



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

Report Nos.: 50-250/86-05 and 50-251/86-05

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, Florida 33102

Docket Nos.: 50-250 and 50-251

License Nos.: DPR-31 and DPR-41

Facility Name: Turkey Point 3 and 4

Inspection Conducted: January 13 - February 10, 1986

Inspectors:

S. Guenther
for T. A. Peebles, Senior Resident Inspector

2/28/86

Date Signed

S. Guenther
for D. R. Brewer, Resident Inspector

2/28/86

Date Signed

Approved by:

S. Guenther
for Stephen A. Elrod, Section Chief
Division of Reactor Projects

2/28/86

Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 238 direct inspection hours at the site, including 26 hours of backshift inspection, in the areas of licensee action on previous inspection findings, annual and monthly surveillance, maintenance observations and reviews, operational safety, independent inspection, and plant events.

Results: Violation - Failure to meet the requirements of Technical Specification (TS) 6.8.1 (paragraph 8).

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REPORT DETAILS

1. Licensee Employees Contacted

C. M. Wethy, Vice President - Turkey Point
*C. J. Baker, Plant Manager - Nuclear
*D. D. Grandage, Operations Superintendent - Nuclear
T. A. Finn, Operations Supervisor
J. Crockford, Assistant Operations Supervisor
J. Webb, Operations/ Maintenance Coordinator
K. L. Jones, Technical Department Supervisor
*B. A. Abrishami, Inservice Test (IST) Supervisor
D. Tomaszewski, Plant Engineering Supervisor
D. A. Chaney, Corporate Licensing
*J. Arias, Regulation and Compliance Supervisor
R. L. Teuteberg, Regulation and Compliance Engineer
*R. Hart, Regulation and Compliance Engineer
*J. W. Kappes, Maintenance Superintendent - Nuclear
O. E. Suero, Electrical Maintenance Supervisor
R. A. Longtemps, Mechanical Maintenance Supervisor
E. F. Hayes, Instrument and Control (IC) Maintenance Supervisor
V. A. Kaminskas, Reactor Engineering Supervisor
R. G. Mende, Reactor Engineer
R. E. Garrett, Plant Security Supervisor
P. W. Hughes, Health Physics Supervisor
W. C. Miller, Training Supervisor
J. M. Donis, Site Engineering Supervisor
J. M. Mowbray, Site Mechanical Engineer
L. C. Huenniger, Start-up Superintendent
R. H. Reinhardt, Acting Quality Control (QC) Supervisor
R. J. Acosta, Quality Assurance (QA) Superintendent
*W. Bladow, Quality Assurance Supervisor
J. A. Labarraque, Performance Enhancement Program (PEP) Manager
D. W. Hasse, Safety Engineering Group Chairman
*R. J. Earl, Quality Control Inspector

Other licensee employees contacted included construction craftsmen, engineers, technicians, operators, mechanics, electricians and security force members.

*Attended exit interview.

2. Exit Interview

The inspection scope and findings were summarized during management interviews held throughout the reporting period with the Plant Manager - Nuclear and selected members of his staff.

An exit meeting was conducted on February 12, 1986. The areas requiring management attention were reviewed.

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One violation was identified: Failure to meet the requirements of TS 6.8.1, in that the requirements of Administrative Procedure (AP) 0103.4, section 8.7, were not implemented when licensee personnel operated clearance tagged valves without completing required temporary lift authorizations (250,251/86-05-01) (paragraph 8).

Two Inspector Followup Items (IFIs) were identified: (1) Improve AP 0109.3, On the Spot Changes to Procedures, such that changes which are not time sensitive are implemented by procedure change requests rather than spot change requests (IFI 250,251/86-05-02) (paragraph 8); and (2) Modify the Inservice Test Program for Valves to delete the exemption request specifying only cold shutdown testing for the steam generator blowdown isolation valves (IFI 250,251/86-05-03) (paragraph 6).

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. The licensee acknowledged the findings without dissenting comments.

3. Management Meeting

a. A management meeting was held on January 31, 1986, with the licensee representatives identified below. The meeting was conducted in the Region II office at the NRC's request to discuss the status of the following issues:

- The licensee's discovery of construction debris in the Unit 3 and Unit 4 emergency containment coolers.
- The modifications being made to the Unit 4 reactor cavity seal.
- The licensee's auxiliary feedwater system availability/reliability study.
- The licensee's schedule for submittal and implementation of the Standard Technical Specifications.

These discussions with the licensee proved to be very beneficial in clarifying the history of these issues, their current status, and the licensee's plans to further resolve the NRC's concerns in these areas.

b. Licensee Attendees

C. J. Baker, Plant Manager - Nuclear
 F. H. Southworth, Senior Technical Advisor
 D. A. Chaney, Nuclear Licensing Supervisor
 J. Arias, Regulation and Compliance Supervisor
 J. A. Labarraque, Performance Enhancement Program Manager
 E. Preast, Site Engineering Manager
 J. J. O'Neill, Licensing Engineer
 L. F. Pabst, Power Plant Engineer
 J. E. Sheetz, Power Plant Engineer

NRC Attendees

R. D. Walker, Director, Division of Reactor Projects
A. F. Gibson, Director, Division of Reactor Safety
V. W. Panciera, Chief, Reactor Projects Branch 2
S. A. Elrod, Chief, Reactor Projects Section 2C
D. R. Brewer, Resident Inspector
S. Guenther, Project Engineer
G. Schnebli, Reactor Inspector

4. Licensee Action on Previous Inspection Findings (92702)

a. Performance Enhancement Program (PEP) Summary

The following personnel changes were recently announced: D. Jones has been assigned supervisor of the Procedure Upgrade Project; E. Preast was selected to a new position of Site Engineering Manager; and J. Labarraque will be returning as the Supervisor of the Technical Department.

b. Previously Identified Items

(CLOSED) Licensee Event Report (LER) 250-84-38 - The leaking vent pipe on the "B" emergency diesel generator day tank was replaced with a flexible, braided metal hose. The flexible hose has withstood vibration effects since December 1984 without incident. The repair appears satisfactory.

(OPEN) LER 250-85-40 and Violation 250/85-42-01 - This LER documented a Unit 3 reactor trip that occurred when a reactor operator improperly installed the fuses for source range nuclear instrument N-32. This event resulted in the issuance of violation 250/85-42-01. The instrument occasionally fails to energize as designed when reactor power is reduced to the source range. It is possible to energize the instrument by removing and reinserting the power supply fuses. During this procedure the channel must be placed in trip bypass to preclude the power surge induced flux spike indication from initiating a reactor trip signal. On February 12, 1986, the instrument again failed to energize when reactor power was reduced to the source range following a reactor trip. The fuses were removed and replaced causing the channel to energize. The licensee has determined, however, that a preamplifier must be replaced to correct this problem. Parts are not available onsite but have been ordered; delivery is expected in six weeks. This LER and the associated violation remain open pending replacement of the preamplifier.

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(OPEN) Violation 250/84-35-02 and 251/84-36-02 - This violation, issued on December 27, 1984, concerned inadequate surveillance of the auxiliary feedwater (AFW) system flow control valves. The valves in the AFW train not receiving flow were not verified to respond to open and close signals from the steam supply valves. In response to the violation the licensee modified Operating Procedure (OP) 7304.1, Auxiliary Feedwater System - Periodic Test, to require this verification. However, the modified procedure, since revised and renamed Operations Surveillance Procedure (OSP) 3/4-OSP-075.1, Auxiliary Feedwater System Train 1 Operability Verification, remains inadequate with respect to flow control valve verifications.

Inspection Report 250,251/85-40 documented an unresolved item (UNR 250,251/85-40-12) concerning the simultaneous operation of steam supply valves (MOV-1404 and MOV-1405) during train 1 AFW system testing. When the valves are operated together, as required in 3/4-OSP-075.1, it is not possible to verify that each valve is capable of independently causing the train 2 flow control valves to open on system actuation, and close upon system shutdown.

In response to Inspection Report 250,251/85-40, the licensee stated, in letter L-86-29, of January 31, 1986, that procedures 3/4-OSP-075.1 were again modified and that the procedures now require that each MOV be independently capable of opening all flow control valves.

Procedures 3/4-OSP-075.1 were reviewed by the inspectors on February 10, 1986, and it was determined that the procedures still failed to adequately address the steam supply valve - flow control valve surveillance. The procedures are adequate for testing the "A" AFW pump, in that MOV-1404 is used to supply steam to the pump, and the train "B" flow control valves are verified to open and close at the appropriate times. The "C" AFW pump is tested using steam supplied through MOV-1405. However, verification that the train "B" flow control valves open in response to opening MOV-1405 is optional. A note in section 7.2 of the procedures states that "step 19 may be marked N/A if AFW pump A has been tested during the performance of this procedure." Step 19 of section 7.2 is the step during which the flow control valves are verified to have opened in response to opening the steam supply valve, MOV-1405.

The procedure change which was referenced in licensee letter L-86-29 was made by On The Spot Change (OTSC) 3651, dated October 9, 1985. The OTSC failed to address all the procedure corrections necessary to fully test the response of the flow control valves with respect to operation of the steam supply valves. Due to an oversight, the licensee failed to identify this discrepancy; this resulted in letter L-86-29 containing inaccurate information.

The licensee is processing an additional OTSC to correct the problem. This violation (250/84-35-02, 251/84-36-02) will remain open pending completion of the licensee's corrective action and resolution of UNR 250,251/85-40-12.

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5. IE Information Notice (IEIN) Followup (92717)

(OPEN) IEIN 85-94, Potential for Loss of Minimum Flow Paths Leading to ECCS (Emergency Core Cooling System) Pump Damage During a LOCA (Loss of Coolant Accident). In addition to the corrective actions described in Inspection Report 250,251/85-44, the licensee has blocked open the recirculation flow path valves (856A and B) for each unit. Mechanically blocking these valves in the open position should assure that a minimum flow path always exists between the discharge of the safety injection pump and the containment spray pumps to the refueling water storage tanks. Long term corrective actions are under development.

6. Monthly and Annual Surveillance Observation (61726/61700)

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

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

- Unit 3 AFW Train 1 Operability Verification
- AFW Special Test 85-16
- Inservice Pump Testing for the "A" AFW pump
- "A" AFW Turbine Electronic and Mechanical Overspeed Testing

During the performance of procedure 3-OSP-075.1, the inspectors noticed that the procedure did not adequately verify the ability of all AFW steam supply valves to operate the opposite train's flow control valves. This discrepancy is discussed in paragraph 4 as a followup to violation 250/84-35-02 and 251/84-36-02.

On February 5, 1986, the inspectors noticed that the "3A" and "3C" steam generator blowdown isolation valves (CV-3-6275A and CV-3-6275C, respectively) were each tagged with a Plant Work Order (PWO) indicating that the valves had exceeded their normal closing stroke times. The stroke times had increased by 25 percent or more over the previous timing results but had not exceeded the maximum allowed stroke time.

A review was conducted to determine if the valves, which are normally tested quarterly, had been shifted to a monthly test schedule as required by the ASME Boiler and Pressure Vessel Code, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components. It was determined



that the valves were only being tested during cold shutdowns based on the licensee's submittal of a relief request from the quarterly at-power test requirements specified in the Code. The relief request was included in a revised pump and valve inservice test program submitted on March 30, 1984 (L-84-84) and applied to all three steam generator blowdown isolation valves (6275A, B and C). The basis for the relief request read as follows:

"These valves must remain open in order to meet steam generator manufacturer warranty requirements and to minimize steam generator degradation."

As a result, the licensee stated that the valves would only be tested during cold shutdowns.

The inspectors determined that cycling these valves for test purposes does not invalidate the manufacturers warranty on the steam generators. The limiting stroke time is 15 seconds, so during a routine stroke timing test, the valves would be shut for less than 30 seconds. A typical stroke time for these valves is approximately 5 seconds. No steam generator degradation should occur with the valves closed for such a short period of time.

Discussions with licensed control room operators indicated that no administrative instructions preclude closing the valves for short periods of time. Several operators indicated that they had cycled the valves while at power on numerous occasions and that the practice was considered acceptable for short-term closures.

Since it is both common and permissible for the control room operators to cycle the valves while at power, the request for exemption does not appear to provide adequate justification for limiting testing to the cold shutdown condition. IFI 250,251/86-05-03 will be used to track this issue and will remain open pending additional licensee justification documenting the problems associated with the short-term cycling of the valves.

7. Maintenance Observations (62703/62700)

Station maintenance activities on safety-related systems and components were observed and reviewed to ascertain that 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: that LCOs were met while components or systems were removed from service; that approvals were obtained prior to initiating work; that activities were accomplished using approved procedures and were inspected as



applicable; that procedures used were adequate to control the activity; that troubleshooting activities were controlled and repair records accurately reflected what took place; that functional testing and/or calibrations were performed prior to returning components or systems to service; that QC records were maintained; that activities were accomplished by qualified personnel; that parts and materials used were properly certified; that radiological controls were properly implemented; that QC hold points were established and observed where required; that fire prevention controls were implemented; that outside contractor force activities were controlled in accordance with the approved QA program; and that housekeeping was actively pursued.

The following maintenance activities were observed and/or reviewed:

- Repair of the AFW turbine steam admission stop check valves
- Inspection and repair of the "A" AFW turbine mechanical overspeed trip device (PWO 69-2920)

No violations or deviations were identified.

8. 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 that maintenance work orders had been submitted as required and that 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 on Unit 3 and Unit 4 to verify operability and proper valve/switch alignment:

- Emergency Diesel Generators (EDGs)
- Auxiliary Feedwater
- 4160 volt and 480 volt switchgear
- Control Room Vertical Panels and Safeguards Racks

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- a. Between November 19 and December 10, 1985, the "B" EDG day tank sight glass was out of service while maintenance was in progress on a tank level switch. The same valves used to isolate the level switch also isolated the sight glass. The sight glass level is required to be recorded by the Unit 3 Nuclear Plant Operator each day at 1:00 a.m.

During a review of the Nuclear Plant Operator's logs it was noted that the level readings on the "B" EDG day tank varied slightly over the time period when the sight glass was isolated. Since the EDG had not been run and the sight glass remained isolated, the inspectors asked the licensee to explain the level variations. The licensee determined that some Nuclear Plant Operators had, on occasion, opened the isolation valves to allow the sight glass to register the tank level. At the time, clearance tags were attached to the valves, specifying that they were not to be opened.

Administrative Procedure 0103.4, In-Plant Equipment Clearance Orders, dated August 28, 1985, specifies requirements for the administrative control of clearance tags. Section 8.7 of the procedure requires completion of a request for temporary lift of clearance prior to manipulating a clearance tagged valve. Between November 19 and December 10, 1985, some Nuclear Plant Operators operated clearance tagged valves without obtaining approval for a temporary lift. This action constitutes a failure to follow procedures.

Technical Specification 6.8.1 requires that written procedures and administrative policies be established, implemented and maintained that meet or exceed the requirements and recommendations of sections 5.1 and 5.3 of ANSI N18.7-1972 and Appendix A of USNRC Regulatory Guide 1.33.

ANSI N18.7-1972, section 5.3.5, requires that permission to release equipment for maintenance be granted by operating personnel. The equipment shall be made safe to work on. Measures shall provide for the protection of workers and equipment and strict control measures shall be enforced.

The failure to comply with TS 6.8.1 is a violation (250,251/86-05-01).

- b. On February 10, 1986, the inspector observed the performance of surveillance testing on the AFW system. Following the completion of procedure 3-OSP-075.1, Auxiliary Feedwater System Train 1 Operability Verification, the control room operator delayed the train 2 surveillance. The operator was concerned about the apparent conflict between two separate changes to procedure 3-OSP-075.2. The changes had both been properly approved as OTSCs, but when integrated into the body of the procedure, combined to make the procedure difficult to understand and implement.

The OTSCs were reviewed to determine how they combined to adversely affect the original procedure. OTSC 3855 was approved of January 23, 1986. The purpose of the change was to clarify instructions and appropriate signoffs for testing train 2 of the system with the "C" AFW pump aligned to that train. (The "C" AFW pump is normally aligned to train 1). OTSC 3855 was verified to be technically correct but the change required extensive handwritten numbering and lettering changes to 12 of the 27 pages.

OTSC 3924 was approved on February 10, 1986. The purpose of this change was to require closing the isolation valves for both the above and below seat drains on each AFW trip and throttle (T&T) valve. The following discrepancies were identified with this change and its integration with OTSC 3855:

- (1) The change was written without regard to the existence of OTSC 3855. It was developed by marking up a copy of the last approved full procedure revision (dated November 22, 1985). It inadvertently deleted two changes specifically instituted by OTSC 3855, by reinserting portions of original pages 17 and 22 that OTSC 3855 had modified. These changes affected the requirements to check and independently verify that the "C" AFW T&T valve was returned to the open position (attachment 2 of the procedure) and to return the governor speed control knob to the maximum setting after its operation in a previous step.
- (2) The change required seat drain valves to be shut for the T&T valve associated with the AFW pumps aligned to train 1 even though only the train 2 test was in progress. While this change causes no problem, it is not essential to the performance of the train 2 test and needlessly complicates the train 2 procedure. Additionally, the mixing of the train 1 seat drain valves with the train 2 test represents a change in the philosophy that had previously promoted separation of train testing.

The inspectors determined that neither OTSC was prompted by an urgent need to upgrade the surveillance such as might be necessary if the procedure did not verify a required parameter or constituted a threat to reliable equipment operation. The changes were the result of the licensee's efforts to improve the surveillance through fine-tuning. Procedures 3/4-OSP-075.2 are being revised to correct these discrepancies.

Discussions were held with the licensee regarding the benefits of reducing the number of OTSCs to a minimum. The licensee stated that staff members were aware that the OTSC system was being used on occasions when the nature of the change would justify a request for procedure revision. The procedure revision requires a longer time

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1. The first part of the document is a list of names and addresses. The names are: John Doe, Jane Smith, and Bob Johnson. The addresses are: 123 Main St, 456 Elm St, and 789 Oak St.

2. The second part of the document is a list of names and addresses. The names are: Alice Brown, Charlie White, and David Green. The addresses are: 101 Main St, 202 Elm St, and 303 Oak St.

3. The third part of the document is a list of names and addresses. The names are: Eve Black, Frank Grey, and Grace Blue. The addresses are: 404 Main St, 505 Elm St, and 606 Oak St.

4. The fourth part of the document is a list of names and addresses. The names are: Henry Red, Ivy Yellow, and Jack Purple. The addresses are: 707 Main St, 808 Elm St, and 909 Oak St.

5. The fifth part of the document is a list of names and addresses. The names are: Karen Pink, Leo Brown, and Mia Green. The addresses are: 1010 Main St, 1111 Elm St, and 1212 Oak St.



period for implementation, since the procedure is retyped to eliminate the use of handwritten changes. The licensee is evaluating methods of reducing the use of the OTSC when the procedure revision appears to be a suitable alternative. Progress in this effort will be reviewed at a later date under IFI 250,251/86-05-02.

9. Plant Events (93702)

An independent review was conducted of the following events.

On January 16, 1986, the "3C" steam generator (S/G) pressure transmitter, PT-3-495, failed high causing its input to the steam flow channel from that S/G to fail high. The "3C" S/G feedwater control system was affected and the operator took manual control.

On January 20, 1986, the licensee reported that an engineering evaluation dated January 13, 1986, had identified a single failure scenario which could result in only one of three emergency containment coolers and one of three filters being actuated during an accident. A failure of the "3B" battery would cause the loss of the "3B" 4160 volt sequencer which would de-energize the auto-transfer circuitry for the "D" motor control center (MCC).

On January 25, 1986, debris was found in the housing above the cooling coils in the "4A" and "4B" emergency containment coolers (ECC). This was believed to have been left there after the S/G outage several years ago. Unit 3 was shut down and the three ECCs were inspected, found to contain debris, and cleaned.

On January 26, 1986, a construction worker bumped a relay and initiated a spurious Unit 4 phase "A" containment isolation. The unit was in a refueling shutdown. All containment parameters were normal.

On January 28, 1986, during a Unit 3 start-up, the "A" and "B" main steam isolation valves (MSIVs) were opened normally, but the "C" MSIV failed to open fully. The cause was determined to be a failed solenoid valve. The qualified valve was taken apart by an instrument technician and no information about the failure was obtained. The licensee has contacted the vendor, ASCO, and has agreed that future failed solenoids will be sent to ASCO for proper troubleshooting.

On February 6, 1986, circuit number 2 of phase "A" containment isolation was actuated on Unit 4 while it was in refueling. Construction personnel were obtaining voltage readings and inadvertently actuated a relay which was thought to have been de-energized. All containment parameters were normal.

No violations or deviations were identified.

10. Independent Inspection

The inspectors routinely attended meetings with licensee management and monitored shift turnovers between shift supervisors, shift foremen and licensed operators. These meetings included daily discussions of plant operating and testing activities as well as discussions of significant problems or incidents. The inspectors reviewed potential problem areas to independently assess the following factors: their importance to safety; the adequacy of proposed solutions; improvement and progress; and adequacy of corrective actions. The inspector's reviews of these matters were not limited to the defined inspection program. Independent inspection efforts were conducted in the following areas:

- AFW System Stop Check Valve failure mechanism determination
- Management Control of Maintenance Repairs

No violations or deviations were identified.

