



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

August 7, 2013

Mr. Mano Nazar  
Executive Vice President  
and Chief Nuclear Officer  
Florida Power and Light Company  
P.O. Box 14000  
Juno Beach, FL 33408-0420

**SUBJECT: TURKEY POINT NUCLEAR PLANT - NRC TRIENNIAL FIRE PROTECTION  
INSPECTION (REPORT NO. 05000250/2013007 AND 05000251/2013007)**

Dear Mr. Nazar:

On June 28, 2013, The U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Turkey Point Nuclear Plant, Units 3 and 4. The enclosed inspection report documents the inspection results, which were discussed with Mr. M. Kiley and other members of your staff on June 28, 2013.

The inspection examined activities conducted under your license as they related to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

The enclosed report documents one NRC-identified finding of very low safety significance (Green) that was determined to involve a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest the violation or significance of this NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Turkey Point Nuclear Plant.

You are not required to respond to this letter. In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the

Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**RA**

Michael F. King, Chief  
Engineering Branch 2  
Division of Reactor Safety

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

Enclosures:  
Inspection Report 05000250/2013007,  
05000251/2013007  
Supplemental Information

cc: (See page 3)

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Letter to Mano Nazar from Michael F. King dated August 7, 2013.

SUBJECT: TURKEY POINT NUCLEAR PLANT - NRC TRIENNIAL FIRE PROTECTION  
INSPECTION (REPORT NO. 05000250/2013007 AND 05000251/2013007)

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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.: 05000250/2013007 and 05000251/2013007

Licensee: Florida Power & Light Company (FPL)

Facility: Turkey Point Nuclear Plant, Units 3 and 4

Location: Florida City, Florida, 33035

Dates: June 10-14, 2013 (Week 1)  
June 24-28, 2013 (Week 2)

Inspectors: G. Wiseman, Senior Reactor Inspector (Lead Inspector)  
P. Braxton, Reactor Inspector  
R. Fanner, Reactor Inspector

Accompanying Personnel: O. López, Senior Reactor Inspector (Training)  
M. Singletary, Reactor Inspector (Training)

Approved by: Michael F. King, Chief  
Engineering Branch 2  
Division of Reactor Safety

Enclosure

## SUMMARY OF FINDINGS

IR 05000250/2013-007, 05000251/2013-007; 06/10-14/2013 and 06/24-28/2013; Turkey Point Nuclear Plant, Units 3 and 4; Fire Protection (Triennial).

This report covers an announced two-week triennial fire protection inspection by a team of three regional inspectors and two inspectors in training. One Green non-cited violation (NCV) was identified. The significance of inspection findings is indicated by their color (Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, Significance Determination Process, dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Components Within the Cross-Cutting Areas," dated October 28, 2011. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated January 28, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process" Rev. 4, dated December 2006.

### A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. An NRC-identified non-cited violation (NCV) of Turkey Point Unit 3 operating license condition (OLC) 3.D, Fire Protection, was identified for the failure to ensure that structural steel that was part of a fire barrier for fire zone (FZ) 104 was provided with a three-hour rated fire proofing as required by the approved fire protection program. The licensee entered the issue into their corrective action program as AR-1886074 and supplemented existing hourly fire watch patrol compensatory measures in FZ 104.

Failure to comply with the requirements of the Turkey Point Fire Protection Program for ensuring that structural steel that was part of a fire barrier was provided with a three-hour fire proofing was a performance deficiency. The performance deficiency was more than minor because it adversely affected the Mitigating Systems cornerstone objective of protection against external events. The inspectors determined the finding to be of very low safety significance (Green) because it was determined, through independent calculations, that the affected structural fireproofing in FZ 104 would provide more than 20 minutes of fire endurance despite the lack of fire test results or engineering evaluations documenting the fire rating of the structural steel fire proofing. The inspectors determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance. (Section 1R05.02)

### B. Licensee Identified Violations

None

## REPORT DETAILS

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

#### 1R05 Fire Protection

This report documents the results of a triennial fire protection inspection of the Turkey Point Nuclear Plant (TPN) Units 3 and 4. The inspection was conducted in accordance with the guidance provided in NRC Inspection Procedure (IP) 71111.05T, "Fire Protection (Triennial)," dated January 31, 2013. The objective of the inspection was to review a sample of four risk-significant fire areas (FAs) to evaluate implementation of the fire protection program (FPP) as described in Appendix 9.6A of the TPN Updated Final Safety Analysis Report (UFSAR), Administrative Procedure (ADM) 0-ADM- 016, Fire Protection Program, Appendix R Safe Shutdown Analysis (SSA) 5160-M-772, and to review site specific implementation of one mitigating strategy from Section B.5.b of NRC Order EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (commonly referred to as B.5.b), as well as the storage, maintenance, and testing of B.5.b mitigating equipment. The sample FAs were chosen based on a review of available risk information as analyzed by a senior reactor analyst from Region II, a review of previous inspection results, plant walkdowns of FAs, consideration of relational characteristics of combustible material to targets, and location of equipment needed to achieve and maintain safe shutdown (SSD) of the reactor. In selecting a B.5.b mitigating strategy sample, the inspectors reviewed licensee submittal letters, safety evaluation reports (SERs), licensee commitments, B.5.b implementing procedures, and previous NRC inspection reports (IRs). Section 71111.05-05 of the IP specifies a minimum sample size of three FAs/Fire Zones (FZs) and one B.5.b mitigating strategy for addressing large fires and explosions. This inspection fulfilled the requirements of the procedure by selecting a sample of four FAs/FZs and one B.5.b mitigating strategy. The FAs/FZs chosen were identified as follows:

1. Unit 4 Fire Area R, FZ 61, Reactor Control Rod Equipment and Motor Control Center 4B Room
2. Unit 3 Fire Area W, FZ 70, 4160V Switchgear 3B Room
3. Unit 3 Fire Area OD, FZ 86, Main Transformer and Startup Transformer
4. Unit 3 Fire Area LL, FZ104, DC Equipment 3A Room

For each of the selected FAs/FZs, the inspectors evaluated the licensee's FPP against applicable NRC requirements and licensee design basis documents. Applicable licensing and design basis documents reviewed by the inspectors are listed in the Attachment to this report.

#### .01 Protection of Safe Shutdown Capabilities

##### a. Inspection Scope

For the selected FAs/FZs, the inspectors performed physical walkdowns to observe: (1) the material condition of fire protection systems and equipment; (2) the storage of permanent and transient combustibles; (3) the proximity of fire hazards to cables relied upon for SSD; (4) the potential environmental impacts, if any, on credited operator manual actions (OMAs) to the areas adjacent to the FA/FZ, and (5) the licensee's implementation of procedures and

processes for limiting fire hazards, housekeeping practices, and compensatory measures for inoperable or degraded fire protection systems and credited fire barriers.

### Methodology

For the selected FAs/FZs, the inspectors evaluated the potential for the effect from the fire event on credited actions specified by licensee procedures. The inspectors reviewed the Turkey Point Unit 3 & 4 UFSAR, Appendix 9.6A, STD-M-006, Engineering Guidelines for Fire Protection for Turkey Points Units 3 & 4, and conduit and cable tray routing information by FA, as well as, conducted field walkdowns of the cable routing to confirm that at least one train of redundant cables routed in the FA/FZ were adequately protected from fire damage or the licensee's analysis determined that the fire damage would not prohibit safe plant shutdown. The inspectors reviewed the TPN SSA for the selected FAs/FZs and compared it to the off-normal operating procedures (ONOPs) to verify that cables and equipment credited to provide reactivity control, reactor coolant makeup, reactor heat removal, process monitoring and support functions for post-fire SSD in the SSA and applicable procedures were adequately protected from fire damage in accordance with the requirements of 10 CFR 50, Appendix R, Section III.G, "Fire Protection of Safe Shutdown Capability."

### Operational Implementation

The inspectors reviewed 0-ONOP-016.10, Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions, and applicable references to other off-normal procedures to verify that the shutdown methodology properly identified the systems and components necessary to achieve and maintain post-fire SSD. The inspectors performed walkdowns of the procedural actions based upon the FAs/FZs selected to assess the implementation of the SSD strategy and human factors attributes associated with them. The inspectors reviewed licensee records, which specified the shift staffing from randomly selected dates, to ensure the proper staffing levels existed to implement actions specified by licensee procedures. The inspectors reviewed licensee-training material to ensure licensed and non-licensed operators were being trained based upon the current plant configuration.

#### b. Findings

No findings were identified.

### .02 Passive Fire Protection

#### a. Inspection Scope

The inspectors walked down the selected FAs/FZs to evaluate the adequacy of the fire resistance of barrier enclosure walls, ceilings, floors, and structural steel support fire proofing protection. This evaluation also included fire barrier concrete block walls, penetration seals, fire doors, fire dampers, and the Thermo-Lag electrical raceway fire barrier systems to ensure that at least one train of SSD equipment would be maintained free of fire damage. Construction detail drawings were reviewed as necessary. Where applicable, the inspectors observed the installed barrier assemblies and compared the as-built configurations to the approved construction details; supporting fire endurance test data; licensing basis commitments; and standard industry practices. The inspectors also performed independent fire resistance calculations to validate the fire resistance of selected structural steel fire proofing components.

**b. Findings**

Introduction: The inspectors identified a Green non-cited violation (NCV) of Renewed Operating License Condition (OLC) 3.D, Fire Protection, for the failure to ensure that structural steel that was part of a fire barrier was provided with a three-hour rated fire proofing as required by the approved FPP.

Description: Fire Area LL was the Unit 3 DC Equipment Room and was a single zone area comprised of FZ 104. FZ 104 was bounded on the floor, ceiling and walls by a three-hour rated fire barrier. The ceiling was constructed of reinforced concrete supported by fireproofed structural steel.

The FPP requirements for structural steel fire proofing were described in Section 3.11.4 of UFSAR Appendix 9.6A. The licensee was required to provide a three-hour fireproofing to all structural steel supporting or forming a part of an identified fire zone or area fire barrier in order to maintain its integrity. The structural steel fireproofing designs were required to comply with standard details and designs tested by Underwriter Laboratories (UL) for a three-hour fire rating. The required fireproofing thickness for structural steel members smaller than those tested by UL was determined in accordance with instructions contained in the UL Fire Resistance Directory - 1984 Edition. In addition, Specification 5177-265-A-149, Technical Specification for Furnishing and Delivery of Cementitious Fire Proofing for Florida Power and Light Company, Revision (Rev) 1, required the manufacturer to provide calculations for determining fireproofing requirements and recommend fireproofing thickness for beam and columns sizes less than those UL tested.

At the time of the inspection, the licensee was unable to provide UL listing data, fire tests results, or engineering calculations demonstrating that the installed fireproofing in FZ 104 was sufficient to meet the FPP fire resistance requirements. The inspectors reviewed Drawing 5610-A-181, Fire Proofing & Installation Guidelines, Rev. 8 and Calculation M12-202-11, Temperature Response of I-Beams with Steel Attachments, Rev. 2 to independently estimate the fire resistance of selected fireproofed beam and column sizes. The inspectors used the methodology described in NUREG 1805, Chapter 17, Calculating the Fire Resistance of Structural Steel Members, dated December 2004. Based on the reviewed documentation and independent calculations, the inspectors determined that the structural steel fire proofing for FZ 104 had an indeterminate fire resistance rating instead of the required three hours.

Analysis: The licensee's failure to ensure that structural steel that was part of a fire barrier was provided with a three-hour fire proofing as required by the approved FPP was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

The significance of this finding was evaluated using IMC 0609, Appendix F, "Fire Protection Significance Determination Process", dated February 28, 2005, because the performance deficiency affected fire protection defense-in-depth strategies involving fire confinement. The finding was assigned a Moderate degradation rating (in accordance with IMC 0609, Appendix F, Attachment 2) since the inspectors determined that some substantial credit could be given despite the lack of fire test results or engineering evaluation documenting the fire rating of the structural steel fire proofing. Question 5 of IMC 0609, Appendix F, Task 1.3.2 screened the finding to very low safety significance (Green) since the inspectors determined that the affected

structural fireproofing would provide more than 20 minutes of fire endurance. This determination was based on the methodology described in NUREG 1805, Chapter 17, Calculating the Fire Resistance of Structural Steel Members. The inspectors determined that no cross cutting aspect was applicable to this performance deficiency because this finding occurred in the past (original plant fireproofing designs) and was not indicative of current licensee performance.

Enforcement: OLC 3.D of the Renewed Facility Operating License No. DPR-31 states, that Florida Power and Light shall implement and maintain in effect all provisions of the approved FPP as described in the UFSAR for Turkey Point Units 3 and 4 and as approved in the Safety Evaluation Report dated March 21, 1979. Section 3.11.4 of UFSAR Appendix 9.6A states, in part, that all structural steel supporting or forming a part of an identified fire zone or area fire barrier, is provided with three-hour rated fireproofing in order to maintain its integrity. The structural steel fireproofing designs shall comply with standard details and designs tested by UL for a three-hour fire rating. The required fireproofing thickness for structural steel members smaller than those tested by UL is determined in accordance with instructions contained in the UL Fire Resistance Directory - 1984 Edition.

Contrary to the above, on June 28, 2013, the licensee failed to ensure that structural steel supporting or forming a part of identified fire barrier in FZ 104 was provided with three-hour rated fireproofing. Specifically, the licensee was unable to provide UL listing data, fire tests results, or engineering calculations demonstrating that the installed structural steel fireproofing in FZ 104 was sufficient to meet the FPP fire resistance requirements. The licensee entered the deficiency into their corrective action program as AR-1886074 and supplemented existing hourly fire watch patrol compensatory measures in FZ 104. This violation is being treated as an NCV, consistent with section 2.3.2 of the NRC Enforcement Policy. NCV 05000250/2013007-01, Failure to ensure that structural steel that was part of a fire barrier was provided with a three-hour fireproofing.

### .03 Active Fire Protection

#### a. Inspection Scope

The inspectors reviewed the redundancy of fire protection water sources and fire pumps to confirm they were installed in accordance with the National Fire Protection Association (NFPA) codes of record to satisfy the applicable separation, design requirements, and licensing basis requirements of the TPN FPP and Appendix 9.6A of the UFSAR. The inspectors performed in-plant observations of the material condition and operational lineup for the operation of the fire water pumps and fire protection water supply distribution piping including, manual fire hose and standpipe systems for the selected FA/FZs. Using operating and valve cycle/alignment procedures as well as engineering drawings, the inspectors examined the electric motor-driven and the diesel-driven fire pumps and accessible portions of the fire main piping system to evaluate operational status, consistency of as-built configurations with engineering drawings, and to verify correct system valve lineups (i.e. position of valves). The inspectors also examined portions of the licensee's SSA and select electrical circuit routing drawings outlining the fire water pumps' power and pressure start capability to verify that the fire water system would be available to support fire brigade response activities during power block fire events.

The inspectors compared the fire detection and fire suppression systems for the selected FAs/FZs to the applicable NFPA Standard(s) by reviewing design documents and observing their as-installed configurations as part of performing the in-plant walkdowns. The inspectors reviewed selected fire protection vendor equipment specifications, drawings, and engineering

calculations to determine whether the fire detection and suppression methods were appropriate for the types of fire hazards that existed in the selected FAs/FZs. During plant walkdowns, the inspectors observed the placement of the fire hose stations, fire extinguishers, fire hose nozzle types, and fire hose lengths, as designated in the firefighting pre-plan strategies, to verify they were not blocked and adequate reach and coverage was provided consistent with the firefighting strategies and FPP documents. The inspectors reviewed completed periodic surveillance testing and maintenance program procedures for the fire detection and suppression systems and compared them to the operability, testing, and compensatory measures requirements of procedure 0-ADM-016.3, Fire Protection Impairments. This review was to assess whether the test program was sufficient to validate proper operation of the fire detection and suppression systems in accordance with their design requirements.

Aspects of fire brigade readiness were reviewed, including but not limited to, the fire brigade's personal protective equipment, self-contained breathing apparatuses, portable communications equipment, and other fire brigade equipment to determine accessibility, material condition and operational readiness of equipment. During plant walkdowns, the inspectors compared firefighting pre-plan strategies to existing plant layout and equipment configurations and to fire response ONOPs for the selected FAs/FZs. This was done to verify that firefighting pre-fire plan strategies and drawings were consistent with the fire protection features and potential fire conditions within the area and also to determine if appropriate information was provided to fire brigade members to facilitate suppression of an exposure fire that could impact the SSD strategy.

b. Findings

No findings were identified.

04. Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The inspectors evaluated whether water-based manual firefighting activities could adversely affect equipment credited for SSD, inhibit access to alternate shutdown equipment, or adversely affect local OMAs required for SSD in the selected FAs/FZs. The inspectors reviewed available documentation related to flooding analysis from fire protection activities as well as potential flooding through unsealed concrete floor cracks. The inspectors also performed independent calculations of inter-area migration of water under fire doors to validate feasibility of selected OMAs in adjacent plant areas.

Firefighting pre-plan strategies; fire brigade training procedures; fire damper locations; heating, ventilation and air conditioning (HVAC) drawings; and, fire response procedures were reviewed to verify that inter-area migration of ventilation of gaseous heat and smoke was addressed and access to safe shutdown equipment and OMAs would not be inhibited by smoke migration from one area to adjacent plant areas used to accomplish SSD.

b. Findings

No findings were identified.

.05 Alternative Shutdown Capability

a. Inspection Scope

No fire zones selected were credited as alternative shutdown capability for a postulated fire. In cases where local OMAs are credited in lieu of Appendix R III.G.2 cable protection of SSD components, the inspectors performed walk-throughs of the procedures to verify that the OMAs were feasible.

b. Findings

No findings were identified.

.06 Circuit Analyses

Inspection Scope

The inspectors reviewed UFSAR 9.6A, "Fire Protection Program Report," system flow diagrams, and the TPN post-fire SSA to verify that the licensee had identified both required and associated circuits that may impact post-fire SSD for the selected FAs/FZs. On a sample basis, the inspectors verified that the cables of equipment specified in the SSA essential equipment list required for achieving and maintaining shutdown conditions, in the event of a fire in the selected fire zones, had been properly identified. In addition, the inspectors reviewed cable routing information for credited equipment/components and verified that these cables had either been adequately protected from the potentially adverse effects of fire damage or analyzed to show that fire induced faults (e.g. hot shorts, open circuits, and shorts to ground) would not prevent post-fire safe shutdown. The inspectors reviewed the licensee's electrical coordination study to determine if power supplies were susceptible to fire damage, which would potentially affect the credited components for the FAs/FZs chosen for review. The specific components reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.07 Communications

a. Inspection Scope

The inspectors reviewed the communication capabilities required to support plant personnel in the performance of OMAs to achieve and maintain SSD, as credited in the TPN UFSAR, Appendix 9.6A, and Section 3.8. The inspectors performed plant walkdowns with the licensee's operations staff to assess the credited method of communications used to complete safe shutdown actions as specified in post-fire SSD procedures for the selected FAs/FZs. The inspectors assessed the operator's ability to communicate based upon completed actions by requesting licensee operations staff to perform radio checks during the walkdowns from applicable control locations. The inspectors assessed if communications were possible given the background noise from plant equipment to determine if this would deter the operator's ability to implement the response strategy within the time required by the plant feasibility analysis. The

inspectors also verified that portable radio communications and fixed emergency communication systems were available, operable, and adequate for the performance of designated activities to support fire event notification and fire brigade firefighting activities. Additionally, the inspectors verified that the design and location of communications equipment, such as repeaters and transmitters, would not cause a loss of communications during a fire. The inspectors reviewed preventive maintenance and surveillance test records and vendor manuals to verify that the communication equipment was being properly maintained and tested.

b. Findings

No findings were identified.

.08 Emergency Lighting

a. Inspection Scope

The inspectors reviewed maintenance and design aspects of the fixed 8-hour battery pack emergency lighting units (ELUs) required by 10 CFR 50 Appendix R, Section III.J and the TPN approved FPP. The inspectors performed plant walkdowns of the post-fire SSD procedures for the selected FAs/FZs to observe the placement and coverage area of the ELUs required to illuminate operator access and egress pathways, and any equipment requiring local operation and/or instrumentation monitoring for post-fire SSD. In some instances, operations personnel performed onsite tests of the ELUs to verify operation. The inspectors also reviewed the availability of portable 8-hour battery powered emergency lights located in storage lockers in select plant locations. The portable 8-hour battery powered emergency lights were credited in the licensee's FPP for operator access and egress routes, and to perform the OMAs required by plant fire response procedures. The inspectors also reviewed completed surveillance and maintenance tests to verify that adequate surveillance testing was in place. The manufacturer's information and vendor manuals for the fixed and portable 8-hour battery pack ELUs were reviewed to verify that the battery power supplies were rated with at least an 8-hour capacity.

b. Findings

No findings were identified.

.09 Cold Shutdown Repairs

a. Inspection Scope

The inspectors interviewed licensee personnel and reviewed both the UFSAR Appendix 9.6A and the SSA to verify that the licensee had evaluated the need for cold shutdown repairs. The inspectors determined that the licensee did not take credit for repairs to cold shutdown components in order to achieve cold shutdown.

b. Findings

No findings were identified.

## .10 Compensatory Measures

### a. Inspection Scope

#### (1) Compensatory Measures for Degraded Fire Protection Components

The inspectors reviewed the administrative controls for out-of-service, degraded and/or inoperable fire protection features (e.g. detection and suppression systems and passive fire barriers) to verify that short-term compensatory measures adequately compensated for the degraded function or feature until appropriate corrective actions could be taken.

#### (2) Operator Manual Actions as Compensatory Measures for Safe Shutdown

The TPN post-fire SSD methodology utilized OMAs to address fire-induced circuit failures, which could potentially prevent operation or cause maloperation of equipment needed to achieve and maintain post-fire SSD conditions. The NRC specified in the *Federal Register* (71 FR 11169); dated March 6, 2006, that OMAs are acceptable as compensatory measures for corrective actions contingent upon the OMAs being feasible. If the OMAs used were consistent with the enforcement guidance in EGM 98-02 in combination with the criteria specified in IP 71111.05T the actions met the basis for adequacy and appropriateness of compensatory measures to restore compliance. In the case of TPN, the corrective actions to restore compliance involved adoption of NFPA 805 through 10 CFR 50.48(c). In this instance, by letter to NRC dated November 15, 2005 (ML053290175), Florida Power & Light Company submitted a letter of intent to transition the current licensing basis to NFPA 805 "Performance-Based Standard for Fire Protection for Light-Water Reactor Electric Generating Plants," 2001 Edition, (NFPA 805 Rule) in accordance with the requirement in Title 10 of the *Code of Federal Regulations* Part 50.48(c) (CFR 50.48(c)) for Turkey Point Nuclear Plant Units 3 and 4.

The inspectors reviewed licensee operator manual actions feasibility calculations PTN-ENG-SEMS-03-045 which initially documented OMAs for Turkey Point Units 3 & 4 as well as supplemental calculation PTN-FPER-13-001. In cases where local OMAs were credited in lieu of cable protection of SSD equipment, the inspectors reviewed and performed walkdowns of those applicable OMAs as specified by 0-ONOP-016.10, Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions to verify that the OMAs were feasible utilizing the guidance of NRC IP 71111.05T, paragraph 02.02.j.2. A list of SSD components examined for cable routing is included in the Attachment.

### b. Findings

No findings were identified.

.11 Review and Documentation of Fire Protection Program Changes

a. Inspection scope

The inspectors reviewed a sample of FPP changes made between January 2010 and March 2013 to assess the licensee's effectiveness and to determine if the changes to the FPP were in accordance with the fire protection license condition and had no adverse effect on the ability to achieve SSD.

b. Findings

No findings were identified.

.12 Control of Combustibles and Ignition Sources

a. Inspection Scope

The inspectors conducted tours of numerous plant areas that were important to reactor safety, including the selected FAs/FZs, to verify the licensee's implementation of FPP requirements as described in the TPN Fire Protection Program and administrative procedure 0-ADM-016.1, "Transient Combustible and Flammable Substances Program." For the selected FAs/FZs, the inspectors evaluated generic fire protection training; fire event history; the potential for fires or explosions; the combustible fire load characteristics; and, the potential exposure fire severity to determine if adequate controls were in place to maintain general housekeeping consistent with the UFSAR, administrative procedures, and other FPP procedures. The inspectors also performed independent calculations to validate that the licensee had adequate controls against hydrogen explosion in the batteries rooms adjacent to FZ 104. There were no hot work activities ongoing within the selected fire areas during the inspection and observation of this activity could not be performed.

b. Findings

No findings were identified.

.13 B.5.b Inspection Activities

a. Inspection Scope

The inspectors reviewed, on a sample basis, the licensee's external makeup to the spent fuel pool strategy. The inspectors verified that the guidelines were feasible, personnel were trained to implement the strategy, and equipment was properly staged and maintained to ensure the licensee staff provided an adequate response to large fires and explosions specified by the guidelines. The inspectors requested and reviewed the inventory of equipment; maintenance records of required equipment; job performance measures and requests to view the physical location of the equipment to ensure all attributes would be available based upon the chosen strategy. The inspectors performed walk downs of the storage and staging areas for the B.5.b equipment to verify that equipment identified for use in the current procedures were available, calibrated, maintained, and tested in accordance with the licensee's B.5.b program procedures.

Through discussions with licensee staff, review of applicable documentation, and plant walkdowns, the inspectors verified the engineering assumptions credited with responding to this type of an event were reasonable. The inspectors reviewed engineering calculations to assess the water makeup capacity required by the strategy and concluded there was reasonable assurance that specified requirements could be met using the specified equipment and credited water sources listed in the implementation guidelines. The inspectors reviewed completed training records of the licensee's staff to verify that personnel were trained and familiar with the applicable strategy objectives and implementing guidelines. In instances where records for potential responders were not available, the inspectors performed interviews of licensee personnel.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

4OA2 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed a sample of licensee independent audits, self- assessments, and system/program health report for thoroughness, completeness and conformance to FPP requirements. Requirements for the independent audits are contained in Regulatory Guide 1.189, "Fire Protection for Operating Nuclear Power Plants," Generic Letter 82-21, "Technical Specifications for Fire Protection Audits," and the licensee's Nuclear Quality Assurance Plan. The inspectors also reviewed CAP documents, including completed corrective actions documented in selected Action Requests (ARs) and operating experience program documents, to ascertain whether industry identified fire protection issues (actual or potential) affecting TPN were appropriately entered into the corrective action program for resolution. Items included in the operating experience program effectiveness review were NRC Information Notices, Regulatory Issue Summaries (RISs), industry or vendor generated reports of defects and non-compliances submitted pursuant to 10 CFR Part 21, and vendor information letters. The inspectors evaluated the effectiveness of the corrective actions for the identified issues. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On June 28, 2013, the lead inspector presented the preliminary inspection results to Mr. M. Kiley, TPN Site Vice President, and other members of the licensee's staff, who acknowledged the results. Proprietary information is not included in this inspection report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee Personnel

V. Barry, SRO Unit Supervisor  
R. Conrad, St. Lucie Fire Protection Engineer  
O. Hanek, Licensing Engineer  
M. Kiley, Site Vice President  
A. Lay, Non-Licensed Operator  
E. McCartney, Site General Manager  
K. Mohindroo, Engineering Manager  
V. Molina, Fire Protection Engineer  
J. Pallin, Maintenance Director  
J. Patterson, Fire Protection Coordinator  
V. Rubano, Fire Protection Chief Engineer  
C. Rossi, Quality Assurance Supervisor  
B. Thaker, Appendix R Engineer  
B. Tomonto, Licensing Manager  
M. Wayland, Operations Director

NRC Personnel

T. Hoeg, Senior Resident Inspector, TPN

**LIST OF ITEMS OPENED, CLOSED AND DISCUSSED**

Opened

None

Opened and Closed

05000250/2013007-01	NCV	Failure to ensure that structural steel that was part of a fire barrier was provided with a three-hour fire proofing (Section 1R05.02)
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Discussed

None

## SUPPLEMENTAL INFORMATION

### LIST OF FIRE BARRIER FEATURES INSPECTED (Refer Report Section 1RO5.02- Passive Fire Barriers)

<b><u>Fire Barriers Floors/Walls/Ceiling Identification</u></b>	<b><u>Description</u></b>
Masonry Block Wall Construction	FZ70 to FZ71
<b><u>Fire Door Identification</u></b>	<b><u>Description</u></b>
Door D-070-1	FZ70 to FZ88
Door D-070-3	FZ70 to FZ71
Door D-061-1	FZ61 to FZ79
Door D-098-2	FZ104 to FZ98
Door D-104-2	FZ104 to FZ101
<b><u>Fire Damper Identification</u></b>	<b><u>Description</u></b>
Damper FD 81-A	FZ104 to FZ101
<b><u>Electrical Raceway Fire Barrier System Identification</u></b>	<b><u>Description</u></b>
Conduit B-3J 1618	FZ104
Conduit B-4J 1607	FZ104
Conduit 3A064	FZ104
<b><u>Structural Steel Fireproofing Identification</u></b>	
Spray-Applied Cementitious Fireproofing (Albi Duraspray)	FZ104

## **LIST OF COMPONENTS REVIEWED**

(Refer to Report Sections 1R05.01 / 1R05.03 / 1R05.05 / 1R05.06)

E-16F, DC/ Inverter Room A/C Unit (South Unit)  
E-16D, DC/ Inverter Room A/C Unit (Common Unit)  
FCV-3(4)-113A, Boric Acid Flow to Blender  
FCV-3(4)-113B, Borated Water Charging Pump Suction  
LCV-4-115A, Letdown to VCT/HT Divert Valve  
LCV-3-115A, Letdown to VCT/HT Divert Valve  
MOV-4-716B, CCW to RCP Thermal Barrier Supply Isolation Valves  
3P201A, Charging Pump 3A  
4P201A, Charging Pump 4A  
4P201C, Charging Pump 4C  
MOV-3-536, Unit 3 Pressurizer Relief Isolation Valve  
MOV-4-536, Unit 4 Pressurizer Relief Isolation Valve  
3AA21, 4160V Supply Breaker for Condensate Pump 3A  
3P201A, Charging Pump 3A Control  
3P201B, Charging Pump 3C Control  
4P201A, Charging Pump 4A Control  
4P201C, Charging Pump 4C Control  
4RTA, Reactor Trip Breaker  
4RTB, Reactor Trip Breaker

### Instruments

FT-3-1401B, AFW Flow to S/G A  
FT-3-1447B, AFW Flow to S/G B  
FT-3-1458B, AFW Flow to S/G C  
LT-3-460, Pressurizer Level Transmitter  
LT-3-477, Steam Generator Level Transmitter  
LT-3-487, Steam Generator Level Transmitter  
LT-3-497, Steam Generator Level Transmitter  
LT-3-722, Steam Generator Level Transmitter  
PT-3-1607, SG B Steam Pressure Transmitter

## LIST OF DOCUMENTS REVIEWED

### **Procedures**

0-ADM-016, Fire Protection Program, Rev. 8  
0-ADM-016.1, Transient Combustible and Flammable Substances Program, Rev. 4A  
0-ADM-016.2, Fire Brigade Program, Rev. 3  
0-ADM-016.3, Fire Protection Impairments, Rev. 1A  
0-ADM-016.4, Fire Watch Program, Rev. 5  
0-ADM-016.5, Hot Work Program, Rev. 6  
0-ADM-030, Control of Fuses, Rev. 12  
0-EPIP-20129, Emergency Response Team Radiological Monitoring, Rev. 1  
0-ONOP-016.10, Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions (FZ 61), Rev. 9  
0-ONOP-016.10, Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions (FZ 70), Rev. 9  
0-ONOP-016.10, Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions (FZ 104), Rev. 2  
0-ONOP-016.10, Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions Basis Document, Rev. 3  
0-OSP-016.34, Portable Diesel Fire Pump Operability Test and Extensive Damage Mitigation Equipment Surveillance, Rev. 7A  
0-PME-003.31, Vital 120 VAC & 125 VDC Breaker Maintenance, Rev. 3  
0-PME-006.04, 480 Volt Load Center Breaker Electro-Mechanical, Rev. 2A  
0-PME-007.04, Molded Case Circuit Breaker Testing, Rev. 2  
0-SFP-016.3, Fire Barriers and Structural Steel Fireproofing Inspection, Rev. 2  
0-SFP-016.5, Fire Protection Equipment Surveillance, Rev. 2  
0-SME-016.4, Fire Damper Inspection, Rev. 2  
0-SME-091.1, Fire and Smoke Detection System Annual Test, Rev. 4  
0-SMM-016.6, Fire Door Inspection, Rev. 0A  
EDMG-1, Guideline for Responding to Large Area Fire or Explosion Involving Multiple Fire Zones, Rev. 2  
3-EOP-E-0, Reactor Trip or Safety Injection, Rev. 6  
3-EOP-ES-0.1, Reactor Trip Response, Rev. 6  
3-EOP-ECA-0.0, Loss of All AC Power, Rev. 4  
3-ONOP-033.1, Spent Fuel Pit (SFP) Cooling System Malfunction, Rev. 9A  
3-OSP-075.1, Auxiliary Feedwater Train 1 Operability Verification, Rev. 5  
QI-3-PTN-1, Design Control, Rev. 7  
QI-6-PTN-1, Quality Instruction, Rev. 5

### **Calculations, Evaluations, & Specifications**

5177-265-EG-22, Breaker/Fuse Coordination Study Calculations (Appendix R), Rev. 6  
5610-E-2000, Appendix R Essential Cable List, Rev. 43  
5610-E-200A, Nuclear Safety Capability Fire Shutdown Analysis Essential Cable List, Rev. 0  
5610-M-722, Appendix R Safe Shutdown Analysis, Rev. 44  
5610-M-722B, Nuclear Safety Capability Fire Safe Shutdown Analysis (FSSA) Fire Area LL, Rev.0

5610-M-722B, Nuclear Safety Capability Fire Safe Shutdown Analysis (FSSA) Fire Area W, Rev.0

5610-M-722B, Nuclear Safety Capability Fire Safe Shutdown Analysis (FSSA) Fire Area R, Rev.0

5610-M-723, Appendix R Essential Equipment List Rev. 29

5610-M-723A, Nuclear Safety Capability Fire Shutdown Analysis Essential Equipment List (EEL), Rev. 0

5610-M-722, Appendix "R" Safe Shutdown Analysis, Rev. 38

5610-M-722B, Nuclear Safety Capability Fire Safe Shutdown Analysis (FSSA), Rev. 0

5610-E-2000, Appendix R Essential Cable List, Rev. 40

5610-E-2000A, Nuclear Safety Capability Fire Shutdown Analysis Essential Cable List (ECL), Rev. 0

EC-276694, Evaluation for PTN-FPER-10-010, Primary Control Station and Safe & Stable Plant Mode, Rev. 1

FPE 89-022, Fire Protection Evaluation Structural Steel Fireproofing Turkey Point Units 3 and 4

M08-265-03, Structural Steel Fire Protection Requirements for Appendix R Modifications, Rev 1

M12-202-11, Temperature Response of I-beams with Steel Attachments, Rev. 2

MN-3.21, Installation and Inspection Guidelines for Thermo-Lag Fire Barrier Material, Rev 13

PC/M 89-491, Structural Steel Attachment Fireproofing Requirements, Dated January 10, 1990

Project No. 14980-100676, Fire Endurance Test of Articles Protected with Thermo-Lag Fire Barrier Systems, Dated January 24, 1997

OP-AA-107, Extensive Damage Management Program, Rev. 1

PTN-BBJM-85-041, Determination of Fire Zone Combustibles Loads for Use in Fire Hazard Analysis, Rev. 5

PTN-BFJE-91-019, AC Emergency Power System Coordination Calculation-CCN 2, Rev. 11

PTN-BFJE-92-023, Load center Circuit Breaker & Ground Fault Relay, Rev. 12

PTN-BFJM-91-057, Turkey Point Unit 3 & HVAC Battery Room Minimum Temperature

PTN-BFJM-92-008, Control Building Battery Room Hydrogen Ventilation during Loss of HVAC Conditions, Rev 1

PTN-ENG-SEES-98-0004, Unit 3 Turbine Lube Oil Fire Zones, OD/85, OD/87, OD/92, Rev 0

PTN-ENG-SEES-98-002, 10CFR50 Appendix R Circuit Analysis For Outdoor Fire Zones, Fire Zone OD/86 Unit 3 Main and Startup Transformer Area, Rev. 0

PTN-ENG-SEES-98-002, Fire Zone OD/86 Unit 3 Main and Startup Transformer Area, Rev. 0

PTN-ENG-SEMS-03-045, Engineering Evaluation for Appendix R Safe Shutdown Timelines for Manual Actions, Rev. 0

PTN-ENG-SENJ-06-039, Resolution of Interim Compensatory Measure B.5.b Phase 2, Rev. 0

PTN-ENG-SENJ-07-001, Resolution of Interim Compensatory Measure B.5.b; Phase 3, Rev. 2

PTN-FPER-01-006, Evaluation of Inaccessible Penetration Seals, Rev. 0

PTN-FPER-07-014, Code Compliance Evaluation: NFPA 14-Standpipe and Hose

PTN-FPER-07-020A, Code Compliance Evaluation: NFPA 20- Installation of Centrifugal Fire Pumps, Rev. 1

PTN-FPER-07-072E, TPN Units 3 and 4 Fire Protection Evaluation Record, Rev. 0

PTN-FPER-07-072E1, NFPA 72E Automatic Fire Detectors Plant Areas except 4A/4B Generator Building, Rev. 1

PTN-FPER-07-080, Code Compliance Evaluation NFPA 80 - Fire Doors and Windows, Rev. 0

PTN-FPER-11-002, NFPA 805 Recovery Action Feasibility Evaluations, Rev. 0

PTN-FPER-11-002, NFPA 805 Recovery Action Feasibility Evaluations, Rev. 1

PTN-FPER-11-008, Suppression and Detection in Outdoor Areas, Rev. 0

PTN-FPER-11-009, Cable Coatings-Hazard Mitigation from Cable Insulation, Rev. 0

PTN-FPER-11-012, Alternative to 1" Booster Hose Reel, Rev. 0  
 PTN-FPER-12-002, Conduit Seal Compliance with NFPA 805, Rev. 0  
 PTN-FPER-13-001, TPN Units 3 and 4 Evaluation of Appendix R III.G.2 Compensatory Manual Actions  
 PTN-FPER-96-030, Thermo-Lag Fire Barrier System Upgrades in the 3A North DC Equipment Room, Rev. 0  
 SSD MA Timeline Parts 1 & 2, Safe Shutdown Timelines for Appendix R Manual Actions, Rev. 0  
 STD-M-006, Engineering Guidelines for Fire Protection for Turkey Point Units 3 & 4, Rev. 1  
 0-EPIP-20112, Communications Network, Rev. 2  
 Specification 5177-265-A-149, Technical Specification for Furnishing and Delivery of Cementitious Fire Proofing for Florida Power and Light Company, Rev. 1  
 Specification No. 5177-265-A-151, Technical Specification for Design, Technical Services, and Furnishing of Electrical Raceway Fire Resistive (Fire Barrier) Assemblies for Fire Protection, Rev. 5

### **Work Orders**

WO 40212679-01, 125VDC Breaker to Rod Drive MG Set, dated 2/15/13  
 WO 40212678-01, 125VDC Breaker to Gen Synchron Panel C14, dated 2/9/13

### **Drawings**

5610-A-58, Sheet 1, Fire Door Details and Specifications, Rev. 12  
 5610-A-60, Sheet 2, Floor Plan at EL. 10'-0" Showing Fire Walls, Detection, Suppression & Lighting, Rev. 6  
 5610-A-61, Sheet 1, Floor Plan at EL. 18'-0" Showing Fire Walls, Doors, Dampers & Fireproofing, Rev. 21  
 5610-A-61, Sheet 2, Floor Plan at EL. 18'-0" Showing Detection, Suppression, and Lightning, Rev. 17  
 5610-A-62, Sheet 1, Floor Plan at EL. 30'-0" Showing Fire Walls, Doors, Dampers & Fireproofing, Rev. 10,  
 5610-A-62, Sheet 2, Floor Plan at EL. 30'-0" Showing Detection, Suppression, and Lightning, Rev.9  
 5610-A-62, Sheet 3, Emergency Lighting Tabulation E, Rev. 26  
 5610-A-178, Sheet 130, Fire Barriers and Penetrations, Rev. 15  
 5610-A-181, Sheet 1, Fire Barrier Fireproofing Details and Guidelines, Rev. 8  
 5610-E-1, Main Single Line Unit 3, Sheet 1, Rev. 41  
 5610-E-1, Main Single Line Unit 4, Sheet 2, Rev. 14  
 5610-E-128A, Raceway Fire Protection Wrap, Elev. 30'-0," Rev. 6  
 5610-E-150A, Raceway Fire Protection Wrap, Elev. 18'-0," Rev. 7  
 5610-M-3025, Control Building Ventilation DC Equipment/Inverter Rooms HVAC, Sheet 3, Rev. 3  
 5613-E-25, Reactor Auxiliaries Charging Pump 3P201A Breaker 30105, Sheet 5A, Rev. 2  
 5613-E-26, Feedwater and Condensate, Condensate Pump 3P6A Breaker 3AA21, Rev. 6  
 5613-M-3041, Reactor Coolant System PORV Control, Sheet 4, Revision 7  
 5613-M-3047, Chemical and Volume Control System Charging and Letdown, Sheet 2, Rev. 56  
 5613-M-3047, Chemical and Volume Control System Seal Water Injection to RCP, Sheet 3, Rev 23  
 5613-M-3050, Residual Heat Removal System, Sheet 1, Rev 35  
 5613-M-3062, Safety Injection System, Sheet 1, Rev 42

5613-M-3075, Auxiliary Feedwater System Steam to Auxiliary Feedwater Pump Turbines, S Sheet 1, Rev 17  
 5613-M-3075, Auxiliary Feedwater System Auxiliary Feedwater to Steam Generators, Sheet 2, Rev 15  
 5613-T-L1, Sheet 12 A, Emergency Bus Load Sequencer, Rev.2  
 5613-T-L1, Sheet 12B, Emergency Bus Load Sequencer Logic Diagram, Rev.2  
 5613-T-L1, Sheet 13, Bus 3A Loss of Voltage and Bus Stripping, Rev. 10  
 5614-E-5, 480 Volt System Load Centers, 4A, 4B, 4C, 4D, and 4H, Rev. 13  
 5614-M-3047, Chemical and Volume Control System Charging and Letdown, Sheet 2, Rev 64  
 5614-M-3075, Sheet 2, Auxiliary Feedwater System, Auxiliary Feedwater to Stem Generators, Rev. 17  
 5610-T-E-1592, Sheet 1, 125V D.C. & 120 V Instrument A.C. Electrical Distribution Unit 3 & 4, Rev. 45  
 5610-E-1, Sheet 1, Main Single Line Unit 3, Rev. 41  
 5610-E-1, Sheet 2, Main Single Line Unit 4, Rev. 14  
 5610-T-E-1591, Operating Diagram Electrical Distribution Unit 3 & 4 Sheet 1, Rev. 73  
 5613-E-5, 480 Volt System Load Centers 3A, 3B, 3C, 3D & 3H, Rev. 16  
 5613-M-3030, Sheet 1, Component Cooling Water Unit 3, Rev. 26  
 5613-M-3041, Sheet 4, Reactor Coolant System PORV Control, Rev. 7  
 5610-A-181, Fire Proofing & Installation Guidelines, Rev. 8  
 5610-A-61, Floor Plan at El. 18'-0" Showing Fire Walls, Doors, Dampers & Fireproofing, Rev. 21  
 5610-C-62, Intake Structure Sections & Det. Sheet 2, Rev. 10  
 5610-C-71, Intake Bridge Crane Laydown Area PLans, Sections and Details, Rev. 8  
 5610-E-128, Tray, Conduit & Grounding Cable Spreading Room Area 16, Rev. 13  
 5610-E-128A, Raceway Protection Wrap EL. 30'-0" Area 16, Rev. 6  
 5610-E-150, Tray, Conduit & Grounding EL. 18'-0" Area 1, Rev. 44  
 5610-E-150A, Raceway Fire Protection Wrap EL. 18'-0" Area 1, Rev. 7  
 5610-M-61, General Arrangement-Intake Structure Plan Elev. 16'-0" and Sections, Rev. 5  
 5610-M-3025, Control Building Ventilation DC Equipment / Inverter Rooms HVAC, Sheet 3, Rev. 3.

### **Completed Surveillance Procedures, Test Records**

0-OSP-016.1, Electric Driven Fire Pump Annual Surveillance Test, Rev. 2  
 0-OSP-016.2, Diesel Driven Fire Pump Annual Surveillance Test, Rev. 2.  
 0-OSP-016.23, Diesel Driven Fire Pump Operability Test, Rev. 2  
 0-OSP-016.26, Electric Driven Fire Pump Operability Test, Rev. 1  
 0-SFP-016.1, Fire Barrier Penetration Seals Inspection, completed 7/11/06  
 0-SFP-016.2, Electrical Raceway Protection Inspection, Rev. 1A  
 0-SFP-016.3, Fire Barriers and Structural Steel Fireproofing Inspection, completed 3/7/05  
 0-SFP-016.5, Fire Protection Equipment Surveillance, completed 4/10/13

### **Plant Modifications and Engineering Changes**

EC-249693, 3A & 3C Load Center Breaker Replacement, Rev. 4  
 EC-275011, Design Change Package Description for Auxiliary Feedwater Pumps B, C, & Spare Refurbishment, Rev. 1  
 PC/M 07-001, Security Changes, Rev. 0  
 PC/M 89-491, Structural Steel Attachment Fireproofing Requirements, dated 1/10/1990

### **Fire Fighting Preplan Strategies**

Pre-fire Strategy ONOP-16.10, Fire Zone 104, Unit 3 DC Equipment Room, Rev. 3  
 Pre-fire Strategy ONOP-16.10, Fire Zone 70, Unit 3 4160 Switchgear 3B Room, Rev. 4  
 Pre-fire Strategy ONOP-16.10, Fire Zone 61, Unit 4 Reactor Control Rod Equipment Room, Rev. 2

### **Applicable Codes & Standards**

NFPA 10, Portable Fire Extinguishers, 1975 Edition  
 NFPA 14, Standard for the Installation of Standpipe and Hose Systems, 1974 Edition  
 NFPA 20, Standard for the Installation of Centrifugal Fire Pumps, 1978 Edition  
 NFPA 24, Outside Protection, 1973 Edition  
 NFPA 30, Flammable and Combustible Liquids Code, 1976 Edition  
 NFPA 72D – Proprietary Protective Signaling Systems, 1979 Edition  
 NFPA 72E – Automatic Fire Detectors, 1978 Edition  
 NFPA 72E – Automatic Fire Detectors, 1984 Edition  
 NFPA 80, Standard on Fire Doors and Windows, 1983 Edition  
 NFPA 90A, Standard on Air Conditioning and Ventilating Equipment, 1981 Edition  
 NFPA 600, Industrial Fire Brigades, 2000 Edition  
 NUREG-1552, Supplement 1, Fire Barrier Penetration Seals in Nuclear Power Plants, dated 01/1999  
 Steel Door Institute, SDI 100, Recommended Specifications for Standard Steel Fire Doors and Frames, Rev. 11/2003  
 Steel Door Institute, SDI 118-01, Basis Fire Door Requirements, Rev. 2001  
 Underwriters Laboratories, Fire Resistance Directory, 01/1998  
 Underwriters Laboratory Standard 555, Standard for Fire Dampers and Ceiling Dampers, 1979  
 STD-M-006, Engineering Guidelines for Fire Protection, Rev. 1

### **Technical Manuals, Vendor Information and Fire Tests**

Vendor Technical Manual, Masterpact NT Low Voltage Power/ Insulated Case Circuit Breaker  
 Vendor Technical Manual, V000858, Fire Door 070-3, dated 4/22/10  
 Vendor Technical Manual, IMPRES™ Adaptive Multi-Unit Charger User's Guide  
 Vendor Technical Manual, VTM NO: V000867, Emergency Lighting System, dated 9/24/2007  
 Fire Test, Project No. 14980-100676, Fire Endurance Test of Articles Protected with Thermo-Lag Fire Barrier Systems, dated 1/24/1997

### **Audits & Self-Assessments**

System Health Report, Fire Protection Program, 2<sup>nd</sup> qtr. 2013  
 System Health Report, Fire Protection Program, 1<sup>st</sup> qtr. 2013  
 System Health Report, Fire Protection Program, 4<sup>th</sup> qtr. 2012  
 System Health Report, 125 VDC and 120 VAC Instruments, Unit 4 1<sup>st</sup> qtr. 2013  
 System Health Report, 125 VDC and 120 VAC Instruments, Unit 4 4<sup>th</sup> qtr. 2012  
 System Health Report, 125 VDC and 120 VAC Instruments, Unit 3 1st qtr. 2013  
 System Health Report, 125 VDC and 120 VAC Instruments, Unit 3 4th qtr. 2012  
 System Health Report, 4.16KV Switchgear, Unit 3 1st qtr. 2013  
 System Health Report, 4.16KV Switchgear, Unit 3 4th qtr. 2012  
 System Health Report, 4.16KV Switchgear, Unit 4 1st qtr. 2013  
 System Health Report, 4.16KV Switchgear, Unit 4 4th qtr. 2012  
 2007-1596, Fire Protection/Appendix R Quick Hit Assessment, dated 1/19/2007

PTN-11-018, Nuclear Oversight Report, dated 12/15/2011T  
 Triennial Fire Protection Inspection Quick Hit Self-Assessment, dated 5/3/2013

### **License Basis Documents**

TPN Units 3 and 4 Renewed Operating License Condition 3.D, "Fire Protection"

TPN Units 3 and 4 Renewed Operating License Condition 3.G, "Mitigation Strategy License Condition"

TPN UFSAR, Section 9.6A, Fire Protection Program Report

TPN UFSAR, Section 14.1.12, Loss of Non-Emergency AC Power to the Plant Auxiliary, Rev 13

NRC Fire Protection SER, , dated 3/21/1979

NRC Fire Protection SER, Exemption From Certain Requirements of 10 CFR Part 50, Appendix R, for Turkey Point Units 3 and 4, Regarding Fire Barriers in Outside Areas, Excluding the Turbine Area, dated 10/08/1998

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior To January 1, 1979, Sections III.G, J, L, and O

Title 10 of the Code of Federal Regulations, Part 50.48, Fire Protection Commitments to Appendix A of BTP APCS 9.5-1

Florida Power and Light Company (FPL) Letter L-2005-217 to NRC dated 11/15/2005, Letter of Intent to Adopt NFPA 805 Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition

Florida Power and Light Company (FPL) Letter L-2008-179 to NRC dated 09/11/2008, Request for Extension of Enforcement Discretion and Revised Submittal Schedule for 10 CRF 50.48(c) License Amendment Request

Letter NRC to Florida Power and Light Company (FPL) dated 11/14/2008, Evaluation of the Request for An Extension of Enforcement Discretion in Accordance with the Interim Enforcement Policy for fire Protection Issues During Transition to National Fire Protection Standard NFPA 805.

Florida Power and Light Company (FPL) Letter L-2011-235 to NRC dated 06/23/2011, Commitment to Submittal Dates for 10 CRF 50.48(c) License Amendment Request

Letter NRC to Florida Power and Light Company (FPL) dated 08/08/2011, Commitment to Submit a ) License Amendment Request to Transition to 10 CRF 50.48(c) National Fire Protection Standard NFPA 805.

Florida Power and Light Company (FPL) Letter to NRC dated May 10, 1982, Exemption Request – Fire Protection Rule Scheduler Requirements of 10 CFR 50.48 (c) – Turkey Point Plant Unit Nos. 3 and 4

Florida Power and Light Company (FPL) Letter to NRC dated March 27, 1984, Exemption Request for Turkey Point Plant Unit Nos. 3 and 4 10 CFR 50, Appendix R, Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979

Florida Power and Light Company (FPL) Letter to NRC dated August 12, 1987, Exemptions from the Requirements of Appendix R to 10 CFR 50, Section III.G.2 – Turkey Point Units 3 and 4

Florida Power and Light Company (FPL) Letter to NRC dated October 27, 2006, Submittal of PTN-ENG-SENJ-06-039, "Engineering Evaluation for Turkey Point Units 3 & 4 Resolution of Interim Compensatory Measure B.5.b, Phase 2" for FPL Use, Rev. 0

### **Other Documents**

Consumer Product Safety Commission (CPSC) Recall Alert 13-14, LED Light Bulbs Recalled by Lighting Science Group Due to Fire Hazard

Framatome ANP, Safe Shutdown Timelines for Appendix R Manual Actions, dated 12/30.2003

NRC RIS 2005-07, Compensatory Measures to Satisfy the Fire Protection Program Requirements

NRC RIS 2006-10, Regulatory Expectations with Appendix R Paragraph III.G.2 Operator Manual Actions  
 NRC RIS 2011-12, Adequacy of Station Electric Distribution System Voltage  
 NRC Information Notice 2009-029, Potential Failure of Fire Water Supply Pumps to Automatically Start Due to Fire  
 NRC Information Notice 2010-13, Failure to Ensure that Post-Fire Shutdown Procedures Can Be Performed  
*Federal Register Notice* 71 FR 11196, Fire Protection Program – Post-Fire Operator Manual Actions, dated 03/06/2006  
 NUREG-1552, Supp. 1, Fire Barrier Penetration Seals in Nuclear Power Plants, dated 06/1998  
 NUREG-1852, Demonstrating the Feasibility and Reliability of Operator Manual Actions in Response to Fire, dated 10/2007  
 HP-9:1, Radiological Emergency Equipment, Rev. 1  
 Job Performance Measure (JPM) 04016030300, Shutdown Portable Diesel Fire Pump, Rev. 0  
 Job Performance Measure (JPM) 04016029300, Start Portable Diesel Fire Pump, Rev. 0  
 LP-6902348, Loss of All AC Power 3(4)-EOP-ECA-0.0NUREG-1852, Feasibility Reliability of OMAs in Response to Fire, dated October 2007  
 Pressurizer Pressure Control System, dated 12/11/2009  
 SD-013, CVCS Charging and Letdown, dated 10/16/2007  
 SD-117, Auxiliary Feedwater, dated 4/14/2009  
 SD-140, Main Power Distribution, dated 10/25/2010

**LIST OF ACTION REQUESTS (ARs) REVIEWED DURING INSPECTION**

<b>AR No.</b>	<b>Description</b>
01864984	Plant procedures are not being updated within the required timeframe after modified systems are placed in service
01868958	TPN Evaluation of NRC RIS 2006-10
00473615	TPN TFPI 2010-Verification of charging pump flow in 0-ONOP-016.10
01876023	Component mis-positioning by inadvertent bumping of valve
00474208	Preventative maintenance on Halon suppression system backup battery power
00474195	TPN TFPI 2010-Verification of no spurious operation of available pressurizer heaters
01670987	Compliance with NFPA 805 Chapter 3 Section 3.3.1.1 for fire prevention inspections
00473177	TPN TFPI 2010- Verification of Mismatched OMA steps in 0-ONOP-016.10 for FZ 101
00432328	2006-22092-OE Regulatory Issue Summary, RIS 2006-010
00432577	2006-21135-OE RIS-06-010 Regulatory Expectation with Appendix R Paragraph III.G.2 Operator Manual Actions

**LIST OF ACTION REQUESTS GENERATED AS A RESULT OF THIS INSPECTION**

<b>AR No.</b>	<b>Description</b>
1881472	Typographical error identified in ECL drawing 5610-2000: functional description of cable 3B0105/3B01-TB5240/Q is "Charging Pump 3A Control." The correct description is "Charging Pump 3A Power." The SSA treated the cable correctly as a power cable

1880972	Revise 0-ADM-16.1 to remove duplicate information in bullet item under NOTE just before Section 4.1.4 regarding description of FZs 101, 104, 108A & 108.
1881900	Revise vendor manual AA30 to include Fire Damper FD-81A which is not included in NIBD-23 Fire Damper Table
1882897	Acceptability of operator manual actions which require pulling of fuses to achieve hot shutdown
1882458	Verify that operator manual action feasibility study considered impact of smoke migration and water intrusion from adjacent fire areas
1878343	E-Lights for Operator Actions at BAT
1878764	C114 and C112 Panel issue
1881904	Diesel Driven Fire Pump Cooling Water Valves have potential for mispositioning, if bumped.
1883657	Enhancements to Pre-Fire Plan in 0-ONOP-016.10 to use portable power generators and portable pumps as part of response strategies for water removal.
1883831	Procedure 0-SME-091.1, Fire and Smoke Detector System Annual Test, is missing acceptance criteria.
1884858	C42 Fire Alarm Panel Batteries does not meet NFPA 72 Requirements
1885244	Revise 0-ONOP-16.10 to change nomenclature from receptacle 421A-1 to portable fans to R1
1885817	Evaluate the correct position for FCV*-113B
1884869	Zone 28 PCR to add late action to open doors if V10 not available. (old PCR 09-2181)
1884872	Evaluate feasibility of opening breakers to blown down valves instead of venting air at 6275A/B/C - multiple zones
1875049	Document operations walk down of all OMAs in 0-ONOP-016.10
1886045	HVAC Design Drawings not located for FA/FZ 61
1886069	QC reports for several fire barriers features could not be located
1886074	Qualification of structural steel fireproofing
1886113	EL160-53 not pointing to the correct equipment.
1886123	Evaluation for penetration seal 061E-E009 exemption from inspection
1890440	Document delay fence effect on OMA – delay fence installed per DCP 242287 (PCM 07-001)

## LIST OF ACRONYMS AND ABBREVIATIONS

ADM	Administrative Procedure
APCSB	Auxiliary and Power Conversion Systems Branch
AR	Action Request
CAP	Corrective Action Program
CFR	Code of Federal Regulations
DID	Defense-in-Depth
ELU	Emergency Lighting Unit
FA	Fire Area
FHA	Fire Hazards Analysis
FPP	Fire Protection Program
FZ	Fire Zone
GL	Generic Letter
HVAC	Heating, Ventilation and Air Conditioning
IMC	Inspection Manual Chapter
IN	Information Notice
IP	Inspection Procedure
IR	Inspection Report
NCV	Non-cited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
NUREG	An explanatory document published by the NRC
OLC	Operating License Condition
OMA	Operator Manual Action
ONOP	Off-Normal Operating Procedure
RIS	Regulatory Issue Summary
ROP	Reactor Oversight Process
SDP	Significance Determination Process
SER	Safety Evaluation Report
SFP	Spent Fuel Pool
SSA	Safe Shutdown Analysis
SSD	Safe Shutdown
TFPI	Triennial Fire Protection Inspection
UFSAR	Updated Final Safety Evaluation Report
UL	Underwriters Laboratory
V	Volt