

#### UNITED STATES NUCLEAR REGULATORY COMMISSION REGION II 101 MARIETTA STREET, N.W. ATLANTA, GEORGIA 30323

Report Nos.: 50-250/90-14 and 50-251/90-14	•
Licensee: Florida Power and Light Company 9250 West Flagler Street Miami, FL 33102	
Docket Nos.:50-250 and 50-251License Nos.:Facility Name:Turkey Point 3 and 4	DPR-31 and DPR-41
Inspection Conducted: April 28 - May 25, 1990	` .
Inspectors: S.J. VIAS W. C. Butcher, Senior Resident Inspector J. J. VIAS J. G. A. Schnebli, Resident Inspector J. J. K. M. T. F. McElhinney, Resident Inspector Approved by: Multiple function R. V. Crlenjak, Section Chief Division of Reactor Projects	<u>b/21/90</u> Date Signed <u>b/21/90</u> Date Signed <u>b/21/90</u> Date Signed <u>b/21/90</u> Date/Signed

#### SUMMARY

Scope:

This routine resident inspector inspection entailed direct inspection at the site in the areas of monthly surveillance observations, monthly maintenance observations, engineered safety features walkdowns, plant startup from refueling, operational safety and plant events.

## Results:

Within the scope of this inspection, the inspectors determined that the licensee continued to demonstrate satisfactory performance to ensure safe plant operations.

Two violations, one unresolved item\*\*, two strengths and two concerns were identified.

50-250,251/90-14-01, Violation. Failure to take actions required by an LCO and entry into mode 3 with no channels of RVLMS operable. (paragraph 8)

\*\* Unresolved Items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations.

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50-250,251/90-14-02, Violation. Failure to follow procedure resulting in an inoperable SI system flowpath when RCS temperature was greater than 380 F. (paragraph 8)

50-250,251/90-14-03, Unresolved. Containment isolation valve 3-6165 found pinned open in lieu of the required pinned close position. (paragraph 8)

The inspectors identified a concern relating to the lack of attention to detail on Unit 3 which resulted in three events. (paragraph 8)

A strength was a system engineer identifying mispositioned valves in the SI system during the system flowpath verification. (paragraph 8)

Another strength noted was management's conservative decision to take Unit 4 off line to repair a turbine stop valve control oil line fitting leak. (paragraph 8)



#### **REPORT DETAILS**

#### **Persons Contacted** 1:

Licensee Employees

\*T. V. Abbatiello, Quality Assurance Supervisor

J. Arias, Sr. Technical Advisor to Plant Manager

J. C. Balaquero, Assistant Technical Department Supervisor

- L. W. Bladow, Quality Manager
- R. J. Earl, Quality Control Supervisor
- T. A. Finn, Assistant Operations Superintendent
- \*S. M. Franzone, Project Engineer

R. J. Gianfrencesco, Assistant Maintenance Superintendent

S. T. Hale, Engineering Project Supervisor

\*K. N. Harris, Senior Vice President, Nuclear Operations

E. F. Hayes, Instrumentation and Controls Supervisor

R. G. Heisterman, Assistant Superintendent of Electrical Maintenance \*V. A. Kaminskas, Operations Superintendent

J. A. Labarraque, Senior Technical Advisor

- G. L. Marsh, Reactor Supervisor
- R. G. Mende, Operations Supervisor

\*L. W. Pearce, Plant Manager

D. R. Powell, Superintendent, Plant Licensing

K. L. Remington, System Performance Supervisor

\*R. E. Rose, Supervisor, Design Control

C. V. Rossi, Quality Assurance Supervisor

- \*G. M. Smith, Service Manager Nuclear

\*R. N. Steinke, Chemistry Supervisor J. C. Strong, Mechanical Department Supervisor

F. R. Timmons, Site Security Superintendent

G. S. Warriner, Quality Control Supervisor

\*M. B. Wayland, Maintenance Superintendent

J. D. Webb, Assistant Superintendent Planning and Scheduling

A. T. Zielonka, Technical Department Supervisor

Other licensee employees contacted included construction craftsman, engineers, technicians, operators, mechanics, and electricians.

\*Attended exit interview on May 25, 1990.

An alphabetical tabulation of acronyms used in this report is Note: listed in paragraph 12.

Followup on Items of Noncompliance (92702) 2.

A review was conducted of the following noncompliances to assure that corrective actions were adequately implemented and resulted in conformance with regulatory requirements. Verification of corrective action was achieved through record reviews, observation and discussions with licensee

personnel. Licensee correspondence was evaluated to ensure the responses were timely and corrective actions were implemented within the time periods specified in the reply.

(Closed) 50-250,251/89-52-05, Violation. Two examples of failure to follow procedures. In response to the failure to adjust the B EDG speed droop to 30 increments during a surveillance test, the licensee counselled the responsible operator and placed the event in the night order log to inform all operations personnel. As a precaution, procedure 0-OSP-023.1 was revised to require the SNPO to notify the RCO when the EDG governor speed droop is set to 30 increments. In response to the event involving the inadvertent release of liquid waste from the B MT in lieu of the B WMT, the licensee disciplined the responsible operator and placed the event in  $\sim$ Procedures OP 5163.2, Waste Disposal the night order book. System-Controlled Liquid Release to the Circulating Water, and OP 5523.1, Waste Disposal System, Gas Decay Tank, Controlled Release to the Atmosphere, were revised to require independent verification to validate the tank to be released against the appropriate release permit. The liquid release permit form was modified by adding a check box for each tank to clearly define the applicable tank. The inspectors determined that these actions were adequate. This item is closed.

3. Followup on Inspector Followup Items (92701)

(Closed) IFI 50-250,251/89-52-03. Concerning the verification of tygon tubing indication used for BAST level indicator channel check. The BAST's were permanently labelled with markings to correspond to percent level on February 5, 1990. This item is closed.

4. Onsite Followup and In-Office Review of Written Reports of Nonroutine Events and 10 CFR Part 21 Reviews (90712/90713/92700)

The Licensee Event Reports and/or 10 CFR Part 21 Reports discussed below were reviewed. The inspectors verified that reporting requirements had been met, root cause analysis was performed, corrective actions appeared appropriate, and generic applicability had been considered. Additionally, the inspectors verified the licensee had reviewed each event, corrective actions were implemented, responsibility for corrective actions not fully completed was clearly assigned, safety questions had been evaluated and resolved, and violations of regulations or TS conditions had been identified. When applicable, the criteria of 10 CFR 2, Appendix C, were applied.

(Closed) LER 50-250/88-15. Post accident hydrogen monitor system deficiencies due to procedure and administrative control weakness. The corrective actions required by this issue were reviewed by the inspectors and found to be adequate. This LER is closed.

## 5. Monthly Surveillance Observations (61726)

The inspectors observed TS required surveillance testing and verified: The test procedure conformed to the requirements of the TS; testing was performed in accordance with adequate procedures; test instrumentation was calibrated; limiting conditions for operation were met; test results met acceptance criteria requirements and were reviewed by personnel other than the individual directing the test; deficiencies were identified, as appropriate, and were properly reviewed and resolved by management personnel; and system restoration was adequate. For completed tests, the inspectors verified testing frequencies were met and tests were performed by qualified individuals.

The inspectors witnessed/reviewed portions of the following test activities:

- 3-OSP-202.1, Safety Injection/ Residual Heat Removal Flowpath Verification
- 3-OSP-068.3, Containment Spray System Monthly Flowpath Verification
- 3-PMI-028.3, RPI Hot Calibration, CRDM Stepping Test, and Rod Drop Test
- 0-OSP-023.1, A EDG Operability Test
- 0-PME-074.2, Standby Steam Generator Feedwater Pumps Motor Oil Change and Space Heater Check

The inspectors determined that the above testing activities were performed in a satisfactory manner and met the requirements of the TS. No violations or deviations were identified in the areas inspected.

#### 6. Monthly Maintenance Observations (62703)

Station maintenance activities of safety related systems and components were observed and reviewed to ascertain they were conducted in accordance with approved procedures, regulatory guides, industry codes and standards, and in conformance with TS.

The following items were considered during this review, as appropriate: LCOs were met while components or systems were removed from service; approvals were obtained prior to initiating work; activities were accomplished using approved procedures and were inspected as applicable; procedures used were adequate to control the activity; troubleshooting activities were controlled and repair records accurately reflected the maintenance performed; functional testing and/or calibrations were performed prior to returning components or systems to service; QC records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were properly implemented; QC hold points were established and observed where required; fire prevention controls were implemented; outside contractor force activities were controlled in accordance with the approved QA program; and housekeeping was actively pursued.

The inspectors witnessed/reviewed portions of the following maintenance activities in progress:

- Replacement of Unit 3 Reactor Vessel O-Ring Due to Leakage
- Replacement of "3A" RHR Pump Mechanical Seal
- Troubleshooting "3A" ICW Pump Failure to Start
- Replacement of "4B" ICW Pump Due to High D/P
- Repair of Unit 3 and 4 Main Turbine Auxiliary Oil Pumps

For those maintenance activities observed, the inspectors determined that these activities were conducted in a satisfactory manner and that the work was properly performed in accordance with approved maintenance work orders. No violations or deviations were identified in the areas inspected.

7. Operational Safety Verification (71707)

The inspectors observed control room operations, reviewed applicable logs, conducted discussions with control room operators, observed shift turnovers and confirmed operability of instrumentation. The inspectors verified the operability of selected emergency systems, verified maintenance work orders had been submitted as required and followup and prioritization of work was accomplished. The inspectors reviewed tagout records, verified compliance with TS LCOs and verified the return to service of affected components.

By observation and direct interviews, verification was made that the physical security plan was being implemented.

Plant housekeeping/cleanliness conditions and implementation of radiological controls were observed.

Tours of the intake structure and diesel, auxiliary, control and turbine buildings were conducted to observe plant equipment conditions including potential fire hazards, fluid leaks and excessive vibrations.

The inspectors walked down accessible portions of the following safety related systems to verify operability and proper valve/switch alignment:

A and B Emergency Diesel Generators Control Room Vertical Panels and Safeguards Racks Intake Cooling Water Structure 4160 Volt Buses and 480 Volt Load and Motor Control Centers Unit 3 and 4 Feedwater Platforms



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Unit 3 and 4 Condensate Storage Tank Area Auxiliary Feedwater Area Unit 3 and 4 Main Steam Platforms Auxiliary Building

The inspectors performed a walkdown of various portions of the plant to witness maintenance initiatives being done by the licensee. The following maintenance initiatives were verified:

- Unit 3 charging pump cleaning and painting. The material condition
  upgrade was completed.
- Unit 3 replacement of RHR butterfly valve (3-887) with a globe valve. This modification was completed this outage.
- Unit 4 RHR pump and heat exchanger rooms, cleaning and painting. This material condition upgrade was completed.
- Number 1 and 2 Blackstart Diesel, overhaul and painting. This material upgrade was completed on February 7, and May 10, 1990, respectively.

During a routine daily tour on April 26, 1990, a NRC inspector noticed a green PWO deficiency tag attached to the No. 4 Blackstart diesel controller. The deficiency tag for PWO 900418085444 stated that the diesel did not get up to required speed on April 18, 1990. During a subsequent tour of the control room the operators were not aware of a problem with the No. 4 Blackstart diesel and a review of the OOS log did not identify it as being OOS. At this time the operations department determined the diesel was OOS and logged it in the OOS log retroactive to April 18, 1990. The diesel was tested satisfactorily and placed back in service on April 30, 1990. The inspectors consider the only method to ensure that control room personnel are aware of the availability of required equipment is to maintain an accurate OOS log. The inspectors consider this an isolated case as the Blackstart diesels are routinely entered in the log when taken 00S, even though there is no requirement to do so.

The inspectors, as a result of routine plant tours and various operational observations, determined that the general plant and system material conditions were being satisfactorily maintained, plant security program was being effective, and that the overall performance of plant operations was adequate. No violations or deviations were identified in the areas inspected.

8. Plant Events (93702)

The following plant events were reviewed to determine facility status and the need for further followup action. Plant parameters were evaluated during transient response. The significance of the event was evaluated along with the performance of the appropriate safety systems and the



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actions taken by the licensee. The inspectors verified that required notifications were made to the NRC. Evaluations were performed relative to the need for additional NRC response to the event. Additionally, the following issues were examined, as appropriate: details regarding the cause of the event; event chronology; safety system performance; licensee compliance with approved procedures; radiological consequences, if any; and proposed corrective actions.

On May 13, 1990, with Unit 4 in Mode 1, 100 percent power, a low ICW pressure alarm was received in the control room. A reduction in ICW flow was noted; therefore, the operators started the 4C ICW pump and stopped the '4B ICW pump. These actions restored ICW pressure and flow to normal. On May 14, 1990, the intake well was inspected by a diver and the 4B ICW pump was tested. No obstructions were found in the well; however, testing revealed that the 4B pump was in the alert range for high differential pressure. Although the pump was still operable the licensee decided to replace the pump with a spare due to the rapid flow oscillations. Due to difficulties which could be experienced during the pump replacement, the licensee requested a Temporary Waiver of Compliance from the NRC Region II office (FPL to NRC letter L-90-184 dated May 15, 1990). TS 3.4.5.b.2 allowed one ICW pump to be out of service for a period of 24 hours. The licensee requested an extension of six days beyond the 24 hours. The justification was based on the RTS as submitted to the NRC on June 5. 1989, which allowed one ICW pump to be out of service for seven days provided two pumps are operable with independent power supplies. The licensee met this condition since the 4A ICW pump was operable with power supplied from the 4A 4160 Volt bus and the 4C ICW pump was operable with power supplied from the 4B 4160 Volt bus. The NRC reviewed the request and subsequently granted an extension of an additional 24 hours to complete repairs. This approval is documented in NRC letter to FPL dated May 16, 1990. The 4B ICW pump was taken out of service at 1:22 a.m. on The replacement pump was installed and tested May 15, 1990. satisfactorily and returned to service at 1:50 a.m. on May 16, 1990, well before the expiration of the granted 24 hour extension. The waiver of . The licensee initiated a root cause compliance is considered closed. investigation on the 4B ICW pump.

On May 18, 1990, with Unit 4 in Mode 1, the licensee discovered a control oil leak on the turbine left stop valve. The leak was located at a control oil line fitting. The fitting could have been tightened with the unit online; however, the licensee made a conservative decision to take the unit offline so as not to chance a plant transient if the oil line broke during tightening. Unit 4 came offline at 10:35 p.m. on May 18, 1990. The fitting was tightened, stopping the leak.

On May 19, 1990, at 4:10 a.m. the Unit 4 RCO received the motor overload annunciator after starting the turbine auxiliary oil pump in preparation for latching the turbine. Subsequent investigation revealed that the pumps high and low pressure impellers were damaged. The licensee shutdown the reactor at 8:32 a.m. on May 20, 1990, and continued with repairs of

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the auxiliary oil pump and filtering of the turbine lube oil to remove any metal fragments from the damaged pump.

On May 18, 1990, with Unit 3 in Mode 3 at an RCS temperature of 410 F, the licensee identified the cold leg SI BIT inlet valves (3-867A and B) locked closed. TS 3.4.1 requires all four SI pumps be operable with an operable flow path prior to criticality. However, procedure ADM-021, Technical Specification Implementing Procedure (Interum TS), revision dated April 12, 1990, requires an operable SI flow path when RCS temperature is raised above 380 F. Additionally, the procedure specifies that all more restrictive ADM-021 procedural requirements be followed unless a waiver is obtained. The licensee did not obtain a waiver of the requirement to have operable SI flow paths prior to exceeding an RCS temperature of 380 F. The failure to follow ADM-021 constitutes a violation of TS 6.8.1 and will be tracked as violation 50-250, 251/90-14-02. Investigation of the above event revealed that valves 3-867A and B were locked closed under a clearance order. When the clearance was lifted, the NWE mistakenly entered "locked closed" in lieu of the correct position of "locked open." At approximately 8:30 p.m. on May 18, unit 3 reached 380 F and the clearance was lifted. The system engineer performed a valve lineup verification per 3-OSP-202.1, SI/RHR Flowpath Verification, attachment 2, and notified the PSN at 10:45 p.m. that valves 3-867A and B were not in their required "locked open" positions. At that time RCS temperature was at 410 F. Although the SI system was isolated, the RHR (low head SI) system was operable. The inspectors determined that the licensee has adequate administrative controls to ensure a proper SI system alignment prior to heating the RCS above 380 F. The personnel error on the clearance order was identified by the licensee during a procedurally required flowpath verification. Operating procedures contained sufficient guidance for the operators when performing an RCS heatup above 380 F. However, the inspectors determined that the operators took a non-conservative approach to operations by heating above 380 F prior to the system engineer completing the SI system flowpath verification. If the operators had waited to verify proper SI system alignment, then the clearance error would have been identified before the flowpath was required. The inspectors noted commendable actions by the system engineer for identifying the mispositioned valves and promptly notifying the PS-N.

On May 19, 1990, with Unit 3 in Mode 3, the licensee discovered the breathing air isolation valve (3-6165) pinned open. This containment isolation valve was required to be pinned closed prior to entering Mode 4. The inspectors were investigating this event at the end of the report period therefore this item will be tracked as URI 50-250,251/90-14-03.

On May 21, 1990, at 11:45 a.m., with Unit 3 in Mode 3, the licensee discovered that the Unit 3 RVLMS was OOS due to the detector heaters being isolated on clearance 3-90-05-110-R for maintenance, which was issued at 5:50 p.m. on May 17, 1990. TS Table 3.5-5, Item 15, requires a minimum of one channel of RVLMS to be operable otherwise Action Statement 9 applies, which places the unit in an LCO. The LCO action statement requires that one channel be restored to operable status within 48 hours. If this

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cannot be accomplished, provisions must be initiated to monitor the reactor vessel inventory. In addition, TS 3.0.4 prevents entry into an Operational Mode unless the conditions for the LCO are met without reliance on provisions contained in the Action requirements. However, due to personnel error, Unit 3 entered Mode 3 at 7:15 p.m. on May 18, 1990, with both channels of RVLMS OOS which is not in accordance with TS 3.0.4. The failure to recognize the unit was required to be in an LCO and entry into Mode 3 with no channels of RVLMS operable is identified as Violation 50-250,251/90-14-01.

The inspectors expressed concern to licensee management regarding the three recent events on unit 3 that indicated a lack of attention to detail, i.e. Entry into mode 3 with both SI system flow paths locked closed, breathing air (containment) isolation valve pinned open and both channels of RVLMS inoperable. The licensee had already initiated actions based on their concern. On May 21, 1990 the licensee initiated a safety system alignment verification walkdown an both units, a containment isolation valve verification walkdown on both units, an instrumentation in service check on both units, and management held discussions with all operations personnel regarding the noted events emphasizing the need to ensure tasks are correctly accomplished regardless of schedule.

9. Management Meeting (94702)

A planning and scheduling meeting was held at the Turkey Point site on May 16, 1990. This meeting was held to discuss the planned dual unit outage scope, status of outage planning and other programmatic issues. A plant tour was conducted by the resident inspectors to update management on plant conditions due to activities in preparation for the dual unit outage. The licensee made presentations on outage planning, engineering and licensing activities and impact on plant procedures and training. Following the meeting, another tour was conducted of plant areas where the material condition upgrade has been completed. NRC management noted the improved appearance of the plant.

# 10. Plant Startup from Refueling (71711)

The inspectors witnessed/reviewed selected activities related to the Unit 3 Startup from Refueling Cycle XII. These reviews were performed to verify that the licensee properly restored systems affected by the outage and to ascertain whether plant startup and core physics testing were conducted in accordance with approved plant procedures.

a. The inspectors performed a walkthrough of the Emergency Diesel Generators, Safety Injection System, Residual Heat Removal System, and Containment Spray System. The following procedures were used to

verify that these systems were restored properly:

0-OSP-023.6 Diesel Generator System Flowpath Verification

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3-OSP-202.1 Safety Injection/Residual Heat Removal Flowpath Verification

3-OSP-068.3 'Containment Spray System Flowpath Verification

The inspectors did not identify any discrepancies in the areas reviewed.

b. The inspectors witnessed the licensee's approach to initial criticality on May 24, 1990. Operating Procedure (OP) 0204.3, Initial Criticality After Refueling, dated April 18, 1990, contained the instructions for achieving initial criticality, establishing the upper limit of the neutron flux level for zero power testing and to verify proper operation of the reactivity computer. Unit 3 achieved criticality at 1:30 a.m. on May 24, 1990. For further details of initial criticality and subsequent startup testing see IR 50-250,251/90-16.

#### 11. Exit Interview (30703)

The inspection scope and findings were summarized during management interviews held throughout the reporting period with the Plant Manager and selected members of his staff. An exit meeting was conducted on May 25, 1990. The areas requiring management attention were reviewed. No proprietary information was provided to the inspectors during the reporting period. The inspectors had the following findings:

Two violations, one unresolved item, two strengths and two concerns were identified.

50-250,251/90-14-01, Violation. Failure to take actions required by an LCO and entry into mode 3 with no channels of RVLMS operable. (paragraph 8)

50-250,251/90-14-02, Violation. Failure to follow procedure resulting in an inoperable SI system flowpath when RCS temperature was greater than 380 F. (paragraph 8)

50-250,251/90-14-03, Unresolved. Containment isolation valve 3-6165 found pinned open in lieu of the required pinned close position. (paragraph 8)

The inspectors identified a concern relating to the lack of attention to detail on Unit 3 which resulted in three events. (paragraph 8)

A strength was noted in that the system engineer identified mispositioned valves in the SI system during the system flowpath verification. (paragraph 8)

Another strength noted was managements conservative decision to take Unit 4 off line to repair a turbine stop valve control oil line fitting leak. (paragraph 8)

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Acronyms and Abbreviations

ADM Administrative AFW Auxiliary Feedwater Administrative Procedures AP American Society of Mechanical Engineers ASME Boric Acid Storage Tank BAST BIT Boron Injection Tank Component Cooling Water CCW Code of Federal Regulations CFR CS Containment Spray DP Differential Pressure Emergency Diesel Generator EDG ENS Emergency Notification System Emergency Response Data Acquisition Display System ERDADS ERT Event Response Team Florida Power & Light FPL Final Safety Analysis Report FSAR HHSI High Head Safety Injection Intake Cooling Water ICW **Inspection Enforcement** IE Inspector Followup Item IFI **Inspection Report** IR Interim Technical Specifications ITS -Limiting Condition for Operation LC0 Licensee Event Report LER Licensee Identified Violation LIV Loss of Coolant Accident LOCA Maintenance Procedures MP MT · Monitor Tank NCR Non-conformance Report Nuclear Plant Operator NPO Net Positive Suction Head NPSH Nuclear Regulatory Commission NRC Off Normal Operating Procedure ONOP Out of Service 00S **Operating Procedure** OP OTSC On the Spot Change Plant Change/Modification PC/M Plant Nuclear Safety Committee PNSC Plant Supervisor Nuclear **PSN** Physical Security Procedures PSP Quality Assurance OA. Quality Control **0**C **Reactor Control Operator** RCO Reactor Coolant Pump RCP Reactor Coolant System RCS Residual Heat Removal RHR **Revised Technical Specifications** RTS Reactor Vessel Level Monitoring System RVLMS Spent Fuel Pit SFP

SNPOSenior Nuclear Plant OperatorSROSenior Reactor OperatorTSTechnical SpecificationTSATemporary System AlterationURIUnresolved ItemWMTWaste Monitor Tank



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