Southern Nuclear

Charles R. Pierce
Regulatory Affairs Director

40 Inverness Center Parkway
Birmingham, Al 35242
205.992.7872 tel
205.992.7601 fax

crpierce@southernco.com

JAN 13 2017

Docket Nos.: 50-348

NL-17-0004

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

Joseph M. Farley Nuclear Plant – Unit 1
Licensee Event Report 2016-007-00
Plant Shutdown Required by Technical Specifications due to Inoperable Steam Flow Transmitters

Ladies and Gentlemen:

This Licensee Event Report is being submitted pursuant to the requirements of the Code of Federal Regulations, 10 CFR 50.73(a)(2)(i)(A) and 10 CFR 50.73(a)(2)(v)(D) for Unit 1.

This letter contains no NRC commitments. If you have any questions regarding the submittal, please contact Ms. Julie Collier at (334) 814-4639.

Respectively submitted,

C. R. Pierce

C. R. Pierce
Regulatory Affairs Director

CRP/jac/lac

Enclosure: Unit 1 Licensee Event Report 2016-007-00

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. M. D. Meier, Vice President – Regulatory Affairs
Mr. D. R. Madison, Vice President – Fleet Operations
Mr. B. J. Adams, Vice President – Engineering
Ms. C. A. Gayheart, Vice President – Farley
Ms. B. L. Taylor, Regulatory Affairs Manager – Farley
Mr. K. D. Miller, Operating Experience Coordinator - Farley
RTYPE: CFA04.054

U. S. Nuclear Regulatory Commission
Ms. C. Haney, Regional Administrator
Mr. S. A. Williams, NRR Project Manager - Farley
Mr. P. K. Niebaum, Senior Resident Inspector - Farley

Joseph M. Farley Nuclear Plant – Unit 1

Unit 1 Licensee Event Report 2016-007-00

Plant Shutdown Required by Technical Specifications due to Inoperable Steam Flow Transmitters

NRC FORM 366 (11-2015) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2018

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET NUMBER		3. PAGE
Joseph M. Farley Nuclear Plant, Unit 1	05000 -	348	1 of 3

4. TITLE

Plant Shutdown Required by Technical Specifications due to Inoperable Steam Flow Transmitters

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
11	17	2016	2016	- 007 -	00	1	13	2017	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE

1

10. POWER LEVEL

99

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
☐ 20.2203(a)(2)(v)	☒ 50.73(a)(2)(i)(A)	☒ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
	☐ 50.73(a)(2)(i)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Julie Collier, Licensing Engineer	334-814-4639

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
x	JE	FT	F180	Y					

14. SUPPLEMENTAL REPORT EXPECTED

☒ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☐ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR
5	19	2017

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

On 11/17/2016 at 1859 with Unit 1 in Mode 1 at 99 percent power, the plant initiated a shutdown in accordance with Limiting Condition for Operation (LCO) 3.0.3 for having no operable steam flow channels for the C Steam Generator (SG). The two steam flow channels did not meet acceptance criteria for Technical Specification (TS) 3.3.2. The shutdown was completed and the plant entered Mode 3 as required by LCO 3.0.3. This is reportable as a plant shutdown required by Technical Specifications in accordance with 10 CFR 50.73(a)(2)(i)(A). This is also reportable as an event or condition that could have prevented fulfillment of a Safety Function needed to mitigate the consequences of an accident, in accordance with 10 CFR 50.73(a)(2)(v)(D).

This condition was discovered during an engineering verification of beginning of cycle full power scaling values for steam flow normalization. New scaling data was calculated and the channels were rescaled and restored to operable status. The cause of this event has not yet been determined. A supplemental LER will be submitted upon the completion of the causal analysis, and the cause and corrective actions will be provided at that time.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Joseph M. Farley Nuclear Plant, Unit 1	05000- 348	2016	- 007 -	00

NARRATIVE

A. PLANT AND SYSTEM IDENTIFICATION

Westinghouse - Pressurized Water Reactor

B. DESCRIPTION OF EVENT

On 11/17/2016 at 1859 with Unit 1 in Mode 1 at 99 percent power, the plant initiated a shutdown in accordance with Limiting Condition for Operation (LCO) 3.0.3 for having no operable steam flow channels [FT] for the C Steam Generator [SG]. The two steam flow channels on the 1C SG did not meet acceptance criteria for Technical Specification (TS) 3.3.2.

During full power engineering verification of beginning of cycle full power scaling values for steam flow normalization it was discovered that three steam flow transmitters were outside the acceptance criteria required by site procedures. The variance was in the non-conservative direction and would allow steam flow to exceed the TS 3.3.2 engineered safety features actuation system [JE] trip setpoint prior to a main steam isolation occurring. TS 3.3.2 requires two steam flow channels per steam line. Two inoperable steam flow transmitters on the 1C SG caused the plant to enter LCO 3.0.3. The shutdown was completed and the plant entered Mode 3 as required by LCO 3.0.3.

C. UNIT STATUS AT TIME OF EVENT

Mode 1, 99 percent power

D. CAUSE OF EVENT

The cause of this event has not yet been determined. A supplemental LER will be submitted upon the completion of causal analysis, and the cause will be provided at that time.

E. REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This event is reportable as the completion of a plant shutdown required by Technical Specifications in accordance with 10 CFR 50.73(a)(2)(i)(A).

Steam flow channels perform a safety function by providing a high steam flow input to main steam line isolation logic circuitry. Each of the three steam generators is equipped with two redundant steam flow transmitters. A high steam flow signal from one of the two steam flow transmitters on two of the three steam generators coincident with a low-low reactor coolant system (RCS) average temperature signal from two of three RCS temperature channels generates a main steam line isolation signal that causes closure of all main steam line isolation valves. This signal is to mitigate the consequences of a main steam line break accident and the resulting rapid depressurization. Having both of the steam flow channels inoperable for the 1C SG caused a loss of safety function for this signal. Therefore this is also reportable as an event or condition that could have prevented fulfillment of a Safety Function needed to mitigate the consequences of an accident, in accordance with 10 CFR 50.73(a)(2)(v)(D).

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Joseph M. Farley Nuclear Plant, Unit 1	05000- 348	2016	- 007 -	00

NARRATIVE

Two additional means of providing a main steam line isolation in the event of a steam line break were available. One is the low-steam-pressure main steam line isolation signal, and the other is the containment pressure signal. These functions remained fully capable of performing the main steam line isolation function during the periods that the steam flow channels were known to be out of tolerance.

Additional means of providing the necessary protection against a steam pipe rupture were maintained. One of these was safety injection (SI) system actuation from low pressurizer pressure signals, high steam line differential pressure, low main steam line pressure, or high containment pressure signals. Another means available was the overpower reactor trips and the reactor trip occurring in conjunction with receipt of the SI signal. A third was the redundant isolation of the main feedwater lines to prevent sustained high feedwater flow which would cause additional cooldown.

The loss of the main steam line isolation from the high steam flow and low-low RCS average temperature signal was determined to be of low risk due to redundant trips for mitigation of a steam line break remaining operable.

F. CORRECTIVE ACTION

The steam flow transmitters were restored to operable status. New scaling data was calculated and the channels were rescaled. Further corrective actions will be determined upon completion of the causal analysis and will be scheduled to ensure timeliness of implementation before the next refueling outage.

G. ADDITIONAL INFORMATION

1) Previous Similar Events:

Joseph M. Farley Unit 2 LER 2013-001-00 was submitted on July 26, 2013 to report two instances of a condition prohibited by Technical Specifications due to the untimely renormalization of Steam Flow Transmitter FT-494 at the beginning of two operating cycles.

Joseph M. Farley Unit 1 LER 2013-003-00 was submitted on January 3, 2014 to report a condition prohibited by Technical Specifications due to the untimely renormalization of Steam Flow Transmitter FT-495 at the beginning of an operating cycle.

Joseph M. Farley Units 1 and 2 LER 2014-003-00 was submitted on June 2, 2014 for scaling errors that resulted in inoperable steam flow channels for durations longer than allowed by Technical Specifications.

2) Commitment Information: This report does not create any licensing commitments