



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

Report Nos.: 50-250/91-31 and 50-251/91-31

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 Units 3 and 4

Inspection Conducted: July 27 through August 23, 1991

Inspectors:	<u><i>R. C. Butcher</i></u>	<u>9/11/91</u>
	R. C. Butcher, Senior Resident Inspector	Date Signed
	<u><i>G. A. Schaepli</i></u>	<u>9/11/91</u>
	G. A. Schaepli, Resident Inspector	Date Signed
	<u><i>L. Trocine</i></u>	<u>9/11/91</u>
	L. Trocine, Resident Inspector	Date Signed
Approved by:	<u><i>K. D. Landis</i></u>	<u>9/11/91</u>
	K. D. Landis, Chief Reactor Projects Section 2B Division of Reactor Projects	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, operational safety, preoperational testing, preparation for Unit 3 refueling, 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. Violations or deviations were not identified. One unresolved item was identified. One strength was identified.

50-250,251/91-31-01, Unresolved Item. Inadvertent rapid start of the 3A emergency diesel generator (paragraph 7).

Strength - Corporate Nuclear Review Board involvement by touring the Turkey Point facility, interviewing personnel, and reviewing the plant readiness for fuel load prior to concurring that fuel load could proceed on Unit 3 (paragraph 8).



REPORT DETAILS

1. Persons Contacted

Licensee Employees

- T. V. Abbatiello, Quality Assurance Supervisor
- * J. Arias, Jr., Technical Assistant to Vice President
- * L. W. Bladow, Quality Manager
- T. A. Finn, Assistant Operations Superintendent
- R. J. Gianfrencesco, Assistant Maintenance Superintendent
- * S. T. Hale, Engineering Project Manager
- K. N. Harris, Senior Vice President - Nuclear Operations
- E. F. Hayes, Instrumentation and Controls Supervisor
- R. G. Heisterman, Assistant Superintendent of Electrical Maintenance
- * H. H. Johnson, Operations Supervisor
- V. A. Kaminskis, Operations Superintendent
- J. E. Knorr, Regulatory Compliance Supervisor
- J. A. Labarraque, Senior Technical Advisor
- J. D. Lindsay, Health Physics Supervisor
- G. L. Marsh, Reactor Supervisor
- * L. W. Pearce, Plant Manager - Nuclear
- * T. F. Plunkett, Site Vice President
- * D. R. Powell, Superintendent - Plant Licensing
- K. L. Remington, System Performance Supervisor
- C. V. Rossi, Quality Assurance Supervisor
- * R. N. Steinke, Chemistry Supervisor
- J. C. Strong, Mechanical Department Supervisor
- F. R. Timmons, Site Security Superintendent
- * 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.

NRC Resident Inspectors

- * R. C. Butcher, Senior Resident Inspector
- G. A. Schnebli, Resident Inspector
- L. Trocine, Resident Inspector

* Attended exit interview on August 23, 1991

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

2. Plant Status

- Safeguards testing for both units was successfully completed



during this period. Failed sequencer relays were replaced and safeguard actuation testing was re-performed to verify relay operability. Preoperational test procedure post test reviews are currently in progress.

- Preparation for Unit 3 fuel load is currently in progress for a scheduled start date of August 24, 1991. The reactor vessel head has been lifted and the reactor vessel cavity is full.
- Past problems with the ARMS for both units appear to have been corrected late this reporting period. This new system has required extensive troubleshooting by both the vendor and the licensee since installation during this outage.
- The security system upgrade continues with the installation of vital area barrier steel/grating and visual/tamper barriers. Installation and checkout of the balance of the security system is in progress. The vendor is still resolving software and hardware problems which are causing many turnovers to be behind schedule. Safenet installation is currently on schedule with the underwater portion complete on Unit 3 and in progress on Unit 4.

3. 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 Part 2, Appendix C, were applied.

- a. (Closed) P2I 50-250,251/90-08; Telemecanique Potential Defective Overload Relay Heaters Due to Weak Resistance Welded Electrical Connections.

The licensee inspected the subject relay heaters supplied to the facility and found none of the discrepancies identified in the Part 21. The inspections were documented in Operability Assessment Item 4-91, dated March 5, 1991. This item is closed.

- b. (Closed) P2I 50-250,251/91-05; Limitorque Potential Failure of Torque Switch Roll Pins.

This Part 21 applied to Limitorque actuators with heavy spring packs installed. The licensee reviewed the records for the subject actuators and determined the heavy spring packs were not used at this facility. The results of this inspection were documented in



Operability Assessment 3-91, dated January 9, 1991. This item is closed.

- c. (Closed) P2I 50-250,251/91-06; Terry Turbine Overspeed Trip Tappet Can Swell Under Certain Environmental Conditions Which Could Prevent Reset After Trip.

The licensee discussed this issue with the vendor and determined the environmental conditions to initiate the tappet swelling required ambient temperatures greater than 150 degrees F. The licensee's turbines operate in an outdoor environment with maximum conditions of 100 degrees F, therefore the licensee concluded there was not an operability concern for this issue. This issue is closed.

4. Monthly Surveillance Observations (61726)

The inspectors observed TS and other required surveillance testing and verified that the test procedure conformed to the requirements of the TSs; 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:

- a. Preoperational Procedure 0804.115, Integrated Safeguards/Load Group Separation Preop. Test, Section 9.1, SI With Offsite Power Available-Train 3A;
- b. Preoperational Procedure 0804.115, Intergrated Safeguards/Load Group Separation Preop Test, Section 9.3, SI With Offsite Power Available-Train 4A;
- c. Preoperational Procedure 0804.115, Intergrated Safeguards/Load Group Separation Preop Test, Section 9.8, Loss of Offsite Power Followed by SI - Train 4B;
- d. 3-OP-023, Emergency Diesel Generator (for 3B EDG);
- e. 3-OSP-038.2, Manipulator Crane Operability Test;
- f. 3-OSP-038.4, Spent Fuel Pit Bridge Crane Operability Test;
- g. 3-OSP-038.7, Fuel Transfer System Operability Test; and

h. OP-16204.3, Incore Mast Mounted T.V.-Periodic Test.

The test described in paragraph a. above was initially run on July 26, 1991, and was unsuccessful in that the expected results were not achieved. Following a review of the test data, a design change was incorporated to allow time for the 3A sequencer to verify the auxiliary transformer breaker had opened and the startup transformer breaker had closed. This occurs within approximately 10 cycles. Following the above modification, the test was successfully conducted on July 28, 1991. Other test exceptions were documented and are being addressed individually. See reports 50-250,251/91-22, 91-23 and 91-30 for further information.

The inspectors determined that the above testing activities were performed in a satisfactory manner and met the requirements of the TSs. Violations or deviations were not identified.

5. 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 the TSs.

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:

- a. repair of oil leaks on 3B EDG;
- b. troubleshooting and repair of Unit 4 EDG permanent magnet generators;
- c. troubleshooting and repair of the newly installed ARMs system;
and
- d. troubleshooting, replacement, and retesting of the newly installed sequencer failed relays.

For those maintenance activities observed, the inspectors determined that the activities were conducted in a satisfactory manner and that the work was properly performed in accordance with approved maintenance work orders. Violations or deviations were not identified.

6. Operational Safety Verification (71707)

The inspectors observed control room operations, reviewed applicable logs, conducted discussions with control room operators, observed shift turnovers, and monitored instrumentation. The inspectors verified proper valve/switch alignment of selected systems, verified maintenance work orders had been submitted as required, and verified 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. The implementation of radiological controls and plant housekeeping/cleanliness conditions were also 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. In addition, the inspectors walked down accessible portions of systems which are currently required to be operable/functional in order to verify proper valve/switch alignment.

The licensee conducted a safety evaluation to define control of the plant configuration during the dual unit emergency power system enhancement project. Procedure TP-645, Defueled Operations Without Emergency Diesel Generators, was issued to proceduralize the requirements determined in the safety evaluation to be in effect from the time both units enter the defueled condition and both EDGs are removed from service. Also, portions of the revised TSs became effective when both units entered the defueled condition.

During the present dual unit outage the licensee removed the startup sources from the Unit 4 fuel. Unit 4 was being refueled during this outage per PC/M 91-043, Removal of Startup Sources - Turkey Point Unit 4. There is a similar PC/M for Unit 3 which will be incorporated during the next Unit 3 refueling outage. A review of the licensee's refueling/core loading procedures showed there was no criteria specified to assure the source range nuclear instruments were responding to fuel loading/movement. The licensee responded to questions regarding the verification of source range indication by revising their procedures to require a minimum source range detector count rate of 30 counts per minute with a signal to noise ratio of at least 2. This criteria is to be used for refueling operations as well as initial approach to criticality. Affected procedures were



3-OP-040.2, Refueling Core Shuffle, and Operating Procedure 0204.3, Initial Criticality After Refueling. The fuel assemblies placed in the core next to the source range detectors must meet specific burnup, enrichment, design; and decay time criteria which are documented in engineering calculation PTN-BFJF-91-01, Neutron Source Requirements During Reload and Initial Criticality - Turkey Point Units 3 and 4. Reactor engineering will specify fuel load to meet that criteria.

The licensee routinely performs QA/QC audits/surveillances of activities required under its QA program and as requested by management. To access the effectiveness of these licensee audits, the inspectors examined the status, scope, and findings of the following audit reports:

<u>Audit Number</u>	<u>Number of Licensee Findings</u>	<u>Type of Audit</u>
QAO-PTN-91-002	-	W Remote Visual Examination of Unit 3 and 4 of Reactor Vessels
QAO-PTN-91-016	-	RCS Audit TSs 2.0, 3/4.4, and 6.7
QAO-PTN-91-031	-	CE Unit 4 Steam Generator Sludge Lancing
QAO-PTN-91-041	-	USTS Coating Inspection of Unit 3 and 4 Containment Buildings
QAO-PTN-91-045	1	Radwaste Audit per 10 CFR Part 20 and 49 CFR Part 173 Subpart I
QAO-PTN-91-046	-	Responsibility and Reorganization per TQR 1.0 and TSs 6.1 and 6.2
QAO-PTN-91-047	1	July Performance Monitoring Audit
QAO-PTN-91-049	-	Security Response Capabilities and the Access Control Program

The QA audit reports reviewed were distributed to the appropriate departmental managers, the Plant Manager, the CNRB, and the President - Nuclear Division. The applicable criteria, a description of the particular finding, a discussion of the issues, a statement of the impact on quality, a list of recommended corrective actions, a recommended responsible department, and the responsible QA contact were documented for each finding. In accordance with the licensee's QA program, the responsible department is required to respond to all QA findings in writing. No additional NRC followup actions will be taken on these findings because they were identified by the licensee's QA program audits, appropriate corrective actions have either been completed or are currently underway, and plant management has been made aware of these issues.

As a result of routine plant tours and various operational observations, the inspectors determined that the general plant and system material conditions were satisfactorily maintained, the plant security program was effective, and the overall performance of plant operations was good. In addition, the inspectors verified the critical electrical system lineup and verified the availability of the required number of Blackstart diesel generators. Availability of the minimum number of ICW and CCW pumps was also verified. Violations or deviations were not identified.

7. 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 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 August 9, 1991, at 9:47 a.m., a construction worker inadvertently opened the Unit 4B inverter breaker while removing scaffolding. During the automatic transfer from the inverter to the CVT, a momentary loss of power to R-11 and R-12, the radiation monitor for containment and control room ventilation isolation caused the system to actuate and the isolation occurred. The licensee declared a significant event in accordance with 10 CFR 50.72 (b)(2)(ii) and notified the NRC at 10:30 am. After the cause of the inverter trouble was identified and corrected the 4B inverter, the control room, and the containment ventilation systems were returned to a normal line-up.

On August 22, 1991 at 7:55 p.m., an inadvertent rapid start of the 3A EDG occurred when startup personnel were verifying leads on the 3A EDG per procedure. The 3A EDG was stopped per 3-OP-23, section 6.1. The licensee reported this event to the NRC per 10CFR 50.72 (b)(2)(ii). Initially it appears the 3A EDG start was caused by startup personnel inadvertently shorting leads together. The licensee has not completed their investigation of this event. This event will be tracked as unresolved item 50-250,251/91-31-01.

Violations or deviations were not identified.

8. Refueling Activities (60710)

On August 23, 1991, the CNRB met to review the status of fuel reload preparations for Unit 3. The CNRB provided independent assurance that the TP units were ready to return to safe and reliable operation. The CNRB had reviewed the plant management's restart plan, conducted CNRB oversight tours, and interviewed various plant personnel. After a briefing by the site vice president on the status of open items, the CNRB unanimously approved a motion finding the preparations for Unit 3 fuel reload was satisfactory. The site vice president was given the authority to start fuel reload when he was satisfied with closure of the remaining open items. The CNRB review of Unit 3 readiness for fuel load was identified as a licensee strength.

Violations or deviations were not identified.



9. Exit Interview (30703)

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 August 23, 1991. The areas requiring management attention were reviewed. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. Dissenting comments were not received from the licensee. Violations or deviations were not identified. The inspectors identified one unresolved item. One strength was identified.

<u>Item Number</u>	<u>Description and Reference</u>
50-250,251/91-31-01	URI-Inadvertent start of the 3A EDG (paragraph 7).

Strength - Corporate Nuclear Review Board involvement by touring the Turkey Point facility, interviewing personnel, and reviewing the plant readiness for fuel load prior to concurring that fuel load could proceed on Unit 3 (paragraph 8).

9. Acronyms and Abbreviations

ADM	Administrative
AFW	Auxiliary Feedwater
AP	Administrative Procedure
ARMS	Area Radiation Monitoring System
ASME	American Society of Mechanical Engineers
BS	Blackstart
CCW	Component Cooling Water
CE	Combustion Engineering
CFR	Code of Federal Regulations
CNRB	Company Nuclear Review Board
CS	Containment Spray
CVT	Constant Voltage Transformer
DP	Differential Pressure
ECC	Emergency Containment Cooler
EDG	Emergency Diesel Generator
ENS	Emergency Notification System
ERDADS	Emergency Response Data Acquisition Display System
ERT	Event Response Team
FPL	Florida Power & Light
FSAR	Final Safety Analysis Report
HHSI	High Head Safety Injection
ICW	Intake Cooling Water
IFI	Inspector Followup Item
IR	Inspection Report
KV	Kilovolt
LCO	Limiting Condition for Operation



LER	Licensee Event Report
LIV	Licensee-Identified Violation
LOCA	Loss-of-Coolant Accident
MP	Maintenance Procedure
MSIV	Main Steam Isolation Valve
NCR	Non-conformance Report
NPO	Nuclear Plant Operator
NPSH	Net Positive Suction Head
NRC	Nuclear Regulatory Commission
ONOP	Off Normal Operating Procedure
OOS	Out of Service
OP	Operating Procedure
OSP	Operations Surveillance Procedure
OTSC	On-the-Spot Change
P21	10 CFR Part 21
PC/M	Plant Change/Modification
PNSC	Plant Nuclear Safety Committee
psi	pounds per square inch
PSN	Plant Supervisor Nuclear
PSP	Physical Security Procedures
PTN	Plant Turkey Nuclear
QA	Quality Assurance
QAO	Quality Assurance Organization
QC	Quality Control
RCC	Rod Control Cluster
RCO	Reactor Control Operator
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RI	Resident Inspector
RPS	Reactor Protective System
SFP	Spent Fuel Pit
SFW	Standby Feedwater
SG	Steam Generator
SI	Safety Injection
SMM	Surveillance Mechanical Maintenance
SNPO	Senior Nuclear Plant Operator
SRO	Senior Reactor Operator
TP	Temporary Procedure
TPCW	Turbine Plant Cooling Water
TQR	Topical Quality Assurance Report
TS	Technical Specification
TSA	Temporary System Alteration
URI	Unresolved Item
USTS	United States Testing Services
VIO	Violation
<u>W</u>	Westinghouse Electric Corporation