L-2017-190
10 CFR § 50.73
November 7, 2017

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

Re: Turkey Point Unit 4
Docket No. 50-251
Licensee Event Report: 2017-001-00
Date of Event: September 10, 2017
Manual Reactor Trip Due to Lowering Steam Generator Level Caused by Loss of Flow Regulating Valve Positioner Control

The attached Licensee Event Report 05000251/2017-001-00 is submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A) due to actuations of the reactor protection and auxiliary feedwater systems.

If there are any questions, please call Mr. Mitchell Guth at 305-246-6698.

Sincerely,

Thomas Summers
Regional Vice President - Southern Region
Florida Power & Light Company

Attachment

cc: Regional Administrator, USNRC, Region II
Senior Resident Inspector, USNRC, Turkey Point Nuclear Plant

NRC FORM 366 (04-2017) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2020

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Turkey Point Unit 4	05000 251	1 OF 2

4. TITLE

Manual Reactor Trip Due to Lowering Steam Generator Level Caused by Loss of Flow Regulating Valve Positioner Control

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
										05000
9	10	2017	2017	001	00	11	7	2017	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
1	☐ 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)
10. POWER LEVEL	☐ 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)
88	☐ 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)*
Paul F. Czaya	(305) 247-7150

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

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO				

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

On September 10, 2017 at approximately 1855 hours, the Turkey Point Unit 4 reactor was manually tripped from 88% power due to lowering level in Steam Generator (SG) C. The reactor was stabilized in Mode 3. Auxiliary Feed Water actuated as expected on low level in SG C and was secured at approximately 1933 hours. At the time of the event, the Turkey Point site was experiencing high winds with rain associated with Hurricane Irma. The B and C Main Feedwater Regulating Valves (MFRV) had been in manual control when the C MFRV failed closed. The cause of the event was a degraded signal due to water intrusion into the C MFRV valve positioner hand selector switch enclosure resulting from a less than adequate design and installation. Corrective actions include modifications to the Unit 3 and 4 MFRV hand selector switch enclosures and enclosure penetrations, and repair of a failed component associated with the 4C MFRV. Additionally, the terminal/pull box specifications will be revised to improve direction for installation activities. Safety significance is very low because the unit responded as designed to the trip.

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Turkey Point Unit 4	05000-251	2017	001	00

NARRATIVE

DESCRIPTION OF THE EVENT

On September 10, 2017 at approximately 1855 hours, the Turkey Point Unit 4 reactor [AC, RCT] was manually tripped from 88% power due to lowering level in Steam Generator [SB, SG] C. The reactor was stabilized in Mode 3. Auxiliary Feed Water (AFW) [BA] actuated as expected on low level in SG C and was secured at approximately 1933 hours. At the time of the event, the Turkey Point site was experiencing high winds with rain associated with Hurricane Irma.

The Reactor Protection System (RPS) [JC], and AFW actuations were reported in accordance with 10 CFR 50.72 in Event Notification 52960 and are also reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A).

CAUSE OF THE EVENT

The direct cause of the event was a degraded signal due to water intrusion into the 4C Main Feedwater Regulating Valve (MFRV) [SJ, FCV] positioner hand selector switch enclosure. The root cause was a latent weakness in the installation of the enclosure. A contributing cause was a less than adequate design change that installed the enclosures.

ANALYSIS OF THE EVENT

The event was initiated by failure of the 4C MFRV. At the time of the event, level in the 4B and 4C SGs was being controlled manually due to positioner issues. The operator controlling SG levels noticed the 4C SG level was not responding as expected to controller inputs. The 4C SG level continued to lower even though the 4C MFRV and its associated bypass valve both were demanded full open. The reactor operator manually tripped the reactor as briefed at the 20% level in the 4C SG. Troubleshooting identified water intrusion in the 4B and 4C MFRV positioner selector switches (PSS). During troubleshooting, the 4C MFRV PSS was found to have a broken wire weakened by corrosion. The wire appears to have broken when a cover was removed during the troubleshooting.

ANALYSIS OF SAFETY SIGNIFICANCE

Safety significance is very low because the unit responded as designed to the trip.

CORRECTIVE ACTIONS

Corrective actions are contained in Condition Report 2224218 and include:

1. Modifications were completed on the Unit 3 and 4 MFRV hand selector switch enclosures and enclosure penetrations. The broken wire associated with the 4C MFRV was repaired. Other enclosures in safety significant systems were also included in the scope of work.
2. The terminal/pull box specifications will be revised to improve direction for installation of enclosures needing protection from water intrusion.

ADDITIONAL INFORMATION: EIIS Codes are shown in the format [IEEE system identifier, component function identifier, second component function identifier (if appropriate)].

FAILED COMPONENTS IDENTIFIED: None

PREVIOUS SIMILAR EVENTS: None