



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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

April 26, 2007

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: ST. LUCIE NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT
05000335/2007002, 05000389/2007002

Dear Mr. Stall:

On March 31, 2007, the US Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Plant Units 1 and 2. The enclosed integrated inspection report documents the inspection findings which were discussed on April 4, 2007, with Mr. Johnston 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.

This report documents two NRC identified findings and two self-revealing findings of very low safety significance (Green). Two of these findings were determined to involve a violation of NRC requirements. Additionally, three licensee-identified violations which were determined to be of very low safety significance are listed in Section 40A7 of this report. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these violations as non-cited violations (NCVs) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you 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 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the St. Lucie facility.

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 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/

Michael E. Ernstes, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos.: 50-335, 50-389
License Nos.: DPR-67, NPF-16

Enclosure: Inspection Report 05000335/2007002, 05000389/2007002
w/Attachment - Supplemental Information

cc w/encl: (See page 3)

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ADAMS: Yes ACCESSION NUMBER: _____

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SIGNATURE	SON	TLH4 by email	SPS by email	RCT1	LXC by email	RCT1 for	CAP3
NAME	SNinh	THoeg	SSanchez	RTaylor	LCain	ARogers	CPeabody
DATE	04/20/2007	04/20/2007	04/20/2007	04/19/2007	04/20/2007	04/19/2007	04/20/2007
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Report to J. A. Stall from Michael E. Ernstes dated April 26, 2007

SUBJECT: ST. LUCIE NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT
05000335/2007002, 05000389/2007002

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-335, 50-389

License Nos.: DPR-67, NPF-16

Report Nos.: 05000335/2007002, 05000389/2007002

Licensee: Florida Power & Light Company (FPL)

Facility: St. Lucie Nuclear Plant, Units 1 & 2

Location: 6351 South Ocean Drive
Jensen Beach, FL 34957

Dates: January 1 - March 31, 2007

Inspectors: T. Hoeg, Senior Resident Inspector
S. Sanchez, Resident Inspector
S. Ninh, Senior Project Engineer
R. Taylor, Reactor Inspector (Section 1R07)
A. Rogers, Reactor Inspector (Section 1R07)
L. Cain, Senior Reactor Inspector (Sections 1R02, 1R17)
C. Even, Reactor Inspector (Sections 1R02, 1R17)
C. Peabody Reactor Inspector (Sections 1R02, 1R17)

Approved by: Michael Ernstes
Reactor Projects Branch 3
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000335/2007-002, 05000389/2007-002; 01/01/2007 - 03/31/2007; St. Lucie Nuclear Plant, Units 1 & 2; Post Maintenance Testing; Problem Identification and Resolution of Problems; and Event Followup.

The report covered a 3-month period of inspection by resident inspectors and an announced inspection by region based inspectors. Four Green findings, two of which were non-cited violations (NCV) were identified. 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," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. A self-revealing finding was identified following an event when Unit 1 inadvertently entered Operational Mode 3 (Hot Standby) due to a failure of the 1A air operated atmospheric dump valve (HCV-08-2A) actuator diaphragm and subsequent plant heat up. It was determined that inadequate maintenance instructions resulted in damage to the actuator diaphragm. The licensee documented this issue in condition report (CR) 05-28232 with corrective actions to develop a written maintenance procedure to perform future actuator maintenance in accordance with component technical manual requirements.

This finding is greater than minor because it affected the equipment reliability attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions while the plant is shutdown. The finding was determined to be of very low safety significance because it only affected the Initiating Events Cornerstone and does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. A contributing cause of the finding is related to the cross cutting area of Human Performance specifically Resources, because the licensee did not have a complete and accurate work package to perform this maintenance activity. (Section 40A3.1)

- Green. A self-revealing finding was identified for improper torquing of cap screws used to attach a blind flange to an auxiliary servo actuator associated with the turbine digital electro-hydraulic (DEH) control system which caused a premature failure of an O-ring and resulting hydraulic oil leak. The oil leak resulted in an unplanned manual reactor/turbine trip from 45 percent power due to the DEH leak on the Unit 2 number 1 throttle valve servo actuator. The failed O-ring was a result of poor contractor workmanship and inadequate procedure guidance for torque verification following installation during rebuilding of the actuator at the vendor's facility. The licensee documented this issue in CR 06-

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18379 with corrective actions to address vendor oversight by Florida Power and Light Company. This finding is greater than minor because it affected the equipment reliability attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operation. The finding was determined to be of very low safety significance because although the finding contributed to a manual reactor trip, mitigation equipment and functions remained available. A contributing cause of the finding is related to the cross-cutting area of Human Performance specifically Work Practices because the licensee did not provide adequate supervisory oversight of this specific maintenance activity at the vendor's facility. (Section 4OA3.6)

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failure to take timely and effective corrective actions to prevent recurrence of a known condition whereby the epoxy-anhydride coating on certain 480 Volt (V) current transformers (CTs) reverts back to a liquid and may flow to unwanted areas within electrical system breaker cubicles. In 1989, as part of a response to a 10 CFR Part 21 issue regarding this phenomenon, the licensee planned to perform the inspection activity of CTs every eighteen months. This corrective action was not procedurally implemented into the licensee's Preventive Maintenance (PM) Program and therefore was not being performed as planned by the licensee.

The finding is greater than minor because if left uncorrected, could become a more significant safety concern if the liquified coating migrates to adjacent breakers and affects breaker operation, thus challenging the overall performance and reliability of 480V breakers. The finding is associated with the equipment performance attribute of the Mitigating Systems Cornerstone. However, the finding was determined to be of very low safety significance because it did not represent an actual malfunction of a 480V breaker. (Section 4OA2.2)

Cornerstone: Barriers

- Green. The inspectors identified a Non-Cited Violation (NCV) of Technical Specification (TS) 6.8.1.a, which requires that written procedures be implemented covering the activities in applicable procedures recommended by Regulatory Guide 1.33, including procedures for maintenance. The maintenance work order procedure 37000257, "FCV-23-7 Repair," was inadequate because it failed to give guidance for post maintenance test acceptance criteria required by procedure ADM-78.01, "Post Maintenance Testing." The performance deficiency resulted in an unplanned TS Limiting Condition of Operation entry. The licensee entered this performance deficiency into their corrective action program for resolution.

The finding is greater than minor because it is associated with the Barrier Integrity Cornerstone and the respective attribute of Systems, Structures, or Components (SSC) and barrier performance. The finding is of very low safety significance because it only affected the containment barrier and subsequent engineering evaluations determined there was no actual degradation to the subject containment barrier equipment. A contributing cause of the finding is related to the cross cutting area of Human Performance specifically Resources, because the licensee did not have a complete and accurate procedure or work package to perform this maintenance activity. (Section 1R19)

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Both units operated at or near full Rated Thermal Power (RTP) for the entire inspection report period except for minor power changes for testing.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed and verified licensee actions taken in accordance with their procedural requirements prior to the onset of cold weather. The inspectors observed plant conditions and evaluated those conditions using criteria documented in licensee procedure ADM-04.03, "Cold Weather Preparations." The inspectors performed site walkdowns and plant tours to verify the licensee had made the required preparations. The inspectors performed reviews of plant exterior areas vulnerable to cold weather conditions which included the following areas:

- Unit 1 Condensate Storage Tank (CST) and Auxiliary Feedwater (AFW) Pumps
- Unit 2 Emergency Diesel Generators (EDG)

b. Findings

No findings of significance were identified.

1R02 Evaluations of Changes, Tests, or Experiments

a. Inspection Scope

The inspectors reviewed selected samples of evaluations to confirm that the licensee had appropriately considered the conditions under which changes to the facility, Updated Final Safety Analysis Report (UFSAR), or procedures may be made, and tests conducted, without prior NRC approval. The inspectors reviewed evaluations for eight changes and additional information, such as calculations, supporting analyses, the UFSAR, and drawings to confirm that the licensee had appropriately concluded that the changes could be accomplished without obtaining a license amendment. The evaluations reviewed are listed in the Attachment.

The inspectors also reviewed samples of changes for which the licensee had determined that evaluations were not required, to confirm that the licensee's conclusions to "screen out" these changes were correct and consistent with 10 CFR 50.59. The sixteen "screened out" changes reviewed are listed in the Attachment.

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The inspectors also reviewed programmatic Condition Reports (CRs) to confirm that problems were identified at an appropriate threshold, were entered into the corrective action process, and appropriate corrective actions had been initiated.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

Partial Walkdowns

a. Inspection Scope

The inspectors conducted five partial equipment alignment verifications of the safety-related systems listed below to review the operability of required redundant trains or backup systems while the other trains were inoperable or out of service (OOS). The inspectors looked to identify any discrepancies that could impact the function of the system, and therefore, potentially increase risk. These inspections included reviews of applicable Technical Specifications (TS), plant lineup procedures, operating procedures, and piping and instrumentation drawings (P&ID), which were compared with observed equipment configurations. The inspectors also reviewed applicable reactor control operator (RCO) logs; equipment out of service (OOS) and operator workaround (OWA) lists; active temporary system alterations (TSA); and outstanding condition reports (CRs) regarding system alignment and operability.

- Unit 1 Main Steam Isolation Valves
- 1A Emergency Core Cooling System (ECCS) Pumps Suction Lineup while 1B ECCS Pumps OOS
- 2B High Pressure Safety Injection (HPSI) while 2A HPSI OOS
- 2A Low Pressure Safety Injection (LPSI) while 2B LPSI OOS
- 2A Containment Spray (CS) while 2B CS OOS

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Protection - Tours

a. Inspection Scope

The inspectors conducted tours of the nine areas listed below to verify they conformed with licensee procedure AP-1800022, Fire Protection Plan. The inspectors specifically examined any transient combustibles in the areas and any ongoing hot work or other potential ignition sources. The inspectors also assessed whether the material condition,

operational status, and operational lineup of fire protection systems, equipment and features were in accordance with the Fire Protection Plan. Furthermore, the inspectors evaluated the use of any compensatory measures being performed in accordance with the licensee's procedures and Fire Protection Plan.

- Unit 1 Steam Trestle Area
- Unit 2 Pipe Penetration Room
- Unit 2 Heating and Ventilation Room
- Unit 1 Heating and Ventilation Room
- Unit 2 Shutdown Cooling Heat Exchanger Rooms
- Unit 2 Charging Pump Area
- Unit 1 -0.5' Elevation of Reactor Auxiliary Building
- Unit 1 19.5' Elevation of Fuel Handling Building
- Unit 2 Steam Trestle Area

b. Findings

No findings of significance were identified.

.2 Fire Protection - Drill Observation

a. Inspection Scope

The inspectors observed a fire drill conducted in the Unit 1 Turbine Building 19.5' Elevation Switchgear Room on February 14, 2007. The drill was observed to evaluate the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them in a self-critical manner at the debrief, and took appropriate corrective actions as required. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient fire fighting equipment brought to the scene; (5) effectiveness of command and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of pre-planned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

Biennial Inspection

a. Inspection Scope

The inspectors reviewed inspection records, test results, maintenance work orders, and other documentation to ensure that heat exchanger (HX) deficiencies that could mask or

degrade performance were identified and corrected. Risk significant HXs reviewed included the Component Cooling Water (CCW) HXs and Control Room Air Conditioning Unit.

The inspectors reviewed completed HX inspection and cleaning procedures, and differential pressure trending for all the CCW HXs. These documents were reviewed to verify inspection methods and performance of the HXs under the current maintenance frequency was adequate. The inspectors also reviewed eddy current test reports, and tube plugging maps for the CCW HXs. These documents were reviewed to verify that test methods were consistent with industry standards, and to verify that HX design margins were being maintained.

The inspectors reviewed the general health of the Intake Cooling Water (ICW) system via review of design basis documents, system health reports, and discussions with the ICW system engineer. These documents were reviewed to verify the design basis was being maintained and to verify adequate ICW system performance under current preventive maintenance, inspections and frequencies.

Condition Reports (CRs) were reviewed for potential common cause problems and for problems which could affect system performance to confirm that the licensee was entering deficiencies into the corrective action program and initiating appropriate corrective actions. In addition, the inspectors conducted a walkdown of selected HXs and major components for the ICW system to assess general material condition and to identify any degraded conditions of the selected components.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program

Resident Inspector Quarterly Review

a. Inspection Scope

On March 12, 2007, the inspectors observed and assessed licensed operator actions during a simulated tube leak/rupture event to verify that operator performance was adequate and that evaluators were identifying and documenting crew performance problems. The inspectors also reviewed simulator physical fidelity and specifically evaluated the following attributes related to the operating crews' performance:

- clarity and formality of communication
- ability to take timely and conservative actions
- prioritizing, interpreting, and verifying alarms
- correct use and implementation of procedures, including alarm response procedures

- timely control board operation and manipulation, including high-risk operator actions
- oversight and direction provided by the shift supervisor, including the ability to identify and implement appropriate TS actions
- group dynamics involved in crew performance

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

Quarterly Evaluation

a. Inspection Scope

The inspectors reviewed the reliability and deficiencies associated with the two systems listed below, including associated CRs. The inspectors verified the licensee's maintenance effectiveness efforts met the requirements of 10 CFR 50.65 and licensee Administrative Procedure ADM-17.08, Implementation of 10 CFR 50.65, Maintenance Rule. The inspectors focused on the licensee's system functional failure determination, a(1) and a(2) classification determination, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also attended applicable expert panel meetings, and interviewed responsible engineers. The inspectors reviewed associated system health reports, and the licensee's goal setting and monitoring requirements.

- Unit 1 CS System
- Unit 1 Instrument Air (IA) System

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the risk assessments for the following six Systems, Structures, and Components (SSCs), or a combination thereof, that were non-functional due to planned and/or emergent work. The inspectors also walked down and/or reviewed the scope of work to evaluate the effectiveness of licensee scheduling, configuration control, and management of online risk in accordance with 10 CFR 50.65(a)(4) and applicable licensee program procedure ADM-17.16, Implementation of the Configuration Risk Management Program. The inspectors interviewed responsible Senior Reactor Operators on-shift, verified actual system configurations, and specifically evaluated

results from the online risk monitor (OLRM) for the combinations of OOS risk significant SSCs listed below:

- 1B-HPSI, 1B-LPSI, 1B-CS Pumps, and Valve MV-07-1B OOS
- 2A ECCS Critical Maintenance Management (CMM)
- 2AB Battery Charger, 2C-IA Compressor, and 2C-ICW Pump OOS
- 2B ECCS CMM
- 1A ECCS Train OOS Due to Valve MV-07-2A Failure
- 1A CCW CMM

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following six CR interim dispositions and operability determinations to ensure that operability was properly supported and the affected SSCs remained available to perform its safety function with no increase in risk. The inspectors reviewed the applicable Updated Final Safety Analysis Report (UFSAR), and associated supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim disposition.

- CR 07-34, Flow Control Valve FCV-23-9 Leaks by Seat
- CR 07-731, Ultimate Heat Sink Barrier Valve Stroke Time High
- CR 07-36, Flow Control Valve FCV-23-7 Fail To Fully Close
- CR 07-4626, ICW Valve TCV-14-4A Fail to Fully Open
- CR 07-6684, ECCS Pump Room High Differential Pressure (Fan HVE-9A)
- CR 07-8278, Unit 1 Fan HVE-12 Bearing Degraded

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors evaluated design change packages for nine modifications, in the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstone areas, to evaluate the modifications for adverse effects on system availability, reliability, and functional capability. The modifications and the associated attributes reviewed are as follows:

PC/M 05039, Rev. 0, St. Lucie Unit 1, AFW Pump 1C AFAS Start Logic Modification (Mitigating Systems)

- Timing
- Licensing Bases
- Testing Review

PC/M 02025 Rev. 1, St. Lucie Unit 1, ICW Strainer Replacement (Mitigating Systems)

- Materials / Replacement Components
- Equipment Protection
- Flowpaths
- Process Medium
- Licensing Basis

PC/M 04002 Rev. 1, St. Lucie Unit 2, EDG Electric Fuel Oil Priming Pump Recirculation Modification (Mitigating Systems)

- Energy Needs
- Materials / Replacement Components
- Flowpaths
- Licensing Basis

PC/M 04072 Rev. 0, St. Lucie Unit 2, GL 96-06 CCW Water Hammer Support Mods (Mitigating Systems)

- Structural
- Licensing Basis

PC/M 05240 Rev. 0, St. Lucie Unit 2, Replacement of Electric Motor Driven Start-up Air Compressor 2A (Mitigating Systems)

- Energy Needs
- Materials / Replacement Components
- Flowpaths
- Process Medium
- Licensing Basis
- Failure Modes

PC/M 05244 Rev. 0, St. Lucie Unit 2, Replacement of Containment Spray Flow Control Valves FCV-07-1A/B (Barrier Integrity)

- Energy Needs
- Materials / Replacement Components
- Flowpaths
- Pressure Boundary
- Process Medium
- Licensing Basis

PC/M 06011 Rev. 0, St. Lucie Unit 2, Instrument Air and Service Air Modifications (Mitigating Systems)

- Energy Needs
- Flowpaths

- Process Medium
- Licensing Basis

PC/M 05097 Rev. 0, St. Lucie Unit 2, MFIV Actuator Upgrade (Mitigating Systems and Barrier Integrity)

- Materials / Replacement Components
- Flowpaths
- Process Medium
- Licensing Basis
- Failure Modes
- Post-Modification Testing

PC/M 04059, Rev. 2, St. Lucie Unit 1, Feedwater Control Replacement - Phase 2 (Initiating Events)

- Energy Needs
- Materials / Replacement Components
- Flowpaths
- Process Medium
- Licensing Basis
- Failure Modes
- Post-Modification Testing

Documents reviewed included procedures, engineering calculations, modification design and implementation packages, work orders, site drawings, corrective action documents, applicable sections of the living UFSAR, supporting analyses, Technical Specifications, and design basis information. For the selected modification packages, the inspectors observed the as-built configuration.

The inspectors also reviewed selected CRs associated with modifications to confirm that problems were identified at an appropriate threshold, were entered into the corrective action process, and appropriate corrective actions had been initiated.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors witnessed and reviewed Work Order (WO) post maintenance test (PMT) activities of the six risk significant SSCs listed below. The following aspects were inspected: (1) Effect of testing on the plant recognized and addressed by control room and/or engineering personnel; (2) Testing consistent with maintenance performed; (3) Acceptance criteria demonstrated operational readiness consistent with design and licensing basis documents such as TS, UFSAR, and others; (4) Range, accuracy and calibration of test equipment; (5) Step by step compliance with test procedures and/or

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work orders (WO), and applicable prerequisites satisfied; (6) Control of installed jumpers or lifted leads; (7) Removal of test equipment; and, (8) Restoration of SSCs to operable status. The inspectors also reviewed problems associated with PMTs that were identified and entered into the licensee's CAP.

- WO#36021789, MV-08-3 Linkage Lube
- WO#37000257, Valve FCV-23-7 Repair
- WO#37000258, Valve FCV-23-9 Repair
- WO#36005634, Valve HCV-3647 Operator PM
- WO#35018122, Valve MV-07-2A Operator PM
- WO#37002996, Valve TCV-14-4A Repair

b. Findings

Introduction: The inspectors identified a Green Non-Cited Violation (NCV) of TS 6.8.1.a and Regulatory Guide (RG) 1.33, for the licensee failing to specify the PMT acceptance criteria in maintenance Work Order (WO) O#37000257, "FCV-23-7 Repair," as required in administrative procedure ADM-78.01, "Post Maintenance Testing." Specifically, the inspectors identified that a PMT was performed and considered satisfactory without complying with the general acceptance criteria required by ADM-78.01.

Description: On January 1, 2007, a body to bonnet leak was identified by the licensee on containment isolation valve FCV-23-7, 2A steam generator blowdown sample isolation. Valve FCV-23-7 was then closed to successfully stop the body to bonnet leak; however, the valve did not isolate flow to the secondary sample panel as expected. As a result, the licensee isolated the leaking FCV-23-7 valve by closing a manual valve located in the containment building. The system remained in this condition until maintenance on the leaking valve could be planned and scheduled.

On January 10, 2007, the valve was disassembled, inspected, reassembled, and tested in accordance with Work Order (WO) #37000257 Task 1. The seat leakage test was performed and considered satisfactory with no criteria listed in the WO document. The inspectors determined that the WO required a seat leakage test but did not specify allowable leakage criteria or quantify the results of the test. The inspectors also determined that the licensee's Quality Assurance Program Topical Quality Assurance Report, TQR 11.0, "Test Control," required test acceptance criteria be included in written approved test procedures. Test procedure ADM-78.01 specifies non-existing seat leakage as the general acceptance criteria for valve seat leakage tests. This requirement was not translated into the WO which performed the maintenance and PMT activities which resulted in emergent engineering analysis to verify operability of the subject valve. CR 07-4038 was written to address the inspectors finding and a licensee operability assessment determined that the measured seat leakage of approximately 50 milliliters per minute was acceptable and the valve was considered operable.

Analysis: The inspectors determined that the licensee's failure to follow the PMT procedure when preparing the work order was a performance deficiency. The inspectors concluded that the finding was greater than minor in accordance with IMC

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0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening." because it involved the attribute of SSC and barrier performance and affected the barrier integrity objective of providing reasonable insurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using Manual Chapter 0609, Appendix A, Attachment 1, "Significance Determination Process," Phase 1 Worksheet, the finding is determined to have very low safety significance because it only affected the containment barriers cornerstone, and all subsequent engineering evaluations determined that there was no actual degradation to the subject containment barrier equipment. A contributing cause of the finding is related to the cross cutting area of Human Performance specifically Resources, because the licensee did not have a complete and accurate work package to perform this maintenance activity.

Enforcement: TS 6.8.1.a requires that written procedures shall be established, implemented, and maintained covering the activities specified in RG 1.33, Revision 2, February 1978. RG 1.33, Appendix A, Item 9.a, requires maintenance that can affect safety related equipment be properly preplanned and performed in accordance with written instructions appropriate to the circumstances. Contrary to the above, on January, 20, 2007, PMT requirements on valve FCV-23-7 were not preplanned or performed in accordance with safety related procedure ADM-78.01, "Post Maintenance Testing." Because the failure to implement the subject procedure was of very low safety significance and has been entered in the licensee's CAP, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000389/2007002-01, Failure to Follow Procedure for Post Maintenance Testing of a Containment Isolation Valve.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed portions of the following six surveillance tests and monitored personnel conducting the tests as well as equipment performance, to verify that testing was being accomplished in accordance with applicable operating procedures. The test data was reviewed to verify it met TS, UFSAR, and/or licensee procedure requirements. The inspectors also verified that the testing effectively demonstrated the systems were operationally ready, capable of performing their intended safety functions, and that identified problems were entered into the licensee's CAP for resolution. The tests included one inservice test (IST).

- 1-2200050B, 1B EDG
- 2-2200050B, 2B EDG
- 2-OSP-01.03, Reactor Coolant System Inventory Balance
- 2-OSP-25.09A, Train 'A' ECCS Ventilation Monthly Surveillance Testing
- 1-OSP-03.05B, 1B HPSI Pump Code Run
- 1-OSP-03.06B, 1B LPSI Pump Code Run

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modificationsa. Inspection Scope

The inspectors continued to periodically screen active Temporary System Alterations (TSA) for risk significant systems. The inspectors examined two TSAs listed below, including a review of the technical evaluation and its associated 10 CFR 50.59 screening. The TSA was compared to the system design basis documentation to ensure that: (1) the modification did not adversely affect operability or availability of other systems; (2) the installation was consistent with applicable modification documents; and, (3) did not affect TS or require prior NRC approval. The inspectors also observed accessible equipment related to the TSA to verify configuration control was maintained.

- TSA#1-07-001, Temporary Vibration Analysis Monitoring of Fan HVE-21B
- TSA#1-06-13, Fan HVA-3A Evaporator Repair

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluationa. Inspection Scope

On February 15, 2007, the inspectors observed a quarterly EP drill of the licensee's Emergency Response Organization (ERO) for personnel in the Emergency Operations Facility (EOF). During this drill the inspectors assessed licensee performance to determine if proper emergency classification, notification, and protective action recommendations were made in accordance with EP procedures. The inspectors evaluated the adequacy of the post drill critique conducted in the EOF.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors assessed the accuracy of the following PIs reported to the NRC. The inspectors reviewed the PI data of both Units 1 and 2 for the previous four quarters (i.e., First Quarter 2006 through Fourth Quarter 2006). Monthly Operating Reports, LERs, RCO Chronological Logs, and CRs were reviewed to verify the reported PI data was complete and accurate.

- Unit 1 Unplanned Scrams per 7000 Critical Hours
- Unit 2 Unplanned Scrams per 7000 Critical Hours
- Unit 1 Unplanned Scrams With Loss of Normal Heat Removal
- Unit 2 Unplanned Scrams With Loss of Normal Heat Removal
- Unit 1 Unplanned Transients per 7000 Critical Hours
- Unit 2 Unplanned Transients per 7000 Critical Hours
- Unit 1 RCS Leakage
- Unit 2 RCS Leakage

The inspections were conducted in accordance with NRC Inspection Procedure 71151, "Performance Indicator Verification." The applicable planning standard, Nuclear Energy Institute (NEI) 99-02, Revision 4, "Regulatory Assessment Performance Indicator Guidelines," was used as reference criteria.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution of Problems

.1 Review of Items Entered into the Corrective Action Program

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and to help identify repetitive equipment failures or specific human performance issues for followup, the inspectors performed screening of items entered into the licensee's CAP. This was accomplished by reviewing the CR summaries from daily printed reports and periodically attending CR oversight group meetings.

.2 Annual Sample: Review of Current Transformer Encapsulating Material Degradation

a. Inspection Scope

The inspectors selected CR 07-3262, "Current Transformer Encapsulating Material for Windings is Degrading," for a detailed review and discussion with the licensee. The inspectors reviewed the CR to ensure that the description of the condition was accurate

and properly captured in their CAP; that the condition was properly classified and prioritized; and that the corrective actions were appropriate, timely, and consistent with the safety significance of the condition. The inspectors evaluated the CR in accordance with the licensee's corrective action process as specified in licensee procedure NAP-204, "Condition Reporting."

b. Findings and Observations

Introduction: The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," during review of an issue associated with degraded coatings on 480 Volt (V) current transformers (CTs). The inspectors determined that the licensee failed to take timely and effective corrective actions to prevent recurrence of a known phenomenon whereby the epoxy-anhydride coating on CTs reverts back to a liquid and may flow to unwanted areas inside an electrical breaker cubicle. In 1989, as part of a response to a 10 CFR Part 21 issue regarding this phenomenon, the licensee decided to reduce the inspection interval of CTs to eighteen months. When questioned by the inspectors, it was determined that this corrective action was not procedurally implemented into the licensee's Preventive Maintenance (PM) Program and therefore was not being performed.

Description: On February 1, 2007, during the process of removing a 480V breaker from service to perform maintenance, electrical maintenance personnel noticed a liquid-type substance that had oozed out of the CT which was mounted on the 'C' phase load stab inside the breaker cubicle. It was also noted that some of this material had flowed onto the breaker's secondary disconnect blocks. The licensee subsequently determined that this material had not, nor would not, affect the electrical connection of the secondary and primary stabs or the operation of the breaker.

The purpose of the CT is to drive an ammeter on the breaker cubicle to monitor running current of the component associated with that particular breaker. For example, the breaker that had the degraded CT coating was associated with a fan motor. The licensee replaced the CT with new ones that are encapsulated with a different polyurethane casting compound that are not susceptible to this type of degradation. All Unit 1 CTs were replaced under WO#5240/61 in 1990. Unit 2 CTs were inspected and only the CTs that showed degradation were replaced, however it is not clear as to which CTs were replaced and it is not known where the CTs are installed that are subject to reversion.

Analysis: The inspectors determined that the licensee failed to take timely and effective corrective actions to prevent recurrence of a known phenomenon whereby the epoxy-anhydride coating on CTs reverts back to a liquid and may flow to unwanted areas inside an electrical breaker cubicle. The finding is associated with the equipment performance attribute of the Mitigating Systems Cornerstone. The finding was considered more than minor because if left uncorrected, could become a more significant safety concern if the liquified coating migrates to adjacent breakers and affects breaker operation, thus challenging the overall performance and reliability of 480V breakers. However, the finding was determined to be of very low safety

significance in accordance with NRC Inspection Manual Chapter 0609, Appendix A, Attachment 1, SDP Phase 1 screening worksheet because it did not represent an actual malfunction of a 480V breaker. The inspectors also determined that the cause of this finding was related to the corrective action aspect of the problem identification and resolution cross-cutting area.

Enforcement: Criterion XVI of 10 CFR Part 50, Appendix B, states in part, that “Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.” Contrary to this requirement, the licensee failed to take timely and effective corrective actions for a 10 CFR Part 21 issue that affected 480V breaker CT reliability. Specifically, in 1989, the licensee recognized the need to institute a more frequent inspection of 480V breaker CTs to ensure degradation of the epoxy-anhydride coatings was readily identified prior to complete failure, but did not implement those inspections into their PM program. The licensee entered the issue into their CAP as CR 07-4176. Because the licensee has entered the issue into their CAP and the finding is of very low safety significance (Green), this violation of 10 CFR 50, Appendix B, Criterion XVI, is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000389/2007002-02: Failure to Take Adequate Corrective Actions for Establishing Current Transformer Inspections.

4OA3 Event Followup

.1 (Closed) LER 05000335/2005-006-00, Equipment Failure Led to Inadvertent Mode Change During Reactor Plant Cooldown Operations.

a. Inspection Scope

The inspectors reviewed the subject LER and CR 05-28232 to assess the circumstances associated with an equipment failure that led to an inadvertent mode change during the plant cooldown that occurred on October 17, 2005.

b. Findings

Introduction: A self-revealing Green finding was identified following an event when Unit 1 inadvertently entered Operational Mode 3 (Hot Standby) due to a failure of the 1A air operated atmospheric dump valve (HCV-08-2A) actuator diaphragm and subsequent plant heatup. It was determined that inadequate maintenance instructions resulted in damage to the actuator diaphragm.

Description: On October 17, 2005, Unit 1 was shutdown in Operational Mode 4 (Hot Shutdown) and cooling down with use of the two atmospheric dump valves (ADVs) for the start of a scheduled refueling outage. During the cooldown, the 1A ADV experienced a failed diaphragm in its air operated actuator assembly causing the valve to close and the reactor coolant temperature to increase above 325 degrees Fahrenheit. Operational Mode 3 Hot Standby conditions were reached when reactor coolant

temperature increased to 325 degrees. The licensee identified that Mode 3 was entered without the Technical Specification (TS) 3.1.2.2 Limiting Condition of Operation (LCO) being met. TS 3.1.2.2 required at least two boron injection flow paths be operable from either the Boric Acid Make-up (BAM) Tanks or from the Refueling Water Tank (RWT). At the time of the Mode change, only one boron flow path existed from the RWT since the BAM tanks were out of service in preparation of the refueling outage. TS 3.0.4 required that entry into an operational Mode shall not be made when conditions of the LCO are not met and the actions require a shutdown. Therefore, inadvertent entry into Mode 3 resulted in a non-compliance with TS 3.0.4. The inspectors determined that the boron injection flow path from the RWT was not affected and remained operable. In addition, the allowed outage time for less than two boron injection flowpaths was not exceeded during this event. This licensee-identified finding involved a violation of TS 3.0.4 requirements. The enforcement aspects of this TS violation are discussed in Section 4OA7.

The licensee performed an apparent cause evaluation of the event and determined that the ADV diaphragm failed due to inadequate maintenance overhaul instructions including torquing and reassembly requirements. It was determined that no written procedure was available to perform WO#31021960 to overhaul the HCV-08-2A actuator assembly. The licensee determined the valve actuator bolting was overtorqued causing the diaphragm to be overloaded between the two bolt holes of the actuator body assembly resulting in excessive air leakage and the valve failing in the closed position. The licensee documented this issue in CR 05-28232 with corrective actions to develop a written maintenance procedure to perform future actuator maintenance in accordance with component technical manual requirements.

Analysis: The inspectors determined that the licensee's actions to overhaul the safety related atmospheric dump valve HCV-08-2A without an adequate maintenance procedure constituted a performance deficiency and a finding. The inspectors determined that this finding was greater than minor because it affected the equipment reliability attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions while the plant is shutdown. Using Manual Chapter 0609, Appendix A, Attachment 1, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to be of very low safety significance because it does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. A contributing cause of the finding is related to the cross cutting area of Human Performance specifically Resources, because the licensee did not have a complete and accurate procedure or work package to perform this maintenance activity.

Enforcement: The inspectors determined that the overhaul of the atmospheric dump valve HCV-08-2A without an adequate maintenance procedure was not an activity affecting quality subject to 10 CFR Part 50, Appendix B, nor a procedure required by licensee conditions or TS. Therefore, while a performance deficiency existed, no violation of NRC regulatory requirements occurred. This finding is identified as FIN 05000335/2007002-03, Inadequate Atmospheric Dump Valve Maintenance Procedure. The licensee documented this issue in CR 05-28232 with corrective actions to develop a

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written maintenance procedure to perform future actuator maintenance in accordance with component technical manual requirements. The new procedure was issued on August 31, 2006. This LER is closed.

.2 (Closed) LER 05000335/2006-001-00, Auxiliary Feedwater (AFW) Trip During Surveillance Run

On January 5, 2006, with Unit 1 at 100 percent power, the mechanical overspeed trip mechanism actuated and tripped the turbine during performance of a surveillance test on the turbine driven 1C AFW pump. The licensee determined that the turbine trip was caused by the AFW turbine trip lever not being properly re-latched following a previous surveillance on the AFW pump. The licensee also determined that the trip mechanism was improperly reset for 20 days, exceeding the TS 3.7.1.2 allowed outage time of 72 hours. The inspectors determined that this issue was identified, evaluated, and documented, as NCV 05000335/2006002-01, Failure to Reset the 1C AFW Pump Mechanical Over Speed Trip Linkage. The licensee revised their procedures to provide appropriate acceptance criteria for resetting the trip mechanism including instructions to verify the top surface of the tappet nut was in line with the head lever to ensure full engagement of the contact surfaces to prevent recurrence. The inspectors reviewed the subject LER and no additional findings were identified. This issue was entered into the licensee's corrective action program as CR 06-0298. This LER is closed.

.3 (Closed) LER 05000389/2006-001-00, Manual Reactor Trip Due to Condenser Tube Leak

On January 26, 2006, with Unit 2 at 100 percent, a main condenser high conductivity/sodium annunciator was received in the main control room. The licensee determined that the high sodium level was due to seawater intrusion from the main condenser waterbox. A rapid controlled down power was initiated in accordance with the plant secondary chemistry off-normal procedure. The reactor was manually tripped at 25 percent power in accordance with plant operating procedures and all safety systems worked as designed. The licensee determined that the cause of the rapid chloride and sodium level increase was saltwater leak in the main condenser waterbox as a result of a condenser tube with a longitudinal crack in the tube seam weld. Corrective actions were taken to repair the defective tubes. The LER was reviewed by the inspectors and no findings of significance were identified. The licensee documented the failed equipment in their corrective action program (CR 2006-1613). This LER is closed.

.4 (Closed) LER 05000389/2006-003-00, Missed Eddy Current Indication from Refuel Outage SL2-15 Inspection

On May 6, 2006, Unit 2 was shutdown for Cycle 16 refueling outage. During steam generator eddy current testing, the licensee identified that an error was made during the previous refueling outage steam generator (SG) eddy current testing that allowed a defect in a steam generator tube (R100 L96 in SG 2B) to remain in service during the Cycle 15 operation. The licensee determined that this event was caused by an incomplete rotating probe inspection of bobbin probe identified during Cycle 15.

Corrective actions included plugging of the subject tube and review of rotating probe data to ensure the entire target location was tested where the data was used to disposition a bobbin indication as no degradation found during Cycle 15. The licensee identified a second tube (R87 L97 in SG 2B) that was not fully evaluated by Plus Point and remained in service during Cycle 15. Tube integrity assessment for both tubes and in-situ pressure testing for R100 L96 during Cycle 16 outage demonstrated that the defective tubes met the structural integrity and accident induced leakage performance criteria of NEI 97-06, "Steam Generator Program Guidelines." The inspectors determined that this finding is more than minor because these steam generator tubes had been degraded and affected the RCS barrier Integrity Cornerstone. This finding is determined to be of very low safety significance (Green) using IMC 0609 Appendix J, Steam Generator Tube Integrity Findings Significance Determination Process screen because one or more tubes that should have been repaired as a result of a previous inspection. This licensee-identified finding involved a violation of TS SR 4.4.5.4.a.6, Plugging or Repair. The enforcement aspects of the violation are discussed in Section 4OA7. This LER is closed.

.5 (Closed) LER 05000335/2006-003-00, Unanalyzed Condition for Diesel Generators and Degraded Voltage Relaying

A scenario was used during simulator training where the 2C component cooling water (CCW) pump replaced a tripped 2B CCW pump. The 2C CCW pump was mechanically aligned to train B but remained electrically aligned to train A. This resulted in operation of two CCW pumps powered from the same electrical train. The existing emergency diesel generator (EDG) loading calculations included the start of only one CCW pump per electrical train. A Condition Report (CR) was initiated on July 26, 2006, to address the acceptability of operating in this configuration with respect to EDG loading. On August 16, 2006, the licensee's preliminary evaluation concluded that the EDG was not operable in this condition. An extent of condition review determined that operation of the two CCW pumps or two intake cooling water (ICW) pumps per electrical train could affect the degraded voltage protection system by causing premature isolation of the offsite power circuit for the affected train during a degraded voltage with concurrent loss of coolant accident scenario. The licensee determined that the apparent causes were weaknesses in design documentation, design modification, and inadequate procedural controls on CCW and ICW system operation that introduced unanalyzed system interactions. The licensee's evaluation results determined that weaknesses in the design modification process permitted the implementation of a plant modification in 2003 that disabled a pump start block circuit. This resulted in a condition where two CCW pumps could load onto an EDG, which could result in a loss of the affected EDG. Also, procedural inadequacies permitted operation of two CCW or two ICW pumps on an electrical train since original plant startup. Corrective actions included to install warning placards on Units 1 and 2 CCW and ICW pump control switches to alert operators that running the 1C/2C CCW or ICW pump on the same electrical train requires entry into TS LCOs. Corrective actions also included procedure changes and planned modifications.

The licensee's engineering analysis determined that Unit 2 EDGs had sufficient capacity to start a second CCW pump on either EDG. However, operation of two CCW pumps on Unit 1 EDGs was found to exceed the EDG load ratings, which could potentially result in EDG failure. The inspectors determined that this finding was greater than minor because it affected the equipment reliability attribute of the Mitigating System Cornerstone in that Unit 1 EDGs were degraded in this alignment. The inspectors determined that this finding was of very low safety significance (Green) because no actual loss of safety system function occurred or no TS LCOs were exceeded. In addition, operation of two CCW pumps or two ICW pumps on the same electrical train was of short duration (approximately 5 minutes or less). This licensee-identified finding involved a violation of 10 CFR 50.59 requirements. The enforcement aspects of the violation are discussed in Section 4OA7. This LER is closed.

6. (Closed) LER 05000389/2006-004-00, Unplanned Manual Reactor/Turbine Trip to DEH Leak

a. Inspection Scope

The inspectors reviewed the subject LER and CR 06-18379 to assess the circumstances associated with an equipment failure that led to an unplanned reactor plant trip on June 15, 2006.

b. Findings

Introduction: A self-revealing finding was identified for improper torquing of the cap screws used to attach a blind flange to an auxiliary servo actuator, which led to the failure of the interfacing O-ring under the high digital electro-hydraulic (DEH) pressure. This resulted in an unplanned manual reactor/turbine trip from 45 percent power due to a severe DEH oil leak on the Unit 2 number 1 throttle valve actuator.

Description: On June 15, 2006, while Unit 2 was returning to power from a refueling outage, an unplanned manual reactor/turbine trip was initiated due to a severe DEH leak on the number 1 throttle valve actuator. The licensee determined the leak was a result of improper torquing by a contractor of the cap screws used to attach a blind flange to the actuator, which led to the failure of the interfacing O-ring under high DEH pressure. The licensee performed a root cause of the event and determined that the failed O-ring was a result of poor contractor workmanship and inadequate procedure guidance for torque verification following O-ring installation at the vendor's facility. The valve was repaired and the licensee documented this issue in CR 06-18379 with corrective actions to address vendor oversight by Florida Power and Light Company.

Analysis: The inspectors determined that the licensee's actions to overhaul the number 1 valve servo actuator without adequate vendor oversight and inadequate procedure guidance for torque requirements constituted a performance deficiency and a finding. The inspectors concluded that the finding was more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," Section 3, "Minor Questions." This finding was greater than minor because it is associated with the

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Initiating Event Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operation. Specifically, the equipment performance attribute is to ensure throttle valve reliability. Using Manual Chapter 0609, Appendix A, Attachment 1, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to be of very low safety significance because although the finding contributed to a manual reactor trip, mitigation equipment and functions remained available. A contributing cause of the finding is related to the cross-cutting area of Human Performance specifically Work Practices because the licensee did not provide adequate supervisory oversight of this specific maintenance activity at the vendor's facility.

Enforcement: The inspectors determined that the licensee's actions to overhaul St. Lucie Unit 2 number 1 throttle valve servo actuator without adequate vendor oversight and inadequate procedure guidance for torque requirements was not an activity affecting quality subject to 10 CFR Part 50, Appendix B, nor a procedure required by licensee conditions or TS. Therefore, while a performance deficiency existed, no violation of NRC regulatory requirement occurred. This finding is identified as FIN 05000335/2007-04, Inadequate Unit 2 Number 1 Throttle Valve Maintenance Procedure. The valve was repaired and the licensee documented this issue in CR 06-18379 with corrective actions to address vendor oversight by Florida Power and Light Company. This LER is closed.

40A6 Meetings

.1 Exit Meeting Summary

On April 4, 2007, the resident inspectors presented the inspection results to Mr. Gordon Johnston and other members of your staff, who acknowledged the findings. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Annual Assessment Meeting Summary

On March 27, 2007, the NRC's Branch Chief and the Resident Inspector assigned to the St. Lucie Nuclear Plant, as well as the Region II Public Affairs Officer, met with Florida Power and Light Co. (FPL) to discuss the NRC's Reactor Oversight Process (ROP) and the St. Lucie annual assessment of safety performance for the period of January 1, 2006 through December 31, 2006. The major topics addressed were: the NRC's assessment program, the results of the St. Lucie Units 1 and 2 assessment, and future NRC inspection activities. Attendees included FPL management, site staff, and one local news reporter.

This meeting was open to the public. The NRC's presentation material used for the discussion is available from the NRC's document system (ADAMS) as accession number ML070940029. The licensee did not have a handout presented at the meeting. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

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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.

- TS 3.0.4 states in part that an entry into operational Mode shall not be made when conditions of the limiting condition for operation (LCO) are not met and the action requires a shutdown. Contrary to this, On October 17, 2005, Unit 1 inadvertently entered Mode 3 without TS 3.1.2.2 LCO being met. This was identified in the licensee's corrective action program as CR 05-28232. This finding was determined to be of very low safety significance because the boron injection flow path from the refueling water tank was not affected and remained operable. In addition, the TS allowed outage time for less two boron injection flowpaths was not exceeded during this event.
- TS 3.4.5 states that each steam generator shall be operable or restore to operable status prior to increasing T-average above 200 degree F. TS Surveillance 4.4.5.0 states that each steam generator shall be demonstrated operable by performance of the required augmented inservice inspection program. Contrary to this, during Cycle 15 refueling outage, Unit 2 exceeded 200 degree F without establishing the operability of the steam generators by surveillance requirements in that the defective tube was not plugged or repaired as required. This was identified in the licensee's corrective action program as CR 06-13913. This finding was determined to be of very low safety significance because the degraded tube was capable of performing its safety function.
- 10 CFR 50.59(d)(1) states, in part, that the licensee shall maintain records of changes in the facility, of changes in procedures, and of tests and experiments. These records must include a written evaluation which provides a basis for the determination that the change, test, or experiment does not require a license amendment. Contrary to this, the licensee failed to perform an adequate safety evaluation which placed Unit 1 in an unanalyzed condition. The design modification process permitted the implementation of a plant modification in 2003 that disabled a pump start block circuit. This resulted in a condition where two CCW pumps could load onto an emergency diesel generator (EDG), which could result in a loss of the affected EDG. Also, plant procedures permitted operation of two CCW or ICW pumps on an electrical train since original plant startup. This was identified in the licensee's corrective action program as CR 06-21661. The finding was determined to be of very low safety significance because no actual loss of safety system function occurred or no TS LCOs exceeded. In addition, operation of two CCW pumps or two ICW pumps on the same electrical train was of short duration (approximately 5 minutes or less).

ATTACHMENT: SUPPLEMENTAL INFORMATION

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SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

D. Albritton, Assistant Operations Manger
E. Armando, Site Quality Manager
D. Calabrese, Emergency Preparedness Supervisor
D. Cecchett, Licensing Engineer
C. Costanzo, Plant General Manager
M. Danford, Performance Improvement Department Supervisor
K. Frehafer, Licensing Engineer
R. Hughes, Site Engineering Manager
B. Jacques, Security Manager
G. Johnston, Site Vice President
B. Kelly, System Engineer
R. McDaniel, Fire Protection Supervisor
R. Merle, Projects Manager
L. Neely, Work Control Manager
B. Neff, System Engineer
W. Parks, Operations Manager
T. Patterson, Licensing Manager
W. Raasch, System Engineer
B. Robinson, Health Physics Manager
G. Swider, Systems Engineering Manager
J. Tucker, Maintenance Manager
R. Walker, Emergency Preparedness

NRC Personnel

B. Mozafari, NRR Senior Project Manager
S. Ninh, Region II Senior Project Engineer

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened/Closed

05000389/2007002-01	NCV	Failure to Follow Procedure for Post Maintenance Testing of a Containment Isolation Valve (1R19)
05000389/2007002-02	NCV	Failure to Take Adequate Corrective Actions for Establishing Current Transformer Inspections (4OA2.2)
05000335/2007002-03	FIN	Failure to Implement Atmospheric Dump Valve Maintenance Procedure (4OA3.1)
05000335/2007002-04	FIN	Failure to Implement Unit 2 Number 1 Throttle Valve Maintenance Procedure (4OA3.6)

Closed

05000335/2005-006-00	LER	Equipment Failure Led to Inadvertent Mode Change During Reactor Plant Cooldown Operations (4OA3.1)
05000335/2006-001-00	LER	Auxiliary Feedwater Trip During Surveillance Run (4OA3.2)
05000389/2006-001-00	LER	Manual Reactor Trip Due to Condenser Tube Leak (4OA3.3)
05000389/2006-003-00	LER	Missed Eddy Current Indication from Refuel Outage SL2-15 Inspection (4OA3.4)
05000335/2006-003-00	LER	Unanalyzed Condition for Diesel Generators and Degraded Voltage Relaying (4OA3.5)
05000389/2006-004-00	LER	Unplanned Manual Reactor/Turbine Trip to DEH Leak (4OA3.6)

LIST OF DOCUMENTS REVIEWEDProcedures

1-OSP-21.01A, "1A Intake Cooling Water Pump Code Run," Revision 0A
 1-OSP-21.01B, "1B Intake Cooling Water Pump Code Run," Revision 0A
 1-OSP-21.01C, "1C Intake Cooling Water Pump Code Run," Revision 0A
 2-OSP-21.01A, "2A Intake Cooling Water Pump Code Run," Revision 0A
 2-OSP-21.01B, "2B Intake Cooling Water Pump Code Run," Revision 0A
 2-OSP-21.01C, "2C Intake Cooling Water Pump Code Run," Revision 0A
 036005, "Emergency Cooling Water Canal - Periodic Test," Revision 18
 SCEG-009, "Guidelines for Maintenance Rule Structural Condition Monitoring by A Qualified Inspector," Revision 1B

Full 10 CFR 50.59 Evaluations

PSL-ENG-SEIS-05-039, Rev. 1, St. Lucie Unit 1, Alternate NIS Excore Detector Arrangement
 PC/M 02025, Rev. 1, St. Lucie Unit 1, ICW Strainer Replacement
 PC/M 02170, Rev. 0, St. Lucie Unit 1, Abandonment of Unit 1 Boronometer
 PSL-ENG-SEMS-99-043, Rev. 1, St. Lucie Unit 1, Use of PRC-01 Resin to Remove Co-58 Contaminants
 PSL-ENG-SENS-06-038, Rev.1, St. Lucie Unit 2, Fuel Handling Building Placement of Tri-Nuclear Filter/Vacuum Above Spent Fuel Racks for Spent Fuel Pool Cleanup
 PC/M 04059, Rev. 2, St. Lucie Unit 1, Feedwater Control Replacement - Phase 2

PSL-ENG-SEMS-05-030, Load Combinations for ASME Code Class 3 Components -
 ICW/CCW Strainer UFSAR Update
 PC/M 02025, Rev. 1, St. Lucie Unit 1, ICW Strainer Replacement

Condition Reports

2007-91	2007-2970	2007-5584	2007-8879
2007-388	2007-3020	2007-5714	2007-2593
2007-503	2007-3134	2007-5772	2007-2672
2007-731	2007-3229	2007-5807	2007-6798
2007-732	2007-3240	2007-5836	2007-6684
2007-978	2007-3262	2007-5921	2007-6721
2007-2403	2007-3684	2007-5932	2007-6793
2007-2473	2007-4380	2007-6040	2007-6826
2007-2543	2007-4383	2007-6657	2007-7256
2007-2620	2007-4387	2007-6658	2007-7264
2007-2732	2007-4446	2007-4038	2007-7292
2007-2749	2007-4509	2007-8163	2006-36661
2007-2809	2007-5547	2007-8778	
2007-2851			

Work Orders

WO 35030325/03, Agastat E7000 Series Timing Relay Testing
 WO 35030325/01, Agastat E7000 Series Timing Relay Testing

Other Corrective Action Documents

2005-13481, PCM 10CFR50.59 Screening Prepared by an Unqualified Preparer and not
 Cosigned by a Qualified Screener.
 2005-23209, FRG Action Item 05-074-B & FRG Action Item 05-074-C
 2006-28586, Preparation of 10CFR50.59 Screenings by FPL for Vendor prepared PCMs
 2006-36237, Operations Procedure 1-0960020 Changed and Approved with Incomplete
 10CFR50.59 Applicability Screening and Inadequate Reviews
 2005-13481, 50.59 Screen Prepared by Unqualified Preparer
 2005-23209, FRG A/I 05-074-B
 2006-28586, 50.59 Screen not signed
 2006-36237, Incomplete 50.59 Applicability Screen

Modifications

PC/M 05039, Rev. 0, St. Lucie Unit 1, AFW Pump 1C AFAS Start Logic Modification
 PC/M 02025 Rev. 1, St. Lucie Unit 1, ICW Strainer Replacement (Mitigating Systems)
 PC/M 04002 Rev. 1, St. Lucie Unit 2, EDG Electric Fuel Oil Priming Pump Recirculation
 Modification
 PC/M 04072 Rev. 0, St. Lucie Unit 2, GL 96-06 CCW Water Hammer Support Mods

PC/M 05240 Rev. 0, St. Lucie Unit 2, Replacement of Electric Motor Driven Start-up Air Compressor 2A (Mitigating Systems)
PC/M 05244 Rev. 0, St. Lucie Unit 2, Replacement of Containment Spray Flow Control Valves FCV-07-1A/B
PC/M 06011 Rev. 0, St. Lucie Unit 2, Instrument Air and Service Air Modifications
PC/M 05097 Rev. 0, St. Lucie Unit 2, MFIV Actuator Upgrade

PC/M 04059, Rev. 2, St. Lucie Unit 1, Feedwater Control Replacement - Phase 2

Work Orders

WO 35005346, Aux FW Pump 1C AFAS Start Logic Modification
WO 35005347, Aux FW Pump 1C AFAS Start Logic Modification
WO 35018522, Install Air Purge on Hydraulic Reservoir for MFIV(s)

Procedures

ADM-78.01, Rev. 22, Post Maintenance Testing
1-OSP-09.01C, Rev 0B, 1C Auxiliary Feedwater Code Run
1-0700050, Rev. 88, Auxiliary Feedwater Periodic Test
ADM-78.01, Rev. 26A, Post Maintenance Testing
QI-3-PSL-1, Rev. 19, Design Control
QI-11-PR/PSL-2, Rev. 37C, Mechanical Test Control
QI-11-PR/PSL-1, Rev. 18G, Test Control
1-IMP-09.23, Rev. 2B, MFRV Cal and Functional Testing
1-IMP-09.33, Rev. 1B, Feedwater 15% Bypass Valve Cal and Functional Testing
QI-2-PSL-8, Rev. 3B, Computer Software Control

Drawings

8770-G-079, Flow Diagram Main Steam System
8770-B-326, Aux FW Pump 1C Turbine and Steam Valve MV-08-3
DWG 8770-B-335, Sht. 64J, Rev. 9, 120VAC PP-1C

Corrective Action Documents

2005-1592, Review of PCM 05002, "Unit 2 Feedwater Control Replacement"
2005-7265, Inadequately Written PCM
2005-34657, PC/M Packages for the Unit 2 ICW Debris Filter Modifications do not meet Expectations for Product Quality.
2005-23525, Evaluation for 15% Bypass Valve Setpoint Change
2005-1592, Review of PC/M05002, Unit 2 Feedwater Control Replacement
2005-7265, Inadequate written PC/M
2005-34657, PC/M Packages do not meet expectations from product quality

Calculations

PSL-2FSM-06-024, "Minimum Wall Thickness - Lines I-30"-CW-9 Intake Cooling Water Pump
2A Discharge Nodes 77-79"
Eng-SPSL-06-0151, "St. Lucie Plant Unit 2 ICW Performance Curves PSL-ENG-SEMS-02-
043," Rev. 4
PSL-IFJE-03-002, Rev. 5, Load Study for Non-Nuclear Safety Related SUPS 1C and SUPS 1D
30kVA Inverters
PSL-IFJM-92-030, Rev. 2, SBO Control Room and RAB Area Temperature Calc
PSL-IFJE-03-002, Rev. 5, Load Study for Non-Nuclear Safety Related SUPS 1C and SUPS 1D
30kVA Inverters
PSL-IFJM-92-030, Rev. 2, SBO Control Room and RAB Area Temperature Calc

Other Documents

Engineering Examination Report, GIR # 06-012, "Unit 2 ICW PP 2A Discharge"
Walkdown Inspection Report for Zone #42, Dated March 17, 2006
System Health Reports #21a/ICW Periods 2006-2, 2006-3, 20062 (Unit 1 & Unit 2)
EMP-100.08, Rev. 4, Agastat E7000 Series Timing Relay Testing Procedure
2-ADM-03.01H, Unit 2 Power Distribution Breaker List
ENG-QI-1.7, Rev. 9, Design Input Verification
ENG-QI-1.5, Rev. 7 (Draft), Calculations
TEDB Classification Sheets for all MFRV Bypass and Positioners
PSL-ENG-SEIJ-04-063, Rev. 0, FMEA for PC/M 04059
PC/M 03068, Rev. 1, Unit #1 DOPS, SOER, and PDN Mod