



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

November 29, 2022

Bob Coffey
Executive Vice President, Nuclear and Chief Nuclear Officer
Florida Power & Light Company
700 Universe Blvd.
Mail Stop: EX/JB
Juno Beach, FL 33408

**SUBJECT: TURKEY POINT – TRIENNIAL FIRE PROTECTION INSPECTION REPORT
05000250/2022010 AND 05000251/2022010**

Dear Bob Coffey:

On October 20, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Turkey Point and discussed the results of this inspection with Mr. Brian Stamp and other members of your staff. The results of this inspection are documented in the enclosed report.

Two findings of very low safety significance (Green) are documented in this report. Two of these findings involved violations of NRC requirements. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement; and the NRC Resident Inspector at Turkey Point.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; and the NRC Resident Inspector at Turkey Point.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,



Signed by McCoy, Gerald
on 11/29/22

Gerald J. McCoy, Chief
Engineering Br 2
Division of Reactor Safety

Docket Nos. 05000250 and 05000251
License Nos. DPR-31 and DPR-41

Enclosure:
As stated

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SUBJECT: TURKEY POINT – TRIENNIAL FIRE PROTECTION INSPECTION REPORT
05000250/2022010 AND 05000251/2022010 DATED NOVEMBER 29, 2022

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 05000250 and 05000251

License Numbers: DPR-31 and DPR-41

Report Numbers: 05000250/2022010 and 05000251/2022010

Enterprise Identifier: I-2022-010-0043

Licensee: Florida Power & Light Company

Facility: Turkey Point

Location: Florida City, FL

Inspection Dates: October 03, 2022 to October 21, 2022

Inspectors: L. Jones, Senior Reactor Inspector
J. Montgomery, Senior Reactor Inspector
M. Singletary, Reactor Inspector
D. Strickland, Reactor Inspector

Approved By: Gerald J. McCoy, Chief
Engineering Br 2
Division of Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee’s performance by conducting a triennial fire protection inspection at Turkey Point, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC’s program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

Failure to Follow Procedure for Diesel Driven Fire Pump Surveillance Results in Pump Runout			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000250,05000251/2022010-01 Open/Closed	[H.8] - Procedure Adherence	71111.21N. 05
A self-revealed Green finding and associated non-cited violation (NCV) of Turkey Point Units 3 and 4 Technical Specifications Section 6.8.1a was identified when the licensee failed to follow a procedure for fire pump surveillance.			

Failure to Adequately Evaluate a Surveillance Frequency Change to Fire Protection Program Equipment			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000250,05000251/2022010-02 Open/Closed	None (NPP)	71111.21N. 05
The inspectors identified a Green finding and associated NCV of Turkey Point Operating License Condition 3.D when the licensee failed to establish adequate test control for verifying functionality of the 4C Charging Pump Breaker normal/isolate transfer switches.			

Additional Tracking Items

None.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.21N.05 - Fire Protection Team Inspection (FPTI)

Structures, Systems, and Components (SSCs) Credited for Fire Prevention, Detection, Suppression, or Post-Fire Safe Shutdown Review (IP Section 03.01) (4 Samples)

The inspectors verified that components and/or systems will function as required to support the credited functions stated for each sample. Additional inspection considerations are located in the fire hazards analysis (FHA) or safe shutdown analysis (SSA).

- (1) Halon 1301 system in FA NN/FZ 108A (Units 3 and 4 A DC Equipment Room)
- (2) Very Early Warning Fire Detection System (VEWFDS) in FA U/FZ 67 (4160V Switchgear 4B Room)
- (3) Unit 3 125VDC Distribution System
- (4) Unit 4 Chemical Volume Control System

Fire Protection Program Administrative Controls (IP Section 03.02) (1 Sample)

The inspectors verified that the selected process is implemented in accordance with the licensee's current licensing basis, ensured that the licensee's FPP contains adequate procedures to implement the selected administrative control, and verified that the selected administrative control meets the requirements of all committed industry standards.

- (1) NFPA 805 Monitoring Program

Fire Protection Program Changes/Modifications (IP Section 03.03) (2 Samples)

The inspectors verified the following:

- a. Changes to the approved FPP do not constitute an adverse effect on the ability to safely shutdown.
- b. The adequacy of the design modification, if applicable.
- c. Assumptions and performance capability stated in the SSA have not been degraded through changes or modifications.
- d. The FPP documents, such as the Updated Final Safety Analysis Report, fire protection report, FHA, and SSA were updated consistent with the FPP or design change.
- e. Post-fire SSD operating procedures, such as abnormal operating procedures, affected by the modification were updated.

- (1) PTN-FPER-21-006, R0, PTN Fire Protection Evaluation Supporting Removal Of Fire Hose From Hose Stations
- (2) PTN-FPER-21-011, R0, PTN Fire Protection Surveillance Optimization – Phase 3 Fire Water Systems

INSPECTION RESULTS

Failure to Follow Procedure for Diesel Driven Fire Pump Surveillance Results in Pump Runout			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000250,05000251/2022010-01 Open/Closed	[H.8] - Procedure Adherence	71111.21N.0 5
A self-revealed Green finding and associated non-cited violation (NCV) of Turkey Point Units 3 and 4 Technical Specifications Section 6.8.1a was identified when the licensee failed to follow a procedure for fire pump surveillance.			
<p><u>Description:</u> On August 17, 2022, surveillance of the Diesel Driven Fire Pump (DDFP) was performed via procedure 0-OSP-016.2, "Diesel Driven Fire Pump Annual Surveillance Test." Step 7.7 of this procedure stated, "Establish initial valve lineup as follows" and contains 6 substeps. Five of the substeps involved verifying or manipulating the position of valves. Step 7.7.6 stated, "Unlock Full Flow Recirc[ulation] valve 10-760." The step did not include direction to manipulate the valve. Upon reaching this step of the procedure, the operator unlocked and fully opened valve 10-760. After opening the valve, the operator observed pump discharge pressure of 25 PSIG, which was lower than expected. About 15 minutes after the initial pump start, while the operator consulted with the main control room, the operator observed smoke rising from the pump engine and coolant overflowing from the surge tank.</p> <p>The pump was secured, declared out of service, and compensatory measures were implemented. By analysis of an oil sample, the pump vendor determined that there was no permanent damage to the engine. Plant personnel subsequently overhauled the pump, and performed a surveillance test, with the pump passing the test satisfactorily.</p> <p><u>Corrective Actions:</u> Corrective actions consisted of remediation of the individual operator, as well as a procedure change to move the mis-performed step to a different section of the procedure.</p> <p><u>Corrective Action References:</u> ARs 2434543 and 2434544</p>			
<u>Performance Assessment:</u>			
<p><u>Performance Deficiency:</u> The licensee's failure to follow procedure in accordance with Technical Specification 6.8.1a was a performance deficiency.</p> <p><u>Screening:</u> The inspectors determined the performance deficiency was more than minor because it was associated with the Human Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, there was reasonable doubt whether the pump, following the event, would have been capable of performing its safety function.</p>			

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix F, "Fire Protection and Post - Fire Safe Shutdown SDP." Using IMC 0609, Appendix F, Attachment 1, the inspectors determined the issue was of very low safety significance (Green) because the resulting non-functional fixed suppression system did not adversely affect the ability of the system to protect equipment important to safe shutdown (Question 1.4.2-A), because a redundant 100% capacity motor driven fire pump was still available.

Cross-Cutting Aspect: H.8 - Procedure Adherence: Individuals follow processes, procedures, and work instructions. Specifically, the diesel driven fire pump was declared out of service as a result of an operator failing to follow a surveillance procedure. During performance of the procedure, the operator also failed to use human error reduction techniques that could have prevented the error.

Enforcement:

Violation: Turkey Point Units 3 and 4 Technical Specifications Section 6.8.1a states, in part, "Written procedures shall be established, implemented, and maintained covering activities referenced by the site Quality Assurance Topical Report." Section A.1 of the site Quality Assurance Topical Report (QATR) states that elements of the Quality Assurance Program are applied to fire protection activities and also states, in part, "NextEra Energy commits to compliance with NQA-1, 1994, Basic Requirement 5." NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," Basic Requirement 5 states, in part, "Activities affecting quality shall be prescribed by and performed in accordance with documented instructions, procedures, or drawings of a type appropriate to the circumstances."

Contrary to the above, on August 17, 2022, an activity affecting quality was not performed in accordance with a documented procedure of a type appropriate to the circumstances.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Adequately Evaluate a Surveillance Frequency Change to Fire Protection Program Equipment			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000250,05000251/2022010-02 Open/Closed	None (NPP)	71111.21N.0 5
The inspectors identified a Green finding and associated NCV of Turkey Point Operating License Condition 3.D when the licensee failed to establish adequate test control for verifying functionality of the 4C Charging Pump Breaker normal/isolate transfer switches.			
<u>Description:</u> The inspectors reviewed test records for the components that can be controlled from the alternative shutdown panel. These tests help to ensure the functionality of those components that are credited for fire scenarios that lead to main control room abandonment. During a review of the testing documents for the 4C Charging Pump Breaker normal/isolate transfer switch, inspectors noted that the testing frequency was changed from 54 months to 72 months in 2017. The change was approved under a preventative maintenance change			

request (PMCR) document, ER-AA-204-2006-F02, change evaluation form. According to the PMCR, the surveillance frequency change from 54 months to 72 months was based on the rugged build quality of the switches and the reliable performance history. The change was not identified to affect the fire protection program under section C1 of the PMCR, and therefore, never received a fire protection program evaluation. The original frequency of testing this switch was 18 months, in accordance with a commitment made to the NRC in 1983 regarding alternate shutdown capability. The licensee was unable to provide a justification for the surveillance frequency change from 18 months to 54 months.

In 2021, as part of an unrelated effort, the site performed an evaluation to extend the testing frequency of similar transfer switches that are tested via a different procedure. The evaluation was for changing the testing frequency from 18 months to 36 months. The evaluation for this change stated that the 36-month frequency was established consistent with the guidelines and methodology of EPRI Report TR001006756, Fire Protection Equipment Surveillance Optimization and Maintenance Guide, dated July 2003.

The test frequency changes for the 4C Charging Pump Breaker normal/isolate transfer switches from 18 months to 54 months, and subsequently from 54 months to 72 months were not adequately evaluated and is not consistent with the 36-month test frequency established for other similar components.

Corrective Actions: The licensee wrote a CR to track the issue and evaluate current and recommended PM frequencies.

Corrective Action References: AR 2439940

Performance Assessment:

Performance Deficiency: The licensee's failure to establish test control in accordance with Turkey Point Operating License Condition 3.D was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the PD resulted in a meaningful and substantive reduction in margin with respect to an acceptable testing frequency.

Significance: The inspectors assessed the significance of the finding using IMC 0609 Appendix F, "Fire Protection and Post - Fire Safe Shutdown SDP." Using IMC 0609, Appendix F, Attachment 1, the inspectors determined the issue was of very low safety significance (Green) because inspectors assigned the finding a "Low" degradation rating (Question 1.3.1-A).

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Turkey Point Unit 4 OLC 3.D required, in part, for the licensee to implement and maintain in effect all provisions of the approved FPP that complied with 10 CFR 50.48(c), "National Fire Protection Association Standard NFPA 805," as specified in the license

amendment request dated June 28, 2012. Section 4.7.3 of the June 28, 2012 license amendment request stated that FPL will maintain the existing Fire Protection Quality Assurance (QA) Program. The QATR also states that selected elements of the QA program are applied to fire protection activities. QATR Section B.8, Test Control states, in part, "Testing programs are established and implemented to demonstrate that items subject to the provisions of this QATR will perform satisfactorily in service. ... These programs include criteria for determining when testing is required, such as operational tests, to demonstrate that performance of plant systems is in accordance with design intent."

Contrary to the above, since 2017, the licensee failed to adequately implement a testing program that included criteria for determining when testing the 4C Charging Pump isolation capability is required to demonstrate that performance of plant systems is in accordance with design intent.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On October 20, 2022, the inspectors presented the triennial fire protection inspection results to Mr. Brian Stamp and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.21N.05	Corrective Action Documents	AR 2434543	Spilled Coolant and Smoke from DDFP Surveillance During Run	8/17/2022
		AR 2434544	DDFP Motor Smoke and Low Discharge Press During Run	8/17/2022
		AR 2436974	TSC Plant Page Speaker Unintelligible	09/21/2022
		CR 01-0326-2		6/20/2001
		CR 2007-26147	Cable Spreading Room Halon Bottle Charge Labels	8/29/2007
	Corrective Action Documents Resulting from Inspection	AR 2438754	Emergency Light EL085-30 in the 3A DC Equipment Room only has one light bulb.	10/5/2022
		AR 2438917	Drawing 5610-E-1397 Sheet 1 identifies dampers that are affected by Halon System Initiation. 0-ONOP-016.8 Enclosure 1 for FZ 108A and 108B identifies dampers that are affected by Halon initiation. These two documents do not match. ...	10/6/2022
		AR 2438918	NRC Identified DBD Valves Not in ONOP	10/11/2022
		AR 2438922	New 'A' Series padlock needed for the SNPO Shelter ICCS Box.	10/6/2022
		AR 2438998	5610-016-DB-001 and 0-ONOP-105 Need Revisions	10/7/2022
		AR 2439145	The NRC questioned if Code NFPA 76 should be referenced in Appendix G, Code Of Record of 5610-016-DB-001, despite being referenced in EC 282418	10/11/2022
		AR 2439940	ALT SHUTDOWN PANEL PM CHANGE NOT EVALUATED PER FP PROGRAM	10/20/2022
	Drawings	5613-M-3047	Chemical and Volume Control System Charging and Letdown, Sheet 1	Rev. 24
		5613-M-3047	Chemical and Volume Control System Charging and Letdown, Sheet 2	Rev. 59
		5613-M-3047	Chemical and Volume Control System Charging and Letdown, Sheet 3	Rev. 32
5614-M-3047		Chemical and Volume Control System Charging and Letdown, Sheet 1	Rev. 24	
5614-M-3047		Chemical and Volume Control System Charging and	Rev. 69	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
			Letdown, Sheet 2		
		5614-M-3047	Chemical and Volume Control System Seal Water Injection to RCP, Sheet 3	Rev. 29	
	Engineering Changes	EC- 296561	Alternate Shutdown Surveillance extension		Rev. 0
		PCR 2291468	Enhancement adds guidance to prevent water hammer when starting a Charging pump and starting a CCW pump. (AR 224498)		Rev. 23
		PTN-FPER-21-006	PTN Fire Protection Evaluation Supporting Removal of Fire Hose from Hose Stations		8/19/2021
		PTN-FPER-21-011	PTN Fire Protection Surveillance Optimization-Phase 3 Fire Water Systems		9/2/2021
	Engineering Evaluations	5610-016-DB-001	Fire Protection System NFPA 805 Design Basis		
		5610-E-2000A	Nuclear Safety Capability Fire Shutdown Analysis Essential Cable List		Rev. 13
		5610-M-722B	Nuclear Safety Capability Fire Safe Shutdown Analysis (NSCA)		Rev. 8
		5610-M-723A	Nuclear Safety Capability Fire Shutdown Analysis Essential Equipment List		Rev. 7
		ER-AA-204-2006-F02	PMCR Change Evaluation Form for 45007 and 45008 Norm/Isolate Transfer Switch Test PM		Rev. 3
		PTN-BFJR-16-034	Turkey Point Units 3 and 4 Fire Probabilistic Risk Assessment Fire Scenario Report NUREG/CR-6850 Tasks 8 and 11		Rev. 2
		PTN-BFJR-16-057	Turkey Point Nuclear Plant FPRA Summary Report		Rev. 3
		PTN-FPER-11-002	NFPA 805 Recovery Action Feasibility Evaluation		Rev. 1
	Miscellaneous	5177-265-EG-22	Circuit Breaker/Fuse Coordination Study		Rev. 9
		5614-E-25	Reactor Auxiliaries Charging Pump 4P201C Breaker 45008		Rev. 8
		JPM 24047033101	Adjust Reactor Cooling Pump Seal Injection JPM		Rev. 0
		JPN-PTN-SEMJ-89-109	Turkey Point Plant Units 3 and 4 Safety Evaluation		Rev. 0
		Turkey Point			Amendment

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		Nuclear Plant Units 3 and 4 Technical Specifications		Nos. 288 and 282
		Turkey Point Units 3 and 4 Updated FSAR		05/17/2021
	Procedures	0-ADM-016	Fire Protection Program	Rev. 33
		0-ADM-232	Time Critical Operator Action Program	Rev. 16
		0-ONOP-025.3	DC Equipment and Inverter Rooms Supplemental Cooling	Rev. 4A
		0-OSP-200.1	Schedule of Plant Checks and Surveillances	Rev. 39
		3-OSP-300.1	Alternate Shutdown Panel 3C264 Operability Test	Rev. 15A
		4-OSP-300.3	Safe Shutdown and Alternate Shutdown Operability Test	Rev, 4A
		4-OSP-300.4	Dedicated Alternate Shutdown Communications System Operability Test	08/18/2022
		EN-AA-202-1004	Fire Protection Screening	Rev. 13
		EN-AA-203-1100-F01	NFPA 805 Monitoring Program Phase 2/3: Screening and Risk Target Values	Rev. 7
		FP-AA-104-1006	Implementation of the NFPA 805 Monitoring Program	Rev. 5
		FPL-1	Quality Assurance Topical Report	Rev. 28
		O-ONOP-016.10	Safe Shutdown Manual Actions	Rev. 44A
		O-ONOP-105	Control Room Evacuation	Rev. 26A
	Self-Assessments	AR #02424658-04	Turkey Point Fire Protection Program Focused Self-Assessment	08/18/2022
	Work Orders	4083617702	PT-4-406 Failing - Replace Transmitter	09/01/2022