures. The Power Range surveillance test procedures test both the high and low setpoint trips. The applicable section of these procedures for testing the low setpoint trip are not required to be performed if the plant is in mode 1. Due to additional startup surveillance requirements, a functional surveillance of the low setpoint trip is verified prior to startup. However, there was no procedural requirement to ensure performance of the low setpoint trip if the unit was scheduled to be shutdown.

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Therefore, when the surveillance test was last performed prior to the Unit 1 shutdown, only the high setpoint trip was tested since the unit was in mode 1.

Safety Assessment

The Bases for TS section 2.2.1, Reactor Trip System Instrumentation Setpoints, states that the Intermediate and Source Range, Nuclear Flux reactor trips provide reactor core protection during reactor startup. No credit was taken for operation of the trips associated with either the Intermediate or Source Range channels in the accident analyses; however, their functional capability at the specified trip settings is required by this specification to enhance the overall reliability of the Reactor Protection System.

The Table 3.3-1 Functional Unit 6.B mode 3 requirement for the Source Range, Nuclear Flux is indication only. Verification of Source Range energization and indication was completed as required by procedure. Visual and audible Source Range indications are available in the control room. Operating procedures require monitoring and recording Source Range indications during subcritical conditions and any discrepancy between the two Source Ranges would be observed by the operators. A boration to cold shutdown was commenced at 0045, and adequate shutdown margin was verified approximately two hours later. The boration met the requirement of the action statement of Table 3.3-1 Functional Unit 6.B for TS 3.3.1, although it was not recognized at the time. A subsequent evaluation has determined that Unit 1 did have adequate shutdown margin when mode 3 was entered. In addition, the unit was being shutdown which is consistent with the TS action ultimately required for a failed surveillance test and inoperable equipment.

For the Power Range, Neutron Flux Instrumentation, all surveillance was current except for the high flux low setpoint reactor trip bistables. Had an event occurred requiring operation of the Power Range low setpoint trips, the Intermediate Range, Nuclear Flux trip would have been available. The basis for the Intermediate Range trip is to provide backup protection to the low setpoint trip of the Power Range, Neutron Flux. In addition, only 2 out of 4 channels greater than the setpoint are required for a trip, and if a failure of one channel had occurred, the other three channels would have been available to provide a low power setpoint trip since no known common mode failure exists.

Based on the above, no safety concerns exist.

The health and safety of the public were not affected.

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Corrective Action

The applicable procedure will be revised to ensure the Table 4.3-1 Functional Unit 6 (Source Range, Neutron Flux) functional test for TS 4.3.1.1 is performed quarterly.

Currently, the Final Safety Analysis Report (FSAR) addresses the method of calibration of the Power Range. Performing the high flux low setpoint bistable calibration as required by Table 4.3-1 Functional Unit 2.B would be in conflict with the FSAR. A change will be initiated to the FSAR to allow performing the high flux low setpoint bistable calibration in mode 1 in order to ensure the TS 4.3.1.1 power range low setpoint surveillance requirements are met during unit shutdowns.

Lessons learned from these events will be provided to the appropriate personnel.

The above corrective actions will be completed by May 1, 1997.

Additional Information

Southern Nuclear Operating Company (SNC) has discussed the inconsistency in Technical Specifications with Nuclear Reactor Regulation, and SNC is currently determining a resolution to the issue.

Implementation of ITS will delete the requirement to perform the Power Range high flux low setpoint surveillance prior to entering mode 2 during a unit shutdown.

The following LERs were due to personnel error resulting in failure to incorporate TS surveillance requirements into plant procedures:

LER 97-003-00 (Shared) - Failure to Comply with Technical Specifications 4.5.3.2 and 3.5.2;

LER 96-004-00 (Shared) - Surveillance Requirements Not Met For Manual Safety Injection Input Into the Reactor Trip System;

LER 96-002-00 (Shared) - Technical Specification Surveillance Requirements Not Met And Common-Cause Failure Identified;

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LER 96-002-00 (Unit 2) - Misapplication of Technical Specification 4.4.6 Requirements Regarding F*;

LER 93-002-00 (Shared) - Missed Technical Specification Surveillance on the TDAFWP; and

LER 90-002-00 (Shared) - Surveillance Not Performed Due To Inadequate Procedural Guidance.