



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

October 27, 2011

Florida Power and Light Company
ATTN: Mr. Mano Nazar, 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
05000250/2011004 AND 05000251/2011004**

Dear Mr. Nazar:

On September 30, 2011, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Turkey Point Units 3 and 4. The enclosed inspection report documents the inspection results, which were discussed on October 18, 2011, with Mr. Kiley and other members of your staff.

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.

Based on the results of this inspection, one finding of significance was identified. Also, a licensee identified violation which was determined to be of very low safety significance is listed in the report. Because of the very low safety significance of the issues and because they are entered into your corrective action program, the NRC is treating these issues as non-cited violations (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest any 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 Turkey Point. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II, and the NRC Resident Inspector at Turkey Point.

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In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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/

Daniel W. Rich, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 05000250/2011004, 05000251/2011004
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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cc w/encl:
Alison Brown
Nuclear Licensing
Florida Power & Light Company
Electronic Mail Distribution

Larry Nicholson
Director
Licensing
Florida Power & Light Company
Electronic Mail Distribution

Michael Kiley
Site Vice President
Turkey Point Nuclear Plant
Florida Power and Light Company
Electronic Mail Distribution

Niel Batista
Emergency Management Coordinator
Department of Emergency Management
and Homeland Security
Electronic Mail Distribution

Robert J. Tomonto
Licensing Manager
Turkey Point Nuclear Plant
Florida Power & Light Company
Electronic Mail Distribution

Eric McCartney
Plant General Manager
Turkey Point Nuclear Plant
Florida Power and Light Company
Electronic Mail Distribution

Mitch S. Ross
Vice President and General Counsel
Nuclear
Florida Power & Light Company
Electronic Mail Distribution

Marjan Mashhadi
Senior Attorney
Florida Power & Light Company
Electronic Mail Distribution

William A. Passetti
Chief
Florida Bureau of Radiation Control
Department of Health
Electronic Mail Distribution

Attorney General
Department of Legal Affairs
The Capitol PL-01
Tallahassee, FL 32399-1050

County Manager of Miami-Dade County
111 NW 1st Street, 29th Floor
Miami, FL 33128

Gene St. Pierre
Vice President, Fleet Support
Florida Power & Light Company
Electronic Mail Distribution

George Gretsas
City Manager
City of Homestead
Electronic Mail Distribution

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Letter to Mano Nazar from Daniel Rich dated October 27, 2011

SUBJECT: TURKEY POINT NUCLEAR PLANT – INTEGRATED INSPECTION REPORT
05000250/2011004 AND 05000251/2011004

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C. Evans, RII

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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: 05000250/2011004, 05000251/2011004

Licensee: Florida Power & Light Company (FPL)

Facility: Turkey Point Nuclear Plant, Units 3 & 4

Location: 9760 S. W. 344th Street
Homestead, FL 33035

Dates: July 1 to September 30, 2011

Inspectors: J. Stewart, Senior Resident Inspector
M. Barillas, Resident Inspector
A. Alen, Resident Inspector (Acting)
G. Kuzo, Senior Health Physicist

Approved by: D. Rich, Branch, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000250/2011004, 05000251/2011004; 7/1/2011 – 9/30/2011; Turkey Point Nuclear Power Plant, Units 3 and 4; Maintenance Effectiveness

The report covered a three month period of inspection by resident inspectors and region based health physicists. One Green NCV was identified. The significance of most findings is identified by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspect was determined using IMC 305, Operating Reactor Assessment Program. The findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December, 2006.

A. NRC-Identified & Self-Revealing Findings

Cornerstone: Barrier Integrity

(Green) A Self-revealing Non-cited violation of Technical Specification requirements was identified for failure to implement procedures to control a defective component and prevent its use in a safety-related system. Specifically, the licensee installed a solenoid valve, known to be defective in the valve actuator for the Unit 3 B emergency containment cooler and the valve subsequently failed a surveillance requirement. The issue was documented in the licensee's corrective action program as CR1682798 and corrected by replacing the defective solenoid valve prior to returning the system to service.

The failure to identify and control the solenoid valve after having received information that the valve was defective was a performance deficiency. The performance deficiency was determined to be more than minor because it adversely affected the safety related emergency containment cooler system which is used to protect the public from radionuclide releases caused by accidents. The finding was screened using IMC 0609, "Significance Determination Process (SDP)," Attachment 0609.04 for the Containment Barrier and was screened as of very low safety significance (Green). The inspectors determined that the cross-cutting aspect of Problem Identification and Resolution was affected when the licensee did not identify the defective component in the corrective action program in a timely manner after having received notification from the vendor of a component defect. (P.1(a)) (1RO12)

B. Licensee Identified Violations

A violation of very low safety significance identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violation and associated corrective actions are listed in Section 4OA7 of this report.

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REPORT DETAILS

Summary of Plant Status:

Unit 3 operated at full power throughout the period.

Unit 3 operated at full power throughout the period

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (02.03 Readiness for Impending Adverse Weather Conditions) Hurricane Irene

a. Inspection Scope

During week of August 22, 2011 the inspectors reviewed the licensee's preparations for Hurricane Irene per licensee procedure 0-ONOP-103.3, Severe Weather Preparations. The inspectors attended licensee meetings for coordination of ongoing and planned maintenance activities that could potentially coincide with severe weather conditions and verified it was being managed appropriately. The inspectors toured the protected area for loose debris which could pose hazards to plant equipment during high winds. The inspectors also examined the external flood protection boundary for material condition and sealing of piping penetrations in floors and walls between flood areas. The inspectors selected risk-significant and susceptible systems and areas for specific review and verified readiness of essential systems. No severe weather conditions were experienced at the site. The following areas of the site were specifically inspected:

- Unit 3 and Unit 4 Emergency diesel generator and oil tank areas
- External flood protection boundary and temporary barriers
- Unit 3 and Unit 4 Component cooling water pump areas
- Unit 3 and Unit 4 Refueling water storage tank areas

b. Findings

No findings 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 operating procedures and piping and instrumentation drawings, which were compared with observed

equipment configurations to verify that the critical portions of the systems were correctly aligned to support operability. The inspectors also verified that the licensee had identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems. In this area, inspectors reviewed apparent cause evaluation for Unit 4 safety injection (SI) test isolation valves found out of position (CR1649616). The inspectors routinely verified that alignment issues were documented in the corrective action program.

- Unit 3, Intake cooling water (ICW) electrical lineup according to 3-NOP-019, Intake Cooling Water System, Rev 6 while B ICW Pump was being replaced (work order 39001942).
- Unit 4, Auxiliary feedwater (AFW) alignment while C AFW turbine was on Train 1 to support A AFW turbine maintenance. The alignment check was verified using 4-NOP-075, Auxiliary Feedwater System.
- Unit 4, Component cooling water (CCW) valve alignment when A CCW pump was tagged out for overhaul under work order 35029046-01, Implement MSP-05-125. The walk down was done using licensee procedure 4-NOP-030, Component Cooling Water System and included verification of A train power to the C CCW pump to comply with Technical Specification (TS) 3.7.2; 30 day action.

.2 Complete Equipment Walkdown

The inspectors performed a detailed review of the alignment and condition of system 013, Unit 3 instrument air system (IAS), to verify that the existing alignment was consistent with the design. Specifically, the inspectors reviewed the Unit 3 IAS supply (starting from the system compressors) to Train 1 and Train 2 of Unit 3 AFW control valves including their nitrogen backup supply. To determine the correct system alignment, the inspectors reviewed the TS; licensee procedure 3-NOP-013.03, Instrument Air System Valve and Breaker Alignments; 3-NOP-075.02, AFW Backup Nitrogen System Alignment and Bottle Change-Out; piping and instrumentation drawing 5613-M-3013 and 5613-M-3075, the design basis documents; and the Updated Final Safety Analysis Report (UFSAR). The inspectors walked down supports and restraints associated with the safety-related nitrogen backup supply piping to the AFW control valves. During the walkdown, the inspectors reviewed the following:

- Valves were correctly positioned and did not exhibit air leakage that would impact the system's support functions to the AFW system. The inspectors verified that work requests were written for valves with identified air leaks.
- Electrical power was available as required.
- Major system components were correctly labeled, lubricated, cooled, ventilated, etc.
- Hangers and supports were correctly installed and functional.
- Essential support systems were operational.
- Ancillary equipment or debris did not interfere with system performance.
- Tagging clearances were appropriate.
- Valves were locked as required by the locked valve program.

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 temporary modifications, system health report, the system description, condition reports,

and outstanding maintenance 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 in a timely manner.

b. Findings

No findings were identified.

1R05 Fire Protection

a. Inspection Scope

.1 Fire Area Walkdowns

The inspectors toured the following six plant areas to evaluate conditions related to control of transient combustibles, ignition sources, and the material condition and operational status of fire protection systems including fire barriers used to prevent fire damage and propagation. The inspectors reviewed these activities using 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 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 inspectors accompanied fire watch roving personnel on a tour of fire protection impairments and risk significant fire areas to assure monitoring of area status and to verify proper identification and handling of transient combustibles. The following areas were inspected:

- Unit 3: Main feedwater platform
- Unit 4: B Emergency diesel generator room
- Unit 4: 480V load center rooms
- Unit 4 A/B 4.16kV switchgear rooms
- Main control room
- Auxiliary building breezeway

b. Findings

No findings were identified.

.2 Annual Fire Drill

a. Inspection Scope

On September 21, 2011, the inspectors observed the licensee fire brigade's response to a simulated fire on the Unit 3 turbine deck. The inspectors verified that control room communications with the fire brigade were established and announcement of the fire location and sounding of alarms were made in a timely manner. The inspectors verified that the drill was administered in accordance with licensee procedures FPAD-027, Fire

Brigade and Mutual Aid Drill Scenario Development and 0-ONOP-016.10, Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions. The inspectors checked the brigade's communications, ability to set-up and execute fire operations, and their use of fire fighting equipment. Six plant operators responded in full fire response gear and additional responders were available to dress if needed. The simulated fire was declared out after charging a hose and spraying water in the vicinity. The inspectors verified that the licensee implemented the aspects described below.

- The brigade, including the fire brigade leader, consisted of a minimum of five team members. Six brigade members responded fully dressed in gear and additional operators were available to dress, if needed.
- The team members acquired and donned the appropriate turnout gear including self contained breathing apparatus (SCBA) which were properly donned and used.
- Control room personnel verified and announced the fire location. The fire alarm was sounded and fire brigade personnel were dispatched. Pre-fire strategies and the emergency response classification guide were referenced by control room supervisors.
- The fire brigade leader maintained control. Members were briefed (including potential hazards), discussed plan of attack, received assignments, and performed communications checks. A second qualified brigade leader provided support.
- Fire brigade arrived at the scene in a timely manner, taking an appropriate access route.
- Command and control was established near the fire location. Communications were established and maintained with control room personnel.
- Communications were effective between the control room, command post, plant operators and fire brigade response teams.
- Fire hose lines were capable of reaching the fire area; the lines were laid out without flow restrictions and were charged. Water was discharged in the vicinity of the simulated fire and, after an appropriate time, the fire was declared out by the controllers.
- The fire brigade arrived with sufficient fire fighting equipment to perform its fire fighting duties. Offsite notification and request for assistance were simulated.
- The drill scenario was followed and the drill acceptance criteria were met.
- A post-drill critique was held to identify strengths and areas for improvement.
- All fire-fighting equipment associated with the drill was returned to a state of readiness following completion of the drill. The inspectors checked that fire readiness was quickly restored.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On September 6, 2011, the inspectors assessed licensed operator performance in the plant specific simulator. Event simulations were accomplished using a training evaluation scenario which involved a simulated dropped rod followed by a fast load of reduction, indications of loose metal inside unit 3B steam generator followed by a feedwater pipe break inside containment to the same steam generator. Operators responded to the events using off-normal procedures 3-ONOP-028.3, Dropped RCC; 3-ONOP-100, Fast Load Reduction; 3-ONOP-099.1, Response to a Metal Impact Alarm; and plant emergency procedures 3-EOP-E-0, Reactor Trip and Safety Injection; 3-EOP-E-2, Faulted S/G Isolation; and 3-EOP-FR-Z.1, Response to High Containment Pressure, and 3-EOP-E-1, Loss of Reactor Coolant or Secondary Coolant Response.

Inspectors verified that the Unusual Event and Alert Event classifications and simulated state notifications were performed in accordance with licensee procedures 0-EPIP-20101, Duties of the Emergency Coordinator; and 0-EPIP-20134, Offsite Notifications and Protective Action Recommendations. The simulator board configurations were compared with actual plant control board configurations concerning recent plant modifications. The inspectors specifically evaluated the following attributes related to operating crew performance and the licensee evaluation:

- Clarity and formality of communication
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Correct use and implementation of off-normal and emergency operating procedures; and emergency plan implementing procedures
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by shift supervisor, including ability to identify and implement appropriate TS actions and emergency plan classification and notification
- Crew overall performance and interactions
- Evaluator's critique and findings

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the following three 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 licensee 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 verified that equipment problems were being identified and entered into the corrective action program. The inspectors used licensee maintenance rule data base, system health reports, and the corrective action program as sources of information on tracking and resolution of issues.

- CR 1540347 Functional failure review for 3A emergency diesel generator solenoid valve SV-3-3522A failed to close following fuel transfer. The licensee concluded that the TS action time for the 3A diesel engine out of service did not exceed TS limitations.
- Operating Experience Smart Sample FY 2010-01: Recent Inspection Experience for Components Installed Beyond Vendor Recommended Service Life
- CR 1602163, 4B ICW/CCW Basket Strainer inlet valve 4-50-344 actuator was found fluttering. The inspectors observed corrective maintenance activities to replace the valve's actuator per WO 40062625.
- CR 1674743, Functional failure review for 3B ECC inlet valve CV-3-2903 failed to open due to sticking of solenoid valve SV-3-2920. The licensee concluded this failure to be a maintenance preventable functional failure.

b. Findings

Introduction: (Green) A Self-revealing Non-cited violation of Technical Specification (TS) 6.8.1 requirements was identified for failure to implement procedures to identify and control defective components and prevent their use in safety-related systems. Specifically, the licensee installed a solenoid valve, known to be defective, in the valve actuator for the Unit 3 B emergency containment cooler (3B ECC) and the valve later failed a surveillance requirement.

Description: On June 15, 2011 the licensee received four solenoid valves (Model no. NP8342) under purchase order (PO) 2263021. These valves were manufactured by Automatic Switch Company (ASCO) and are used in various systems, including the air-operated actuators for the inlet and outlet valves to the emergency containment coolers. On two occasions, June 24, 2011 and July 8, 2011, the licensee received information by email from the manufacturer indicating that the valves supplied under the purchase order had been inadvertently lubricated during assembly. The vendor requested the valves to be returned. This particular valve model was not supposed to have any lubricating agent because operating experience revealed that drying of the lubricating agent could occur with the solenoid valve coil energized, and could result in slow response of the solenoid. FPL procedure QI-16-PTN-2, Evaluating and Reporting Defects and Failures, states that any individual who receives notification of a potential deviation or defect shall notify their supervisor and/or generate a condition report so the condition is properly evaluated and

corrective actions are taken. In this case, FPL received the vendor information by email but no action was taken to inform supervision or write a condition report

On August 4, 2011, one of the defective valves was installed on 3B ECC inlet valve, CV-3-2903, actuator. This malfunction became self-evident when the valve took over 60 seconds to stroke during its monthly surveillance on August 31, 2011. The normal stroke time is approximately five seconds. The licensee disassembled the valve to determine the cause of the failure and identified dried grease in the solenoid valve internals. The licensee then contacted the supplier (AREVA) and was made aware of two notifications provided in June 24, 2011, and July 8, 2011 emails. The licensee replaced the solenoid valve with a solenoid confirmed not to have the defective lubricant and placed the other three valves, supplied under PO 2263021, on hold to be returned to the vendor. The problem was documented in the corrective action program as CR 1682798.

Analysis: The inspectors determined that the failure to control the defective solenoid valves after receiving information from the vendor of the potential defect was a performance deficiency. The performance deficiency was determined to be more than minor because it adversely affected the containment barrier cornerstone objective of providing reasonable assurance that physical design barriers (containment) will protect the public from radionuclide releases caused by accidents. The finding was screened to be of very low safety significance (Green) in accordance with IMC 0609, "Significance Determination Process (SDP)," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Table 4a for the Containment Barrier. The inspectors determined that the cross-cutting aspect of Problem Identification and Resolution was affected when the licensee did not identify the defective component in the corrective action program in a timely manner after having received notification from the vendor. (P.1(a))

Enforcement: Turkey Point TS 6.8.1 requires that procedures required by the FPL Quality Assurance Topical Report (QATR) be implemented. The topical report includes procedures for control of defective components. The licensee implements this requirement, in part, using FPL procedure QI-16-PTN-2, Evaluating and Reporting Defects and Failures, Revision 1, which states, in part, that any individual who receives notification of a potential deviation or defect shall notify their supervisor and/or generate a condition report so the condition is properly evaluated and corrective actions are taken. Contrary to the above, on June 24, 2011, licensee personnel received information indicating that solenoid valves supplied per PO# 02263021 were defective, but failed to notify supervision or generate a condition report. As a result, corrective actions were not taken and on August 4, 2011, the licensee installed one of the defective valves on the actuator to safety related inlet valve CV-3-2903 to 3B ECC. As a result, the emergency containment cooler valve failed to stroke within inservice testing time requirements on August 31, 2011, during the monthly surveillance. The issue was documented in the licensee's corrective action program as CR1682798 and corrected by replacing the defective component prior to returning the system to service. Because this violation was of very low safety significance and was entered in the licensee's corrective action program, this violation is being treated as a Non-Cited Violation, consistent with Section

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2.3.2 of the NRC Enforcement Policy. **(NCV 05000250/2011-004-01) Failure to Control Defective Component Results in Safety System Surveillance Failure.**

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 six emergent or planned maintenance activities. The inspectors verified the licensee's risk assessment and risk management activities using 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; WM-AA-1000, Work Activity Risk 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 and the licensee assessment of aggregate risk using FPL procedure OP-AA-104-1007, Online Aggregate Risk. The inspectors evaluated the following risk assessments during the inspection:

- July 7: Unit 3 risk management during replacement of 3B intake cooling water pump
- July 18: Unit 4 risk management with A auxiliary feedwater pump out of service for planned maintenance when the 4A feedwater regulating valve (FCV-4-478) was not responsive in manual operation (CR 1669817)
- August 3: Unit 3 risk management during 3D 4.16kV bus outage
- September 6: Unit 4 risk management when instrument air compressors 4CD and 4CM were removed from service for replacement. Temporary air compressors were walked down and temporary operating procedure TP-11-008, Temporary Instrument Air Operations, was reviewed as part of the risk inspection.
- September 26: Unit 3 risk with increased leakage from 3C reactor coolant pump seal, Temporary Procedure TP-11-015, Guidance for Operation with Unwanted 3C RCP Seal Leak-off Flow.
- September 27: Unit 3 risk management when 3B emergency diesel generator was removed from service for preventive maintenance on the north radiator idler using work order 40099456-01.

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

For the five operability evaluations described in the condition reports (CR) listed below, the inspectors evaluated the technical adequacy of licensee evaluations to ensure that TS operability was properly justified and the subject component or system remained

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available such that no unrecognized increase in risk occurred. The inspectors reviewed the UFSAR to verify that the system or component remained available to perform its intended function. In addition, when applicable, the inspectors reviewed compensatory measures implemented to verify that the plant design basis was being maintained. The inspectors also reviewed a sampling of condition reports to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations.

- CR 1669369, Operability Assessment for corrosion found on Unit 4 Refueling Water Storage Tank dome
- Temporary System Alteration 2011-271821, Operability assessment of the 3B ECC outlet valve, CV-3-2906, blocked in the open position and placing the fan switch for 3B ECC in the “Stop” position
- CR 1677185, Operation of Unit 3 intake cooling system with valve 3-50-406 shut and valve 3-50-407 open.
- CR 1679739, Operability Assessment for the 3A Reactor Trip Breaker with sticking of the Auto-Shunt trip block pushbutton.
- CR 1684107, Operability assessment when control room inlet damper D-2 failed to close following testing. Temporary system alteration 03-03-025-024, Rev. 0 and selected sections of UFSAR section 9.9.1 were reviewed in the assessment.

b. Findings

No findings were identified.

1R18 Plant Modification

a. Inspection Scope

The inspectors reviewed one temporary system modification and one permanent plant modification listed below to ensure that that the modifications did not adversely affect safety system availability or reliability. The inspectors reviewed 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. For the permanent modification the inspectors reviewed the licensee’s 10 CFR 50.59 screening to ensure that NRC approval was not required prior to installation of the modification. The inspectors specifically checked environmental qualification, energy needs, structural integrity, and failure modes of replacement component. For the temporary modification the inspectors specifically checked the system flow-path, operations, fuel energy needs, and the 10 CFR 50.59 screening to verify the licensee conclusions in meeting its licensing basis. The inspectors conducted plant tours and discussed system status with engineering and operations personnel to check for the existence of modifications that had not been appropriately identified and evaluated.

- EC 250090, Replacement of the 4B emergency diesel generator governor motor operated potentiometer with a digital reference unit. WO# 40048859-02
- EC-246991, Temporary instrument air (IA) configuration for Phase 4-4 IA upgrade for Unit 4

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b. Findings

No findings were identified.

1R19 Post Maintenance Testinga. Inspection Scope

For the five 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 operable. The inspectors used licensee procedure 0-ADM-737, Post Maintenance Testing, in their assessments.

- Unit 3: 3-OSP-075.6, Section 4.2, Testing of trip throttle valve MOV-6459A following replacement of the 1M relay under work order (WO) 40059742-01, Replace MOV-6459 1M relay
- Unit 3: 3-OSP-055.1, Section 4.3, 3B Emergency containment cooler (ECC) test following replacement of the ECC inlet valve (3-CV-2903) solenoid valve under work order 40094929-01, SV-3-2920: Replace Solenoid
- Unit 4: 0-SME-003.5, Section 6.7 and 6.2, Load test and load sharing test for the 4A2 Battery charger following the 18 month preventive maintenance under work order 40044854-01, 4A2 Battery charger inspection and load test
- Unit 4: 4-OSP-030.1, Section 7.1, 4A CCW In-service test following pump motor and bearing replacement under work order 35029046-01, 4P211A: Implement MSP 05-125 and WO 38001137-02, 4P211A: Motor replacement
- E-16C control room air handling unit testing following blower replacement under work order 40109658, High vibrations on E-16C blower

b. Findings

No findings were identified.

1R22 Surveillance Testinga. Inspection Scope

The inspectors either reviewed or witnessed the following six surveillance tests to verify that the tests met the TS requirements, the UFSAR, and the licensee's procedural requirements and demonstrated that the systems were operationally ready to perform their intended safety functions. 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 alignment required for the system to perform its safety function. Inservice tests (IST) were validated using the licensee's Inservice Testing Program, Fourth Ten Year Interval, dated March 11, 2004. The inspectors verified that surveillance issues were documented in the corrective action program.

- 3-OSP-023.2, 3A Diesel Generator 24 Hour Full Load Test and Load Rejection, Section 7.1 Test
- 4-OSP-049.1, Reactor Protection System Logic Test (A channel)
- 0-NCAP-015.5, Determination of Particulate Contamination in Diesel Fuel Oil, for 4A, 4B, and Unit 3 diesel oil storage tanks
- 4-OSP-050.2, 4B Residual Heat Removal Inservice Test, Section 7.1 (IST)
- 3-OSP-030.1, 3A Component Cooling Water Pump Inservice Test, Section 7.1 (IST)
- 3-OSP-063.1A, Safeguards Actuation System Logic Test (Train A)

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

.1 Emergency Preparedness Drill

a. Inspection Scope

On July 14, 2011, the inspectors observed an emergency preparedness drill and the performance of the licensee's emergency response organization. The drill included a simulated strike by a tornado that caused damage to plant systems requiring an Alert declaration and notification to state and county officials. The scenario progressed including a failure of the reactor protection system that led the licensee to make a Site Area Emergency declaration with notification to the state of Florida and simulated notification to the NRC. The inspectors observed the crew in the plant simulator including simulated implementation of emergency procedures and staff in the Technical Support Center (TSC) using the event classification guidelines and emergency response procedures. During the drill, the inspectors observed the simulator and TSC staff verify that emergency classification and notifications were made in accordance with the licensee emergency plan implementing procedure 0-EPIP-20101. Licensee identified critique items were reviewed and observations were discussed with the licensee to verify that drill issues were identified and captured in the corrective action program.

b. Findings

No findings were identified.

.2 Simulator Based Training Evolution

a. Inspection Scope

On July 18, 2011, the inspectors observed an operating crew in the plant simulator. The simulation included a loss reactor coolant through a stuck open primary safety valve. The loss of subcooling required the declaration of an Alert (FA1). During the drill, the

inspectors assessed operator actions to verify that emergency classification and simulated notification of local officials were made in accordance with the emergency plan implementing procedures and 10 CFR 50.72 requirements. The inspectors reviewed the event classifications and notifications to ensure these were made in accordance with licensee procedure, 0-EPIP-20101, Attachments 1 and 2, Turkey Point Classification Tables. Drill critique items were discussed with the licensee and reviewed to verify that drill issues were identified and captured in the licensee's corrective action program.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4A01 Performance Indicator Verification

Initiating Events and Mitigating Systems Cornerstones

a. Inspection Scope

The inspectors checked licensee submittals for the performance indicators (PIs) listed below for the period July 1, 2010, through June 30, 2011, 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. 6 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), and performance indicator data sheets to verify the licensee had identified plant transients and equipment failures, as applicable. The inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution.

- Unit 3 Unplanned Scrams per 7000 Critical Hours
- Unit 3 Unplanned Scrams with Complications
- Unit 3 Unplanned Power Changes per 7000 Critical Hours
- Unit 3 Safety System Functional Failures
- Unit 3 Mitigating Systems Performance Indicator (MSPI) Emergency AC Power
- Unit 3 MSPI High Head Safety Injection
- Unit 3 MSPI Residual Heat Removal System
- Unit 3 MSPI Auxiliary Feedwater System
- Unit 3 MSPI Cooling Water Support Systems
- Unit 4 Unplanned Scrams per 7000 Critical Hours
- Unit 4 Unplanned Scrams with Complications
- Unit 4 Unplanned Power Changes per 7000 Critical Hours
- Unit 4 Safety System Functional Failures
- Unit 4 MSPI Emergency AC Power
- Unit 4 MSPI High Head Safety Injection
- Unit 4 MSPI Residual Heat Removal System

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- Unit 4 MSPI Auxiliary Feedwater System
- Unit 4 MSPI Cooling Water Support Systems

b. Findings

No findings 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 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 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 and 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 licensee procedures PI-AA-204, Condition Identification and Screening Process, and PI-AA-205, Condition Evaluation and Corrective Action. The inspectors reviewed the cumulative effects of the operator workarounds that were in place to verify that those effects could not increase initiating event frequency, affect multiple mitigating systems, or affect the ability of operators to properly respond to plant transients and accidents. The inspectors also reviewed operator workarounds to verify that the licensee was identifying operator workaround problems at an appropriate threshold and entering them in the corrective action program.

- CR 1682758, leak from 3B reactor coolant pump flow transmitter FT-3-6585B piping mechanical joint

- CR 1658517, 3B Emergency diesel generator north idler plate vibration increase, including work order 40099456 and engineering change 272907. Action request 1666707 linked the original condition report to the engineering change; action request 1658517 provided the operability assessment prior to the engineering change.

b. Assessment and Observations

No findings were identified.

4OA3 Follow-up of Events

a. Inspection Scope

(Closed) LER 05000250/2010-004-00, Inoperable Main Steam Line High Range Noble Gas Accident Monitoring Instrumentation Supplement

On October 1, 2010, Unit 3 was in Mode 6 for refueling outage activities and Unit 4 was operating in Mode 1. Radiation Monitor (RAD)-6426 with Data Acquisition Monitor (DAM)-1 and High Range Noble Gas Detector Assembly SA-9, common to Turkey Point Units 3 and 4 and used to monitor main steam line (MSL) noble gas concentrations, is required to be operable in Modes 1 through 3 in accordance with TS 3.3.3.3. During research of the design basis for replacement of the subject monitoring system, the licensee determined that noble gas samples taken from each of the U4 and U3 MSLs and subsequently transported through long sample lines and chillers prior to reaching the RAD-6426 detector would not be representative of noble gases released from either the MSL safety valves or atmospheric dump valves during postulated emergency plan effluent release scenarios. Based on their evaluation, the licensee determined that the monitoring system could not be restored to an operable status within seven days and initiated preplanned alternate monitoring methods. Further, the licensee's final evaluation concluded that the failure to provide representative noble gas samples from the U3 and U4 MSLs to the monitoring instrumentation had not met the operability intent of the TS requirements since installation of the monitor and associated sample lines in 1981. The licensee determined the failure to identify this lack of sample representativeness and accurate monitoring of potential steam line releases resulted from inadequate design, design verification, and functional testing of the monitoring system during its original installation. Corrective actions include continuation of alternate monitoring methods until permanent replacement of the MSL monitoring system is completed in the second quarter of 2012.

The inspectors reviewed and discussed the LER, and associated licensee documentation describing proposed post-installation testing of the monitoring system proposed to establish correlations between noble gas activities in steam samples with flow out the MSL to determine activity released from the safety and/or atmospheric dump valves under selected emergency scenarios. Based on a lack of any post-installation test records or correlation curves, the inspectors concluded that the proposed initial operating tests correlating noble gas activities in steam samples to flow rates out of the system had not been conducted. Licensee oversight of the completion and review of the

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proposed tests and results potentially could have identified the monitor and sample line design inadequacies. The enforcement aspects of the violation are discussed in Section 4OA7. This LER is closed.

(Closed) Licensee Event Report (LER) 50-250/2010-003-00, Reactor Trip due to Fault on 230kV Side of Generator Step-Up Transformer

On September 23, 2010, a reactor trip of Unit 3 from full power occurred when an electrical flashover on the high side of the Unit 3 Generator Step Up transformer occurred. All safety systems responded to the trip as designed. One control rod indicated 18 steps after the trip but was later verified to be fully inserted. The licensee evaluated the trip in CR 582206 and determined the root cause to be flashover to ground of the C phase high voltage bushing induced by salt laden vapor from a nearby circulating water system condenser water box priming system. As corrective action, the bushings on Unit 3 main transformer were replaced with a longer version, the conductors were replaced, and the condenser water box priming system was overhauled to improve water separation. A planned corrective action to replace the Unit 4 high voltage bushings was not completed when the root cause was revised to attribute the failure to externally induced contamination. No performance deficiencies were identified. The LER is closed.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the plant inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours. These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspection activities.

b. Findings

No findings of significance were identified.

4OA6 Exit

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Kiley and other members of licensee management October 18, 2011. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary information. The licensee did not identify any proprietary information.

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4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for disposition as an NCV.

TS 3.3.3.3(a) requires, in part, the accident monitoring instrumentation channels shown in Table 3.3-5, including the main steam line (MSL) high range-noble gas effluent monitor, to be operable. Contrary to this, on October 1, 2010, licensee evaluation of design bases for the proposed replacement of the MSL high range-noble gas effluent monitor common to Units 3 and 4, i.e., Radiation Monitor (RAD)-6426 with Data Acquisition Monitor (DAM)-1 and High Range Noble Gas Detector Assembly SA-9, determined that the current configuration of the sample line and monitor system failed to meet the TS operability requirements. Specifically, the licensee determined that noble gas samples collected from each of the U3 and U4 steam lines would not be representative of noble gases released from the MSL safety valves and/or atmospheric dump valves during postulated emergency plan scenarios. Further, licensee evaluations indicated that the subject monitoring system had not met the TS requirement since it was installed in 1981. The inspectors determined that this finding is more than minor. Initial NRC concerns and licensee commitment for proposed sampling and estimating noble gas quantities released via steam pathways in accordance with NUREG 0578 were documented in letters dated March 10, 1980, March 28, 1980, and August 20, 1980, from Robert E. Uhrig, Vice President, Florida Power and Light to the Office of Nuclear Reactor Regulation Projects and Licensing Offices. The inspectors noted that the subject correspondence documented that subsequent to installation, operating tests were to be conducted for the purpose of correlating noble gas activities in steam samples with flow out of the system through the MSL safety relief or atmospheric dump valves to demonstrate proper operation. However, licensee representatives stated that their reviews of monitor operability determined that neither test records nor other correlation data were found which demonstrated completion of the proposed initial operating tests for the installed monitoring system. The inspectors noted that proper oversight and review of those initial post startup tests, if conducted, potentially could have identified the design inadequacies subsequent to sample line and monitoring system's installation. Further, the inoperable monitor had a credible impact on equipment maintained to support emergency response dose calculation capabilities in accordance with Emergency Plan Implementing Procedure 20126, Offsite Dose Calculations. The finding was considered to have very low safety significance (Green) because the licensee had alternate methods for estimating effluent releases from the MSL atmospheric dump and/or release valves. This issue and corrective actions were documented in the licensee's corrective action program as Condition Report (CR) Numbers 572823, 585330, and 596361.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

R. Coffee, Work Controls Manager
B. Carberry, Emergency Preparedness Manager
C. Cashwell, Radiation Protection Manager
M. Crosby, Quality Manager
J. Garcia, Engineering Manager
M. Jones, Assistant Operations Manager
M. Kiley, Site Vice-President
E. McCartney, Plant General Manager
J. Patterson, Fire Protection Supervisor
J. Pallin, Maintenance Manager
R. Tomonto, Licensing Manager
R. Wright, Operations Manager

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000250/2011-004-01 NCV Failure to control defective component results in safety system surveillance failure (IR12)

Closed

05000250/2010-004-00 LER Inoperable Main Steam Line High Range Noble Gas Accident Monitoring Instrumentation Supplement (4OA3)

05000250/2010-003-00 LER Reactor Trip due to Fault on 230kV Side of Generator Step-Up Transformer (4OA3)

LIST OF DOCUMENTS REVIEWED

Section 40A3: Event Follow-up

Procedures and Guidance Documents

0-Emergency Plan Implementing Procedure (EPIP)-20126, Off-Site Dose Calculations,
Dated 11/09/09

Letter (L-80-79) from Robert E. Uhrig, Vice President, Advanced Systems & Technology, Florida Power and Light Company, to Mr. A. Schwencer, Chief, Operating Reactors Branch 1, Division of Operating Reactors, U.S. Nuclear Regulatory Commission, Dated 03/10/80

Letter (L-80-109) from Robert E. Uhrig, Vice President, Advanced Systems & Technology, Florida Power and Light Company, to Mr. A. Schwencer, Chief, Operating Reactors Branch 1, Division of Operating Reactors, U.S. Nuclear Regulatory Commission, Dated 03/28/80

Letter (L-80-274) from Robert E. Uhrig, Vice President, Advanced Systems & Technology, Florida Power and Light Company, to Mr. Darrell G. Eisenhut, Director, Division of Licensing, U.S. Nuclear Regulatory Commission, Dated 08/20/80

CAP Documents

AR 00403463, Source Traceability for Liquid Effluent Monitoring Calibrations