



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

July 26, 2006

Florida Power and Light Company  
ATTN: Mr. J. A. Stall, Senior Vice President  
Nuclear and Chief Nuclear Officer  
P. O. Box 14000  
Juno Beach, FL 33408-0420

SUBJECT: TURKEY POINT NUCLEAR PLANT - INTEGRATED INSPECTION REPORT  
05000250/2006003 AND 05000251/2006003

Dear Mr. Stall:

On June 30, 2006, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Turkey Point Units 3 and 4. The enclosed integrated inspection report documents the inspection findings which were discussed on July 6, 2006, with Mr. T. Jones and other members of your staff.

The inspection examined activities conducted under your license as they relate 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.

Based on the results of this inspection, no findings of significance were identified. However, licensee identified violations which were determined to be of very low safety significance are listed in this report. NRC is treating the violations as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy because of the very low safety significance of the violations and because they are entered into your corrective action program. If you wish to contest these non-cited violations, 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 Turkey Point.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and 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 the NRC's document system (ADAMS). Adams is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Joel T. Munday, Chief  
Reactor Projects Branch 3  
Division of Reactor Projects

Docket Nos. 50-250, 50-251

License Nos. DPR-31, DPR-41

Enclosure: Inspection Report 05000250/2006003 and 05000251/2006003  
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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FP&L

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Report to J. A. Stall from Joel T. Munday dated July 26, 2006.

SUBJECT: TURKEY POINT NUCLEAR PLANT - INTEGRATED INSPECTION REPORT  
05000250/2006003 AND 05000251/2006003

Distribution w/encl:

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-250, 50-251

License Nos: DPR-31, DPR-41

Report No: 05000250/2006003, 05000251/2006003

Licensee: Florida Power & Light Company (FP&L)

Facility: Turkey Point Nuclear Plant, Units 3 & 4

Location: 9760 S. W. 344<sup>th</sup> Street  
Florida City, FL 33035

Dates: April 1 to June 30, 2006

Inspectors: S. Stewart, Senior Resident Inspector  
T. Kolb, Resident Inspector  
M. Pribish, Resident Inspector, Watts Bar (1R22, 4OA1.1)  
D. Jones, Resident Inspector, H. B. Robinson (1R12, 1R13)  
T. Ross, Senior Resident Inspector, Browns Ferry (1R12, 1R13,  
1R23)

Approved by: Joel T. Munday, Chief  
Reactor Projects Branch 3  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000250/2006-003, 05000251/2006-003; 04/01/2006 - 06/30/2006; Turkey Point Nuclear Power Plant, Units 3 and 4; Routine Integrated Report.

The report covered a three month period of inspection by resident inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process", Revision 3, dated July 2000.

A. Inspector Identified & Self-Revealing Findings

None

B. Licensee Identified Violations

Violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been administered through the licensee's corrective action program. The violations and corrective actions are listed in Section 4OA7 of this report.

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## REPORT DETAILS

### Summary of Plant Status:

Unit 3 began the period with the plant refueled and in Mode 5. Unit 3 returned to Mode 1 operations on April 10, returned to full power on April 14, and operated at full power thereafter. Unit 4 began the period at full rated thermal power and operated at or near full power for the inspection period except Unit 4 was shutdown on May 18 to repair secondary plant pipe supports. The unit was restarted and returned to full power on May 22.

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity (Reactor-R)

#### 1R01 Adverse Weather Protection

##### a. Inspection Scope

The inspectors reviewed the status of licensee actions in accordance with licensee administrative directive EP-AD-009, Hurricane Season Preparation. This review included physical walkdowns of the plant protected area and discussions with responsible licensee personnel regarding systems, structures, and components vulnerable to high winds and potential flooding during a hurricane. The inspectors reviewed applicable technical specifications, a memo issued by the site vice president regarding hurricane season, and exceptions which had been identified during the initial walkdowns by licensee personnel. The inspectors also reviewed procedure 0-ONOP-103.3, Severe Weather Preparations, and specifically examined the following areas:

- Main control room
- Unit 3 4160 volt switchgear building
- Unit 4 4160 volt switchgear building

##### b. Findings

No findings of significance were identified.

#### 1R04 Equipment Alignment

##### .1 Partial Equipment Walkdowns

##### a. Inspection Scope

The inspectors conducted three partial alignment verifications of the safety-related systems listed below. These inspections included reviews using plant lineup procedures, operating procedures, and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions of the operable systems were correctly aligned.

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- Unit 3, 3B Containment Spray System during planned maintenance for the 3A Containment Spray Pump
- Unit 3, Intake Cooling Water System (ICW) during replacement of 3B ICW pump
- Unit 3 and Unit 4, Electrical Power Systems during 24 hour endurance run for the 3B Diesel Generator

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors conducted a detailed walkdown/review of the alignment and condition of the Unit 3 component cooling water (CCW) system to verify proper equipment alignment and identify any discrepancies that could impact the function of the system and increase risk. The inspectors utilized licensee procedure 3-OP-030, "Component Cooling Water System," and drawing 5613-M-3030 (Component Cooling Water System), as well as other licensing and design documents, when verifying that the system alignment was correct. During the walkdown, the inspectors also verified, as appropriate, that: (1) valves were correctly positioned and did not exhibit leakage that would impact the function of any valve; (2) electrical power was available as required; (3) major portions of the system and components were correctly labeled, cooled, and ventilated; (4) hangers and supports were correctly installed and functional; (5) essential support systems were operational; (6) ancillary equipment or debris did not interfere with system performance; (7) tagging clearances were appropriate; and (8) valves were locked as required by the licensee's locked valve program. Pending design and equipment issues were reviewed to determine if the identified deficiencies significantly impacted the system's functions. Items included in this review were the operator workaround list, the temporary modification list, system health reports, and outstanding maintenance work requests/work orders. In addition, the inspectors reviewed the licensee's corrective action program to ensure that the licensee was identifying and resolving equipment alignment problems.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

.1 Fire Area Walkdowns

The inspectors toured the following nine plant areas during this inspection period to evaluate conditions related to control of transient combustibles and ignition sources, the

material condition and operational status of fire protection systems including fire barriers used to prevent fire damage or fire propagation. The inspectors reviewed these activities against provisions in the licensee's procedure 0-ADM-016, Fire Protection Plan, and 10 CFR Part 50, Appendix R. The licensee's fire impairment lists, updated on a daily basis, were routinely reviewed. In addition, the inspectors reviewed the condition report database to verify that fire protection problems were being identified and appropriately resolved. The following areas were inspected:

- Unit 4 Control Room Inverter Room
- Unit 4, 4A and 4B 4160V Bus Rooms
- Unit 4, 4A and 4B Residual Heat Removal Pump Rooms
- Unit 3 and Unit 4 Vital Battery Rooms
- Unit 3 Containment Spray Pump Room
- Unit 3 and Unit 4 Cable Penetration Rooms
- Unit 3 Spent Fuel Pool and Heat Exchanger Area
- Unit 3 and Unit 4 Cable Spreading Room
- 3B and 4B 480 Volt Reactor Motor Control Center Rooms

b. Findings

No findings of significance were identified

.2 Annual Fire Drill

a. Inspection Scope

On May 24, 2006, the inspectors observed the licensee fire brigade respond to a simulated fire involving the Unit 3 auxiliary transformer with the deluge system simulated to be disabled. The inspectors verified that the drill was administered in accordance with licensee procedure FPAD-010, Fire Brigade and Mutual Aid Drill Scenario Development. The inspectors checked the brigade's communications, ability to set-up and execute fire operations, and their use of fire fighting equipment. Additionally, the inspectors verified that the licensee consider the aspects as described below, when the brigade conducted the firefighting activities and during the post-drill critique. The inspectors noted that the control room personnel did not simulate or evaluate the Emergency Action Level (EAL) classification for this drill. The inspectors checked that licensee personnel documented drill observations in CR 2006-16316.

- The brigade, including the fire brigade leader, consisted of five team members.
- The team members acquired and donned the appropriate turnout gear.
- Self contained breathing apparatus (SCBA) were available and properly used.
- Control Room personnel verified and announced the fire location. The fire alarm was sounded and fire brigade personnel were dispatched.
- Fire brigade leader maintained control. Members were briefed (including potential hazards), discussed plan of attack, received individual assignments, and performed communications checks.
- Fire brigade arrived at the scene in a timely manner, taking the appropriate

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- access route specified in the strategies and procedures.
- Command and control was established near the fire location. Communications were established with the control room personnel.
- Communications were efficient and effective between the control room, command post, plant operators and fire brigade members.
- Fire hose lines were capable of reaching the fire area, the lines were laid out without flow restrictions and were simulated as being charged. Use of additional fire equipment (i.e., monitor water canon, foam cart) was simulated.
- The fire area was entered in a controlled manner using the two person rule.
- The fire brigade arrived with sufficient fire fighting equipment to perform its fire fighting duties.
- The fire brigade checked for fire victims and propagation into other plant areas.
- The drill scenario was followed and the drill acceptance criteria was met.
- A post-drill critique was held to identify strengths and weaknesses.
- All fire-fighting equipment associated with the drill was returned to a state of readiness following completion of the drill.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

During the week of May 1, 2006, the inspectors observed and assessed licensed operator annual operating test activities in accordance with 10 CFR 55.59. The simulated events were done using the licensee's plant specific simulator and scenario 750003500, Small Break Loss of Coolant Accident. Initially, the reactor coolant system flow transmitter, FT-3-424, failed low followed by a coolant system leak. The leak escalated to exceed charging pump capacity which required a manual reactor trip. The trip was complicated by a failure of the turbine to trip along with a spurious bus stripping relay actuation which locked in a trip signal for the 3C intake cooling and component cooling water pumps. The scenario was ended shortly after the operators' transition to 3-EOP-E-1, Loss of Reactor or Secondary Coolant. The inspectors observed the operator's use of 3-EOP-E-0, Reactor Trip and Safety Injection, 3-EOP-E-1, Loss of Reactor or Secondary Coolant; and off normal procedures, 3-ONOP-49.1, Deviation or Failure of Safety Related or Reactor Protection Channels, 3-ONOP-041.3, Excessive Reactor Coolant Leakage, and 3-ONOP-019, Intake Cooling Water Malfunction. Event classifications (including Site Area Emergency) were checked for proper classification and completion of the notification form. The simulator board configurations were compared with actual plant control board configurations. The inspectors specifically evaluated the following attributes related to operating crew performance:

- Clarity and formality of communication
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms

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- Correct use and implementation of off normal and emergency operation procedures; and emergency plan implementing procedures
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by operation's supervision, including ability to identify and implement appropriate technical specification actions, regulatory reporting requirements, and emergency plan actions and notification

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the following four equipment problems and associated condition reports to verify that the licensee's maintenance efforts met the requirements of 10 CFR 50.65 (Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants) and FPL Administrative Procedure 0-ADM-728, Maintenance Rule Implementation. The inspectors' efforts focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk significance, determination of (a)(1) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also interviewed responsible engineers and observed some of the corrective maintenance activities. The inspectors checked that when operator actions were credited to prevent failures, the operator was dedicated at the location needed to take timely action, and that the action was governed by applicable procedures. Furthermore, the inspectors checked to ensure that equipment problems were being identified and entered into the corrective action program. Because some deficiencies had involved work practices, the inspectors observed work in progress to determine that work controls were sufficient to prevent problems. Specific work that was checked included Work Order 35022936-01, coolant charging pump A: replace power frame and fluid drive; Work Order 35022936-02, replace charging pump motor; and Work Order 36011919-01, component cooling heat exchanger cleaning. For observed work, foreign material intrusion controls were verified to be in compliance with the licensee's administrative procedure, 0-ADM-730, Foreign Materials Exclusion Controls. The inspectors reviewed the Turkey Point Maintenance Rule Self Assessment, November 21, 2005 through January 26, 2006.

- CR 2005-15789, ATM-3 Fuses may be marginal for emergency containment filter applications; System 56 Health Reports, Containment Emergency Filters and System 7, 480 volt Motor Control Centers, were reviewed, as was CR5-14782, 3A emergency containment cooling fan fuse failure. Licensee procedure 0-ADM-30, Control of Fuses, was reviewed.
- CR 2005-29696, Loss of Unit 4 startup transformer due to salt buildup on insulators.
- CR 2005-26875, POV-4-4882 Turbine Plant Cooling Water Isolation Valve stroke erratic.

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- CR 2005-25109, 3A intake cooling water pump exceeds Unavailability Performance Criteria and CR 2004-9783, Intake Cooling Water Pump Discharge Check Valves exceed Reliability Performance Criteria. Documents reviewed included Intake Cooling Water System Health Report, first quarter 2006.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors completed in-office reviews and control room inspections of the licensee's risk assessment of eight emergent or planned maintenance activities. The inspectors compared the licensee's risk assessment and risk management activities against the requirements of 10 CFR 50.65(a)(4); the recommendations of Nuclear Management and Resource Council 93-01, Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, Revision 3; and Procedures O-ADM-068, Work Week Management and O-ADM-225, On Line Risk Assessment and Management. The inspectors also reviewed the effectiveness of the licensee's contingency actions to mitigate increased risk resulting from the degraded equipment. The inspectors evaluated the following eight risk assessments during the inspection:

- April 26, Unit 3 startup transformer unplanned insulator replacement.
- May 18, Unit 4 shutdown for repairs to condensate system pipe hangers.
- May 20, Unit 4 shutdown to Mode 4 to repair MOV-4-744A/B packing leakoff line in containment.
- June 1, Unit 3 component coolant water 3A heat exchanger cleaning.
- May 30 - June 2, Unit 4 charging pump 4A replacement.
- June 7 - 9, Unit 4 intake coolant water pump 4A replacement.
- June 20, Unit 4, 4B component cooling water pump, 4B emergency diesel generator, and 4E239B/240B load center and switchgear room chillers out of service. Note: the Grid Instability and Load Threat Toggle was selected because of switchyard work.
- June 22, Unit 4, 4B component cooling water heat exchanger and 4C charging pump were out of service. Note: the Grid Instability and Load Threat Toggle was selected because of switchyard work.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutionsa. Inspection Scope

For the three non-routine events described below, the inspectors either observed the activity or reviewed operator logs and computer data to determine that the evolution was conducted safely and in accordance with plant procedures. Specific checks were done to assess operator preparedness and performance in coping with non-routine events and transients.

- April 26, loss of normal cooling to the North and South Inverter Rooms which required entry into 0-ONOP-025.3, DC and Inverter Rooms Supplemental Cooling
- May 19, Unit 4 operations in Mode 3 and preparations for entering Mode 4
- May 22, Unit 4 entry into Mode 1 and power increase to 50% power

b. Findings

No findings of significance were identified.

1R15 Operability Evaluationsa. Inspection Scope

The inspectors reviewed seven interim disposition and operability determinations associated with the following condition reports to ensure that Technical Specification operability was properly supported and the system, structure or component remained available to perform its safety function with no unrecognized increase in risk. The inspectors reviewed the Final Safety Analysis Report, applicable supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim condition report disposition.

- CR 2005-35434, Unit 4 reactor coolant leakage has increased
- CR 2006-13540, 4B intake cooling water pump differential pressure degrading trend
- CR 2006-9891, excessive corrosion on 3A and 3B emergency diesel generator day tank vent stacks
- CR 2006-10833, 3A emergency diesel generator cylinder test valve found open
- CR 2006-16631, 3B intake cooling water pump has no seal leak-off flow
- CR 2006-16278, Unit 4 biowall and recirculation sump access gates found closed during operation
- CR 2006-13858, anomalous QSPDS core exit thermocouple temperature distribution profile

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testinga. Inspection Scope

For the four post maintenance tests listed below, the inspectors reviewed the test procedures and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable. The inspectors verified that the requirements of procedure 0-ADM-737, Post Maintenance Testing, were incorporated into test requirements. The inspectors reviewed the following work orders (WO) and/or surveillance procedures (OSP):

- Unit 4, WO 36011735-01 for repairs to containment interlock mechanism
- Unit 4, WO 36011947-01 including WO #06-061 for replacement of 4A high head safety injection overcurrent relays
- Unit 3, WO 35015003-01 for pressurizer control group heater robicon cleaning and calibration
- Unit 4, WO 35022936-01,-02,-03 for replacement of 4A charging pump motor and power frame

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities.1 Monitoring of Unit 3 Heatup and Startup Activitiesa. Inspection Scope

The inspectors reviewed activities during reactor restart and power escalation to verify that reactor parameters were within safety limits and that the startup evolutions were done in accordance with pre-approved procedures and plans. The inspectors noted that no reduced inventory operations were conducted during the outage. The inspectors conducted a thorough walkdown of containment prior to reactor restart to verify no evidence of leakage and that no debris which could impact operability of the containment sump had been left. Sections of the reactor physics testing were observed or reviewed with reactor engineering personnel.

b. Findings

No findings of significance were identified.



1R22 Surveillance Testinga. Inspection Scope

The inspectors either reviewed or witnessed the following nine surveillance tests to verify that the tests met the technical specifications, the UFSAR, the licensee's procedural requirements and demonstrated the systems were capable of performing their intended safety functions and their operational readiness. In addition, the inspectors evaluated the effect of the testing activities on the plant to ensure that conditions were adequately addressed by the licensee staff and that after completion of the testing activities, equipment was returned to the positions/status required for the SSC's to perform its safety function. The tests reviewed included two inservice tests (IST) and one reactor coolant system leakage detection surveillance.

- Unit 4, 4-OSP-024.2, Emergency Bus Load Sequencers Manual Test (IST)
- Unit 4, 4-OSP-075.2, Auxiliary Feedwater Train 2 Operability Verification
- Unit 3, 3-OSP-050.2, Residual Heat Removal System Inservice Test (IST)
- Unit 4, 4-OSP-023.1, Diesel Generator Operability Test (4B diesel generator)
- Unit 4, 4-OSP-041.1, Reactor Coolant System Leak Rate Calculation (RCS Leak Detection)
- Common, 0-OP-100, Security Diesel Operation, section 5.2
- Common, 0-OSP-025.1, Control Room Emergency Ventilation System Operability Test
- Unit 3, 3-OSP-023.2, Diesel Generator 24 Hour Full Load Test and Load Rejection
- Unit 3, 3-OSP-23.1, Diesel Generator Operability Test

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modificationsa. Inspection Scope

The inspectors reviewed the temporary modification listed below to ensure that it did not adversely affect the operation of the system. The inspectors screened temporary plant modifications for systems that were ranked high in risk for departures from design basis and for inadvertent changes that could challenge the systems to fulfill their safety function. The inspectors conducted plant tours and discussed system status with engineering and operations personnel to check for the existence of temporary modifications that had not been appropriately identified and evaluated.

- Temporary System Alteration 04-06-041-03, Unit 4 Qualified Safety Parameter Display System Core Exit Thermocouple Cables A4 and A5 Exchange



b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness (EP)

1EP6 Drill Evaluation

.1 Emergency Preparedness Drill

a. Inspection Scope

On April 20, 2006, the inspectors observed an operating crew in the simulator and technical support center staff during a drill of the site emergency response organization. The drill included a large steam generator tube leak and a failure of the reactor to automatically trip when required. During the drill the inspectors assessed operator actions to verify that emergency classification and notifications were made in accordance with the licensee emergency plan implementing procedures and 10 CFR 50.72 requirements. The inspectors specifically reviewed the Notice of Unusual Event and Alert classifications and notifications were in accordance with licensee procedure 0-EPIP-20101, Duties of the Emergency Coordinator. The inspectors also observed whether the initial activation of the emergency response centers was timely and as specified in the licensee's emergency plan. Technical specification that required actions during the drill were reviewed to assess correct implementation. Licensee identified critique items were discussed with the licensee and reviewed to verify that drill issues were identified and captured.

b. Findings

No findings of significance were identified.

.2 Simulator Based Training Evolution

Inspection Scope

On May 1, 2006, the inspectors observed the licensee simulator based training that included evaluation of licensed operator event classification. Results of the training are used by the licensee as inputs into the Drill/Exercise Performance and Emergency Response Organization Drill Participation Performance Indicators. The simulation involved a Notice of Unusual Event declaration for reactor coolant system leakage greater than 10 gallons per minute and a Site Area Emergency declaration for reactor coolant system leakage greater than 50 gallons per minute and greater than charging pump capacity. The inspectors observed the licensee's event classification in accordance with licensee procedure 0-EPIP-20101, Duties of the Emergency Coordinator. Notification of the State Warning Point of the simulated event was not done. At the conclusion of the drill, the inspectors discussed the drill with plant staff and

noted that licensee identified problems were documented in the corrective actions program.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

Mitigating and Barrier Integrity Systems Cornerstone

a. Inspection Scope

The inspectors checked licensee submittals for the performance indicators (PIs) listed below for the period April 1, 2004, through December 31, 2005, to verify the accuracy of the PI data reported during that period. Performance indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 3 and licensee procedure 0-ADM-032, "NRC Performance Indicators Turkey Point," were used to check the reporting for each data element. The inspectors checked licensee event reports (LERs), operator logs, plant status reports, condition reports (CRs), system health reports, and performance indicator data sheets to verify that the licensee had identified the cumulative safety system unavailability and required hours, as applicable. The inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution. In addition, for the reactor coolant system (RCS) activity PI verification, the inspectors observed a chemistry technician obtain and analyze an RCS sample. The inspectors checked that deficiencies affecting the licensee's performance indicator program were entered into the corrective action program and appropriately resolved.

Reactor Safety Cornerstone

- Safety System Unavailability, High Head Safety Injection, Unit 3
- Safety System Unavailability, High Head Safety Injection, Unit 4
- Safety System Unavailability, Auxiliary Feedwater System, Unit 3
- Safety System Unavailability, Auxiliary Feedwater System, Unit 4
- RCS Activity, Unit 3
- RCS Activity, Unit 4
- RCS Leakage, Unit 3
- RCS Leakage, Unit 4

b. Findings

No findings of significance were identified.

#### 4OA2 Problem Identification and Resolution

##### .1 Daily Review

###### a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a screening of items entered daily into the licensee's corrective action program. This review was accomplished by reviewing daily printed summaries of condition reports and by reviewing the licensee's electronic condition report database. Additionally, reactor coolant system unidentified leakage was checked on a daily basis to verify no substantive or unexplained changes.

###### b. Findings

No findings of significance were identified

##### .2 Annual Sample Review

###### a. Inspection Scope

The inspectors selected the following two condition reports for detailed review and discussion with the licensee. The condition reports were reviewed to ensure that an appropriate evaluation was performed and appropriate corrective actions were specified and prioritized. Other attributes checked included disposition of operability, resolution of the problem including cause determination and corrective actions. The inspectors evaluated the condition reports in accordance with the requirements of the licensee's corrective actions process as specified in NAP-204, Condition Reporting.

- CR 2006-17848, Ineffective corrective actions to address Raychem proficiency issues. CR 2005-24911, Unsatisfactory Raychem splice on 3A intake cooling water pump, and licensee procedure 0-GME-102.1, Raychem Sleeve Installation, were also reviewed. No improperly assembled splices were identified when in service.
- CR 2006-19390, Dropped flashlight into Unit 4 spent fuel pit. The inspectors also checked CR 2006-7264 for an inadequate foreign materials exclusion briefing that had been closed to "trend only".

###### b. Findings

No findings of significance were identified

### .3 Semi-Annual Trend Review

#### a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, the inspectors reviewed the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector corrective actions item screening discussed in section 4OA2.1 above, plant status reviews, plant tours, document reviews, and licensee trending efforts. The inspectors' review nominally considered the six month period of December 2005 through June 2006. The review also included issues documented outside the normal CAP such as in the Chief Nuclear Officer's Indicator Report, dated May 17, 2006. Corrective actions associated with a sample of the issues identified in the licensee's corrective action program were reviewed for adequacy.

#### b. Assessment and Observations

No findings of significance were identified. However, the inspectors, in reviewing licensee performance over the last six months, noted a number of occasions when licensee personnel did not identify discrepancies in the NRC performance indicators. No color changes in the indicators were involved. When identified to the licensee, the licensee documented the discrepancies in the corrective action program as follows:

- CR 2006-12570, High Pressure Injection System, 2004 2<sup>nd</sup>, 2004 3<sup>rd</sup>, and 2005 1<sup>st</sup> quarter data discrepancies
- CR 2006-12696, Heat Removal, Auxiliary Feedwater, 2005 data discrepancies

The inspectors also identified a trend in external corrosion of piping having impacted safety systems. The licensee found that the Unit 3 emergency diesel generator fuel oil day tank vent piping had corroded to the point where small amounts of rain water had intruded into the fuel oil. The licensee documented the occurrence in the corrective action program as CR 2006-9891, and repaired the piping. In a second case, corroded drain piping over the Unit 4 spent fuel pool allowed a small amount of rain water to enter the pool. The licensee documented the occurrence in the corrective action program as CR 2006-17108 and repaired the drain line. Neither intrusion resulted in system inoperability.

The inspectors also identified a trend in plant problems that may have been prevented had enhanced pre-job preparations, such as detailed pre-job briefings been used. Licensee Event Report (LER) 50-250/2006-01, identified a core alteration that was completed without direct communications between the control room and the refueling personnel. In this case, the pre-job preparations did not assure continuity of communications prior to the evolution. LER 50-251/2005-007 described the temporary inoperability of one Unit 4 emergency diesel generator due to a foreign materials exclusion cover being placed over the engine room air intake during painting. The pre-

job preparations did not assure that the cover would be properly used to prevent adverse impact on the safety system. In a third example, an operator was tasked to enter a contaminated, foreign materials exclusion area to take a log reading, and dropped the flashlight into the Unit 4 spent fuel pool (CR 2006-19390). In this case, the pre-job preparations were not adequate to assure that foreign materials would be properly controlled to prevent accidental entry into the spent fuel pool.

#### 4OA3 Event Followup

.1 (Closed) Licensee Event Report 05000250, 251/2005-004-00: Fast Acting Control Circuit Fuses Can Cause Inoperable Emergency Containment Filters During Degraded Voltage Conditions

On May 19, 2005, the Unit 3 3A Emergency Containment Filter (ECF) fan failed to start during a surveillance test. On investigation, the licensee found that the fuse had blown and later found that the fuse had been marginally sized for the application. The licensee identified that similarly sized fuses were also installed in the 3B and 4C ECFs. Three ECFs (3C, 4A, and 4B) used time delay fuses and were not affected. The licensee found that the cause of the fuse opening was insufficient margin in the design to ensure that the ECFs would start reliably given variation in voltage, fuse tolerance, and starter inrush current. Corrective actions included replacing the fuses with suitably sized fuses with a time delay to prevent spurious starting failures for the ECFs. An extent of condition review was also done and the licensee replaced fuses in two of four boric acid transfer pump motor starter circuits with fuses having a time delay. The inspectors reviewed the licensee's corrective action document (CR 2005-15789) and checked that the fuse replacements had been completed. No performance deficiency was identified. However, the use of marginally sized fuses in the ECFs was a violation of NRC requirements. The enforcement aspects are discussed in Section 4OA7. This LER is closed.

.2 (Closed) Licensee Event Report 05000251/2005-005-00: Loss of Offsite Power Causes Engineered Safety Feature Actuations

This LER describes an event on October 31, 2005, when flashover of switchyard insulators caused the Unit 4 startup transformer to electrically isolate, causing a partial loss of offsite power to Unit 4. As expected, the emergency diesels started and provided power to the safety buses, the auxiliary feedwater system actuated for heat sink protection, and the steam generator blowdown was isolated. The unit was in Mode 3 at the time of the event, having been shut down to preempt Hurricane Wilma, which hit on October 24, 2005. The flashover was attributed to excessive salt contamination of the switchyard insulators as a result of Hurricane Wilma and weather patterns after the storm. As corrective action, the licensee removed salt from the line insulators and began replacing the insulators with salt resistant replacements. Switchyard monitoring capability was enhanced and engineering oversight and controls were added. No performance deficiencies were identified by the inspectors. This LER is closed.

.3 (Closed) Licensee Event Report 05000251/2005-007-00: Foreign Material Exclusion Cover Causes Inoperability of One Emergency Diesel Generator

Closed) Licensee Event Report 05000251/2005-007-01: Foreign Material Exclusion Cover Causes Inoperability of One Emergency Diesel Generator

On November 29, 2005, the 4A Emergency Diesel Generator was made inoperable when Herculite reinforced fabric was placed over the entire floor grating area above the diesel in preparation for painting in the room. This grating provided the air intake and air cooling for the engine. Control room personnel were unaware of this condition for approximately 5.5 hours until discovered and immediately corrected during an engineering walkdown of the area. The licensee entered the event into the corrective action program as CR 2005-32840 and CR 2006-2649 and established an interim corrective action to prevent recurrence by painting signs near the floor grating stating "contact engineering prior to covering". The inoperability did not exceed the Technical Specification allowed outage time for the 4A diesel generator. The enforcement aspects are discussed in Section 4OA7. This LER is closed.

.4 (Closed) Licensee Event Report 05000250/2006-001: Core Alterations Performed Without Direct Communications

On March 11, 2006, the licensee identified that the Unit 3 upper internals were removed from the reactor without having direct communication between the personnel at the refueling station and the control room. Direct communications during core alterations is a requirement of Turkey Point Technical Specification 3.9.5 and had been established for control rod unlatching, but not re-established after a shift turnover, pre-job briefing, and other preparations for lifting the vessel upper internals. The internals were removed without additional problems. When identified, the licensee restored the required communications, which were in place prior to the next core alteration and a procedure step to verify communications prior to removal of the upper internals was added to licensee procedure 0-GMM-043.9, Reactor Vessel, Removal of Upper Internals. The licensee entered the issue into the corrective actions program as CR 2006-7520 for evaluation. The enforcement aspects are discussed in Section 4OA7. This LER is closed.

.5 (Closed) Licensee Event Report 0500250/2006-002-00: Main Steam Safety Valve Setpoints Outside Technical Specification Limits

On March 5, 2006, the licensee identified that two of the twelve main steam safety valves (MSSVs) were found with lift setpoints above their Technical Specification Table 3.7-2 limit of  $\pm 3$  percent. The two valves were declared inoperable and the test failures were documented in CR 2006-6537 and CR 2006-6522. The preliminary cause for the setpoint drift was minor corrosion or micro-bonding of the valve inner components. The licensee's evaluation of the valve failures continued at the time of the inspection and a supplemental LER was planned. Corrective actions were to repair and retest one of the valves and replace the other with a spare. The as-left setpoints were required to be within  $\pm 1$  percent of the nominal value. The licensee evaluated the safety valve

capability and determined using test data that the twelve MSSVs were capable of providing steam generator overpressure protection. No findings of significance were identified. This LER is closed.

#### 4OA5 Other Activities

##### (Closed) Notice of Violation 05000250, 251/2006-010, AFW Pump B Out of Service Greater than TS Allowed Due to Incorrect Bearing Installation

NRC Inspection Report 05000250&251/2006-13, detailed the NRC Inspection Procedure 95001 review of the noted inspection finding. The violation was held open pending licensee action to revise their root cause for the violation and take appropriate corrective actions. The inspector verified that the licensee root cause report (CR 2005-30750) was revised to note that an inservice testing code required evaluation was not performed. The licensee also revised administrative procedure 0-ADM-502, In-Service Testing Program, to include a requirement to document in a condition report the following inservice testing observations prior to declaring a pump operable following maintenance:

- Measured vibration increase of 50 percent over previous reference value
- Measured vibration value of 0.2 in/sec or greater
- Pump differential pressure outside of the previous acceptable range

This violation is closed.

#### 4OA6 Exit

##### Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Jones and other members of licensee management at the conclusion of the inspection on July 6, 2006. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. The licensee did not identify any proprietary information.

#### 4OA7 Licensee Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as NCVs:

- .1 Technical Specification 3.6.3 requires that three emergency containment filtering units (ECFs) be operable or after seven days, be in at least hot standby within the next 6 hours and cold shutdown within the following 30 hours. Contrary to the above, as of May 19, 2005, on Unit 3, the 3A and 3B ECFs were inoperable, and on Unit 4 the 4C ECF was inoperable due to marginal fusing in the starting circuits. The licensee failed to be in hot standby as required. When identified, the licensee replaced the affected fuses

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with time delay fuses and completed an extent of condition review. The licensee documented the issue in condition report CR 2005-15789. The licensee stated that the violation existed for over 5 years during which time the fans started when demanded for surveillance testing. This finding is of very low safety significance because the likelihood of ECF failure was small and redundant fans or containment spray were unaffected.

- .2 Technical Specification 6.8.1.a requires that the procedures recommended in Appendix A of NRC Regulatory Guide 1.33, Revision 2, February 1978, be implemented. The regulatory guide in Appendix A lists procedures for performing maintenance that can affect safety related equipment. The licensee implements this requirement, in part, using administrative procedure, 0-ADM-701, Control of Plant Work Activities, which states in step 5.1.1.1, that work activities which can affect the performance of equipment shall be appropriately preplanned. Contrary to the above, on November 29, 2005, the licensee failed to preplan work that affected the 4A emergency diesel generator. Specifically, work package 34010631 for painting in the emergency diesel generator 4A air start area, did not include preplanned provisions for control of foreign material cover placement. During the work, the engine air intake was blocked rendering the diesel engine inoperable. The violation lasted for about 5.5 hours until discovered and immediately corrected during an engineering walkdown of the area. As corrective action, the licensee documented the occurrence in CR 2005-32840, painted signs on the diesel air intake grating to prevent inadvertent blockage, and revised the work notes for the diesels to protect the air intake. This finding is of very low safety significance because the time when the diesel was not available was short and the redundant diesel generators that were available had a loss of power event occurred.
- .3 Technical Specification 3.9.5 requires that direct communications be maintained between the control room and personnel at the refueling station during core alterations. Contrary to the above, on March 11, 2006, a Unit 3 core alteration was performed when direct communications between the control room and personnel at the refueling station were not maintained. When identified during a supervisory review of activities, communications were immediately established, the shift manager was coached on the oversight role, and the event was entered into the corrective action program as CR 2006-7520. The licensee revised refueling procedure 0-GMM-043.9, Reactor Vessel, Removal of Upper Internals, to verify that communications were established prior to the core alteration. This finding is of very low safety significance because operator staffing was sufficient to respond to any postulated event and when identified by the licensee, communications were promptly established prior to any fuel movement.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee personnel:

J. Antignano, Fire Protection Supervisor  
S. Greenlee, Engineering Manager  
D. Hoffman, Operations Superintendent  
T. Jones, Site Vice-President  
M. Moore, Corrective Actions Supervisor  
M. Murray, Emergency Preparedness Supervisor  
M. Navin, Operations Manager  
K. O'Hare, Radiation Protection and Safety Manager  
W. Parker, Licensing Manager  
M. Pearce, Plant General Manager  
D. Poirier, Maintenance Manager  
W. Pravat, Work Controls Manager  
G. Warriner, Quality Manager  
B. Webster, Senior Vice President, Operations

#### NRC personnel:

N. Diaz, NRC Chairman  
W. Travers, Regional Administrator, Region II  
L. Plisco, Deputy Regional Administrator, Region II  
J. Munday, Projects Branch Chief, Region II

### LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

#### Closed

05000250,251/2005-004	LER	Fast Acting Control Circuit Fuses Can Cause Emergency Containment Filters to be Inoperable During Degraded Voltage Conditions (Section 4OA3.1)
05000251/2005-005-00	LER	Loss of Offsite Power Causes Engineered Safety Feature Actuations (Section 4OA3.2)
05000251/2005-007-00	LER	Foreign Material Exclusion Cover Causes Inoperability of One Emergency Diesel Generator (Section 4OA3.3)
05000251/2005-007-01	LER	Foreign Material Exclusion Cover Causes Inoperability of One Emergency Diesel Generator (Section 4OA3.3)
05000250/2006-001-00	LER	Core Alterations Performed Without Direct Communications (Section 4OA3.4)
05000250/2006-002-00	LER	Main Steam Safety Valve Setpoints Outside Technical Specification Limits (Section 4OA3.5)
05000250&251/2006-010	VIO	AFW Pump B Out of Service Greater than TS Allowed Due to Incorrect Bearing Installation (EA-06-027) (Section 4OA5)