Thomas A. Lynch
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July 26, 2013

Docket Nos.: 50-364

NL-13-1514

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

Joseph M. Farley Nuclear Plant – Unit 2
Licensee Event Report 2013-001-00
2C Steam Generator Flow Transmitter Inoperable Longer Than Allowed By Technical Specifications

Ladies and Gentlemen:

In accordance with the requirements of 10CFR50.73(a)(2)(i)(B) Southern Nuclear Operating Company hereby submits the enclosed Licensee Event Report. This letter contains no NRC commitments. If you have any questions, please contact Bill Arens at (334) 814-4765.

Sincerely,

T. A. Lynch
Vice President – Farley

TAL/WNA

Enclosure: Unit 2 Licensee Event Report 2013-001-00
cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. B. L. Ivey, Vice President – Regulatory Affairs
Mr. B. J. Adams, Vice President – Fleet Operations
Mr. C. R. Pierce, Director – Regulatory Affairs
Mr. J. G. Horn, Regulatory Affairs Manager - Farley
RTYPE: CFA04.054

U. S. Nuclear Regulatory Commission
Mr. V. M. McCree, Regional Administrator
Mr. R. E. Martin, NRR Project Manager - Farley
Mr. P. K. Niebaum, Senior Resident - Farley

Joseph M. Farley Nuclear Plant – Unit 2

NL-13-1514

2C Steam Generator Flow Transmitter Inoperable Longer Than Allowed By Technical Specifications

Unit 2 Licensee Event Report 2013-001-00

NRC FORM 366 (10-2010) | U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 | EXPIRES: 10/31/2013

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 Section (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
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4. TITLE

2C Steam Generator Flow Transmitter Inoperable Longer Than Allowed by Technical Specifications

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
05	29	2013	2013	- 001 -	00	07	26	2013	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE

1

10. POWER LEVEL

100

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

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
J.M. Farley Nuclear Plant, William N. Arens – Licensing Supervisor	(334) 814-4765

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	B080	Y					

14. SUPPLEMENTAL REPORT EXPECTED

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

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR
09	13	2013

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

On May 29, 2013, with Unit 2 operating in Mode 1 at 100% power, Engineering personnel performing a review of Unit 2 beginning-of-cycle power ascension data identified that 2C Steam Generator Steam Flow Transmitter FT-494 did not meet Technical Specification calibration accuracy requirements. Based on this information the steam flow instrument was declared inoperable and the required actions of the appropriate Technical Specification were performed. However, since the data utilized in the engineering review was obtained on May 14, 2013, it is known that FT-494 has been inoperable since May 14, 2013. Consequently, the time limits of the applicable Technical Specification required action were not met. This represents a condition prohibited by Technical Specifications and is reportable under 10CFR50.73(a)(2)(i)(B). Steam flow transmitter FT-494 was re-calibrated and returned to service on June 1, 2013. Investigation into the cause of the FT-494 inaccuracy has not been completed. This out-of-tolerance condition of FT-494 also occurred at the beginning of the previous fuel cycle.

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

Description of Event

Farley Nuclear Plant steam flow transmitters are calibrated each refueling outage utilizing instrument data from the previous operating cycle. Following the initial post-refueling ascension in power the steam flow transmitters are normalized utilizing beginning-of-cycle data per procedure FNP-2-ETP-4462 (Power Ascension Following a Unit Refueling Outage).

On May 29, 2013 at 1339, with Unit 2 operating in Mode 1 at 100% power, Engineering personnel performing beginning-of-cycle normalization calculations determined that 2C Steam Generator Steam Flow Transmitter FT-494 [FT] was outside of Technical Specification accuracy requirements. Technical Specifications require that the high steam flow bistable actuates at less than 110.3% of full steam flow. However, the power ascension data indicated that the actual high steam flow setpoint for FT-494 was 111.38% of full steam flow.

As a result of the determination by Engineering, FT-494 was declared inoperable and the Technical Specification 3.3.2 (Engineered Safety Feature Actuation System Instrumentation) required action for the inoperable channel was entered. The effected bistable was placed in the tripped condition within the required 72 hours from the declaration of inoperability. FT-494 was subsequently re-calibrated and the high steam flow bistable was verified to trip at a setpoint less than the Technical Specification limit of 110.3% of full steam flow. FT-494 was returned to operable status at 1642 on June 1, 2013. FT-494 is a model number 764 flow transmitter manufactured by ITT Barton.

The data utilized in the Engineering determination was obtained on May 14, 2013. For the purpose of determining reportability, this date is considered the point of discovery. Consequently, the completion times associated with the applicable Technical Specification required actions were not met. This represents an operation or condition prohibited by Technical Specifications and is reportable under 10CFR50.73(a)(2)(i)(B).

The Engineering review also identified that a similar condition existed at the beginning of the previous fuel cycle. At 1311 on January 4, 2012, with Unit 2 operating in Mode 1 at 100% power, Engineering review of beginning-of-cycle instrument data identified that the FT-494 high steam flow bistable setpoint was 111.36% of full steam flow which is above the maximum Technical Specification allowable setpoint of 110.3% of full steam flow. This resulted in a declaration of inoperability for FT-494. FT-494 was recalibrated and returned to service at 0935 on January 7, 2012 which is within the time requirement of the applicable Technical Specification required action based on the time of declaration of inoperability. The data utilized for this review was obtained on November 29, 2011, which is the discovery time for the purpose of determining reportability. Based on this discovery time, the completion time associated with the applicable Technical Specification required action was not met. This also represents an Operation or Condition Prohibited by Technical Specifications and is reportable under

10CFR50.73(a)(2)(i)(B). Due to an oversight by the plant staff this reportability requirement was not recognized and the required Licensee Event Report was not submitted.

Cause of Event

Causal analysis of the out-of-tolerance condition identified on January 4, 2012 was performed utilizing the Apparent Cause Determination process. This causal analysis determined that the out of tolerance condition could be due to transmitter issues such as the equalizing valve leak-by or partial clogging of the flow transmitter sensing lines. This causal analysis included a review of associated procedures and work order packages for calculation or implementation errors with no errors being identified. As a result of this analysis, actions were put in place to monitor the performance of FT-494 over a six-month period, collect and review data to resolve possible sensing line blockage, and to investigate the condition of the transmitter equalizing valve during the Spring 2013 Unit 2 refueling outage. The causal analysis also specified performance of a re-evaluation of the event causes following the completion of the above mentioned actions. This re-analysis is being completed with the Enhanced Apparent Cause Determination for the May 29, 2013 event.

The out-of-tolerance condition identified on May 29, 2013, is being evaluated using the Enhanced Apparent Cause Determination process. This cause determination is being conducted in conjunction with the re-analysis of the previous causal determination and is scheduled for completion on July 26, 2013. This Licensee Event Report will be supplemented upon the completion of these causal analyses.

Safety Assessment

Steam Flow Transmitter FT-494 performs 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.

During the time periods of the FT-494 out-of-tolerance condition, the redundant steam flow transmitter remained capable of performing its safety function. Therefore, sufficient inputs to the main steam line isolation circuitry were available to actuate a main steam line isolation at the proper setpoint. At no time was there a loss of safety function.

A diverse means of providing a main steam line isolation in the event of a steam line break is the low-steam-pressure main steam line isolation signal. This function remained fully capable of performing the main steam line isolation function during the periods that FT-494 was known to be out of tolerance.

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NARRATIVE

Based on the above considerations and on the FT-494 setpoint being slightly above allowable tolerance but otherwise operable this condition is considered to have low safety significance.

Corrective Action

FT-494 was rescaled per work order SNC 459224 and returned to service at 1642 on June 1, 2013. Further corrective actions for the FT-494 high steam flow setpoint being above the allowable value have yet to be determined. Upon completion of the causal analysis, this Licensee Event Report will be supplemented by September 13, 2013.

The failure of the plant staff to identify the event that occurred on January 4, 2012 as requiring a Licensee Event Report has been entered in the plant corrective action program as condition report 675409.

Additional Information

A review of previously submitted Licensee Event Reports identified no similar issues being reported within the previous three years. There have been three other instances in the previous three years of steam flow transmitters requiring re-normalization following the evaluation of beginning-of-cycle data. In all of these cases, the high steam flow setpoints remained within the accuracy requirements of Technical Specifications and operability of the steam flow channel was not affected. These occurrences are documented in condition reports 55575 (for Unit 1 FT-485), 485511 (for Unit 1 FT-484), and 646824 (for Unit 2 FT-485).