August 2, 2012

L-2012-308
10 CFR 50.73

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

Re: St. Lucie Unit 1
Docket No. 50-335
Reportable Event: 2012-006
Date of Event: June 5, 2012

Installation Wiring Error in the 1A Auxiliary Feedwater Flow Transmitter

The attached Licensee Event Report 2012-006 is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

Very truly yours,

Robert J. Hughes FOR JJ

Joseph N. Jensen
Site Vice President
St. Lucie Plant

JNJ/rcs
Attachment

IE22
NRR

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

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
St. Lucie Unit 1	05000335	1 OF 3

4. TITLE
Installation Wiring Error in the 1A Auxiliary Feedwater Flow Transmitter

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
									NA	
06	05	2012	2012	- 006 -	00	08	02	2012	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

NAME	TELEPHONE NUMBER (Include Area Code)
Richard Sciscente - Principal Engineer, Licensing	772-467-7156

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURE	REPORTABLE TO EPIX
D	BA	FT	R335	YES					

14. SUPPLEMENTAL REPORT EXPECTED

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

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On June 5, 2012 at 1314 EDT, St. Lucie Unit 1 was in Mode 1 at 100% reactor power and performing monthly flow testing of 1A auxiliary feed pump when the 1A auxiliary feed pump flow transmitter, FT-09-2A, was discovered to be inoperable. Upon troubleshooting, it was discovered that the leads were wired incorrectly on the square root extractor, and the indication was non-functional. The square root extractor had been replaced with a different design on May 9, 2012, and declared operable on May 10, 2012, while the flow transmitter was actually inoperable. This condition unknowingly existed for greater than the allowable Technical Specification action time of 72 hours per Technical Specification 3.3.3.8 and is reportable pursuant to 10 CFR 50.73(a)(2)(i)(B). This event had no significant safety consequence since an auxiliary feedwater actuation had not occurred while the flow transmitter leads were wired incorrectly.

The wiring was corrected and tested to return the flow transmitter to operable status on June 5, 2012 at 2100 EDT.

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
St. Lucie Unit 1	05000335	2012	- 006	- 00	Page 2 of 3

NARRATIVE

Description of the Event

On June 5, 2012 at 1314 EDT, St. Lucie Unit 1 was in Mode 1 at 100% reactor power and performing monthly flow testing of 1A auxiliary feed pump when the 1A auxiliary feed pump flow transmitter, FT-09-2A, was discovered to be inoperable. Upon troubleshooting, it was discovered that the leads were wired incorrectly on the square root extractor, and the indication was non-functional. The square root extractor had been replaced with a different design on May 9, 2012, and declared operable on May 10, 2012, while the flow transmitter was actually inoperable. This condition unknowingly existed for greater than the allowable Technical Specification action time of 72 hours per Technical Specification 3.3.3.8.

Cause

A root cause evaluation determined that vague procedure guidance for post maintenance testing, inadequate vendor technical drawings and a previous event not captured in the corrective action program were causes and contributors to entering a 72 hour Technical Specification action statement greater than the allowable time.

Analysis of the Event

The root cause for returning the flow transmitter in an inoperable condition following maintenance was a failure to identify and correct the wiring error due to an incomplete procedure for the required post-maintenance testing (PMT).

Additional contributing causes led to the wiring error. The new square root extractor had a less than adequate item equivalency evaluation (IEE) that did not address potential wiring issues during installation, and work order instructions lacked the information needed to ensure the square root extractor would be installed correctly. The vendor technical manual for the new square root extractor provided a drawing with a call-out box that identified the terminals that needed to be wired to ensure the square root extractor performed its designed function. However, there was nothing in the work order or the drawing that directed personnel to utilize the information in the call-out box located at the bottom of the drawing.

Safety Significance

This event had no significant safety consequence since an auxiliary feedwater actuation had not occurred while the flow transmitter leads were wired incorrectly.

The auxiliary feedwater pump flow transmitter, FT-09-2A, which provides flow indication function, is not considered in the PRA model because its inoperability will not impact the respective auxiliary feedwater pump from performing its design function under accident conditions. Therefore, there is no risk impact associated with the reported inoperability of FT-09-2A.

This licensee event report is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition which was prohibited by the plant's Technical Specifications.

LICENSEE EVENT REPORT (LER)
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1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
St. Lucie Unit 1	05000335	2012	- 006	- 00	Page 3 of 3

NARRATIVE

Corrective Actions

The corrective actions listed below are entered into the site corrective action program. Any changes to the actions will be managed under the corrective action program.

1. The wiring was corrected and tested to return the flow transmitter to operable status on June 5, 2012 at 2100 EDT.
2. The Station will revise the post-maintenance test procedure to strengthen the guidance for the requirements and instructions for performing channel functional testing.
3. The Station will revise the vendor tech manual drawing for installation of these square root extractors to ensure end users refer to Detail A for guidance on landing leads to the correct terminals.

Similar Events

A similar event was identified and corrected in March 2009 when PMT and subsequent troubleshooting identified that a newly installed square root extractor was wired incorrectly. However, this information was not captured in a condition report or as internal operating experience.

Failed Component(s)

Rochester Instrument Systems model SC-1330 square root extractor

Manufacturer

Rochester Instrument Systems