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June 23, 2005

Docket No.: 50-348

NL-05-1061

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Joseph M. Farley Nuclear Plant – Unit 1
Licensee Event Report 2005-001-00
Technical Specification 3.3.2.C Violation due to
Solid State Protection System Card Failure Troubleshooting

Ladies and Gentlemen:

Joseph M. Farley Nuclear Plant – Licensee Event Report (LER) No. 2005-001-00 is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B).

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

A handwritten signature in black ink, appearing to read "L. M. Stinson".

L. M. Stinson

LMS/was/sdl

Enclosure: Licensee Event Report 2005-001-00

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser, Executive Vice President
Mr. J. R. Johnson, General Manager – Plant Farley
RTYPE: CFA04.054; LC# 14291

U. S. Nuclear Regulatory Commission
Dr. W. D. Travers, Regional Administrator
Mr. R. E. Martin, NRR Project Manager – Farley
Mr. C. A. Patterson, Senior Resident Inspector – Farley

Handwritten initials "JE22" in black ink, located in the bottom right corner of the page.

LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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.

1. FACILITY NAME Joseph M. Farley Nuclear Plant – Unit 1	2. DOCKET NUMBER 05000348	3. PAGE 1 OF 4
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4. TITLE
Technical Specification 3.3.2.C Violation due to Solid State Protection System Card Failure Troubleshooting

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
04	28	2005	2005	- 001 -	00	06	23	2005		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)							
10. POWER LEVEL 100	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)				
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)				
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)				
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)				
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)				
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)				
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)					
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER					
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A					

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME J. R. Johnson, General Manager Nuclear Plant	TELEPHONE NUMBER (Include Area Code) 334-899-5156
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
B	JC	RLY	W120	Y					

14. SUPPLEMENTAL REPORT EXPECTED				15. EXPECTED SUBMISSION DATE		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)				X NO				

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

On May 4, 2005, with the unit operating at 100% power, it was determined that Unit 1 had operated in a condition prohibited by Technical Specification (TS) 3.3.2.C from 16:22 on April 28, 2005 until 03:41 on April 29, 2005 in that a Solid State Protection System (SSPS)[JC] logic circuit for Main Steam Line (MSL) differential pressure Safety Injection actuation had failed at 04:22 on April 28, 2005, and the failed logic train Limiting Condition for Operation (LCO) Required Action Statement (RAS) was not applied. At 04:22 on April 28, 2005, a trip status indicating light, main control board alarm, and associated computer alarm actuated. TS 3.3.2.D was entered based on a suspected failed channel. Historically, this symptom set has been due to a failed channel. Troubleshooting determined at 01:34 on April 29, 2005, that the failure was not a failed channel but a failed A Train Engineered Safety Features Actuation logic circuit. The failed circuit was repaired, tested, and returned to service at 03:41 on April 29, 2005.

The circuit failure event was caused by the failure of a new card installed in October 2004. The operation in a condition prohibited by TS was caused by the time required to troubleshoot the failure. The failed card has been returned to the vendor for analysis. Preplanned systematic diagnostic guidance will be developed and provided to planning personnel that will include lessons learned from this event by August 15, 2005.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2) NUMBER	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Joseph M. Farley Nuclear Plant Unit - 1	05000348	2005	- 001	- 000	2 OF 4

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

Westinghouse -- Pressurized Water Reactor
 Energy Industry Identification Codes are identified in the text as [XX]

Description of Event

On May 4, 2005, with the unit operating at 100% power, it was determined that Unit 1 had operated in a condition prohibited by TS 3.3.2.C from 16:22 on April 28, 2005 until 03:41 on April 29, 2005 in that a SSPS[JC] logic circuit for Main Steam Line (MSL) differential pressure Safety Injection actuation logic had failed at 04:22 on April 28, 2005, and the appropriate failed logic train LCO RAS was not applied until 01:34 on April 29, 2005.

At 04:22 on April 28, 2005, Main Control Board Annunciator 1B SG Steam Line High Delta P Alert and associated computer alarm came in and trip status indicating light PB485B2 was lit. Control Room personnel addressed all Annunciator Response Procedure (ARP) actions. TS 3.3.2.D was entered based on a suspected failed channel. Historically, this symptom set has been due to a failed channel. The RAS for TS 3.3.2.D for a failed process instrumentation channel requires the channel to be placed in trip condition within 6 hours. The channel was placed in trip at 08:54 on April 28, 2005. TS 3.3.2.C for inoperable Engineered Safety Feature Actuation System (ESFAS) logic was not applied at this time. This TS requires restoration to operability within 6 hours or unit shutdown within 12 hours.

Instrumentation and Controls (I&C) personnel subsequently determined that the channel bistable was functioning properly at 10:30 on April 28, 2005 and the channel was taken out of trip, but the annunciator, trip status indicating light, and computer point remained in the alarm condition. The work order was replanned to check the SSPS. A Multiplexer Test Switch was taken to the "A+B" position and the trip status light began flashing, indicating a potential problem either in one train of SSPS, the multiplexer, or an input relay. Operations directed Maintenance to place the channel back in trip at 15:18 on April 28, 2005 per TS 3.3.2.D.

Following additional planning and troubleshooting, the multiplexer and the input relays were verified to be functioning properly. This indicated the problem was in the SSPS logic circuits. At 01:34 on April 29, 2005, the RAS for TS 3.3.2.D was exited and the RAS for TS 3.3.2.C was entered.

The failed card was identified as a Universal Logic Board (ULB) in A Train SSPS. The failed card was replaced, SSPS surveillance testing was performed satisfactorily, and TS 3.3.2.C was exited at 03:41 on April 29, 2005.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		OF	
Joseph M. Farley Nuclear Plant Unit - 1	05000348	2005	- 001	- 000	3	OF	4

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

Cause of Event

The equipment failure described in this event was caused by a failed NAND gate on the affected Universal Logic Board. The degraded logic NAND gate caused the associated multiplexing NAND gate to be low, resulting in the annunciator, trip status indicating light, and computer alarm.

The failed card was a new card that had been installed in October 2004 as part of the plant preventive maintenance program. The card has been returned to the vendor for investigation of the cause of the failure.

An LER is required because of firm evidence that a condition existed for a time longer than permitted by Technical Specification 3.3.2.C, i.e. the A Train SSPS Steam Line Differential Pressure Safety Injection actuation logic had failed at 04:22 on April 28, 2005 and this failure was not identified until 01:34 on April 29, 2005.

The time required to identify the failed actuation logic was extended due to insufficient troubleshooting guidance or preplanned work sequences. Preplanned diagnostic steps, if carried out prior to placing the suspect channel in test, would have permitted earlier diagnosis and repair of the actual problem.

Safety Assessment

The health and safety of the public were unaffected by this event.

The B Train of SSPS and all equipment actuated by B Train SSPS remained operable throughout this event. Other than the one failed logic circuit, all actuation functions of A Train SSPS were unaffected by this event.

Since only one actuation signal within only one train of SSPS was affected, this event does not represent a Safety System Functional Failure.

LICENSEE EVENT REPORT (LER)

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		OF			
Joseph M. Farley Nuclear Plant Unit - 1	05000348	2005	-	001	-	000	4	OF	4

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

Corrective Action

The failed card was replaced and has been returned to the vendor for analysis.

Preplanned systematic diagnostic guidance will be developed and provided to planning personnel that will include lessons learned from this event by August 15, 2005.

Additional Information

The following LERs have been submitted in the past two years on Technical Specification violations:

LER 2003-002-00 Unit 1, Reactor Vessel Head Set in Place with Technical Specification 3.4.12 Not Met.

LER 2004-001-00 Unit 2, Technical Specification 3.7.8 Violation Due to Operation with One Train of Service Water Inoperable

LER 2004-002-00 Unit 2, Plant Entered Mode 3 with One Train of Component Cooling Water Inoperable

LER 2004-003-00 Technical Specification 3.0.4 Violation Due to Turbine Driven Auxiliary Feedwater Pump Inoperable.