



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

April 30, 2009

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

SUBJECT: TURKEY POINT NUCLEAR PLANT - INTEGRATED INSPECTION REPORT
05000250/2009002 AND 05000251/2009002

Dear Mr. Nazar:

On March 31, 2009, 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 April 17, 2009, with Mr. W. Jefferson 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 these violations as Non-cited Violations consistent with Section VI.A.1 of the NRC Enforcement Policy because of the very low safety significance of the issues and because they are entered into your corrective action program. If you contest these NCVs in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial or disagreement, 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/

Marvin D. Sykes, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 05000250/2009002 and 05000251/2009002
w/Attachment: Supplemental Information

cc w/encls: (See page 3)

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Letter to Mano Nazar from Marvin D. Sykes dated April 30, 2009

SUBJECT: TURKEY POINT NUCLEAR PLANT - INTEGRATED INSPECTION REPORT
05000250/2009002 AND 05000251/2009002

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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.: 05000250/2009002, 05000251/2009002

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

Facility: Turkey Point Nuclear Plant, Units 3 & 4

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

Dates: January 1 - March 31, 2009

Inspectors: S. Stewart, Senior Resident Inspector
M. Barillas, Resident Inspector
C. Fletcher, Reactor Inspector (1R08)
S. Ninh, Senior Project Engineer

Accompanied by: J. Hamman, Division of Reactor Projects, RII
J. Uribe, NRC Nuclear Safety Professional Development Program
R. Williams, Division of Reactor Safety, RII

Approved by: M. Sykes, Chief
Reactor Projects Branch 3

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SUMMARY OF FINDINGS

IR 05000250/2009-002, 05000251/2009-002; 01/01/2009 - 03/31/2009; Turkey Point Nuclear Power Plant, Units 3 and 4; Routine Integrated Inspection Report.

The report covered a three-month period of inspection by resident and region-based inspectors. 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 Inspector Identified & Self-Revealing Findings

None

B. Licensee Identified Violations

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

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REPORT DETAILS

Summary of Plant Status:

Unit 3 operated at or near full power during the inspection period with the following exceptions: On March 15, reactor power was reduced to 50 percent for testing of secondary components, and on March 16, Unit 3 was shutdown and a cooldown initiated to begin refueling outage 24. The unit remained shutdown for the remainder of the period.

Unit 4 operated at or near full power during the inspection period with the following exceptions: On February 8, Unit 4 power was lowered to 60% to repair a secondary system. The unit was returned to full power on February 9. On February 16, Unit 4 power was reduced to approximately 94% due to secondary feedwater oscillations. Repairs were made and the unit was returned to full power on February 21.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection

a. Inspection Scope

During the week of January 19, the inspectors verified the status of licensee actions in accordance with licensee off-normal procedure 0-ONOP-103.2, Cold/Hot Weather Conditions. The inspectors checked Technical Specifications and the Updated Final Safety Analysis Report (UFSAR) for cold weather design features and monitored the periodic testing of the diesel driven instrument air compressors during lower temperature weather. Although the licensee had initiated cold weather mitigation using off-normal procedures, there were no actual freezing weather conditions at the site. This was the annual review of cold weather verification and included physical walkdowns of the following plant areas to check for any specific cold weather vulnerabilities and reviews of operator actions used to mitigate cold weather:

- Boric acid storage tank and transfer pump area
- Unit 3 charging pump area
- Unit 4 charging pump area

b. Findings

No findings of significance were identified.

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1R04 Equipment Alignment

.1 Partial Equipment Walkdowns

a. Inspection Scope

The inspectors conducted partial alignment verifications of the four 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.

- Unit 4 Train A CCW when 4B CCW surge tank makeup piping was being replaced on January 6, 2009. Licensee procedure 3-OP-020, Primary Water System, drawing 5614-M-3030, Component Cooling Water System, and engineering evaluation PTN-ENG-SEMS-08-055, revision 1, Engineering Evaluation for Implementation of Freeze Seal to Replace the CCW Surge Tank Makeup Piping in the CCW Heat Exchanger Room, were used to complete the partial equipment walkdown.
- 4A emergency diesel generator including the station blackout cross-tie, with checks of auxiliary feedwater, and the Unit 4 4160 volt switchgear rooms on January 22, 2009, when the 4B emergency diesel generator was removed from service for preventive maintenance. The walkdowns were done using licensee procedures 4-EOP-ECA-0.0, Loss of All AC Power, and 4-OP-023, Emergency Diesel Generator.
- Unit 3 emergency diesel generators including the station blackout cross-tie, the unit 4 startup transformer, and Unit 4 emergency diesel generators when the unit 3 startup transformer was removed from service on February 4, 2009, for planned maintenance. The inspectors used licensee procedure 0-OSP-205.1, Startup Transformers and Onsite A.C. Power Distribution Verification.
- Unit 3 and Unit 4 component cooling water system during piping replacement. Licensee procedures 3/4-OSP-030.3, Component Cooling Water System, were used to complete the partial equipment walkdown.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors conducted a detailed review of the alignment and condition of the auxiliary feedwater (AFW) system to verify that the existing alignment of the system was consistent with the design. To determine the correct system alignment, the inspectors reviewed the plant Technical Specifications (TS), procedures, drawings, and the Final Safety Analysis Report (FSAR). In addition, the inspectors reviewed the NRC operating experience smart sample, OPEss FY2009-02, "Negative Trend and Recurring Events

Involving Feedwater Systems and utilized these guidance and references for the inspection.

The inspectors walked down the system. During the walkdown, the inspectors reviewed the following:

- Valves were correctly positioned and did not exhibit leakage that would impact the functions of any given valve.
- 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 operator workarounds, temporary modifications, system health reports, the system description, pump vibration data, condition reports and outstanding maintenance work orders (WOs). 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 of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors toured the following six plant areas during this inspection period to evaluate conditions related to control of transient combustibles and ignition sources and 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 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, 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 component cooling pump area
- Unit 3 component cooling pump area
- Auxiliary feedwater pump room during a continuous fire watch for inoperable/degraded thermolag (the thermolag was subsequently repaired)
- Unit 4 4160 volt switchgear rooms

- Unit 3 emergency diesel generator rooms during replacement of a fire protection deluge valve
- Control building breezeway

a. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors verified heat exchanger performance monitoring for the following two sets of heat exchangers in accordance with licensee procedure 3/4-OSP-030.4, Component Cooling Water (CCW) Heat Exchanger Performance Testing. The testing verified adequate heat transfer for safety related equipment during normal and emergency operations. On March 11, 2009, the inspectors observed CCW heat exchanger cleaning under work order number 39000170 and licensee procedure 0-PMM-030.1, Component Cooling Water Heat Exchanger Cleaning. The inspectors checked monitoring and trending of heat exchanger performance done weekly and verified the operational readiness of the system should it be needed for accident mitigation. The inspectors verified that the licensee employed the heat transfer method described in EPRI-NP-7552, Heat Exchanger Performance Monitoring Guidelines. The inspectors walked down portions of the cooling systems for integrity checks and to assess operational lineup and material condition. Maintenance rule monitoring of the system was verified. The inspectors verified that significant heat sink issues, such as errors in the containment integrity design basis analysis that affect the maximum allowable intake cooling water temperature documented in condition report CR 2008-31338, were entered into the corrective action program.

- Unit 3 intake cooling water to component cooling heat exchangers
- Unit 4 intake cooling water to component cooling heat exchangers

Findings

No findings of significance were identified.

1R08 Inservice Inspection (ISI) Activities

.1 Non-Destructive Examination (NDE) Activities and Welding Activities

a. Inspection Scope

From March 23-26, 2009, the inspectors reviewed the implementation of the licensee's Risk Informed In-service Inspection (ISI) program for monitoring degradation of the reactor coolant system (RCS) boundary and risk significant piping boundaries. The inspectors' activities consisted of an on-site review of NDE and welding activities to

evaluate compliance with the applicable edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section XI (Code of record: 1998 Edition through the 2000 Addenda), and to verify that indications and defects (if present) were appropriately evaluated and dispositioned in accordance with the requirements of the ASME Code, Section XI acceptance standards.

The inspectors' review of NDE activities specifically covered examination procedures, NDE reports, equipment and consumables certification records, personnel qualification records, and calibration reports (as applicable) for the following examinations:

- UT examination of weld 8"-SI-2301-1, Residual Heat Removal System, Reducer to Pipe (Direct Observation).
- MT examination of weld 14"-FWA-2301-20, Feed Water System, Pipe to Elbow (Direct Observation).
- VT-3 examination on Double Acting Restraint Support 3-RCH-11, Residual Heat Removal System.

The inspectors also reviewed documentation for the following indications, which were accepted for continuous service:

- Visual Inspection and UT of Emergency Feed Water Piping (AFW), associated with CR # 2008-29399 (Evaluation).

The inspectors' review of welding activities specifically covered the welding activity listed below in order to evaluate compliance with procedures and the ASME Code. The inspectors reviewed the work order, repair and replacement plan, weld data sheets, welding procedures, procedure qualification records, welder qualification records, and NDE reports.

- Welding Package for component CV-3-387 associated with Work Order # 34014582-01, Bypass Line.
- Welding Package for component 3-50-050 (Valve Replacement) associated with Work Order #35016412-01.

b. Findings

No findings of significance were identified.

.2 PWR Vessel Upper Head Penetration (VUHP) Inspection Activities

a. Inspection Scope

The reactor vessel upper head was replaced in the Spring of 2005. Inspections during this outage consisted of Bare Metal Visual (BMV) examinations conducted on the Reactor Pressure Vessel (RPV) Upper Head Penetrations in accordance with ASME Code Case N-729-1 and BMV on the RPV Bottom Head Penetrations in accordance with ASME Code Case N-722, to identify potential boric acid leaks from pressure-retaining

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components. Inspectors reviewed the licensee's activities to verify licensee compliance with the regulatory requirements of 10 CFR 50.55a(g)(6)(ii)(D). Specifically, the inspectors directly observed a portion of the BMV of the upper head penetrations and reviewed examination procedures, personnel training and qualification records, reports for the visual inspection, and examination coverage of pressure retaining components.

b. Findings

No findings of significance were identified.

.3 Boric Acid Corrosion Control (BACC) Inspection Activities

a. Inspection Scope

The inspectors reviewed the licensee's BACC program activities to ensure implementation with commitments made in response to NRC Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary," and applicable industry guidance documents. Specifically, the inspectors performed an on-site record review of procedures and the results of the licensee's containment walk-down inspections performed during the Unit 3 Spring 2009 outage. The inspectors also interviewed the BACC program owner and conducted an independent walk-down of the reactor building to evaluate compliance with licensee's BACC program requirements and verify that degraded or non-conforming conditions, such as boric acid leaks identified during the containment walk-down, were properly identified and corrected in accordance with the licensee's BACC and Corrective Action Programs.

The inspectors reviewed a sample of engineering evaluations completed for evidence of boric acid found on systems containing borated water to verify that the minimum design code required section thickness had been maintained for the affected components. The inspectors selected the following condition report (CR) evaluations for review:

- CR 2008-10824 – Ineffective corrective actions for packing leak on 4-309D, RC Loop B to Regenerative Heat Exchanger Isolation Valve.
- CR 2008-16091 – Active Packing Leak with Boric Acid, light brown in color on valve 4-896R.

b. Findings

No findings of significance were identified.

.4 Steam Generator (SG) Tube Inspection Activities

a. Inspection Scope

No examinations were required to be scheduled this outage.

b. Findings

Not applicable.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a review of ISI-related problems, including welding, BACC, that were identified by the licensee and entered into the corrective action program as Condition Reports (CRs). The inspectors reviewed the CRs to confirm that the licensee had appropriately described the scope of the problem and had initiated corrective actions. The review also included the licensee's consideration and assessment of operating experience events applicable to the plant. The inspectors performed this review to ensure compliance with 10CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the report attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program

.1 Quarterly Review

a. Inspection Scope

On January 20, the inspectors observed and assessed licensed operator annual regualification activities in the plant specific simulator to verify that operator performance assured safety and that evaluators were identifying and documenting crew performance problems. The simulated events were done per Scenario 750205300, which involved a loss of main generator cooling followed by a steam generator tube rupture. The inspectors observed the operator's use of procedures 3-EOP-E-0, Reactor Trip and Safety Injection, 3-EOP-E-3, Steam Generator Tube Rupture, and 3-ONOP-090.1, Generator Gas Temperature Monitoring. Event classification (Alert) was checked for proper classification and timely notification of state agencies using licensee procedure 0-EPIP-20101, Duties of the Emergency Coordinator. The simulator board configurations were compared with actual plant control board configurations including recent modifications. 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 and limit release of radioactive material
- Prioritization, interpretation, and verification of alarms
- Correct use and implementation of off-normal and emergency operation procedures
- Control board operation and manipulation, including high-risk operator actions

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- Oversight and direction provided by supervision, including ability to identify and implement appropriate Technical Specification actions, emergency plan classification and notification; and crew overall performance and interactions

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the following three equipment issues and associated condition reports to verify that licensee maintenance efforts comported with the requirements of 10 CFR 50.65 (Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants) and Administrative Procedure NAP-415, Maintenance Rule Program Implementation. The inspectors focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk significance, determination of 10 CFR 50.65(a)(1) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also interviewed responsible engineers and observed corrective maintenance activities. Furthermore, the inspectors verified that equipment problems were being identified and entered into the corrective action program.

- CR 2009-536, Unit 3 HHSI exceeding maintenance rule performance goal for unavailability.
- CR 2009-4355, action tracking for System 59, Nuclear Instrumentation.
- 10 CFR 50.65a(1) actions for Unit 3 and Unit 4 startup rate comparators documented in CR 2006-21843 and the system health report dated December 31, 2008.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors completed reviews and in-plant inspections of the licensee's risk assessment of five 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) and the recommendations of Nuclear Management and Resource Council 93-01, Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, Revision 3. Implementation of licensee procedures O-ADM-068, Work Week Management; and O-ADM-225, On Line Risk Assessment and Management were also verified. The inspectors reviewed the effectiveness of the licensee's contingency actions to mitigate increased risk resulting

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from the degraded equipment. The inspectors evaluated the following risk assessments during the inspection:

- January 7, 2009, risk assessment for freeze seal and piping cut on the Unit 4 B component cooling suction header. The risk management was in accordance with PTN-ENG-SEMS-08-055, Engineering Evaluation for Implementation of Freeze Seal to Replace the CCW Surge Tank Makeup Piping in the CCW HX Room.
- January 12, 2009, risk management for installation of freeze seal on the Unit 3 B component cooling suction header, the risk management was in accordance with PTN-ENG-SEMS-08-066, Engineering Evaluation for Freeze Seal to Replace Component Cooling Water Makeup Piping.
- January 22, 2009, risk management when 4B emergency diesel generator and B auxiliary feedwater pump were out of service, with switchyard work ongoing.
- January 30, 2009, risk management when 3A intake cooling water header was inoperable for BS-3-1402 basket strainer cleaning during protected Train A week.
- March 23, 2009, risk management when Unit 4 Auxiliary Transformer was out of service due to cooling fan breakers tripping and the Auxiliary Feedwater System Train 2 was out of service for valve leak repairs.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed three 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 UFSAR, applicable supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim condition report disposition.

- CR 2009-595, Small cracks visible in intake cooling water expansion joints XJ-4-1406 and XJ-4-1408 for the 4A and 4C intake cooling water pumps respectively. The licensee stated that monitoring of crack growth during quarterly walkdowns would assure continued operability.
- CR 2009-675, related to the C auxiliary feedwater pump lube oil system leak.
- CR 2009-11245, related to 4B intake cooling water pump reduced flow and its ability to provide adequate heat removal.

b. Findings

No findings of significance were identified.

1R18 Plant Modificationsa. Inspection Scope

The inspectors reviewed the temporary system alteration (TSA) listed below to ensure that it did not adversely affect safety system availability. 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.

- Work Order 38019729-02, Install Freeze seal(s) on component cooling water (CCW) to Surge Tank, including engineering evaluation PTN-ENG-SEMS-08-055

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testinga. Inspection Scope

For the six 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; Dye Penetrant (PT) testing of weld Number 25 per work order 38019729-01, Replace Component Cooling Water Piping. The test was done in accordance with licensee procedure NDE 3.5, Liquid penetrant Examination in Accordance with Construction Codes. The inspector observed that the testing was observed by licensee quality assurance personnel.
- Unit 3: Work Order 37024126-01, MOV-3-350, emergency boration valve preventive maintenance EQ and grease inspection. The PMT was completed in accordance with 0-GME-102.14 and 0-ADM-502 Appendix P.
- Unit 3: Work Order 38019920-02, post maintenance test following 3B emergency containment filtering unit circuit modification in accordance with plant modification PC/M 08-070 and CR 2008-27014.
- Unit 4: Work Order 37026546-01, Emergency Diesel Generator 72 month preventive maintenance on right and left side air start motors using 4-OSP-023.1, Diesel Generator Operability Test, and 4-OSP-023.2, Diesel Generator 24 Hour Full Load Test and Load Rejection.

- Unit 3: Work Order 39003200-01, Repair control valve CV-3-2818 after the valve failed to fully open when demanded (CR 2009-4455). The testing was done using 3-OSP-075.6, Auxiliary Feedwater Train 1 Backup Nitrogen Test, and 3-OSP-075.10, Auxiliary Feedwater Flow Control Valve Operability Test.
- Auxiliary Feedwater Pump C, Work Order 38026587-01, AFW Pump P98C lube oil pump shaft seal leak.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities

.1 Unit 3 Refueling Outage 24

a. Review of Outage Plan

Unit 3 entered a refueling outage on March 16, 2009. Prior to the outage, the inspectors reviewed the licensee's outage plan and risk management activities. Licensee procedure O-ADM-051, Outage Risk Assessment and Control, and various maintenance schedules were reviewed to verify that the licensee had performed adequate risk assessments and had planned risk-management strategies as required by 10 CFR 50.65(a)(4). The outage risk implementation was reviewed with a senior reactor operator assigned risk management duties. The inspectors verified that the licensee adhered to administrative risk reduction methodologies and operating license requirements that maintained defense-in-depth.

b. Findings

No findings of significance were identified.

.2 Monitoring of Shutdown Activities

a. Inspection Scope

The inspectors observed portions of the plant cooldown in accordance with FPL procedure 3-GOP-305, Hot Standby to Cold Shutdown, to verify that cooldown restrictions and similar procedural requirements were followed. The inspectors verified that the cooldown was monitored in accordance with licensee procedure 3-OSP-041.7, Reactor Coolant System Heatup and Cooldown Temperature Verification. The inspectors reviewed operating logs and records and discussed plant shutdown and cooldown activities with operators to verify that operating procedures and technical specifications were appropriately implemented.

b. Findings

No findings of significance were identified.

.5 Refueling Activities

a. Inspection Scope

The inspectors observed fuel handling operations during core offload and refueling and related activities to verify that those operations and activities were being performed in accordance with technical specifications, regulations, and approved procedures. Also, the inspectors observed refueling activities to verify that the location of fuel assemblies was tracked from core offload through core reload and monitored by control room personnel. Checks were made of foreign material controls in vicinity of the open reactor vessel and the spent fuel pool. The inspectors verified communications were maintained between the refueling bridge and the control room during fuel handling.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or witnessed the following six 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. In addition, the inspectors evaluated the effect of the testing activities on plant risk to ensure that conditions were adequately addressed by the licensee staff and that after completion of the testing activities, equipment was returned to the position/status required for the system to perform its intended safety function. The tests reviewed included these inservice tests (IST).

Surveillance Testing

- 3-OSP-075.9, Auxiliary Feedwater Overspeed Test (A pump)
- 4-OSP-059.5, Power Range Nuclear Instrumentation Shift Checks and Daily Calibrations
- 3-OSP-072.5, Main Steam Safety Valve Setpoint Verification Test, RV-3-1400 (attachment 1), RV-3-1405 (attachment 5), RV-3-1413 (attachment 12)

In Service Testing

- 0-OSP-062.2, Safety Injection System Inservice Test (including stroke testing of MOV-3-869 and MOV-3-843A) (IST)
- 0-OSP-062.2, Safety Injection Inservice Test, section 7.10, Safety Injection Pump 4B Comprehensive Test (pump IST)
- 4-OSP-019.1, Intake Cooling Water Inservice Test, section 7.2, ICW pump 4B and discharge check valve test (IST)

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verificationa. Inspection ScopeCornerstone: Barrier Integrity

The inspectors checked licensee submittals for the two performance indicators (PIs) listed below for Unit 3 and Unit 4 for the period January 1, 2008 through December 31, 2008, to verify the accuracy of the PI data reported per licensee procedure 0-ADM-032, NRC Performance Indicators, Turkey Point, attachments 6 and 7. Performance indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 5, were used to check the reporting for each data element. The inspector reviewed operator logs and chemistry department analysis data (0-NCSP-002, Radiochemistry Documentation) to verify that the licensee had identified and reported the proper values for reactor activity and leakage, as applicable. In addition, the inspectors observed chemistry personnel obtain and analyze primary coolant samples from both reactor units, per procedure 0-NCAP-205, Reactor Coolant Activity Analysis. The inspectors checked that deficiencies that could affect the licensee's performance indicator program were entered into the corrective action program.

- Reactor Coolant System Specific Activity
- Reactor Coolant System Leakage (FPL procedure 3/4-OSP-041.1 Reactor Coolant System Leakage Determination was reviewed)

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution.1 Daily Reviewa. 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 routinely checked to verify no substantive or unexplained changes.

b. Findings

No findings of significance were identified

.2 Annual Sample Reviewa. Inspection Scope

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

- CR 2008-11431, Activity to deenergize 4A reactor vessel level indication system (RVLIS) also affected communications link to control room

b. Findings

No findings of significance were identified

4OA3 Event Follow-up.1 (Closed) Licensee Event Report (LER) 50-250/2008-004-00, Emergency Containment Filter Inoperable Due to Control Circuit Length

On August 27, 2008, during review of the emergency containment filters (ECF) control circuitry, FPL engineering identified a voltage drop concern for the Unit 3, 3B ECF control circuit. Because of an extensive cable length for the safety injection automatic start circuit, if switchyard voltage were at the minimum allowed, the voltage drop could prevent pickup of the starting contactor for the 3B ECF. As a result, only two ECFs would reliably start on a safety injection signal to scrub containment atmosphere of radioactive particulates. The design flaw was determined to be a latent design error at least 18 years old. Testing of the ECF start circuitry at nominal switchyard and EDG output voltage had been without problems. Turkey Point technical specifications require three ECFs be operable when the plant is operating. FPL characterized the risk of the issue as having zero effect on core damage probability and a negligible effect on large early release fraction (LERF). The inspector verified that had the ECF been called upon for autostart, and had it not started, emergency operating procedure 3-EOP-E-0, Reactor Trip or Safety Injection, Attachment 3, Step 6.b, would specify that the operator manually start two ECFs as necessary to meet the safety function. Manual start circuitry was not affected by the problem and remained available. Further, the inspector reviewed condition report 2008-27014 and plant modification PC/M 08-070, to confirm that the licensee evaluated the problem and completed appropriate corrective actions to prevent recurrence. The modification installed an interposing relay in the ECF starter circuit thus

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eliminating the voltage drop concern. The inspectors also reviewed work orders 38019920-01 and 38019920-02 which implemented the modifications and conducted post maintenance testing respectively. Enforcement associated in this issue is provided in Section 4OA7. This LER is closed.

.2 (Closed) Licensee Event Report (LER) 50-251/2008-003-00, Class 1 Weld Leak Due to Fatigue and Completion of Technical Specification Required Shutdown

This licensee event report (LER) describes the licensee response to an ASME class 1 piping weld crack in the 4B reactor coolant pump seal water injection line inside containment. The crack was identified by the licensee during containment walkdowns that had been initiated due to indications of higher containment radiation levels and higher than normal RCS unidentified leakage rates. After an extensive search, the leak was discovered on August 7, 2008, and in response to questioning by the NRC, the licensee shut down the plant pursuant to technical specification 3.4.10 on August 15, 2008. The licensee documented the weld flaw in condition report 2008-25246, including a failure analysis documented in Exelon Power Labs Report FPL-11676, Failure Analysis of Turkey Point Unit 4 Failed Socket Weld, dated September 23, 2008. This report and the associated condition report were reviewed by the inspectors. The failure analysis identified the flaw as a cyclic fatigue failure caused by lack of penetration at the original weld root. In the LER, the licensee described the risk of the flaw as very low. After the shutdown, the licensee repaired the weld including a modification designed to relieve the cyclic stress at the weld location. Other headers with the same piping configuration were inspected by the licensee to assure no extent of condition problems. Additionally, the licensee submitted License Amendment Request Number 195 on February 16, 2009, to delete Technical Specification 3.4.10, because of clarity problems with the specification. Enforcement related to this issue was documented in NRC Inspection Report 50-250, 251/2008-004, Failure to Implement Technical Specification Requirements Regarding Structural Integrity of Reactor Coolant System Components. (NCV 0500050251/2008-04-01). This LER is closed.

4OA5 Other Activities

.1 (Closed) Temporary Instruction (TI) 2515/176, EDG TS Surveillance Requirements Regarding Endurance and Margin Testing

a. Inspection Scope

Inspection activities for TI 2515/176 were previously completed and documented in inspection report 05000250, 251/2008004, and this TI is considered closed at Turkey Point Nuclear Plant; however, TI 2515/176 will not expire until August 31, 2009. The information gathered while completing this temporary instruction was forwarded to the Office of Nuclear Reactor Regulation for review and evaluation.

b. Inspection Findings

No findings of significance were identified.

4OA6 Exit1. Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Bill Jefferson and other members of licensee management on April 17, 2009. 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 constituted violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as Non-Cited violations (NCV).

Turkey Point Technical Specification 3.6.3 requires three operable emergency containment filtering units when Unit 3 is operated in Modes 1 thru 4. Further, with one filtering unit inoperable, restore the inoperable unit to operable status within 7 days or be in Hot Standby within 6 hours and Cold Shutdown within the following 30 hours. Contrary to the above, as of August 27, 2008, Unit 3 containment filtering unit 3B was inoperable in excess of 7 days because of an inadequate electrical design that had occurred years before and no action was taken to place the unit in the required configuration. The problem was discovered by the licensee during an engineering review in preparation for circuit modification and was corrected on August 28, 2008 by modifying the circuit to eliminate the design flaw. Because redundant filtering units were not affected, and the affected unit would be manually started if required, the issue was of very low safety significance (Green). The issue was documented in the licensee corrective action program as CR 2008-27014 and reported to the NRC in Licensee Event Report 05000250/2008-004-00.

Turkey Point Technical Specification 6.8.5 requires that administrative procedures be implemented to limit the working hours of personnel who perform safety related functions, and that any deviation from the guidelines be authorized by department managers or higher. The licensee implements these requirements with procedure QI 1-PTN-1 which states in paragraph 5.8.1 that to the extent practicable, personnel are not assigned to shift duties while in a fatigued condition that could significantly reduce their mental alertness or their decision making ability. Additionally, in paragraph 5.8.6, the procedure states that the circumstances of the extraordinary action shall be documented on an overtime deviation request form and that each deviation requires a separate deviation form. Contrary to the above, the licensee had identified multiple examples (listed below) where deviations from the working hour guidelines had occurred without documenting the circumstances of the extraordinary action on a separate deviation form. The issue was entered into the corrective actions program as CR 2008-31143. The licensee has planned and implemented actions noted in the following CRs to prevent exceeding the working hour limits on any routine basis:

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1. (CR 2008-17179) Deviation request completed for meeting of up to 33 operations personnel held on May 14, 2008 for work authorization to exceed 24 hours in a 48 hour period or 72 hours in a 7 day period, but no authorization was written for the same individuals exceeding these limits in the subsequent shifts.
2. (CR 2008-17180) Deviation request completed for meeting of up to 35 operations personnel held on May 20, 2008 for work authorization to exceed 24 hours in a 48 hour period or 72 hours in a 7 day period, but no authorization was written for the same individuals exceeding these limits in the subsequent shifts.
3. (CR 2008-21249) Deviation request completed for two operations personnel on June 27, 2008 for work authorization to exceed 72 hours in a 7 day period, but no authorization was written for these individuals subsequently exceeding these limits on June 29 and June 30, 2008.
4. (CR 2008-15659, and 2008-14968) Deviation request completed after the fact for two operators assigned to exceed 24 hours in a 48 hour period or 72 hours in a 7 day period, on April 30, 2008 and no deviation request was completed for exceeding these limits on May 1, 2008.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

J. Antignano, Fire Protection Supervisor
N. Bach, Chemistry Manager
C. Cashwell, Radiation Protection Manager
R. Coffey, Maintenance Manager
M. Crosby, Quality Manager
J. Hamm, Engineering Manager
L. Hardin, Emergency Preparedness Manager
M. Kiley, Plant General Manager
W. Jefferson, Site Vice-President
R. Tomonto, Licensing Manager
R. Wright, Operations Manager

LIST OF ITEMS OPENED, CLOSED

Closed

50-250/2008-004-00	LER	Emergency Containment Filter Inoperable Due to Control Circuit Length (Section 40A3)
50-251/2008-003-00	LER	Class 1 Weld Leak Due to Fatigue and Completion of Technical Specification Required Shutdown (Section 40A3)
2515/176	TI	EDG TS Surveillance Requirements Regarding Endurance and Margin Testing (Section 40A5)

LIST OF DOCUMENTS REVIEWED

Section 1R04

Auxiliary Feedwater System Description Training Documents
Auxiliary Feedwater Pumps IST Vibration Data
Auxiliary Feedwater System - Unit 3 and Unit 4 Health System Reports
Condition reports
Maintenance Work Orders
Technical Specifications 3/4.7.1.2, Auxiliary Feedwater System
Final Safety Analysis Report, Sections 9.11.1 and 2, Auxiliary Feedwater System
Turkey Point Units 3 and 4 Auxiliary Feedwater System Design Basis Document
Auxiliary Feedwater System Risk-Based Inspection Guide for the Turkey Point Nuclear Plant (NUREG/CR-5633)
Auxiliary Feedwater System Findings
NRC Information Notice 2008-13: Main Feedwater System Issues and Related to 2007 Reactor Trip Data
Component Cooling Water System Description Training Documents
3/4-OSP-030.3, Component Cooling Water System
Technical Specifications 3.7.2, Component Cooling Water System
Final Safety Analysis Report Sections, 6.2.2, 6.5.1 and 9.3, Component Cooling Water System

Section 1R08

Procedures
Procedure 0-ADM-537, 10/20/06, Boric Acid Corrosion Control Program
Procedure NDE 5.4, Rev. 18, Manual Ultrasonic Examination Procedure for Austenitic Pipe Welds
Procedure NDE 2.2, Rev. 13, Dry Powder Magnetic Particle Examination
Procedure NDE 4.3, Rev. 11, VT-3 Visual Examination of Nuclear Power Plant Components
Procedure NDE 3.5, Rev. 2 Liquid Penetrant Examination (visible dye, solvent removable)
Procedure ENG CSI 9.1, Rev 12, Written Practice Qualification and Certification Requirements for NDE Personnel
Procedure NDE 4.7, Rev. 3, Manual Examination Procedure for General Visual/Detailed Visual (VT-1/VT-3)
Procedure NDE-1, Rev 20, URS, Washington Division, Training, Examination, and Certification of NDE Personnel.

Corrective Action Documents
CR 2008-29399 (Evaluation) – AFW Piping UT Inspection of sections with external corrosion.
CR 02-1639 – Train II AFW Steam Supply Piping External Corrosion.
CR 2008-10824 – Ineffective corrective actions for packing leak on 4-309D, RC Loop B to Regenerative HX Isolation Valve.
CR 2008-11359 (Evaluation) – Performance of Boric Acid Visual Leak Inspection after cooldown.
CR 2008-16091 – Active packing Leak with Light Brown Boric Acid on Valve 4-896R.

Other

RIISI Relief Request Number RR-3 and RR-4 and SER dated December 9, 2008.

STD-C-011, Rev. 4, Nuclear Engineering Dept Discipline Standard, Acceptance Criteria for As-Built Safety Related Piping and Pipe Supports.

ANSI B31.1, 1973 Edition, Construction Code for Turkey Point Unit 3 AFW piping.

PTN-0FJS-09-001, Rev 0, Units 3 and 4 Replacement RPV Surface Area Calculation for VE.

VT-3 Examination Record and Data Sheet for Welded Component 3-RCH-11.

URS, Washington Division, Certification Summary for Qualifications for VT-3 and MT.

MT Examination Record and Data Sheet for weld 14"-FWA-2301-20, Feed Water System, Pipe to Elbow.

Calibration Data Sheet for UT examination of weld 8"-SI-2301-1, Residual Heat Removal System, Reducer to Pipe.

Welding Package for component CV-3-387 associated with Work Order # 34014582-01, Bypass Line.

Welding Package for component 3-50-050 (Valve Replacement) associated with Work Order #35016412-01.

Certificate of Method Qualification for Washington Group International for MT.

G-39759 A&B, Parker Research Corporation, NIST Certification, MT Yoke Calibration Certification.