UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

August 10, 2018

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
Florida Power & Light Co.
Mail Stop: EX/JB
700 Universe Blvd.
Juno Beach, FL 33408

SUBJECT: TURKEY POINT NUCLEAR GENERATING STATION – NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 05000250/2018002 AND 05000251/2018002

Dear Mr. Nazar:

On June 30, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Turkey Point Nuclear Generating Station, Units 3 and 4. On July 31, 2018, the NRC inspectors discussed the results of this inspection with Mr. Brian Stamp, Plant General Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors did not identify any finding or violation of more than minor significance.

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 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Randall A. Musser, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos.: 50-250, 50-251
License Nos.: DPR-31, DPR-41

Enclosure:
IR 05000250/2018002
and 05000251/2018002

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SUBJECT: TURKEY POINT NUCLEAR GENERATING STATION – NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 05000250/2018002 AND 05000251/2018002
August 10, 2018

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-250, 50-251
License Nos:	DPR-31, DPR-41
Report Nos:	05000250/2018002, 05000251/2018002
Enterprise Identifier:	I-2018-002-0039
Licensee:	Florida Power & Light Company (FPL)
Facility:	Turkey Point Nuclear Generating Station, Units 3 and 4
Location:	9760 SW 344th Street Homestead, FL 33035
Dates:	April 1, 2018 through June 30, 2018
Inspectors:	J. Orr, Senior Resident Inspector J. Reyes, Resident Inspector W. Loo, Senior Health Physicist (Sections 71124.08 & 71151) R. Carrion, Senior Reactor Inspector (Section 4OA2)
Approved by:	R. Musser, Chief Reactor Projects Branch 3 Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee's performance by conducting a baseline inspection at Turkey Point Nuclear Generating Station Units 3 and 4 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

No findings were identified

Additional Tracking Items

Type	Issue number	Title	Report Section	Status
Unresolved Item (URI)	05000250,251/ 2018002-01	Unit 3 Emergency Diesel Generator Operability during Fuel Oil Transfer to Unit 4 Fuel Oil Storage Tanks	71111.15	Open

PLANT STATUS

Unit 3 began the inspection period at rated thermal power. On June 21, 2018, the unit was down powered to 75 percent to facilitate a small steam leak repair in the Unit 3 containment building on the high pressure tap of the 3B steam generator steam flow channel F-3-485. The unit was returned to rated thermal power on June 22, 2018, and remained at or near rated thermal power for the remainder of the inspection period.

Unit 4 operated at or near rated thermal power for the entire inspection period.

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 performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution." 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

71111.01 - Adverse Weather Protection

Summer Readiness (1 Sample)

The inspectors evaluated summer readiness of offsite and alternate alternating current power systems on May 17 and June 7, 2018.

Seasonal Extreme Weather (1 Sample)

The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of hurricane season on May 31, 2018.

71111.04 - Equipment Alignment

Partial Walkdown (5 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

(1) 3A, 3B, and 4A emergency diesel generators (EDGs), associated auxiliaries, 4kV switchgear, 480V load centers, and station blackout 4kV busses while the 4B EDG was out of service (OOS) for maintenance on April 2 – 6, 2018

(2) Spare class 1E 125 Vdc battery in service for surveillance testing of the 4A 125Vdc battery on April 11, 2018
(3) 3B, 4A, and 4B EDGs while the 3A EDG was OOS for maintenance on April 16, 2017. The 3A EDG configuration was additionally evaluated after its return to service on April 17, 2017.
(4) 3A, 3B, and 4B safety injection pumps, Unit 3 and 4 safety-related 4kV switchgear, and 3A, 3B, and 4B EDGs while the 4A EDG was OOS for maintenance on May 15 – 18, 2018
(5) 3B containment spray pump (CS) while the 3A CS pumpwas OOS on May 24 – 25, 2018

71111.05AQ - Fire Protection Annual/Quarterly

Quarterly Inspection (4 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

(1) Units 3 and 4 main, auxiliary, and startup transformers, fire zones (FZs) 81, 82, 86 and 87 on April 11, 2018
(2) Units 3 and 4 spent fuel pool heat exchanger and pump rooms, FZ 57 and 43, on April 12 and 17, 2018
(3) Raw water tank, electric-driven fire pump (EDFP), diesel-driven fire pump, fire water jockey pumps, and diesel fuel tank area, FZ 122, on April 19, 2018
(4) Units 3 and 4 residual heat removal heat exchanger and pump rooms, FZs 11 – 16, on May 4, 2018

Annual Inspection (1 Sample)

The inspectors evaluated fire brigade performance on April 24 and May 23, 2018.

71111.06 - Flood Protection Measures

Underground Cables (1 Sample)

The inspectors evaluated cable submergence protection in:

(1) Cable vaults 425, 600, and 759 on May 9, 2018.

71111.11 - Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated a simulator scenario administered to an operating crew on May 14, 2018.

Operator Performance (1 Sample)

The inspectors observed and evaluated a Unit 3 power ascension from 75 percent rated thermal power to 100 percent rated thermal power on June 22, 2018.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

(1) Action request (AR) 225251, Maintenance rule (a)(1) plan for gamma metrics nuclear instrument system narrow and wide range failed low
(2) AR 226078, Inadequate basis for conclusion in AR 2246906 maintenance rule functional failure evaluation for 4-CV-2906 stroke failure

71111.13 - Maintenance Risk Assessments and Emergent Work Control (6 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

(1) 3A emergency containment cooler (ECC), 4B EDG, E232 electrical equipment room (EER) heating ventilation and cooling (HVAC), and 2A switchgear and load center room cooling OOSs on April 3 – 6, 2018
(2) 3A EDG, 4CM instrument air compressor, 3C ECC, 1A switchgear and load center room cooling, E232 EER HVAC, and E16F air conditioning unit for DC equipment rooms OOSs on April 16, 2018
(3) EDFP, 3B component cooling water (CCW) pump, E232 EER HVAC, 1A switchgear and load center room cooling, B CS pump, 3A and 3B ECC, and E16D air conditioning unit for DC equipment rooms OOSs on May 2, 2018
(4) MOV-4-1403/4C steam generator steam supply to auxiliary feedwater (AFW), 4B CCW heat exchanger, 4C CCW pump and 4A EDG OOSs on May 10 -11, 2018
(5) 4A EDG OOS on May 16, 2018
(6) 3A CS pump and 3B CCW heat exchanger OOSs on May 23 – 24, 2018

71111.15 - Operability Determinations and Functionality Assessments (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

(1) AR 00-1439, Unit 3 EDG fuel oil transfer to/from Unit 4 EDG storage tanks
(2) AR 2257533, RV-3-747A lifted during second CCW pump start
(3) AR 2259430, 3C AFW train 1 flow control valve oscillates
(4) AR 2262955, MOV-4-1403 failure past operability review
(5) AR 2264657, 4A EDG number 4 cylinder foreign material discovered during engine overhaul
(6) AR 2265753, unable to establish inservice test conditions, insufficient flow, for 4B intake cooling water pump

71111.18 - Plant Modifications (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

(1) Engineering change 291411, temporary furmanite on-line leak repair of steam line flow transmitter FT-3-485

71111.19 - Post Maintenance Testing (7 Samples)

The inspectors evaluated the following post maintenance tests:

(1) Work orders (WOs) 40197483, 40353311, 40400177, 40470775, 40476520, 40549687, 40552816, 40556376, 40556379, and 40576050, 4B EDG overhaul on April 10, 2018
(2) WOs 4054648101, 4058952002, 4055281604, 3A EDG after critical maintenance management on April 17, 2018
(3) WO 40509129, 3B ECC outlet flow control valve, CV-3-2906, pilot operated lock valve replacement on May 2, 2018
(4) WO 40599911, bonnet equalizing check valve to hot leg injection MOV-3-869, 3-946A, upstream stainless steel tube replacement on May 4, 2018
(5) WO 40600276, 4A steam generator steam supply to AFW turbines, MOV-4-1403 inspection and repair on May 10, 2018
(6) WO 40601224, 3A intake cooling water header isolation valve to turbine plant cooling water heat exchangers, POV-4-4883, indications not matching expected condition on May 11, 2018
(7) WOs 40536870 and 40546621, 3A CS pump motor replacement May 25 - 29, 2018

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (3 Samples)

(1) 4-OSP-023.1, 4B Diesel Generator Test on April 10, 2018
(2) 0-SME-003.15, 4A Station Battery 60 Month Maintenance on April 10, 2018
(3) 3-SMI-071.13A, F-495 SG 3C SF and F-496 SG 3C FWF ACOT, SF/FWF Mismatch, Protection Set IV on April 12, 2018

In-service (2 Samples)

(1) 3-OSP-075.2, Auxiliary Feedwater Train 2 Operability Verification and 0-OSP-075.11 Auxiliary Feedwater Inservice Test on April 1, 2018
(2) 3-OSP-206.2 and 4-OSP-206.2, Quarterly Inservice Valve Testing for PORV Block Valves MOV-3-535, MOV-3-536, MOV-4-535, and MOV-4-536 on April 24, 2018

71114.06 - Drill Evaluation

Emergency Planning Drill (1 Sample)

The inspectors evaluated an emergency planning drill from the emergency operations facility on June 6, 2018.

RADIATION SAFETY

71124.08 - Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

Radioactive Material Storage (1 Sample)

The inspectors evaluated the licensee's radioactive material storage.

Radioactive Waste System Walk-down (1 Sample)

The inspectors evaluated the licensee's radioactive waste processing facility during plant walkdowns.

Waste Characterization and Classification (1 Sample)

The inspectors evaluated the licensee's radioactive waste characterization and classification.

Shipment Preparations (1 Sample)

The inspectors evaluated the licensee's radioactive material shipment preparation processes.

Shipment Records (1 Sample)

The inspectors evaluated the licensee's non-excepted package shipment records.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below for the period from April 2017, through March 2018 (4 Samples)

(1) Unit 3 Reactor Coolant System Leak Rate
(2) Unit 4 Reactor Coolant System Leak Rate
(3) Unit 3 Reactor Coolant System Activity
(4) Unit 4 Reactor Coolant System Activity

and October 2017, through March 2018. (1 Sample)

(5) Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual (RETS/ODCM) Occurrences

71152 - Problem Identification and Resolution

Semiannual Trend Review (1 Sample)

The inspectors reviewed the licensee's corrective action program for trends that might be indicative of a more significant safety issue. The following issues were reviewed in detail to verify an adverse human performance trend did not exist during performance of maintenance activities:

- AR 2266336, Failure to Use Proper Place Keeping or Concurrent Verification Resulting in an Error
- AR 2217038, Incorrect Usage of Concurrent Verification during Procedure 0-PME-003.3
- AR 2221823, Static Switch Overcurrent Transfer Test
- AR 2246100, Concurrent Verification Not Performed per WO 40491799

Annual Follow-up of Selected Issues (2 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

(1) AR 2253824, Electric Driven Fire Pump Sparking and Rotating Backwards and AR 2256525, Appropriate Action Statement Entered? This issue was selected to verify the licensee was appropriately applying its administrative fire protection program requirements for an out of service fire pump.
(2) AR 2021075, Auxiliary Building Concrete Degradation at 10 foot (ft), 4 ft, and 2 ft Elevations. This issue was selected to verify that the issue was addressed to a level of detail commensurate with the structure's safety significance.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855.1 - Operation of an Independent Spent Fuel Storage Installation (ISFSI)

During the week of June 17, 2018, the inspectors, through direct observation and independent evaluation, observed the loading of dry shielded canister (DSC) FPL/NEXT-32PTH-072-C-1 from the Unit 4 spent fuel pool bridge. The inspectors verified the cask loading activities were performed in a safe manner and in compliance with approved procedures. Based on direct observation and review of selected records, the inspectors verified the licensee had properly identified each fuel assembly placed in DSC-FPL/NEXT-32PTH-072-C-1. Additionally, through direct observation, the inspectors verified the licensee had properly placed DSC-FPL/NEXT-32PTH-072-C-1 in the ISFSI. During the week of June 24, 2018, the inspectors also observed activities associated with the vacuum drying and seal welding activities, and the heavy lifts to remove the DSC-FPL/NEXT-32PTH-073-C-1 from the spent fuel pool and placing it in the cask handling facility.

On June 21, 2018, the inspectors conducted a walkdown of the ISFSI protected area. The inspectors observed each cask building temperature indicator and passive ventilation system to be free of any obstruction allowing natural draft convection decay heat removal through the air inlet and air outlet openings. The inspectors observed associated cask building structures to be structurally intact and radiation protection access and security controls to the ISFSI area to be satisfactory.

INSPECTION RESULTS

Observation	71152, Problem Identification and Resolution, Annual Follow-up of Selected Issues

On March 12, 2018, while releasing an equipment clearance order on a portion of the Turkey Point fire suppression header, the header pressure momentarily decreased below the two fire pumps' automatic start pressures. Both the electric-driven fire pump (EDFP) and the diesel-driven fire pump automatically started. After pressure was restored in the header, operators noted the EDFP was rotating backwards. Additionally, operators observed sparks and a burnt odor emanating from the EDFP control panel. The discharge isolation valve CV-10-617 was closed to isolate the EDFP and the pump stopped rotating backwards. The licensee identified two issues with the EDFP: 1) electrical components in the start circuitry were burnt which prevented the pump from starting; and 2) the discharge check valve, 10-637, was failed open. As a result of the failed EDFP, the licensee entered a 7-day fire protection administrative requirement which was applicable to Unit 3 and Unit 4 in accordance with plant procedure 0-ADM-016, Fire Protection Program.

Turkey Point requires two functional 100-percent capacity fire pumps. Functionality requirements of the fire pumps are provided through procedure 0-ADM-016, Fire Protection Program. Section 5.6.4.1.a requires a functional fire water supply and distribution system consisting of at least two fire suppression pumps, one electric driven and one diesel driven, with their discharge aligned to the fire suppression header. Section 5.6.4.1.c contains the following action statements:

(1) With one train (one pump and/or one water source and/or one supply header) non-functional, restore the non-functional equipment to functional status within 7 days or provide an alternate water supply and/or backup pumping facilities as needed, effective for a period not to exceed 30 days. This action applies to both units simultaneously.

(4) Any compensatory measure for a non-functional supply and/or distribution system or exceeding the limits prescribed above requires a procedure change and specific engineering evaluation.

On March 17, 2018, the EDFP control panel was repaired and the pump was manually started. After a short run, the EDFP was stopped. Following the test run of the EDFP, the diesel driven fire pump was started. With the diesel driven fire pump running, the EDFP was observed rotating backwards, which provided verification that the EDFP discharge check valve 10-637 was stuck open. The licensee completed the required evaluation and declared the EDFP the back-up fire pump, as the pump could now be started with operator actions. Operator actions consisted of manually starting the pump and opening the discharge isolation valve 10-617 to provide water supply to the suppression header. The licensee exited the 7-day action statement and transitioned to the 30-day action statement, for having one functional fire pump (diesel-driven) with auto start capability and one back-up fire pump (electrically-driven).

On March 28, 2018, the EDFP was taken out of service and tagged out to facilitate repair of the discharge check valve. Due to now having only one functional pump (diesel-driven), the licensee exited the 30-day action statement and transitioned back and entered a new 7-day

action statement per fire protection administrative Section 5.6.4.1.c (1). After the repair and post maintenance tests were completed, the EDFP was declared functional and the licensee exited the 7-day action statement.

AR 2256525 questioned compliance with the action statements in completing the final repair of the EDFP discharge check valve. Specifically, the AR questioned re-entering the 7-day action statement without repairs having been made to the EDFP. The AR disposition determined that log entries were reviewed to verify compliance with plant procedure 0-ADM-016 and ensured no incorrect action statement transitions were made. The AR described that feedback was provided to the originator to clarify concerns.

The inspectors reviewed the control room narrative logs and a detailed time-line of the maintenance activities on the EDFP after the initial pump failure on March 12, 2018. On the first entrance into the 7-day action statement that started on March 12, 2018, which was exited on March 17, 2018, the inspectors determined the licensee was in that action for a total time of 4 days, 23 hours, and 37 minutes. On the second entrance into the 7-day action statement which started on March 28, 2018, the licensee was in that action for 1 day and 29 minutes. There was a cumulative time of 6 days and 6 minutes that the licensee was in a 7-day action statement with one functional pump. Additionally, the total time the licensee was in the 30-day action (with a back-up fire pump) was 10 days, 11 hours and 17 minutes. The inspectors determined there was no performance deficiency because the fire protection program administrative requirements were fortuitously met. Specifically Section 5.6.2.1.b stated, "*Noncompliance with a specification will exist when the functionality requirements and associated action requirements are not met within the specified time intervals*." When operators reentered a new 7 day action statement per Section 5.6.4.1.c on March 28, 2018, after already being in the same 7 day action statement, on March 12, 2018, and then meeting the requirements for a 30 day action period on March 17, 2018, it was inappropriate for operators to consider a new 7 day action statement. Specifically, Section 5.6.4.1.a functionality requirements state in part: "The Fire Water Supply and Distribution System shall be operable with at least two fire suppression pumps, one electric driven and one diesel driven with their discharge aligned to the fire suppression header." The EDFP was never returned to a functional condition. Therefore, the Fire Water Supply and Distribution System was never operable as required by Section 5.6.4.1 since the aggregate issues first occurred on March 12, 2018. For several days the EDFP was aligned as a backup pump and required local operator manual actions to provide fire water supply, but it was never functional because it did not have automatic startup capability and its discharge isolation valve was closed. The fire water supply and distribution system was already in the condition described in Section 5.6.4.1.a, supported by a single diesel driven fire pump without any installed backup pump for 4 days 23 hours and 37 minutes since the aggregate EDFP equipment issues first occurred on March 12, 2018. Additionally, the licensee had not implemented any controls to ensure that the cumulative 7 day action time would not be exceeded when the action statement was re-entered on March 28, 2018.

The Turkey Point fire protection program is based on the compliance with 10 CFR 50.48(a) and 10 CFR 50.48(c), "National Fire Protection Association Standard NFPA 805," and the Turkey Point fire protection license conditions. In May 28, 2015, the NRC issued a license amendment for the Turkey Point to incorporate the NFPA 805 fire protection licensing basis in accordance with the 10 CFR 50.48(c). The amendment authorized the transition of the

licensee's fire protection program to a risk-informed, performance-based program based on the 2001 Edition of NFPA 805. The NFPA 805 standard describes how to use performance-based methods, such as risk-informed methods, fire probabilistic risk assessment, and fire modeling to demonstrate compliance with nuclear safety performance criteria (NSPC) (similar to compliance with post-fire safe-shutdown requirements in 10 CFR 50.48(b) and Appendix R) and to assure that structures, systems, and components (SSCs) (safety-related and important to safety) are protected from fire.

NFPA 805 Safety Evaluation Report (ADAMS Accession No. ML15061A237) Section 3.1.4.5, "NFPA 805 Fire Pump Separation and Diesel-Driven Fire Pump Protection," on page 57 stated that the "…loss of one fire pump would not impact the ability to provide 100 percent of the required fire water demand. In addition, there are contingency plans for alternative fire water supply capability…"

In reviewing this issue with the licensee, the licensee acknowledged that entering a new 7-day action statement was inappropriate. The licensee wrote AR 2269596 to address this issue and to provide updated feedback to the plant operators on the correct tracking of this administrative fire protection program administrative control requirement.

Observation	71152, Problem Identification and Resolution, Annual Follow-up of Selected Issues

No findings were identified. The Auxiliary Building has experienced significant concrete cracking, delamination, and spalling on the 10 foot (ft), 4 ft and 2 ft elevations near the common radioactive pipeway hallway locations, which has been documented in the licensee's Corrective Action Program since 2004. The consequence of this issue was that the identified degradation can adversely impact the structural integrity and functionality of the Auxiliary Building.

The Auxiliary Building provides structural support for numerous safety-related Structures, Systems, and Components (SSCs) for both Units 3 and 4, and protectes them from the effects of weather and various design basis threats such as high wind, earthquake, flooding, jet impingement, etc., and provided radiation shielding to keep personnel dose as low as reasonably achievable (ALARA). It also maintaines a boundary for ventilation pathways to ensure that air would flow in the prescribed direction and ultimately be released through the monitored release path, and it also provides barriers against unauthorized personnel access.

Seven degraded locations have been identified:

- Location #1: West end of 10 ft Hallway:
- Location #2: Under the top end of the ramp between 10 ft and 4 ft elevations:
- Location #3: Under the stair landing at 10 ft elevation:
- Location #4: B Waste Gas Compressor Room:
- Location #5: Laundry Tank Room
- Location #6: Waste Holdup Tank Room
- Location #7: the concrete floor slab just behind the high radiation boundary gate at 10 ft Elevation. Locations #1 through #4 had been repaired and Loactions #5 through #7 were scheduled to be repaired.

An Apparent Cause Evalution was completed for AR 2021075 and the apparent cause was determined to be non-uniform support of the Auxiliary Building foundation slabs along the Circulating Water Pipes path which resulted in differential settlement of the Elevation 10 ft floor slab in relation to the Elevation 4 ft and Elevation 2 ft slabs. Five contributing causes and their respective corrective actions were also identified.

The inspectors reviewed construction drawings, interviewed responsible structural engineers, walked down the affected areas in the Auxiliary Building, and reviewed corrective action documents to evaluate the licensee's actions relative to this issue. The inspectors also interviewed the Plant General Manager with respect to completing the remediation of Locations #5, #6, and #7. The work has a plant high priority and plans for the scope of work, budget, and schedule were being formulated and were expected to be completed by 2020.

The inspectors concluded that the licensee was making adequate progress to address the Auxiliary Building foundation degradation issues and that the Auxiliary Building was functional in its current condition.

Unresolved Item (Open)	Unit 3 Emergency Diesel Generator (EDG) Operability during Fuel Oil Transfer to Unit 4 Fuel Oil Storage Tanks (URI 05000250,251/2018-002-01)	71111.15, Operability Determinations and Functionality Assessments

Description: From April 2, through April 10, 2018, the 4B emergency diesel generator (EDG) was out of service for maintenance. On April 4, 2018, the licensee transferred diesel fuel oil (fuel) from the Unit 3 common storage tank, using the 3A EDG fuel transfer pump, 3P10A, to the 4B EDG storage tank. To perform the fuel transfer, operators aligned the 3A EDG fuel transfer system by: 1) removing the 3P10A control switch from the automatic position; 2) closed the air-operated fill valve CV-3-2046A, to the 3A EDG day tank, by isolating and venting its instrument air supply line; and, 3) opened normally locked-closed Unit 3 and Unit 4 fuel transfer manual valves. During the fuel transfer from Unit 3 to Unit 4, the automatic fuel transfer operation from the Unit 3 storage tank to the 3A EDG day tank was defeated. The licensee did not consider the 3A EDG inoperable in this alignment and credited operator manual actions (OMAs) to restore its day tank to automatic fill operation.

Technical Specification (TS) surveillance requirement 4.8.1.1.2.b, requires in part, that, each diesel generator shall be demonstrated OPERABLE by demonstrating that a fuel transfer pump starts automatically and transfers fuel from the storage system to the day tank. The inspectors questioned if the licensee was in compliance with the surveillance requirement during the fuel transfer and if the 3A EDG was operable by crediting OMAs. The licensee's initial assessment was that the 3A EDG remained operable during the fuel transfer. Additionally, the licensee described that this particular issue was previously reviewed and described in a condition report evaluation, 00-14-19, dated September 22, 2000. The evaluation concluded that automatic operation of the fuel transfer pump was required for EDG operability but automatic operation of the day tank fill valve was not required for operability. The 3A and 3B EDG day tank fill valves are pneumatically operated valves and rely on the non-safety grade instrument air system for operation. Additionally, the evaluation stated that since the instrument air system was non-safety related, and the large EDG day tanks provide

ample run time for the EDGs, OMAs were considered part of the system design basis. The inspectors noted to the licensee that the Turkey Point TS's do not specifically credit OMAs associated with the EDG fuel transfer system in a limiting condition for operation (LCO). The inspectors also noted to the licensee that TS Surveillance Requirement (SR) 4.0.1 states Surveillance Requirements shall be met during the OPERATIONAL MODES or other conditions specified for individual Limiting Conditions for Operation unless otherwise stated in an individual Surveillance Requirement. TS SR 4.8.1.1.2.b. requires demonstrating that a fuel transfer pump starts automatically and transfers fuel from the storage system to the day tank.

If CV-3-2046A fails closed on a loss of instrument air, the licensee has an off-normal operating procedure that uses local OMAs to align a compressed air bottle to open CV-3-2046A to align fuel to the 3A EDG day tank.

UFFSAR section 9.15.1.1.2.1.5 stated in part, "Air-operated valves in the transfer lines from the diesel oil storage tank to the day tank automatically open in response to signals developed by logic circuitry incorporating tank level and pump control switch positions. The valves can be locally opened using a separate air source in the event normal instrument air is not available." Section 9.15.1.3.1 described in part "Sufficient time exists for providing an alternative air source for opening the day tank fill isolation valves should instrument air fail before the day tank is emptied."

With respect to the fuel transfer evolution, the licensee stated that the restoration could be completed with OMAs in sufficient time prior to the day tank being depleted of fuel.

The license initiated AR 2269269 to complete a design basis and license basis review on the EDGs for operability during cross unit fuel transfers. Interim actions included declaring the EDG out of service anytime a cross unit fuel transfer was performed. At the conclusion of the inspection period the licensee had not completed the design and license basis evaluation. It was indeterminate whether a performance deficiency exists. This issue remains unresolved pending review of the licensee's design and license basis evaluation.

Planned Closure Action: A review of the licensee's design and license basis evaluation documented in AR 2269269 was required for closure and to determine a performance deficiency exists.

Licensee Actions: The license entered this issue into the corrective action program as AR 2269269 to complete a design and license basis review of EDG operability during cross unit fuel transfers. Interim actions included declaring the EDG inoperable any time a cross unit fuel transfer was performed.

Corrective Actions Reference: AR 2269269

EXIT MEETINGS AND DEBRIEFS

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

On May 24, 2018, the inspector presented the radiation protection inspection results to Mr. Brian Stamp, Plant General Manager, and other members of the licensee staff.

On July 31, 2018, the resident inspectors presented the quarterly resident inspector inspection results to Mr. Brian Stamp, Plant General Manager, and other members of the licensee staff.

DOCUMENTS REVIEWED

Section 71124.08: Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

Procedures, Guidance Documents and Manuals
0-ADM-605, Control of Radioactive Material, Rev. No. 5A
0-ADM-607, Solid Radioactive Waste Minimization Program, Rev. No. 0A
0-ADM-608, Waste Stream Evaluation, Rev. No. 1A
0-HPA-045, Process Control Program, Rev. No. 0A
0-HPS-040.5, 10CFR61 Compliance and Radioactive Waste/Material Shipment Classification and Characterization, Rev. No. 0A
0-HPS-044.1, Exclusive Use Vehicle Inspection, Rev. No. 1A
0-NCOP-501, DTS WPS Media Sluice, Rev. No. 1
0-NCOP-502, DTS Media Dewatering, Rev. No. 1
0-NCOP-504, DTS Waste Processing System Operations, Rev. No. 1
PI-AA-101, Assessment and Improvement Programs, Rev. No. 24
PI-AA-104-1000, Condition Reporting, Rev. No. 17
RP-AA-103-1001, Posting Requirements for Radiological Hazards, Rev. No. 4
RP-AA-107-1002, Requirements for Radioactive Materials Stored Outdoors, Rev. No. 7
RP-AA-108-1002, Shipment of Radioactive Material, Rev. No. 11
RP-AA-108-1003, Radioactive Materials Surveys for Shipment, Rev. No. 6
RP-AA-108-1004, Packaging Radioactive Materials for Shipment, Rev. No. 2

Records and Data
10CFR61 Analysis for 2018 DAW & 2018 RAM, 04/12/18
10CFR61 Analysis for Primary Resin Liner PO650047-7, 11/15/17
2017 Annual Radioactive Effluent Release Report, Turkey Point Units 3 and 4, 02/16/18
NextEra Energy Nuclear Fleet, Radioactive Material Shipping, Training Slides, Rev. Date 09/22/16
Radioactive Material Shipment (RMS) No. M-17-014, LSA-II, Laundry, 03/23/17
RMS No. M-17-024, LSA-II, AREVA Tooling, 04/10/17
RMS No. M-17-056, LQ, RCP Motor, 10/09/17
RMS No. M-18-006, LQ, Secondary Liner Sample, 03/02/18
Radioactive Waste Shipment No. W-18-001, LSA-II, DAW, 04/03/18
SAP Success Factors, User Curriculum Status Group by Curriculum, Curriculum ID: PTN HP 2402080, 05/22/18
WMG Training Certificates for selected licensee employees for WMG's RC-102 "Use of WMG Programs and Regulatory Interfaces" & "RC-300 "Air Transportation of Radioactive Materials", 08/01/17 and 03/22/18

CAP Documents
AR No. 02131471
AR No. 02254137
Turkey Point Nuclear Assurance Report, Report No. PTN-18-002, Radiological Protection & Radwaste, 04/11/18

Section 71151: Performance Indicator Verification

Procedures, Guidance Documents and Manuals
0-ADM-032, NRC Performance Indicators Turkey Point, Rev. No. 8

Records and Data
0-ADM-032, Attachment 18, RETS/ODCM Radiological Effluent Occurrences, 4th quarter 2017 and 1st quarter 2018
Open EMS Liquid and Gas Status Summary Reports, October 2017 - March 2018

Action Requests
AR 02245402
AR 02246561

Section 71152: Problem Identification and Resolution

Action Requests
AR 0407097, Concrete Cracks Are Observed at Two Aux Building Locations
AR 0473940, Large Crack on South Wall o WHT #1 Room [2' Elevation of Aux Building]
AR 1675358, Floor Buckled and Cracked in 10' Radioactive Pipeway
AR 1766347, Waste Gas Compressor Room (B) Concrete Ledge Delamination
AR 1766349, Laundry Tank Room Concrete – Delamination and Cracks
AR 1766350, Under Ramp Concrete Spall and Crack with Exposed Corroded Rebar
AR 1985656, Aux Building 10' Elevation Concrete Repair Project
AR 2015255, Huge Crack on Aux Building Wall on 2" Elevation
AR 2021075, Update FA for Aux Building Degraded Concrete and ACE Request

Drawings
5610-C-50, Circulating Water System – Plan and Details – Sheet No. 1, Revision 3
5610-C-249, Auxiliary Building El 18'-0", Revision 13
5610-C-251, Auxiliary Building El 10'-0", Revision 9
5610-C-261, Auxiliary Building - Area 8 – Slabs on Grade, Revision 11
5610-C-262, Auxiliary Building - Area 8 – El 10'-0", Revision 10
5610-C-263, Auxiliary Building - Area 8; FND Plan El 10'-0", Revision 5
5610-C-268, Elevations, Sections, and Details Auxiliary Building Area 8, Revision 7
5610-C-269, Auxiliary Building Area 8 & 9 Basement Slab – Plan at El 2'-0" & 4'-0", Revision 7
5610-C-270, Auxiliary Building - Area 9 & 10, FND Plan El 10'-0", Revision 6
5610-C-273, Auxiliary Building - Area 9, FND Plan El 18'-0", Revision 11
5610-C-274, Auxiliary Building - Area 9, El 18'-0", Revision 16
5610-C-275, Auxiliary Building Area 9, Elevations, Sections, & Details, Revision 10
5610-C-649, Auxiliary Building – Miscellaneous Steel – Sheet 6, Revision 7

Other Documents Reviewed
0-ADM-561, Structures Monitoring Program, Revision 6
5177-C-000, Civil-Structural Design Criteria, Revision 5
Assessment Report by Ingelmo Associates PA, Structural Observations and Survey: Auxiliary Building, dated February 2013
CA 2021075-01, Aux Building Action Plan, Revision 1
Condition Report 03-1709

Equivalent Design Package (EDP) 281154, Revision 7
Functionality Assessment for ARs 1766347, 1766349, 1766350, 1766352, 1766353, and 1766358
Functionality Assessment for AR 1985656
Functionality Assessment for AR 2021075
PTN-ENG-SECS-17-019, 2017 PTN Structures Monitoring Program Report, dated 1-5-18
Specification 5177-074-C034.1, Technical Specification for Placement and Control of Compacted Fill, Revision 10
Work Order 34008665, Actions 4, 7, 9, 12, and 16