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

Report Nos.: 50-250/85-04 and 50-251/85-04

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

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

Facility Name: Turkey Point 3 and 4

Inspection Conducted: February 2 - March 11, 1985

Inspectors: Kenneth M Jenison for 3/26/85
T. A. Peebles, Senior Resident Inspector Date Signed

Kenneth M Jenison for 3/26/85
D. R. Brewer, Resident Inspector Date Signed

Approved by: Stephen A Elrod for 3/26/85
Stephen A. Elrod, Section Chief Date Signed
Project Section 2C
Division of Reactor Projects

SUMMARY

Scope: This routine, unannounced inspection entailed 219 inspector-hours on site, including 39 hours of backshift, in the areas of licensee action on previous inspection findings, Licensee Event Report (LER) followup, annual and monthly surveillance, annual and monthly maintenance, operational safety, Engineered Safety Features (ESF) walkdown, plant events, spent fuel pool storage rerack, and independent inspection.

Results: In the nine areas inspected no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

K. N. Harris, Vice President-Turkey Point
*C. J. Baker, Plant Manager-Nuclear
D. W. Haase, Chairman Safety Engineering Group
J. P. Mendietta, Service Manager - Nuclear
*D. D. Grandage, Operations Superintendent-Nuclear
*J. W. Kappes, Maintenance Superintendent-Nuclear
*J. A. Labarraque, Technical Department Supervisor
T. A. Finn, Operations Supervisor
P. W. Hughes, Health Physics Supervisor & Acting Operations Superintendent
*W. C. Miller, Training Supervisor
M. J. Crisler, Quality Control Supervisor
*K. L. Jones, Site QA Supertendent
L. C. Huenniger, Start-up Superintendent
W. R. Williams, Assistant Superintendent Electric Maintenance
J. Arias, Jr., Regulation and Compliance Engineer
*R. H. Reinhardt, Site Quality Control (QC)
*J. M. Donis, Site Engineering Supervisor
J. M. Mowbray, Site Engineer
P. J. Baum, Training Supervisor
V. A. Kaminskas, Reactor Engineering Supervisor
B. A. Abrishami, Inservice Testing (IST) Supervisor
R. G. Mende, Reactor Engineer
R. M. Brown, Health Physics (HP) Supervisor
D. Tomaszewski, Plant Engineer Supervisor
R. E. Garrett, Plant Security Supervisor
J. E. Moaba, Performance Enhancement Program (PEP) Program Manager
G. M. Vaux, Safety Engineering Group

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.

The exit meeting was held on March 8, 1985, with the persons noted above. The areas requiring management attention were reviewed. The licensee has agreed to pursue the following issues which will be reviewed as Inspector Follow-up Items: to develop and implement a controlled safety-related

material shelf-life program and to establish a program to change the diaphrams in Grinnel diaphram valves on an evaluated five year cycle (IFI 250, 251/85-04-01); and actions will be taken to improve post trip review corrective actions (250, 251/85-04-02). The licensee acknowledged the findings and agreed to the commitments.

The licensee did not identify as proprietary any of the materials provided to or revieweed by the inspectors during this inspection.

3. Licensee Action on Previous Inspection Findings (93702)

a. Monthly Update of Performance Enhancement Program (PEP)

The PEP was reviewed to determine if commitments were being met. Status was discussed with the PEP Manager and with other management. Major areas are on schedule. The procedures upgrade project is meeting its timetable, additional personnel have been added to clear backlogs in the review cycle, and the new procedures are being used by operations personnel. The region has been updated and agrees with the progress.

The Health Physics building is under roof and is progressing toward an on schedule completion. The Nuclear Administration building has been approved to include a third floor and the contractor is on site and on schedule.

Effective March 1, 1985, Mr. C. M. Wethy will be the site Vice-President Turkey Point and Mr. K. N. Harris will be the site Vice-President St. Lucie.

b. (Closed) Violation 250/84-22-05

LER 251/83-19 and LER 250/84-16 both involved missing an Iodine sampling Technical Specification (TS) surveillance requirement. Inspection Report 250/84-22 and 251/84-23 cited the second LER as an example of where the corrective actions from the first instance were inadequate to preclude recurrence. The violation and the LERs are closed as the corrective actions of changing the chemistry procedures to contact operations every four hours for plant status has been effective.

(Closed) Violation 250/84-35-01 and 251/84-36-01. The procedures have been changed for the periodic tests on the Reactor Protection system to record the as found voltages. Specifically, OP 14004.1, OP 14004.2, OP 14004.3, OP 14004.4, and OP 1804.1 have been changed which completed the corrective actions.

4. Unresolved Items (URI)

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

One unresolved item was identified (paragraph 10).

5. Licensee Event Report (LER) Followup (92700)

The following LERs were reviewed and closed. The inspector verified that: reporting requirements had been met; causes had been identified; corrective actions appeared appropriate; generic applicability had been considered; and the LER forms were complete. A more detailed review was then performed to verify that: the licensee had reviewed the event; corrective action had been taken; no unreviewed safety questions were involved; and violation of regulations or TS conditions had been identified.

(Closed) LER 250/83-19 On October 8, 1983, a hydrostatic test of the 'A' Reactor Coolant System (RCS) hot leg sample line caused a pressure transmitter to be over pressurized. The cause of the over pressurization of the pressure transmitter, PT-3-403, was an error in the piping drawings. The drawings were corrected and the pressure transmitter was replaced.

(Closed) LER 250/83-22. The high head safety injection stop valves were not closed during the shutdown of Unit 3 on October 2, 1983, as required by the TS. The procedure to close the valves was changed to add a precaution and an independent verification sign-off to assure that valves were closed as required prior to cooling below 380 degrees.

(Closed) LER 250/83-23 and LER 250/83-24. The two events occurred December 1 and 8, 1983, and were related, as both dealt with the de-energizing of the Unit 3 spent fuel pit exhaust monitor. The corrective actions to label the breaker and to supply power from a vital bus have been completed.

(Closed) LER 250/83-26. On December 15, 1983, a portable air compressor rolled down a ramp and damaged the diesel generator fuel supply line and valves. The corrective actions to repair the piping and to install guard posts along the ramp have been completed.

(Closed) LER 251/83-05. On June 1, 1983, a piping snubber was determined to be inoperable due to a modification not having been completed. Maintenance procedure MP 0707.2 which was controlling the inspections was changed to include TS reference and to include actions to be taken. The procedure sign-off for completion of work in procedure OP 16001.2 was changed to clarify the individual meaning of the sign-offs.

(Closed) LER 251/83-07. On August 3, 1983, the Pressurizer Relief Tank (PRT) rupture disc ruptured. The temperature in the PRT was high due to valve leakage into the tank and cooling spray water was being added. The procedure for cooling the PRT has been changed and the valves which were leaking have been repaired.

(Closed) LER 251/83-08. On August 6, 1983, a control rod drive mechanism (CRDM) dropped due to an open stationary coil caused by leakage from the CRDM vent valve. The vent valves were retorqued and the CRDM coil replaced.

(Closed) LER 251/83-11. On August 9, 1983, the required vent path was not available on the Reactor Coolant system when both power operated relief valves were out of service. The cause was lack of coordination between the Maintenance and Operation departments. A coordinator has been assigned and has been effective.

(Closed) LER 251/83-12. On August 19, 1983, the containment isolation valve for breathing air was pinned open when containment integrity was required. The procedures were changed to identify the valve as a containment integrity valve and to require it to be pinned closed when plant conditions require containment integrity.

(Closed) LER 251/83-15. On September 13, 1983, containment integrity was violated to repair a remote valve operator inside the personnel hatch. The inner door had the strong back installed and the entry had to be made as the valve was leaking. The valve and operator were repaired.

(Closed) LER 251/83-20. A hydrostatic test was not performed as required by the design change to add recirculation piping to the high head safety injection system prior to declaring the system 'operable'. The increased management attention to the completion of design changes prior to the involved system or component being declared 'operable' has been reviewed and found to have been effective. The reorganization of the site with the backfit personnel reporting to the site Vice-president has improved the degree of this attention and improved the communication between the groups.

(Closed) LER 251/83-21. The 4B safety injection accumulator relief valve lifted early on December 7, 1983. The program which the licensee is undertaking to test all safety-related relief valves on a five year cycle will minimize the likelihood of this recurring. The licensee reset the other unit 4 accumulator relief valves in February 1985 and will test the unit 3 valves during the April 1985 outage. The program for testing relief valves will continue to be covered as an Inspector Follow-up Item (IFI 250, 251/85-02-05).

(Closed) LER 251/83-22. On December 19, 1983, the Boric Acid Storage Tanks were outside of the TS limits. Communication between operations and chemistry has been proceduralized and has improved and the problem has not recurred.

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

The inspectors observed TS required surveillance testing and verified: 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 (LCO) 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 that any deficiencies identified during the testing 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:

Flux Mapping on Units 3 and 4
Reactor Protection - Periodic Test
Pressurizer Pressure and Water Level - Periodic Test
Auxiliary Feedwater System - Periodic Test
Engineered Safeguards - Periodic Test
Emergency Diesel Generator - Periodic Test
Diesel Fire Pump - Periodic Test
Boric Acid Pump Operability Test

The procedures have been changed for the periodic tests on the Reactor Protection system to record the as found voltages. Specifically, OP 14004.1, OP 14004.2, OP 14004.3, OP 24004.4, and OP 1804.1 have been changed which completes the corrective actions for violation 250/84-35-01 and 251/84-36-01.

No violations or deviations were identified.

7. Monthly and Refueling Maintenance Observations (62703/62700)

Station maintenance activities of safety-related systems and components were observed/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: LCO were met while components or systems were removed from service; redundant components were operable; approvals were obtained prior to initiating the 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 the repair record accurately reflected what actually took place; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; QC hold points were established where required and were observed; fire prevention controls were implemented; outside contractor force activities were controlled in accordance with the approved Quality Assurance (QA) program; and housekeeping was actively pursued.

The following maintenance activities were observed and/or reviewed:

Boric acid transfer pump, maintenance
Steam flow transmitter, instrument line repair
Steam generator level control, repair
Steam generator blowdown hangers, repair
Heat tracing circuits, repair
Battery chargers, preventive maintenance

During a review of maintenance, purchasing and storeroom control, the inspector found that QC was currently studying the need of a shelf-life program. However, a replacement program for diaphrams in Grinnel valves was not a part of the study. The licensee talked to Grinnell and confirmed that the vendor recommended an evaluated five year life for installed diaphrams. The licensee has agreed to develop and implement a controlled safety-related material shelf-life program and as part of their preventative maintenance program to replace the diaphrams in Grinnell diaphram valves on an evaluated five year cycle. The development of these two programs will be an Inspector Follow-up Item (IFI 250, 251/85-04-01).

No violations or deviations were identified.

8. Operational and 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, reviewed tagout records, verified compliance with TS LCO and verified return to service of affected components.

The inspectors by observation and direct interviews verified that the physical security plan was being implemented in accordance with the station security plan.

The inspectors verified that maintenance work orders had been submitted as required and that followup and prioritization of work was on-going.

The inspectors observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection control.

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 Units 3 and Unit 4 to verify operability and proper valve alignment:

High Head Safety Injection
Emergency Boration
Containment Spray
Auxiliary Feedwater
Residual Heat Removal
Emergency Diesel Generators
4160 Volt and 480 Volt Switchgear
Containment Electrical Penetrations

No violations or deviations were identified.

9. Engineered Safety Features Walkdown (71710)

The inspector verified operability of the Containment Spray systems on Units 3 and 4 by performing a complete walkdown of the accessible portions of the system. The following specifics were reviewed and/or observed as appropriate:

a. that the licensee's system lineup procedures matched plant drawings and the as-built configuration;

b. that equipment conditions were satisfactory and items that might degrade performance were identified and evaluated (e.g. hangers and supports were operable, housekeeping etc, was adequate);

c. with assistance from licensee personnel, the interior of the breakers and electrical or instrumentation cabinets were inspected for debris, loose material, jumpers, evidence of rodents,etc.;

d. that instrumentation was properly valved in and functioning and calibration dates were appropriate;

e. that valves were in proper position, breaker alignment was correct, power was available, and valves were locked as required; and

f. local and remote instrumentation was compared, and remote instrumentation was functional.

The inspector performed these walkdowns after the licensee discovered, on February 18, 1985, that the 4A Containment Spray Pump (CSP) breaker would not have closed on an initiating signal.

No violations or deviations were identified.

10. Plant Events (93702)

An independent review of the following events was conducted:

a. On February 6, 1985, at 6:17 a.m., Unit 4 tripped from 27% power during startup due to the 'A' steam generator level reading low coincident with 'A' steam generator steam flow indicating higher than feedwater flow. After the trip, the steam flow channel, FC-475, was reading above zero due to an offset. The post trip review stated that the steam flow transmitter was corrected, but as shown below this statement was not correct.

On February 7, 1985, at 6:40 a.m. with both units at 100% power, a bushing flashover occurred on the A phase of a 240 KV switchgear. Protective relay action tripped three switchyard breakers which resulted in the loss of Unit 3's startup transformer and the 3C transformer which was supplying the 4C bus. 4B main feedwater pump was being supplied from the 4C bus and loss of the pump caused an automatic turbine runback and a reactor trip. At 6:52 a.m., a safety injection signal on Unit 4 was initiated by low-low Reactor Coolant System Average Temperature (Tavg) coincident with high steam flow. Tavg was actually low and was due to the transient, but the high steam flow indications were not real as the main steam isolation valves had been closed earlier in the transient. Two high steam flow channel signals are required to make up the other portion of the logic: one steam flow transmitter, FC-485, had a blown fuse which caused the channel to fail-safe (high flow indication) and actuate; and the other channel, FC-475, was actuated by the transmitter with the zero offset which had not been repaired from the earlier trip on February 6.

This steam flow channel had been the subject of troubleshooting on February 6 and the offset was found to be at the transmitter inside of containment. As the offset was not sufficient to trip the bistable and it was reading high, a considered conservative direction, the instrument shop turned the steam flow channel over to operations as operable. These events could constitute a violation as inadequate corrective action was taken following a reactor trip; e.g., a protection channel was returned to service and was not operable and the unit was restarted. However, the inspector found that: the licensee identified these problems; adequate corrective actions were being pursued; previous corrective actions would not have prevented the event; and the violation would have been a level IV or V. Therefore, this is not a violation and the corrective actions will be followed as an Inspector Follow-up Item (IFI 250, 251/85-04-02). The corrective actions include changing the post trip review procedure to require the Plant Supervisor-Nuclear (PSN) to describe the event and what maintenance is required to repair discrepancies and then when the repairs are made to agree that they are adequate. Also, the instrument department will be reinstructed as to what constitutes operability with emphasis that complete operability is required.

At 7:40 a.m. on February 7, Unit 3 began reducing power to less than 50% power as required by an NRC commitment in the Confirmation of Action Letter of February 16, 1984. This action is to be taken whenever either start-up transformer is not operable. 50% power was reached at 10:07 a.m. and the unit remained there until the start-up transformer was placed back in service.

b. At 8:10 p.m. on February 17, 1985, Unit 3 steam generator blowdown isolation valve to the circulating water discharge (LCV-3-6265B) was found failed open. The cause was that a collar mounted on the Valvetek actuator stem was out of position as it had slid down the stem. This resulted in the positioner feedback mechanism failing which prevented the valve from venting and would not have allowed it to close on a signal from the radiation monitor.

c. On February 18, 1985, at 10:40 a.m., a Shift Technical Advisor (STA) was touring the Unit 4 A, B, C and D 480 volt AC Load Centers with two trainees. She was instructing the trainees what the proper positions of the breakers should be and how the breakers worked. The 4A Containment Spray Pump (CSP) breaker was observed, as follows: to be racked in position; to have indication that it was OPEN and that the "Springs Discharge" flag was displayed; and the "Charging Power" toggle switch was OFF. This was reported to the (PSN). The other pertinent plant conditions were as follows: Unit 4 was at 100% power. The 4B CSP was operable. The Emergency Diesel Generators were operable. The Unit 4 Emergency Containment Coolers were operable. The 4A CSP breaker "Charging Power" toggle switch was placed to "On" and the springs charged. Both pumps were retested per procedure OP 4004.1.

This breaker is an ITE type K-600 for 480 volt AC. The "Charging Power" toggle switch is located on the outside at the bottom of the breaker cover. The indications for "Open/Closed and Springs Charged/Springs Discharge" are flags which are seen through the breaker cover. The outside of the breaker is racked in and out and can be easily seen. With the breaker in the "Open" Position and the "Springs Charged" and the "Charging Power" toggle switch "Off", the breaker will close once upon command. The breaker will then trip as required, but the closing springs will not recharge and the breaker will remain open until the springs are recharged. This will not occur until the "Charging Power" toggle switch is placed to "On". When the "Charging Power" toggle switch in the "On" position, the breaker will respond to signals for closure by supplying power to recharge the closing springs.

The unit had been in power operation since February 6, 1985, which is when the 4A CSP was proven operable by the surveillance test OP 4004.1, Containment Spray Pumps - Periodic Test. The inspector's review of records showed that no maintenance to the 4A CSP had been accomplished in the period to account for the breaker having been realigned, but construction was on-going in the area of the breaker and inadvertent bumping of the switch could have occurred. Therefore, the inspector concludes that the most probable scenario was that: the closing

springs were charged prior to February 6, 1985, and the "Charging Power" toggle switch was "Off" on February 6, when the 4A CSP was started for the test, thus the breaker closed when required; when the breaker was tripped at the end of the test, the springs did not recharge; and that was the condition that was found on February 18. Further review of this event will be documented in a later inspection report, as Unresolved Item (UNR) 250, 251/84-04-03 and will be the topic of a March 28, 1985 enforcement conference.

d. At 8:07 p.m. on February 26, 1985, a Nuclear Operator found a small fire and smoke coming from the 4B boric acid transfer pump. The fire team responded and extinguished the fire with a Carbon Dioxide extinguisher. The pump and associated heat tracing were repaired, tested and placed back in service and declared operable on February 28, 1985, at 5:34 p.m. The TS requirement of three out of four boric acid pumps operable was not met beginning at 3:45 p.m. on February 27 when testing on 3B pump was not satisfactory and the 24 hour action statement was entered. Therefore, at 4:45 p.m. on February 28, a Unit 3 shutdown was begun and ceased when the 4B pump was declared operable. The shutdown initiation was reported to the NRC.

e. At 7:40 a.m. on March 4, 1985, the Unit 3B steam generator steam flow indicators (FT-3-484 and 485) began reading high; the steam flow protection channel associated with FT-3-485 reached the trip setpoint and automatically tripped; and FT-3-484 was reading 350 Klbs/hr high, but less than the trip setpoint. The containment sump level began to increase and a containment entry was made. The instrument line to the low side of FT-3-485 was found leaking which affected both transmitters, but was isolable by the root valve on the FT-3-485 side. The line was replaced that morning.

   At 6:48 a.m. on March 6, 1985, the FT-3-485 channel failed low and FT-3-484 began reading 300 Klbs/hr low. The containment entry found the high side of FT-3-485 to be leaking, which was replaced that morning. The inspector was present at the onset of each event and the operations staff responded promptly and properly.

11. Spent Fuel Storage Racks (50095)

The rerack of the Spent Fuel Pit (SFP) was inspected and evaluated:

- To determine whether the technical requirements detailed or referenced in the facility's submitted Safety Analysis Report (including changes) associated with spent fuel storage racks have been adequately addressed in the construction/installation specification, drawings and work procedures.

- To determine by direct observation and independent evaluation of work, whether the licensee work control system was functioning properly and whether the installation of spent fuel storage racks is in compliance with NRC requirements, licensee commitments and applicable codes.

- To review a sample of records associated with the installation of SFP storage racks to determine whether the licensee is adequately preparing, reviewing and maintaining a system of quality records; whether there is reasonable assurance that the records reflect work accomplishment consistent with the stated requirement; and whether the records indicate any potentially generic problems, management control inadequacies or other weaknesses that could have safety significance.

- The inspector reviewed Health Physics records of surveys and personnel dosimetry and randomly inspected the on-going work. The last of the old racks have been removed and all of the new racks are in place. The licensee has sized the individual tubes for fit and only four have not had the required clearances. These will be used for storage of other devices than spent fuel assemblies.

No violations or deviations were identified.

12. Independent Inspection Effort (92706)

During the reporting period the inspectors routinely attended meetings with licensee management and monitored shift turnovers between shift supervisors, shift foreman and licensed operators. These meetings and discussions provided a daily status of plant operating and testing activities in progress as well as a discussion of significant problems or incidents.

Several issues, itemized below, have been pursued by both the licensee staff and the inspectors without achieving resolution. The inspectors met with licensee management to clarify current positions and interpretations. As a result the licensee is preparing progress and status reports in the following areas:

- To provide information resolving the apparent discrepancy between: the TS basis, B.3.4.2, which indicates that two emergency containment coolers can provide the assumed accident analysis cooling capacity of one containment spray pump; and several sections of the Final Safety Analysis Report (FSAR) which states that no analysis was done to support that statement.

- To provide the basis for the design of the main steam isolation valves, specifically what was assumed for the closing times and what was the specified surveillance testing requirements.

No violations or deviations were identified.