



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

Report Nos.: 50-250/90-06 and 50-251/90-06

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 24, 1990 through March 23, 1990

Inspectors:

for R. V. [Signature] 4/13/90
 R. C. Butcher, Senior Resident Inspector Date Signed

for R. V. [Signature] 4/13/90
 T. F. McElhinney, Resident Inspector Date Signed

for R. V. [Signature] 4/13/90
 G. A. Schnebli, Resident Inspector Date Signed

Approved by: MW [Signature] for 4/13/90
 R. V. Crlenjak, Section Chief Date Signed
 Division of Reactor Projects

SUMMARY

Scope:

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

Results:

Within the scope of this inspection, the inspectors determined that the licensee continued to demonstrate satisfactory performance to ensure safe plant operations. In addition, the licensee, through self-assessment, took prompt action to correct the following non-cited violations:

50-250,251/90-06-01, NCV. Failure to follow procedures resulting in the installation of a non-conforming valve for isolating the 4C ICW pump discharge pressure gauge (Paragraph 9).

50-250,251/90-06-02, NCV. Failure to meet the requirements of TS 3.7.2.b in that the B EDG was not tested daily with the A EDG technically out-of-service (Paragraph 9).



REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *T. V. Abbatiello, Quality Assurance Supervisor
- *J. W. Anderson, Quality Assurance Supervisor
- J. Arias, Sr. Technical Advisor to Plant Manager
- J. C. Balaquero, Assistant Technical Department Supervisor
- *L. W. Bladow, Quality Assurance Superintendent
- J. E. Cross, Plant Manager - Nuclear
- R. J. Earl, Quality Control Supervisor
- *T. A. Finn, Assistant Operations Superintendent
- R. J. Gianfrennesco, Assistant Maintenance Superintendent
- S. T. Hale, Engineering Project Supervisor
- *K. N. Harris, Vice President
- E. F. Hayes, Instrumentation and Controls Supervisor
- R. G. Heisterman, Assistant Superintendent of Electrical Maintenance
- *V. A. Kaminskis, Technical Department Supervisor
- J. A. Labarraque, Senior Technical Advisor
- G. L. Marsh, Reactor Supervisor
- R. G. Mende, Operations Supervisor
- L. W. Pearce, Operations Superintendent
- D. R. Powell, Regulatory and Compliance Supervisor
- K. L. Remington, System Performance Supervisor
- *G. M. Smith, Service Manager - Nuclear
- R. N. Steinke, Chemistry Supervisor
- J. C. Strong, Mechanical Department Supervisor
- F. R. Timmons, Site Security Superintendent
- *G. S. Warriner, Quality Control Supervisor
- *M. B. Wayland, Maintenance Superintendent
- J. D. Webb, Assistant Superintendent Planning and Scheduling
- A. T. Zielonka, Engineering Supervisor

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

*Attended exit interview on March 23, 1990

Note: An alphabetical tabulation of acronyms used in this report is listed in paragraph 11.

2. Followup on Items of Noncompliance (92702)

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

were timely and corrective actions were implemented within the time periods specified in the reply.

(Closed) Violation 50-250,251/88-39-01. This concerned a violation of TS 6.8.1 with two examples. Finding A contained numerous problems with properly executing in-plant equipment clearances. The licensee initiated numerous corrective actions which included: Night orders issued to plant operations to emphasize proper clearance order techniques; operations department initiated independent verification of all clearances as a short term action until a comprehensive review of the clearance process could be completed; procedure AP 103.4, In-Plant Clearance Orders, was revised to enhance clearance process; operations department instituted an event tracking system which trends individual and shift performance to identify any problem area; improved methods for maintaining operators' cognizance of system status was established; a clearance team was formed to recommend changes to improve the process; and operations department reviewed O-ADM-031, Independent Verification, to identify any potential deficiencies. The inspectors reviewed the corrective actions for finding A and found them acceptable. Finding B concerned the failure of the Unit 3 RCO to maintain RCS pressure below 380 psig. This resulted in the OMS setpoint of 400 psig to be reached, opening PORV 3-455C. The event was attributed to operator inattention to detail. The operator was counseled on this event. Additionally, the licensee was considering lowering the OMS alarm setpoint to 380 psig to provide a greater margin between the alarm setpoint and the actuation setpoint. This would allow the operator sufficient time to take actions necessary to prevent OMS actuation. The licensee also identified deficiencies with the alarm response procedure while investigating the event. These deficiencies did not contribute to this event, however, ONOP 0208.2, Annunciator List - Panel A - Reactor Coolant was revised to correct the noted deficiencies. The licensee also initiated the operations event trending as described in finding A above which will identify repeated shift or personnel problems. The inspectors reviewed the corrective actions for finding B and found them acceptable. Based on the review of these corrective actions, this violation is closed.

3. Followup on Inspector Followup Items (92701)

(Closed) IFI 50-250,251/89-18-02. Concerning an inadequate program for the maintenance, surveillance, and control of the Black Start Diesel Generators. The licensee has implemented a comprehensive program to increase the reliability/availability of these diesel generators. This item is closed.

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

The Licensee Event Reports and/or 10 CFR Part 21 Reports discussed below were reviewed. The inspectors verified that reporting requirements had been met, root cause analysis was performed, corrective actions appeared appropriate, and generic applicability had been considered. Additionally, the inspectors verified the licensee had reviewed each event, corrective

actions were implemented, responsibility for corrective actions not fully completed was clearly assigned, safety questions had been evaluated and resolved, and violations of regulations or TS conditions had been identified. When applicable, the criteria of 10 CFR 2, Appendix C, were applied.

(Closed) LER 50-250/88-18. Concerning the isolation of the ECCS pump suction due to inadequate surveillance procedure. This issue was previously discussed in IR 50-250,251/88-21 and the actions required to prevent recurrence were completed. This item is closed.

(Closed) LER 50-250/88-20. Concerning a spurious signal generated by the Channel B Intake Air Radiation Monitor RAI6642 causing a Control Room Ventilation System realignment to Recirculation Mode. The corrective actions required for this occurrence were reviewed and found to be adequate. This item is closed.

(Closed) LER 50-250/88-21. Concerning the pressurizer power operated relief valve exceeding its design basis stroke time. This issue was discussed in detail in IR 50-250,251/89-27 and identified as violation 50-250,251/89-27-01. Final closeout of this issue will be documented in closing out the violation. This item is closed.

(Closed) LER 50-250/88-24. Concerning excessive RHR pump seal leakage causing a plant shutdown. The subject seals were replaced with a new designed seal in Unit 4 RHR pumps during the previous outage and Unit 3 seals are currently being replaced during the Unit 3 outage. This item is closed.

5. Monthly Surveillance Observations (61726)

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

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

- 4-OSP-059.5 Power Range Nuclear Instrumentation Shift Checks and Daily Calibrations
- 0-OSP-023.1 Diesel Generator Operability Test
- 0P-13404.1 Local Leak Rate Tests

- 4-OSP-056.1 Emergency Containment Filter Fans Operating Test

The inspectors determined that the above testing activities were performed in a satisfactory manner and met the requirements of the TS.

No violations or deviations were identified in the areas inspected.

6. Engineered Safety Features Walkdown (71710)

The inspectors performed an inspection designed to verify the operability of the Unit 3 Containment Spray System. This was accomplished by performing a complete walkdown of all accessible equipment. The following documentation was used for this review: 3-OP-068, Containment Spray system, revision dated February 2, 1989; drawing 5610-T-E-4510, Sheet 1, Revision 91; and drawing 5610-T-E-4510, Sheet 2, revision 68. The following criteria were used, as appropriate, during this inspection:

- a. Systems lineup procedures match plant drawings and as built configuration.
- b. Housekeeping was adequate and appropriate levels of cleanliness are being maintained.
- c. Valves in the system are correctly installed and do not exhibit signs of gross packing leakage, bent stems, missing handwheels or improper labeling.
- d. Hangers and supports are made up properly and aligned correctly.
- e. Valves in the flow paths are in correct position as required by the applicable procedures with power available and valves were locked/lock wired as required.
- f. Local and remote position indication was compared and remote instrumentation was functional.
- g. Major system components are properly labeled.

As a result of this walkdown, the inspector found the system lineup to be in compliance with plant drawings and operating procedures, equipment material conditions to be satisfactory, and system component/equipment labeling to be adequate and correct.

No violations or deviations were identified in the areas inspected.

7. Monthly Maintenance Observations (62703)

Station maintenance activities of safety related systems and components were observed and reviewed to ascertain they were conducted in accordance

with approved procedures, regulatory guides, industry codes and standards, and in conformance with TS.

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

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

- Repair of "3B" SFP pump shaft.
- 18 month overhaul of "B" EDG.
- Material upgrade and 18 month overhaul of No. 2 Black Start Diesel.
- Overhaul and mechanical seal replacement for "3A" and "3B" RHR pumps.
- Repair of "3B" RCP thrust bearing oil supply line check valve.
- Troubleshooting excessive thrust bearing end play on "A" AFW pump turbine.
- Repacking of various Unit 3 RHR system valves.

For those maintenance activities observed, the inspectors determined that these activities were conducted in a satisfactory manner and that the work was properly performed in accordance with approved maintenance work orders.

No violations or deviations were identified in the areas inspected.

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

maintenance work orders had been submitted as required and followup and prioritization of work was accomplished. The inspectors reviewed tagout records, verified compliance with TS LCOs and verified the return to service of affected components.

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

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

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

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

- A and B Emergency Diesel Generators
- Control Room Vertical Panels and Safeguards Racks
- Intake Cooling Water Structure
- 4160 Volt Buses and 480 Volt Load and Motor Control Centers
- Unit 3 and 4 Feedwater Platforms
- Unit 3 and 4 Condensate Storage Tank Area
- Auxiliary Feedwater Area
- Unit 3 and 4 Main Steam Platforms
- Auxiliary Building

The inspectors, as a result of routine plant tours and various operational observations, determined that the general plant and system material conditions were being satisfactorily maintained, plant security program was being effective, and that the overall performance of plant operations was good.

There were no violations or deviations identified as a result of the inspection activities in this area.

9. 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 February 28, 1990, at 6:00 p.m., with Unit 4 at 100% power, a mechanical maintenance employee noticed the isolation valve for "4C" ICW pump discharge gauge (PI-4-1452) was a non-qualified valve. The licensee declared the "4C" ICW pump OOS at this time in order to replace the non-conforming valve. The "A" EDG was also OOS during this period for preventive maintenance, therefore, the operability of the "4A" ICW pump, per TS 3.0.5, was not satisfied with the "4C" ICW pump OOS as the "4A" ICW pump emergency power supply was not available. Since two ICW pumps, "4A" and "4C", were technically OOS the requirements of TS 3.4.5.b, which allows only one pump to be OOS for a 24 hour period, could not be met. This caused Unit 4 to enter TS 3.0.1 which required the unit be placed in hot standby within the next seven hours. At 6:56 p.m. mechanical maintenance commenced replacement of the valve which was estimated to require less than one hour. In accordance with the guidelines of AP 103.8, Reactor Shutdown Rate Time Limits, step 8.4, the time to commence unit shutdown was set for 10:00 p.m. At 7:20 p.m. the valve had been replaced with the proper valve and the "4C" ICW pump was started and placed in service, thereby exiting TS 3.0.1. The licensee conservatively estimated that flow rate at the pipe tap for the valve would be less than 40 gpm, which is 0.25% of rated ICW pump capacity, should the valve have failed catastrophically. The licensee determined the proper valve had been replaced with the non-conforming valve by a technician that considered the non-conforming valve more suitable for the application than the previously installed valve. Therefore, this event was caused by cognitive personnel error and was not a programmatic problem. The licensee is currently counseling the responsible individual to determine if further corrective action is warranted. This event was a violation against TS 6.8.1, failure to follow procedure, AP 0190.19, Control of Maintenance of Safety Related and Quality Related Systems, Step 3.2.1; however, since the violation was identified by the licensee and prompt corrective actions were taken, the violation is not being cited per Section V.G.1 of the NRC Enforcement Policy. This item will be tracked as NCV 50-250,251/90-06-01.

At 2:30 p.m., on March 2, 1990, the 3B SFP pump was reported to have high vibration of 2.5 mils which put the pump in the required action range. At 3:40 p.m. the 3A SFP pump would not start and appeared to be bound up. Both the 3A and 3B SFP pumps were isolated and the emergency SFP pump was placed in service. By 5:20 p.m. the emergency SFP pump was in service providing approximately 400 gpm flow and a continuous watch was stationed at the pump. The SFP temperature was being monitored since the 3A or 3B SFP pumps provide approximately 2000 gpm versus the 400 gpm of the emergency pump. The SFP temperature was increasing slowly and the licensee calculated the temperature would stabilize at approximately 140 degrees F. The SFP temperature actually appeared to stabilize at 137 degrees F. At 10:05 p.m., a previously lost SFP sample bottle metal weight was found in the 3A SFP pump. The pump was not damaged. The 3A SFP pump was re-assembled. At 3:35 p.m., on March 3, 1990, the 3A SFP pump was declared back in service. A continuous watch was stationed at the 3A SFP pump until March 14, 1990, monitoring the vibration level which



has been normal. IFI 50-250,251/90-04-04 was previously initiated to followup the investigation of the Unit 3 SFP pump failure. This event will be followed up as part of that IFI.

At 7:35 p.m., on March 6, 1990, with Unit 3 in a refueling outage and Unit 4 at 100% power, the licensee determined that the "A" EDG was inappropriately returned to service and considered operable. The "A" EDG was initially removed from service on February 28, 1990, at 4:45 a.m. for the scheduled refueling outage 18 month preventive maintenance. It was subsequently returned to service at 4:27 p.m. on March 4, 1990, following successful performance of required testing. During the time the "A" EDG was OOS the "3A" and "3B" LCCs were cross-tied to provide normal power from the "3B" 4160 volt bus and emergency power from the "B" EDG.

The licensee had previously performed a Safety Evaluation, JPN-PTN-SEEJ-89-085, which addressed the de-energization of a 4160 volt safety related bus during a single unit outage. In this evaluation the licensee stated that although MCCs "3A" and "3B" would be functional during their respective 4160 volt bus de-energization by cross-connecting load centers, they were not to be considered operable since their power source would be from the opposite train load center which is not considered a normal or backup power supply. This configuration also introduces single failure vulnerabilities for the affected units common safety related equipment.

Since several "A" EDG auxiliaries, room cooling fan and fuel oil supply solenoid, are supplied by the "3A" MCC, the "A" EDG could not be considered operable until the "3A" busses were returned to their normal configuration. TS 3.7.2.b allows for one EDG to be OOS provided the remaining EDG is tested daily. When maintenance and testing were completed on March 4, 1990, the licensee considered the "A" EDG operable and discontinued the TS required daily testing of the "B" EDG. On March 6, 1990, the licensee discovered the "A" EDG should not have been declared operable per the requirements of the safety evaluation previously discussed. This was due to personnel error in the interpretation of the safety evaluation. The licensee determined that program controls were in place and adequate. Personnel error was the identified root cause.

The "B" EDG was successfully tested on March 6, 1990, when the licensee first determined they may have misinterpreted the safety evaluation. The "3A" busses were subsequently returned to service at 12:40 a.m. on March 7, 1990. The "B" EDG had previously been tested on March 4, 1990; however, the licensee failed to test the "B" diesel on March 5, 1990, which was a violation of TS 3.7.2.b. Since this issue was licensee identified and prompt corrective actions were taken, the violation is not being cited per Section V.G.1 of the NRC Enforcement Policy. This item will be tracked as NCV 50-250,251/90-06-02.

10. 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 March 23, 1990. The areas requiring management attention were reviewed. No proprietary information was provided to the inspectors during the reporting period. The inspectors had the following findings:

- 50-250,251/90-06-01, NCV. Failure to follow procedures resulted in the installation of a non-conforming valve for isolating the 4C ICW pump discharge pressure gauge. (Paragraph 9)
- 50-250,251/90-06-02, NCV. Failure to meet requirements of TS 3.7.2.b in that the B EDG was not tested daily with the A EDG technically out of service. (Paragraph 9)

11. Acronyms and Abbreviations

ADM	Administrative
AFW	Auxiliary Feed Water
AP	Administrative Procedures
ASME	American Society of Mechanical Engineers
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CS	Containment Spray
DP	Differential Pressure
ECCS	Emergency Core Cooling System
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
IE	Inspection Enforcement
IFI	Inspector Followup Item
IR	Inspection Report
LCC	Load Control Center
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LIV	Licensee Identified Violation
LOCA	Loss of Coolant Accident
MCC	Motor Control Center
MP	Maintenance Procedures
NCR	Non-conformance Report
NPSH	Net Positive Suction Head
NRC	Nuclear Regulatory Commission
OMS	Overpressure Mitigating System
ONOP	Off Normal Operating Procedure
OOS	Out of Service
OP	Operating Procedure
OTSC	On the Spot Change

PC/M	Plant Change/Modification
PNSC	Plant Nuclear Safety Committee
PORV	Power Operated Relief Valve
PSN	Plant Supervisor Nuclear
PSP	Physical Security Procedures
QA	Quality Assurance
QC	Quality Control
RCO	Reactor Control Operator
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RHR	Residual Heat Removal
SFP	Spent Fuel Pit
SNPO	Senior Nuclear Plant Operator
SRO	Senior Reactor Operator
TS	Technical Specification
TSA	Temporary System Alteration
URI	Unresolved Item

