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

October 30, 2008

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

SUBJECT: TURKEY POINT NUCLEAR PLANT – INTEGRATED INSPECTION REPORT 05000250/2008004 AND 05000251/2008004

Dear Mr. Stall:

On September 30, 2008, 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 October 16, 2008, with Mr. W. Jefferson 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 very low safety significance (Green) was identified. This finding was determined to involve a violation of NRC requirements. Additionally, licensee identified violations which were determined to be of very low safety significance are listed in this report. Because of the very low safety significance and because each item is entered into your corrective action program, the NRC is treating the findings as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you wish to contest these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Turkey Point.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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
Rector Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 05000250/2008004 and 05000251/2008004
w/Attachment: Supplemental Information

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Letter to J. Art Stall from Marvin D. Sykes dated October 30, 2008

SUBJECT: TURKEY POINT NUCLEAR PLANT – INTEGRATED INSPECTION REPORT 05000250/2008004 AND 05000251/2008004

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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:	05000250/2008004, 05000251/2008004
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:	July 1 to September 30, 2008
Inspectors:	J. Stewart, Senior Resident Inspector M. Barillas, Resident Inspector A. Vargas Mendez, Reactor Inspector (Section 4OA5) P. Fillion, Senior Reactor Inspector (Section 4OA5)
Approved by:	M. Sykes, Chief Reactor Projects Branch 3 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000250/2008-004, 05000251/2008-004; 7/1/2008 – 9/30/2008; Turkey Point Nuclear Power Plant, Units 3 and 4; Surveillance Testing.

The report covered a three month period of inspection by resident inspectors and two region based inspectors. The significance of most findings is identified by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). 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", and Revision 4, dated December 2006.

A. Inspector Identified & Self-Revealing Findings

Cornerstone: Initiating Events

Green. The inspectors identified a Non-cited violation of Technical Specification (TS) 3.4.10, when the licensee failed to either isolate a flawed ASME Code Class 1 crack or place Unit 4 in a condition where the TS did not apply. As a result, plant operation was continued with a crack leaking boric acid on components, challenging the integrity of the reactor coolant system. When identified to the licensee, Unit 4 was shut down and cooled to a condition where the requirement did not apply and the crack was repaired. The licensee documented the failure to enter the TS as condition report (CR) 2008-27020.

The finding was more than minor because the un-isolated crack challenged the integrity of the reactor coolant system and affected the objective of the Reactor Safety/Initiating Events Cornerstone to limit the likelihood of those events that upset plant stability and challenge critical safety functions during at power operations. The finding was evaluated using inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet for LOCA Initiators. Because of check valve protection downstream, and with the unimpeded ability to isolate charging upstream, the finding screened as having very low safety significance (Green).

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.

REPORT DETAILS

Summary of Plant Status:

Unit 3 operated at full power throughout the inspection period.

Unit 4 operated at full power throughout the inspection period with the following exception: On August 15 a plant shutdown and cooldown to Mode 5 was initiated to support a reactor coolant system leak repair. The leak was repaired, and the unit was taken critical at 1650 hours on August 23, and returned to full power on August 24, 2008.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection

.1 Impending Adverse Weather: Tropical Storm Fay

a. Inspection Scope

During the preparations and onset of Tropical Storm Fay on August 18, 2008, the inspectors verified the status of licensee actions in accordance with off-normal procedure 0-ONOP-103.3, Severe Weather Preparations. This verification included physical walkdowns of the portions of the plant protected area, control room observations, and discussions with responsible licensee personnel regarding preparations of systems and personnel for high winds. The inspectors specifically examined the following areas:

- 3A emergency diesel generator
- Plant intake area
- Standby steam generator feedwater pump area

b. Findings

No findings of significance were identified. Vital safety systems including offsite power were not affected by the storm.

.2 Impending Adverse Weather: Hurricane Ike

a. Inspection Scope

During the preparations for a potential Hurricane Ike on September 5, 2008, the inspectors verified the status of licensee actions in accordance with off-normal procedure 0-ONOP-103.3, Severe Weather Preparations and 0-EPIP-20106, Natural Emergencies. This verification included physical walkdowns of the portions of the plant protected area, control room observations, and discussions with responsible licensee personnel regarding preparations of systems and personnel for high winds and flooding. The licensee program for monitoring underground cable runs and manholes for water intrusion was reviewed. The inspectors specifically examined the following areas:

- Emergency Diesel Generator rooms
- Plant Intake area

b. Findings

No findings of significance were identified. Hurricane Ike remained south of the site.

1R04 Equipment Alignment

.1 Partial Equipment Walkdowns

a. Inspection Scope

The inspectors conducted three partial alignment verifications of the safety-related systems listed below. These inspections included reviews using plant lineup procedures, operating procedures, and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions of the 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 or barriers by entering them into the corrective action program.

- July 9, 2008; Unit 3/Unit 4, Train 1 of auxiliary feedwater using licensee procedure 3/4-OP-075, Auxiliary Feedwater System, when C auxiliary feedwater pump was removed from service for repair of the lube oil reservoir support bracket (CR 2008-22225)
- August 14, 2008; Unit 3 emergency diesel generators and the blackout cross tie using 4-ONOP-004.3, Loss of the 4B 4KV Bus, following failure of the 4B emergency diesel generator to run during a 24 hour test (CR 2008-25705)
- September 22, 2008; Unit 3 B emergency diesel generator during overhaul of the 3A emergency diesel generator, including radiator replacement

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors conducted a detailed walkdown/review of the alignment and condition of the Unit 3 480V Load Centers vital portions to verify the capability of the system to meet its design basis function to enable safe shutdown of the reactor in the event of a plant accident. The inspectors utilized licensee procedure 3-OP-006, “480 Volt Switchgear System”, and drawing 5610-T-E-1591 (Operating Diagram Electrical Distribution), as well as other licensing and design documents, when verifying that the system alignment was correct. During the walkdown, the inspectors verified, as appropriate, that: (1) electrical power was available as required; (2) major portions of the system and components were correctly labeled, cooled and ventilated; (3) hangers and supports

were correctly installed and functional; (4) essential support systems were operational; (5) ancillary equipment or debris did not interfere with system performance; and (6) tagging clearances were appropriate. Pending design and equipment issues were reviewed to determine if the identified deficiencies significantly impacted system functions. Items included in this review were the operator workaround list, the temporary modification list, system health reports, system description, and outstanding maintenance work requests/work orders. In addition, the inspectors reviewed the licensee's corrective action program to ensure that the licensee was identifying and resolving equipment alignment problems.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

.1 Fire Area Walkdowns

The inspectors toured the following six plant areas during this inspection period to evaluate conditions related to control of transient combustibles and ignition sources, the material condition and operational status of fire protection systems including fire barriers used to prevent fire damage or fire propagation. The inspectors reviewed these activities against provisions in the licensee's procedure 0-ADM-016, Fire Protection Plan, and 10 CFR Part 50, Appendix R. The licensee's fire impairment lists 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 Fire Protection Program Health Report, dated 6-30-2008 was reviewed. The following areas were inspected:

- Unit 3 480V 3A and 3B load centers room
- Unit 3 480 3B and 3C load centers room 3B
- Unit 3 component cooling pump area
- Unit 4 emergency diesel generator rooms
- Unit 4 high head safety injection pump room
- Unit 4 component cooling pump area

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

.1 Internal Flooding

a. Inspection Scope

The inspectors conducted walkdowns of the following two areas which included checks of the sumps to ensure that flood protection measures were in accordance with design

specifications. The inspectors reviewed the Updated Final Safety Analysis Report, Appendix 5F, and Internal Plant Flooding that discussed the protection of areas containing safety-related equipment that may be affected by internal flooding. Specific plant attributes that were checked included structural integrity, sealing of penetrations, control of debris, and operability of sump systems.

- 4A and 4B 4160 switchgear rooms
- U4 diesel fuel oil transfer pump rooms

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On September 10, 2008, the inspectors observed and assessed licensed operator continuing training requalification in the plant specific simulator. The simulated events were done using Nuclear Training Department Lesson Plan 750001200, Loss of Instrument Air/Loss of Feedwater/ATWS. The inspectors observed the operator's use of procedures 3-EOP-E-0, Reactor Trip and Safety Injection; 3-EOP-FR-S.1, Response to Nuclear Plant Generation/ATWS; and 0-ONOP-013, Loss of Instrument Air. The operator's actions were checked to be in accordance with licensee procedures. Event classifications (including Alert) were checked for proper classification and simulated notification in accordance with licensee procedures 0-EPIP-20101, Duties of the Emergency Coordinator; and 0-EPIP-20134, Offsite Notifications and Protective Action Recommendations. The licensee simulated emergency plan notifications. 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 supervision, including ability to identify and implement appropriate technical specification actions and emergency plan classification and notification
- Crew overall performance and interactions
- Evaluator's critique and findings

b. Findings

No findings of significance 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 Administrative Procedure 0-ADM-728, Maintenance Rule Implementation. The inspectors' efforts focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk significance, determination of (a) (1) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also interviewed responsible engineers and observed some of the corrective maintenance activities. The inspectors checked that when operator actions were credited to prevent failures, the operator was dedicated at the location needed to accomplish the action in a timely manner, and that the action was governed by applicable procedures. Furthermore, the inspectors verified that equipment problems were being identified and entered into the corrective action program. The inspectors used licensee engineering procedure EDI-ENG-025, Management and Administration of Maintenance Rule Processes, and the applicable system health reports in the reviews.

- Unit 3 residual heat removal sump pumps (flood protection)
- CR 2008-21079, Unit 3 and Unit 4 high head safety injection 10 CFR 50.65 (a)(1) action plan after Unit 4 isolation valve 4-867 was found shut . Condition Report 2008-15431, which detailed the licensee investigation, was also reviewed.
- Unit 3 480V vital motor control centers

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors completed in-office reviews and control room inspections of the licensee's risk assessment of seven 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 0-ADM-068, Work Week Management and O-ADM-225, On Line Risk Assessment and Management. The inspectors also reviewed the effectiveness of the licensee's contingency actions to mitigate increased risk resulting from the degraded equipment. The inspectors evaluated the following risk assessments during the inspection:

- July 11: Unit 4, risk assessment when B standby steam generator feedpump was declared inoperable due to high temperature alarm and Train 2 AFW was out of service.

- July 28: Unit 4, risk management of activities for troubleshooting nuclear instrument N-4-44 after the detector upper signal drifted high (CR 2008-24025) and increased leakage on the unit required multiple containment entries (CR 2008-23894)
- August 5: risk management following a trip of the A auxiliary feedwater pump when bearing oil did not respond as specified by 3-OSP-075.1, Auxiliary Feedwater Train 1 Operability Verification, (CR 2008-24992)
- Aug 11: Unit 3, risk assessment for work on A component cooling water header during Protected Train A work week (CR 2008-26141)
- August 14: Unit 4, risk assessment and risk management following failure of the 4B emergency diesel generator to run (CR 2008-25705)
- September 9: Both units, entry into ONOP-103.3 due to tornado warning and being in orange risk for 3D 4kV bus outage with station blackout breaker 3AD07 out of service
- September 29: Unit 3, unplanned entry into risk condition yellow when Inverter/DC equipment room air conditioning unit E16D was found out of service when E16E was out of service for maintenance (CR 2008-30014)

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

For the six operability evaluations described in the condition reports (CR) or as 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 available such that no unrecognized increase in risk occurred. The inspectors reviewed the final safety analysis report 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 2008-21157, Leak off Auxiliary Feedwater Steam Supply Valve 3-10-319, Upstream of MOV-3-1405
- Turkey Point Operational Decision Making Report: Unit 4 Reactor Coolant Leakage Plan, July 30, 2008
- CR 2008-24770, Prompt Operability, Rev. 1, Unit 4 radiation detectors R-11 and R-12, containment particulate and gas found with water in detector housing and discharge lines. Compensatory measures for inoperable R-11, 12 were verified during the week of August 8.
- CR 2008-24992, Operator manually tripped A auxiliary feedwater pump turbine when oil pressure did not meet specified levels
- CR 2008-27099, 4A Battery Test Equipment Failure Causing Halt on 4A Battery Test
- CR 2008-21204, B Standby Steam Generator Feed Pump High Coolant Temperature Alarm

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. 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 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 3 and 4, July 23, completion of 3-OSP-075.1, Auxiliary Feedwater Train 1 Operability Verification, including 0-OSP-075.11 Auxiliary Feedwater Inservice Test following WO 32017670-01, P2A Oil Change in accordance with 0-PMM-075.1, Auxiliary Feedwater Pump Oil Change
- Unit 3, August 5, completion of 3-OSP-075.1, Auxiliary Feedwater Train 1 Operability Verification, after FT-3-1457A sensing lines were replaced per work order 38018458-01
- Unit 3, August 21, inservice stroke time testing on POV-3-4883 following repair of an air leak on the valve open diaphragm under work order 38019232-01
- Unit 4: 4-OSP-023.2, 4B Emergency Diesel Generator 24 Hour Load Test and Load Rejection, following replacement of the k1 relay following failure of the EDG to recover after an initial load test. The repair was done under work order 38019030-01, and the problem was documented in CR 2008-25705. For the post-maintenance test, the engine was run for 2 hours and with temperatures stabilized, the engine was stopped and restarted satisfactorily.
- Unit 3: September 25, 2008, 3-OSP-023.1 Diesel Generator Operability Test following 3A diesel engine overhaul and radiator replacement critical maintenance management (CMM)

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities

.1 Unit 4 Leak Repair Outage

a. Inspection Scope

The inspectors observed the short duration Mode 5 outage to repair a leaking weld on ASME Class 1 seal injection piping to the B reactor coolant pump.

The inspectors evaluated licensee activities to verify the licensee considered risk in developing work schedules, adhered to administrative risk reduction methodologies

(0-ADM-051) when changing plant configuration, and adhered to operating license and Technical Specification requirements that maintained defense-in-depth. The inspectors observed the licensee conduct part of the reactor cooldown and entry into Mode 5, including verification of cooldown limits in accordance with licensee procedure 4-OSP-041.7, Reactor Coolant System Heatup and Cooldown Temperature Verification. The inspectors completed a walkdown of containment during leak repair activities to verify implementation of licensee programs that manage risk during maintenance. The inspectors reviewed activities during reactor restart and power escalation to verify that reactor parameters were within safety limits and that the startup evolutions were done in accordance with pre-approved procedures and plans. The inspectors verified that outage items had been entered into the licensee's corrective action program at an appropriate threshold.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

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

- Unit 4, July 7, 4-OSP-075.7, Auxiliary Feedwater Train 2 Backup Nitrogen Test, including alignment of backup nitrogen using licensee procedure 4-OP-075, Section 7.5, Backup Nitrogen Bottle alignment
- Unit 3, 3-OSP-075.1, Auxiliary Feedwater Train 1 Operability Verification
- Unit 4; 0-NCZP-051.5, Sample and Analysis of Containment Atmosphere, completed as a compensatory measure for inoperable R-11 and R-12 (containment gaseous and particulate) detectors on August 11, 2008
- Unit 4: 4-OSP-206.1, Inservice Valve Testing – Cold Shutdown, Section 7.8, Containment Purge Valves (IST)
- Unit 3: 3-OSP-041.1, Reactor Coolant Leakrate Determination

b. Findings

Introduction: (Green) The NRC identified that the licensee failed to implement TS 3.14.10 requirements regarding the structural integrity of ASME Class 1 piping and components.

Description: On August 7, 2008, with Unit 4 at full power, during an investigation of elevated reactor coolant system leakage, licensee inspectors identified a small crack on the 4B reactor coolant pump seal water injection line inside the Unit 4 containment building. Spray from the crack had deposited boric acid on components and structures and coolant had accumulated on the floor below. The cracked weld was found in ASME Code Class 1 piping that provided seal cooling to the 4B reactor coolant pump. On August 15, the NRC identified to licensee personnel a need to comply with TS 3.4.10. Because the licensee had not isolated the seal injection line, TS 3.0.3 was identified by the NRC as an appropriate TS. On August 15, the licensee initiated a plant shutdown and cooldown to a temperature where the TS did not apply, then repaired the crack.

Analysis: Failure to implement a TS requirement to isolate an ASME code Class 1 crack or put the plant in a condition where the requirement did not apply was a performance deficiency. The finding was more than minor because the un-isolated crack challenged the integrity of the reactor coolant system and affected the objective of the Reactor Safety/Initiating Events Cornerstone to limit the likelihood of those events that upset plant stability and challenge critical safety functions during at power operations. The finding was evaluated using inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet for LOCA Initiators. Because of check valve protection downstream, and with the unimpeded ability to isolate charging upstream, the finding screened as having very low safety significance (Green). No cross-cutting aspect was associated with this finding.

Enforcement: Technical Specification 3.4.10 requires that the structural integrity of ASME Code Class 1 components be maintained and with the structural integrity of any Class 1 component not conforming, restore the structural integrity of the affected component or isolate the affected component prior to increasing reactor coolant system temperature more than 50 degrees F above the minimum temperature required by NDT considerations. Contrary to the above, on August 7, 2008, a Class 1 seal injection line in the reactor coolant system was identified with an ASME code non-conforming flaw (cracked weld), and with the plant at full power in Mode 1, the flaw was not isolated. Subsequently, on August 15, the plant was shutdown and a cooldown completed to a temperature where the technical specification was no longer applicable. The crack was repaired and restored to ASME code compliance. The licensee documented the failure to comply with TS 3.4.10 in condition report (CR) 2008-27020. Because this issue is of very low safety significance and has been entered into the licensee's corrective action program, the violation is being treated as a Non-cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000251/2008-04-01, Failure To Implement TS Requirements Regarding Structural Integrity of Reactor Coolant System Components.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

.1 Emergency Preparedness Drill

a. Inspection Scope

On September 19, 2008, the inspectors observed licensee staff in a drill of the licensee's emergency response organization. The drill included a simulated tornado touch down

onsite, leading to an Alert declaration and activation of the emergency operations facility (EOF). Afterward, high reactor coolant leakage leads to a loss of coolant accident and a site area emergency declaration with notification of state agencies and the NRC simulated from the EOF. When containment pressure builds to more than 20 psig, a general emergency is declared. The inspectors observed the EOF make protective action recommendations and the simulated notification of state agencies. During the drill the inspectors assessed actions of the EOF staff to verify that emergency classification and notifications were made in accordance with the licensee emergency plan implementing procedures and 10 CFR 50.72 requirements. The inspectors also observed the initial activation of the EOF as specified in the licensee's emergency plan. Licensee identified critique items were discussed with the licensee and reviewed to verify that drill issues were identified and captured.

b. Findings

No findings of significance were identified.

.2 Simulator Based Training Evolution

a. Inspection Scope

On September 17, 2008, the inspectors observed the licensee simulator based licensed operator requalification training (LORT) that included evaluation of licensed operator event classification and state notification. Results of the training are used by the licensee as inputs into the Drill/Exercise Performance and Emergency Response Organization Drill Participation Performance Indicators. FPL Nuclear Training Department lesson Package 750004901, included an Alert declaration after the reactor failed to trip on a manual signal. The Alert declaration was made in accordance with licensee procedure 0-EPIP-20101, Duties of the Emergency Coordinator, item 5.B.3, Loss of Safe Shutdown/ATWS. The inspectors observed the licensee's event declaration and simulated notification to the State of Florida. At the conclusion of the drill, the inspectors discussed the drill with plant staff and observed the licensee evaluator's critique.

b. Findings

No findings of significance were identified.

2. Radiation Safety Cornerstone

Adverse Weather: Hurricane Ike

Although radiation protection inspection activities started during this inspection period, the NRC chose to delay the onsite portion of the inspection until the Hurricane Ike threat had passed. The results of this activity will be documented in a subsequent integrated resident inspection report.

4. OTHER ACTIVITIES

4OA1 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, 2007, through June 30, 2008, 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. 5 and licensee procedure 0-ADM-032, "NRC Performance Indicators Turkey Point," were used to check the reporting for each data element. The inspectors checked licensee event reports (LERs), operator logs, plant status reports, condition reports (CRs), system health reports, and performance indicator data sheets to verify that the licensee had identified the cumulative safety system unavailability and required hours, as applicable. The inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution.

- 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 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

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

.1 Daily Review

a. Inspection Scope

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

b. Findings

No findings of significance were identified.

.2 Annual Sample Review

a. Inspection Scope

The inspectors selected the following 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 disposition of operability, resolution of the problem including cause determination 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. The inspectors reviewed the cumulative effects of the operator workarounds that were in place to verify that those effects could not increase an 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 2007-31185, Unit 4 startup transformer lost power and locked out on September 30, 2007 due to cable fault

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

.1 (Closed) Licensee Event Report (LER) 50-250/2007-004-00 and 50-250/2007-004-01, Reactor Coolant System Boundary Leakage

The Licensee Event Report described the discovery of small amounts of water inside the thermowells for resistance temperature detectors TE-3-420A/B, and TE-3-422B2. The licensee determined that the water contained some constituents of reactor coolant, however pressure testing of both thermowells and detailed examination did not find any structural problems that would allow leakage. It was suspected that coolant had entered the thermowells from an exterior source. The LER was reviewed by the inspectors and no performance deficiency was identified. The licensee documented the discovery of water and their review of the matter as condition report (CR) 2007-27546 and the affected thermowells were replaced. There were no findings of significance. The LERs are closed.

.2 (Closed) Licensee Event Report (LER) 50-251/2008-002-00, Safety Injection Isolated in Mode 3 Due to Inadequate Configuration Control

The licensee event report describes the licensee's discovery that safety injection manual isolation valve 4-867 was out of position (closed) when open was required by plant technical specifications for operation in Mode 3 above 380 degrees F. The valve was discovered shut during a planned engineering walkdown a few hours after the plant had been heated above 380 degrees. When found, the licensee placed the valve in the correct position and initiated a root cause investigation. The licensee intended to revise procedures to assure that in the future, safety systems would be verified in the correct

alignment during recovery from a refueling outage prior to mode changes. Improper alignment of valve 4-867 was a performance deficiency and the finding was more than minor because the misalignment had a credible impact on safety if safety injection were needed to mitigate a transient. A regional Senior Reactor Analyst performed a Phase 3 Significance Determination on this performance deficiency and concluded it was of very low safety significance (Green). The exposure time stretched over three modes with 5.5 hours in Mode 3, 3 days in Mode 4 and 2 days in Mode 5. The dominant accident timeframe was when the unit was in Mode 4 without High Head Safety Injection via the cold legs available. The dominant accident sequence was a Small Break Loss of Coolant Accident followed by operators failing to transfer to the hot leg pathway upon recognizing the cold leg pathway was not providing core cooling. The human failure probability assigned to this action task was 4E-2 due to performance shaping factor of high stress, moderately complex actions outside the Main Control Room, poor procedure direction and a partially degraded work process. The NRC's Probabilistic Risk Assessment model was used to derive the accident sequences while in Modes 3 & 4 using basic event HPI-MOV-CF-DIS as the surrogate for the performance deficiency and no recovery was considered. Mode 5 was evaluated using the Phase 2 accident sequences contained in NRC Manual Chapter 0609, Attachment G with TW-L, POS 1, TTB>2 hours and all key safety functions available except High Head Safety Injection. The licensee identified finding involved a violation of TS Specification 3.5.2 and TS 3.0.3. The enforcement aspects of the violation are discussed in Section 4OA7. The LER is closed.

4. OTHER ACTIVITIES

4OA5 Other Activities

.1 NRC Temporary Instruction (TI) 2515/172, Reactor Coolant System Dissimilar Metal Butt Welds

a. Inspection Scope

During the period September 29-30, 2008, the inspector conducted a verification review of documents submitted by the licensee for TI 2515/172. The scope of the inspections identified in NRC TI 2515/172, "Reactor Coolant System Dissimilar Metal Butt Welds (DMBWs)," includes primary system piping DMBWs one inch nominal pipe size and larger. The objectives of the inspections include the verification that each pressurized water reactor (PWR) plant conforms to its commitments to conduct an inspection program and mitigation techniques are consistent with the industry guidelines of the Materials and Reliability Program (MRP)-139, "Primary System Piping Butt Weld Inspection and Evaluation Guidelines," July 2005.

b. Findings and Observations

No findings of significance were identified.

The inspector verified that the licensee has implemented MRP-139 for Units 3 and 4. The inspector verified by reviewing the Westinghouse Vendor Manual Z313, Technical Manual for Pressurizer along with component drawings, that locations with Alloy 600/182/82 only exist in the Reactor Vessel Bottom-Mounted Instrumentation Penetrations. These locations are J-groove welds and, in accordance with MRP-139,

fall outside of the program. Inspections for these penetrations are performed in accordance with the Boric Acid Corrosion Control Program (BACC). The BACC program states that these locations will be inspected via visual examination at every outage. During the last 10-year vessel examination, UT examinations on the Unit 4 BMI penetrations were performed and no recordable indications were identified. Pending guidance from MRP-139 and the NRC, the licensee will continue to monitor these locations in Units 3 and 4 via the BACC program. This TI was initially performed during the Unit 4 Spring 2008 refueling outage that had been previously closed in Turkey Point Nuclear Plant – integrated inspection report 05000250/2008003 and 05000251/2008003.

.2 Temporary Instruction (TI) 2515/176, Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing

a. Inspection Scope

The objective of this temporary instruction was to gather information to assess the adequacy of nuclear power plant emergency diesel generator (EDG) endurance and margin testing as prescribed by plant-specific TS. The inspector interfaced with the appropriate station staff to obtain the information specified in Attachment 1 of the TI, Worksheet. The TI applies to all operating nuclear power reactor licensees that use EDGs as the onsite standby power supply. The inspector verified the accuracy of the information by review of TS, EDG Design Basis Event (DBE) loading calculations, EDG endurance run test procedures, test data from the last three endurance tests performed on each EDG, EDG ratings, and EDG operating history. The information gathered will be forwarded to the Nuclear Reactor Regulation/Division of Engineering/Electrical Engineering Branch (NRR/DE/EEEB) for further review to assess the adequacy and consistency of EDG testing at nuclear stations.

b. Findings and Observations

The TI is presently scheduled to be open until August 31, 2009, pending completion of NRC review. The inspector completed the TI worksheet on September 2, 2008. No interim exit was performed. The inspector discussed the completed work sheet with the licensee. No proprietary information is included in this report.

.3 (Closed) URI 05000250, 251/2007006-01, Halon Concentration in Fire Zones 108A and 108B May Not Be Adequate

This unresolved item was established because the licensee had not determined with sufficient certainty, by calculation or test, the leakage rate of Halon (a gas used for fire suppression) from Fire Zones (FZ) 108A and 108B. Therefore, there was uncertainty as to whether in FZ 108A or 108B, the required five percent concentration could be held for ten minutes.

Since the time of the 2007 triennial fire protection inspection, the licensee has performed calculations of Halon concentrations for FZ 108A and 108B. The inspector reviewed these calculations and performed independent calculations. The weight of Halon in the storage tank was 221 pounds. The free volume of the room is 7,642 cubic feet. The temperature of the Halon upon injection into the room would be 70 degrees Fahrenheit. The envelope of the room forms a tight enclosure with minimal openings for out leakage. The heating, ventilating and air conditioning (HVAC) system is fairly complex. The

essential feature of the HVAC system is that all isolation dampers in the room will automatically close upon Halon system initiation. However, remote located fans would continue to run delivering air to adjacent rooms. The action of these fans could result in loss of Halon from the room via leakage past the closed dampers. Calculations show that the desired concentration can be maintained if the total leakage does not exceed 240 cubic feet per minute. Normal HVAC system operation air flows were known by calculation and measurement. Also, the leakage path areas at the closed isolation dampers were measured. Based on this data, the licensee concluded that actual leakage would not be expected to exceed 240 cubic feet per minute. In addition, some Halon extracted from the room by the HVAC system would return to the room via the same system. There are six inverters in the room each having two cooling fans of 700 cubic feet per minute capacity. The effect of these fans and leakage flow past the dampers would serve to efficiently mix the air and Halon, and there would not be sharp stratification of air and Halon in the room. FZ-108B is a worst case in terms of Halon concentration as compared to FZ-108A. The inspector concluded that the design basis of five percent Halon concentration held for ten minutes would be met in both FZ108A and 108B. This unresolved item is closed with no finding.

.3 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.

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4OA6 Meetings, Including Exit

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Jefferson and other members of licensee management on October 16, 2008. 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.

4OA7 Licensee Identified Violations

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

- Turkey Point Technical Specification (TS) 3.5.2.a requires four operable safety injection pumps with discharge aligned to the reactor coolant system (RCS) cold legs when RCS temperature is greater than 380 degrees F. TS 3.0.3 requires that when a limiting condition for operation is not met, within one hour, action shall be initiated to place the unit in Mode 5. Contrary to the above, on May 5, 2008, Unit 4 temperature exceeded 380 degrees F with no safety injection pumps aligned to the RCS, and appropriate action was not initiated. When discovered after about 5 hours of operation above 380 degrees, safety injection isolation valve 4-867 was opened and the technical specification actions were no longer applicable. The licensee documented the event in their corrective action program as CR 2008-15431 and initiated a comprehensive root cause evaluation. In their evaluation, the licensee identified as one cause the fact that valve alignments had not been completed as required by licensee procedures. Having a mitigating system valve in the incorrect position was a performance deficiency and the misalignment was evaluated using the NRC significance determination process.

- Turkey Point TS 3.6.1.3 requires that both containment air lock doors be closed except for transit entry and exit. The licensee implements this requirement, in part, with procedure 0-ADM-009, Containment Entries When Containment Integrity is Established, which states, in step 5.1.10, that to comply with technical specification 3.6.1.3, both personnel hatch airlock doors shall be maintained closed when actual transit is not in progress. Contrary to the above, on September 18, the inner personnel hatch airlock door was not maintained closed when two personnel entered the Unit 4 containment for plant operations (operate lighting, search for and operate a valve). The condition lasted for approximately 25 minutes until the individuals exited containment and closed the inner door. The finding was more than minor because it was associated with the integrity of the reactor containment, and was of very low safety significance because one containment door remained closed during the entry. When identified to the licensee on September 24, 2008, after an individual questioned procedure compliance from the entry, the licensee documented the occurrence in condition report 2008-29525, and initiated an investigation.

- Turkey Point TS.9.11 requires that the spent fuel storage pool level be maintained greater than or equal to 56 feet, 10 inches (56.83 feet). The licensee implements this requirement by implementing procedure 4-OSP-201.3, Nuclear Plant Operator Daily Logs, which requires level be maintained above 56.91 feet and that when an abnormal condition that could affect a technical specification is logged, the shift manager will be notified and corrective actions will be noted. Contrary to the above, on September 20 and 21, 2008, abnormal spent fuel pool level (56.90 feet) was identified in the operator daily logs and neither the shift manager was notified nor were corrective actions noted. As a result, on September 22, 2008, a level below the technical specification minimum was logged (56.81 feet). The finding was more than minor because it was associated with the spent fuel cooling system radiological barrier and was of very low safety significance because the level was corrected within the allowed technical specification time. When identified to supervision, the level was raised by adding water to the pool and the issue was documented in the corrective action program as CR 2008-26431. A cause evaluation was initiated as part of the corrective action report.

ATTACHMENT: SUPPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:
J. Antignano, Fire Protection Supervisor
R. Coffey, Maintenance Manager
J. Hamm, Engineering Manager
S. Shafer, Assistant Operations Manager
W. Jefferson, Site Vice-President
K. O'Hare, Performance Improvement Manager
L. Hardin, Emergency Preparedness Manager
R. Wright, Operations Manager
M. Kiley, Plant General Manager
M. Crosby, Quality Manager
P. Skinner, Acting Chemistry Manager
C. Cashwell, Radiation Protection Manager
R. Tomonto, Licensing Manager

NRC personnel:
M. Sykes, Branch Chief, DRP

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000251/2008-04-01	NCV	Failure To Implement Technical Specification Requirements Regarding Structural Integrity of Reactor Coolant System Components (Section 1R22)

Closed

50-250/2007-004-00	LER	Reactor Coolant System Boundary Leakage (Section 4OA3)
50-250/2007-004-01	LER	Reactor Coolant System Boundary Leakage (Section 4OA3)
50-251/2008-002-00	LER	Safety Injection Isolated in Mode 3 Due to Inadequate Configuration Control (Section 4OA3)
05000250, 251/2007006-01	URI	Halon Concentration in Fire Zones 108A and 108B May Not Be Adequate (4OA5)

Discussed

Temporary Instruction (TI) 2515/176	Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing. (Section 4OA5)
Temporary Instruction (TI) 2515/172	Reactor Coolant System Dissimilar Metal Butt Welds (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Section 4OA5, Other Activities

NG-CSI-A600, “Alloy 600 Management Program,” Revision 1
NRC Bulletin 2002-01, “Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity”
Response to NRC Bulletin 2002-01
NRC Bulletin 2003-002, “Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity”
Response to NRC Bulletin 2003-02
NRC Bulletin 2004-01, ”Inspection of Alloy 82/182/600 Materials Used in The Fabrication of Pressurizer Penetrations and Steam Space Piping Connections At Pressurized Water Reactors”
Response to NRC Bulletin 2004-01
ENG-CSI-A600, “FPL Alloy 600 Management Program,” Revision 1
MSE-MNA-389-94, Proprietary Westinghouse Owners Group Plant Engineer Alloy 600 Road Map
Westinghouse Vendor Manual Z313, Technical Manual For Pressurizer
Drawing #681 J252, Pressurizer Lower Head Assembly and Details
Drawing #718 J531, Pressurizer & Safety Nozzle Upper Head Assembly and Details
Drawing 5610-M-3025, Control Building Ventilation DC Equip/Inverter Rooms HVAC, Rev 1
Condition Report 2007-2099, Halon System in Fire Zones 108A and 108B
Calculation PTN-BFSM-07-002, Impact of HVAC Effects on Halon Concentration Decay in Fire Zones 108A & B, dated 12/16/07
Calculation by Kleinsorg Group, Descending Interface and Concentration Decay Evaluations of Total Flooding Halon 1301 Systems Applied to Fire Zones 108A and 108B at Turkey Point, dated 11/27/07
Calculation PTN-BFSM-07-05, Supporting Input for Halon Concentration Assessment, dated 10/18/07