



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30303

Report Nos.: 50-250/83-41 and 50-251/83-40

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 at Turkey Point site near Homestead, Florida

Inspectors: Frank Jape  
for H. Krug, Reactor Inspector  
S. Weise  
S. Weise, Reactor Inspector

2/6/84

Date Signed

2/3/84

Date Signed

Accompanying Personnel: R. Brewer

Approved by: Stephen A. Elrod  
Stephen A. Elrod, Chief, Project Section 2C  
Division of Project and Resident Programs

2/6/84

Date Signed

#### SUMMARY

Inspection on December 3, 1983 - January 6, 1984

#### Areas Inspected

This routine, unannounced inspection involved 129 inspector-hours on site in the areas of Plant Operations, Surveillance testing, Maintenance, Documentation, Licensee Program Improvements and Fire protection.

#### Results

Of the six areas inspected, no violations or deviations were identified in four areas; and two violations were identified in two areas, failure to compensate Intermediate Range Nuclear Instrumentation adequately (paragraph 7), and failure to maintain adequate plant change documentation (paragraph 9). Five examples of violations which had been previously identified in Report 250, 251/83-38 were identified in one area.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

K. N. Harris, FPL/Manager - Nuclear Energy  
H. E. Yaeger, Site Manager - PTP  
\*C. J. Baker, Plant Manager - Nuclear  
D. T. Hunt, FPL/Security  
B. C. LaPira, Fire Protection Supervisor  
D. W. Jones, QC Supervisor  
\*M. J. Chrisler, QA Supervisor  
J. A. Labarraque, Technical Supervisor  
J. P. Mendieta, FPL/Maintenance Superintendent  
\*D. W. Haase, Operations Superintendent - N  
T. A. Finn, Operations Supervisor - N  
J. E. Moore, Start-up Superintendent - N  
T. Essinger, Assistant Manager, Quality Assurance  
A. G. Abbott, Start-up Supervision

Other licensee employees contacted included technicians, operators, mechanics and security force members.

### 2. Exit Interview

The inspection scope and findings were summarized on January 6, 1984, with those persons indicated in paragraph 1 above. The inspectors conducted frequent unprogrammed discussions with the plant manager and various members of his supervisory staff. Significant aspects associated with the inspection scope and relevant findings were routinely brought to their attention.

During the exit meeting, the licensee described and committed to a program of improvements associated with the areas inspected. These features are described in this report in section 10, Licensee Program Improvements. Subsequent to this inspection the licensee also provided a letter of commitment on January 13, 1984 (Woody-Dance).

### 3. Licensee Action on Previous Enforcement Matters

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Violations Noted in Inspection Report 250, 251/83-38

Several additional examples of those violations noted in Inspection Report 250, 251/83-38 have been included in this report. These examples support the aforementioned violations. As discussed in a telephone conversation between H. C. Dance, Chief, Branch 2, Division of Project and Resident Programs, NRC Region II and J. W. Williams, Vice President, Nuclear Energy, Florida Power and Light on January 11 and 12, 1984, the number of procedural violation examples indicates a need for increased management attention.

6. Plant Operations

The inspector kept informed on a daily basis of the overall plant status and any significant safety matters related to plant operations. Discussions were held with plant management and various members of the operations staff on a regular basis. Selected portions of daily operating logs and operating data sheets were reviewed during the report period. The inspector conducted various plant tours and made frequent visits to the control room. Observations included witnessing work activities in progress, obtaining the status of operating and standby safety systems, confirming valve positions, observing instrument readings and recordings, annunciator alarms, house-keeping, radiation area controls, and vital area controls. Informal discussions were held with operators and other personnel on work activities in progress and the status of safety-related equipment or systems.

On December 4, 1983, the inspector observed the shutdown and restart of the Unit 4 and monitored plant personnel to verify compliance with Operating Procedure (OP) 0205.1, Unit Shutdown, and OP-0202.2, Unit Startup. No discrepancies were noted.

7. Surveillance Testing

The inspector observed portions of various surveillance testing activities in progress on safety-related systems to ascertain whether testing was conducted in accordance with approved procedures; test instrumentation was calibrated; the testing was not violating limiting conditions of operation (LCO); systems tested were removed from service and returned to service following the testing in accordance with required administrative controls; radiological controls were implemented as applicable; surveillance test documentation was reviewed and that discrepancies were rectified; and that surveillance tests results and schedules met TS requirements.

On December 4, 1983, the inspector observed the performance of OP 4104.2, Engineered Safeguards and Emergency Power Systems - Integrated Test. This included accompanying operations personnel during post test verification and review of OP 4101.2 for completeness, accuracy and compliance. No safety-related discrepancies were noted. All engineered safeguards and emergency power systems appeared to perform as designed.

## 8. Maintenance Activities

The inspectors observed various maintenance activities in progress on safety-related systems to ascertain that the activities were not violating LCO; redundant components were operable; required administrative approvals and tagouts were obtained prior to initiating the work; approved procedures were used; replacement parts and materials used were properly certified; radiological controls, as applicable, were being implemented; Quality Control hold points were observed; and equipment was properly tested prior to returning to service.

- a. On December 4, 1983, the inspector observed the performance of maintenance procedure (MP) 12207.1, Intermediate Range Nuclear Instrumentation (IRNI) Compensatory Voltage Adjustment. The compensating voltage adjustment was being performed before the shutdown rod banks were inserted into the core. Section 4.1 of MP-12207.1, Precautions and Limitations, requires the shutdown rod banks to be on the core bottom prior to beginning the compensating adjustment. Section 5.1, Related System Status, also requires that the shutdown rod banks be on the core bottom before the adjustments begin. The requirement to have shutdown rods on the bottom is occasionally ignored because boron concentration is periodically used to establish shutdown margin and the shutdown rod banks are left fully withdrawn from the core. This situation has generated a belief by the operators that the position of the shutdown rods is not crucial to the accurate performance of the voltage adjustment. The licensee expressed the belief that the requirement to have shutdown rod banks on the bottom exists to force a 20-minute wait after shutdown to allow reactor power to decrease to a level of approximately  $1 \times 10^{-11}$  ion-chamber-amps where gamma rays contribute significantly to intermediate range detector output. A requirement to wait 20 minutes prior to starting the compensatory voltage adjustment is not actually mentioned in MP-12207.1. Subsequently, the licensee revised MP-12207.1, adding a precaution to wait 20 minutes after shutdown prior to commencing the procedure and deleting the requirement that shutdown rods be on the core bottom. The inspector reviewed vendor supplied technical manuals and found no stipulations imposed on shutdown rod position and consequently did not take exception to the revision. The failure on December 4, 1983, to follow MP-12207.1 during IRNI voltage compensation is a violation, and will be reviewed as 250, 251/83-41, 40-01.
- b. On December 16, 1983, the inspector observed maintenance activities on B emergency diesel generator air pressure regulator. The 240/200 psi reducer was leaking to the atmosphere causing the emergency start air flasks to lose pressure and preventing an adequate air supply from reaching the air start motors. The valve replacement was performed satisfactorily and no discrepancies were noted.
- c. On December 21, 1983, the inspector reviewed the results of OP-4004.1, Containment Spray Pumps - Periodic Test, to verify that corrective maintenance for severe pump vibration problems had been successfully



accomplished. The inspector had previously observed several attempts to balance and realign the motor and coupling. No discrepancies were noted in the maintenance procedures and the excessive vibration in pumps 3A and 3B were determined to be flow related. New recirculation lines for the containment spray pumps had recently been installed and new vibration baseline data is being obtained. When the new recirculation line was used instead of the original recirculation line, the vibrations were markedly reduced. Both pumps vibration values were found to be above the normal range and are within the alert range. This requires the frequency of testing to be doubled until the cause of the deviation is determined and corrected. This item will be reviewed as IFI 250, 251/83-41, 40-06.

#### 9. Documentation Inadequacies

The following instances of documentation inadequacies are related to recent plant changes (PC/M) to the respective systems:

- a. On December 20, 1983, while conducting a partial walkdown of the Unit 4 Containment Spray and Safety Injection system, the inspectors observed that the recent addition of recirculation test piping was not reflected on licensee controlled drawing 5610-T-E-4510, Sheet 1, Revision 16. This drawing did not contain the following as-built features:
  - (1) Safety injection pump recirculation test piping and associated valves numbered 899, H, K, L, T, R, U.
  - (2) Containment spray pump recirculation test piping and associated valves numbered 896, R, S, T.
  - (3) Safety injection pump bearing cooling lines and associated valves.
- b. On December 8, 1983, the inspector observed the performance of control room personnel as they responded to an inadvertant initiation of the Unit 3 480V load center degraded voltage protection system. The inspector was unable to locate any information, available to control room personnel, which indicated that the degraded voltage protection system was installed or functional. Investigation led to the following findings:
  - (1) Operations personnel were not aware that the undervoltage protection system had recently became functional.
  - (2) Operations personnel had received no formal brief or training summary concerning the undervoltage modification and consequently were not thoroughly familiar with its purpose or operating mechanisms.
  - (3) No updated electrical drawings existed in the control room with which to analyze system performance.

- (4) Off normal operating procedures for electrical distribution casualties had not been updated to reflect the changes in electrical system automatic response brought about by the installation of the undervoltage protection system.

While the plant changes are not signed off as complete, the systems are functional and capable of affecting the operation of the plant. A number of licensee administrative procedures required that information to be used by licensed reactor operators in the performance of their licensed operating activities be provided in advance of making functional any unit modifications which change the operating characteristics of safety-related systems. These include: Licensee Administrative Procedure 0103.10, Updating and Using Plant Drawing, Section 3.2.1 requires the Technical Department to provide interim drawings to reflect recent changes to systems. Licensee Administrative Procedure 0190.15, Plant Projects-Approval, Implementation and Regulatory Requirements, requires training/operating drawings to be provided to the Start-up Organization at the time of system acceptance. Licensee Administrative Procedure 0103.17, System/Equipment, Acceptance/Turnover to Nuclear Plant Staff, requires a complete as-built package submittal from the Construction Department at the time of acceptance.

Contrary to the requirements of the administrative procedures, three recently modified systems (Safety Injection Test Recirculation system, Containment Spray Test Recirculation systems, Under-Voltage subsystem) were made functional without all the required operating information being made available to the Operations Department. This is a violation 250, 251/83-41, 40-07.

#### 10. Licensee Program Improvements

The failure to update operating information (paragraph 9) is not only a failure to follow procedure but is also a symptom of a significant weakness in the program for completion of changes and subsequent testing. During the course of this inspection, licensee management outlined an improvement plan intended to evaluate the procedures being used for turnover and test to establish the requirements for information needed, by operators and others, during the various stages of hardware systems turnover. At the exit meeting, the licensee reiterated certain characteristics of this turnover and test program and stated that personnel were already working to upgrade the program. Some of the more significant features were stated to be:

- a. A series of partial turnovers is being established, and has seen some use. A major feature of interest is that a partial turnover to operations will be performed anytime the unit is modified such that the safety-related characteristics of a unit is changed. The primary focus is between Startup and Operations.
- b. A new signoff stage is being defined for Operations in that, Operations must certify that it possesses the prescribed turnover documentation

and that it has sufficient information and training to operate the modified unit. This information will reside in the control room. The program will constrain operations to identify the need for missing or additional information as soon as practicable.

- c. A written mechanism for corrective action will prescribe mandatory action to be taken when turnover packages are either incomplete or inadequate.
- d. The current process, which appears to be functioning well, whereby organizations, such as Operations and Training, provide coordinators to Startup, will be formalized.
- e. The program upgrade is to be supported with appropriate training on its use, especially for licensed operators.
- f. QA/QC programs will be appropriately expanded to encompass the program upgrade.
- g. The procedures for conducting Project PC/M Meetings, prior to an outage, will be changed to require the identification of "training intensive" modifications; and to prescribe the specific documentation and training operators must have prior to making the modification functional.

#### 11. Fire in Unit 3 Containment (93702)

On December 17, 1983, a small fire occurred in the lagging on the bowl of C Reactor Coolant Pump (RCP). The fire was extinguished within ten minutes with no equipment damage or personnel injury. The inspectors reviewed the operating logs and discussed the event with licensee personnel.

Smoke was observed in containment about 6:15 a.m. and operations personnel were sent to identify the source. About 30 minutes later, the source of the smoke was identified as oil soaked lagging on the bowl of C RCP. Maintenance personnel were notified to remove the oil soaked lagging, however, the lagging was not removed. About 9:40 a.m., Maintenance personnel informed dayshift operations personnel that the problem was not oil soaked lagging and further corrective action was not taken. At about 12:20 p.m., the oil soaked lagging burst into flame and was extinguished by fire brigade personnel.

The inspectors had the following findings:

- a. The lagging became oil soaked during maintenance activities associated with the C RCP lubricating oil system, which occurred earlier in the outage. Based on discussions with fire protection personnel and a review of housekeeping procedures, oil spillage should have been cleaned up by maintenance personnel or reported if more extensive corrective action was necessary.

- b. The licensee plant staff identified the cause of the smoke and the potential fire hazard associated with oil soaked lagging on the hot RCP surface, but did not ensure that corrective action was taken to preclude a fire, which eventually resulted.

The failure to implement proper maintenance and housekeeping in accordance with Quality Procedure 2.10, Revision 0, is a further example of the failure to follow procedures cited in report 250, 251/83-38, and will be reviewed as 250, 251/83-41, 40-02.

## 12. Plant Tour (71707/71710)

- a. Various plant tours were conducted by the inspectors. Attention was focused on the operability of safety-related equipment in the following areas; cable spreading room; inverter and battery room; motor generator set and battery rooms; rod control equipment rooms; switchgear rooms; diesel generator and day tank room; and auxiliary building.
  - (1) On December 14, 1983, the inspector verified the proper lineup of the auxiliary feedwater system. No safety-related discrepancies were noted. One fire extinguisher was found which was overdue for its monthly check. The extinguisher belonged to construction personnel and it was not currently in use by a fire watch.
  - (2) On December 16, 1983, the inspector verified the proper lineup of major electrical circuit breakers. No significant discrepancies were noted.
  - (3) On December 23, 1983, the inspector verified the correct lineup of portions of the fire protection system. Numerous normally-open isolation valves were verified to be open. The deluge systems for the major transformers were verified to be operational. No significant discrepancies were noted.
- b. On December 20, 1983, the inspectors conducted a partial walkdown of the Unit 4 containment spray and safety injection systems. The inspectors observed valve positions, condition of pumps, instruments, and electrical cables, area cleanliness, valve identification, and locking devices, if appropriate. The inspectors utilized Operating Procedure 4103.1 dated October 13, 1983, for lineup of safety injection and containment spray valves and plant drawing 5610-T-E-4510, Sheet 1 of 2, Revision 16 in order to verify that as-built conditions were reflected in procedures and drawings. Based on this review, the inspectors had the following findings:
  - (1) Operating Procedure 4103.1 does not require operators to align all safety injection and containment spray system valves. Specifically, numerous vent and drain valves are not included on



this or any other existing valve lineups. The following valves serve as examples:

- (a) Safety injection and containment spray pump piping, casing, and bearing cooling vents and drains.
- (b) General system piping vents and drains numbered 940 R, T, U; 941 E, F, G; 942 F, G, H, V, W, X; 943 C, D, F, H; 894 H; 898 U; and several unnumbered valves shown on the system drawing.
- (c) Refueling water storage tank drain 894 R.

The licensee stated that it is standard practice on both units to not conduct formal valve lineups on safety-related system vent and drain valves. This is not consistent with ensuring that safety injection and containment spray flow will be delivered to the core or containment, respectively. Failure to establish and implement an adequate pre-startup valve lineup for the Safety Injection and Containment Spray systems is a further example of a failure to implement procedures required by TS 6.8.1 as cited in report 250, 251/83-38, and will be reviewed as 250, 251/83-41, 40-03.

- (2) Valve 337, Safety Injection Test Fire Isolation, is a locked closed valve by drawing and the locked valve list of AP 0103.5. Procedure OP 4103.1 does not require the valve to be locked. Several valve label tags on Unit 4 Safety Injection Pump suction and discharge valves have the prefix 3 for Unit 3. This could confuse an operator as to which pump's valves are being operated. The pumps, themselves, are properly labelled as Unit 4 pumps. The inconsistency between the OP, AP and the drawing is a further example of a failure to implement adequate procedures as cited in report 250, 251/83-38 and will be reviewed as 250, 251/83-41, 40-04.

c. During the plant tour of December 20, 1983, the inspectors observed pipe support welding activities in the area of the Unit 4 safety injection pumps.

- (1) The inspectors reviewed the completed Welding and Cutting Permit 6-1604, posted at the work site, for compliance with requirements. This permit required the fire watch to have a fully charged extinguisher at the work site. The carbon dioxide extinguisher at the work site was found to have no charge indicating gauge and had not been verified as charged since February 1983. Discussions with the firewatch, indicated that the status of the extinguisher was never ascertained. Failure to follow fire protection controls associated with welding activities is a further example of a failure to implement procedures as cited in report 250, 251/83-38 and will be reviewed as 250, 251/83-41 40-05.

- (2) The inspectors also identified an additional carbon dioxide fire extinguisher in the auxiliary feedwater pump area that had not been checked since September 1983. No work activities were in progress at the time. Discussions with licensee, fire protection personnel indicated that this extinguisher was maintained by the construction contractor and is separate from installed plant fire protection equipment.

### 13. Security

During the inspection period, the inspector observed a potential violation concerning vital area access control. This issue will be discussed in a separate security inspection report.