



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

Report Nos.: 50-250/90-36 and 50-251/90-36

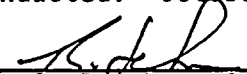
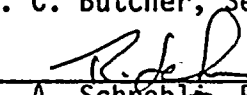

Licensee: Florida Power and Light Company
 9250 West Flagler Street
 Miami, FL 33102

Docket Nos.: 50-250 and 50-251

License Nos.: DPR-31 and DPR-41

Facility Name: Turkey Point 3 and 4

Inspection Conducted: October 5, 1990, through November 2, 1990

Inspectors:		
	R. C. Butcher, Senior Resident Inspector	11/19/90 Date Signed
		
	G. A. Schiebl, Resident Inspector	11/19/90 Date Signed
Approved by:		
	R. V. Crjenjak, Section Chief Division of Reactor Projects	11/15/90 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, 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:

NCV 50-250,251/90-36-01. Failure to perform a TS required surveillance on 4160V switchgear room louver sprays (paragraph 4).

NCV 50-250,251/90-36-02. Failure to perform a TS required surveillance in the time period allotted (paragraph 8).

NCV 50-250,251/90-36-03. Failure to follow procedure resulting in the use of non-QL parts being used in a safety-related reach rod assembly (paragraph 6).

NCV 50-250,251/90-36-04. Operation of CCW system with split header resulting in operation outside the design basis (paragraph 8).



Two strengths were identified during this inspection period. The first was identifying that the CCW system could be operating outside the design basis when in a split header configuration and expanding their review to other safety related systems to ensure similar discrepancies did not exist. The second involved the maintenance supervisor identifying the use of non-conforming parts in a safety related system during his review of the completed work package.



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. Gianfrenesco, Assistant Maintenance Superintendent
- *S. T. Hale, Engineering Project Supervisor
- K. N. Harris, Senior Vice President, Nuclear Operations
- E. F. Hayes, Instrumentation and Controls Supervisor
- R. G. Heisterman, Assistant Superintendent of Electrical Maintenance
- V. A. Kaminskis, Operations Superintendent
- *J. E. Knorr, Regulatory Compliance Supervisor
- J. A. Labarraque, Senior Technical Advisor
- G. L. Marsh, Reactor Supervisor
- R. G. Mende, Operations 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
- *R. E. Rose, Design Control Supervisor
- C. V. Rossi, Quality Assurance Supervisor
- *W. A. Shelley, Site Engineering Supervisor
- G. M. Smith, Service Manager, Nuclear
- 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.

*Attended exit interview on November 2, 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 50-250,251/90-14-01. Concerning the failure to recognize Unit 3 was required to be in an LCO and entry into Mode 3 with no channels of RVLMS operable. The licensee responded to this violation in letter L-90-269, dated July 20, 1990. The inspectors reviewed the corrective actions required for this event and found them to be adequate. This violation is closed.

3. Followup on Inspector Followup Items (92701)

(Closed) IFI 50-250,251/89-52-04. Concerning the initiation of PM requirements to prevent lint accumulation in the laundry room. The licensee established a monthly PM (061002) to clean the lint baskets and rotating drums in the laundry dryers. This issue 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 50-250/89-06. Concerning Train B ICW pump being taken out of service while A EDG was out of service for maintenance. The inspectors reviewed the corrective actions required for this event and found them to be adequate. This LER is closed.

(Closed) LER 50-250/89-08. Concerning two channels of Boric Acid Heat Tracing being inoperable at the same time. The root cause of this event was seat leakage through two isolation valves which caused the boric acid temperature to decrease below 145 degrees F. The suspect valves were repaired. This LER is closed.

(Closed) LER 50-250/90-018. Concerning the failure to perform TS required surveillance on 4160V switchgear room louver sprays. TS 4.15.3.a.2 requires spray systems be visually inspected at least once per 18 months, and at least every 3 years perform an air flow test. TS 3.14.3.a requires that the Unit 3 and 4 4160V switchgear room louver sprays be operable. The 4160V switchgear room louver sprays were last inspected on January 18, 1985, at which time the associated louvers had been replaced with 3 hour fire barriers per Plant Change Modification packages 83-141 and 83-142. The licensee's corrective actions identified in the LER are considered adequate and the revised TS does not require this surveillance. The licensee's failure to perform a TS required surveillance on 4160V



switchgear room louver sprays is a TS violation; however, the inspectors determined that this event met the criteria for a NCV as specified in Section V.G.1 of 10 CFR 2, Appendix C. This item will be tracked as NCV 50-250,251/90-36-01.

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:

- 0-OSP-22.5, Emergency Diesel Generators Starting Air Valves Operability Test for A EDG;
- 0-OSP-23.1, Diesel Generator Operability Test for A EDG;
- OP 1604.1, Full Length RCC-Periodic Exercise; and
- 3-OSP-030.1, Component Cooling Water Pump Inservice 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. 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 HV-4-1 Containment Ventilation Isolation Valve Operator;
- Repair of 3A2 Traveling Screen;
- Troubleshooting Blackstart Diesel No. 3 failures of the speed sensing panel and the voltage regulator; and
- Material condition upgrade of No. 3 Blackstart Diesel including overhaul and painting. The upgrade was completed and the diesel was satisfactorily tested and returned to service on October 12, 1990.

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 with the exception of the issue discussed below.

With Turkey Point Unit 4 at 100% power, while operations personnel were performing valve lineups, a roll pin in the reach rod assembly for valve HV-4-1, a containment penetration vent valve in the containment post-accident evaluation system, failed. This rendered the valve out of service and the plant in two LCOs, including one 7 day and one 30 day action statement. A PWO was initiated and planned calling for the replacement of the roll pin. Initial investigations estimated that the installed roll pin was a 3/8" X 2" pin which was obtained from stores. When the failed pin was removed, it was determined that the pin was really 1/4" X 2". The journeyman obtained the proper size pin from the hot tool room and installed and post-maintenance tested the valve satisfactorily. The job was identified to Operations as complete on October 10, 1990, and the LCOs lifted. During a maintenance supervisor review of the PWO on October 11, 1990, it was identified that the roll pin installed did not appear to have adequate material traceability. The journeyman on the job was contacted and he indicated that the pin was obtained from the hot tool room and therefore did not have material traceability. A review of all the 1/4" X 2" roll pins available in stores indicated that only QL-3 pins are carried, indicating that the pin installed was likely the correct pin carried in stores. A work order was initiated on the basis that inadequate material traceability existed and the pin was replaced on October 12, 1990.

The cause of the original pin failure is under investigation by the system engineer with a report due in mid-November. The rework of the job was



caused by personnel error of the journeyman. The journeyman indicated that he did not think about the quality requirements for the pin when obtaining one from the hot tool room even though he was aware of the job being safety-related. The journeyman was counseled on material controls for safety and quality related jobs on October 12, 1990. The event was discussed in the Mechanical Maintenance weekly shop meeting on October 19, 1990, to emphasize that parts in the tool rooms are for non-safety related uses only. Additionally, a policy has been established that foreman or supervisor approval must be obtained before any part can be obtained from the tool rooms.

The failure to use the proper roll pin is a violation TS 6.8.1 in that Administrative Procedure 0190.19, Control of Maintenance on Safety Related and Quality Related Systems, step 8.4.1.1, requires all appropriate documentation verifying proper parts be included with the PWO. However, the inspectors determined that this item met the criteria for a NCV as specified in Section V.G.1. of 10 CFR 2, Appendix C. This item will be tracked as NCV 50-250,251/90-36-03.

7. 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; and
- Auxiliary Building.

On October 29, 1990, at 6:56 p.m., the licensee passed its previous dual unit record run. The previous record was established on August 12, 1988, at 11:32 p.m., with a total run of 76 days, 15 hours and 12 minutes. Both units are currently operating and should continue to do so until the scheduled shutdown for the dual unit outage commencing in late November 1990. The licensee's previous efforts toward reliability are now resulting in increased unit availability.

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. No violations or deviations were identified in the areas inspected.

8. 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 October 13, 1990, at approximately 10:00 a.m., with both units at 100% power the periodicity allowed for the performance of the surveillance required by TS 4.8.2.1.a, including the 25% extension allowed by TS 4.0.1, was exceeded. This surveillance requires that the pilot cell specific gravity be read and recorded at least once per 24 hours. The event was discovered at 12:30 p.m., during the review of Unit 4 log sheets in accordance with procedure 4-OSP-201.3, NPO Daily Logs. The vital DC station batteries were declared inoperable, both units entered TS 3.0.1, and electricians were dispatched to take the required battery pilot cell specific gravity readings. At 1:19 p.m., the required surveillance was completed satisfactorily and TS 3.0.1. was exited. The root cause of this event was caused by personnel error, in that the plant personnel responsible for this surveillance were busy with corrective maintenance necessary to return other TS required equipment to service within the time permitted by the applicable TS LCO. Also contributing to this event was an inadequate review of required surveillances for the shift by the operator responsible for collecting the data for 4-OSP-201.3, and the licensed operator responsible for reviewing log sheets at the end of each shift. The licensee promptly took the following corrective actions to



prevent recurrence: Procedure 4-OSP-201.3 was revised to add a space for and a requirement to provide the date and time of performance of previous surveillance and the date and time of the current surveillance. In addition, an administrative time requirement is being added to ensure that the TS required periodicity is not exceeded. Procedure OP-0204.2, Periodic Tests, Checks, and Operating Evolutions, was revised to require the mid shift PSN to verify completion of Procedure 4-OSP-201.3. This event and the resulting procedural changes were reviewed with all applicable Operation and Maintenance personnel. The failure to perform the TS required surveillance in the time period allotted constitutes a violation of TS 4.8.2.1.a. However, the inspectors determined that this item met the criteria specified for a NCV in Section V.G.1 of 10 CFR 2, Appendix C. This item will be tracked as NCV 50-250,251/90-36-02.

On October 18, 1990, during a review of the quarterly IST testing procedure for CCW, a condition that could possibly prevent the operation of the required 2 of 3 ECCs was discovered. The quarterly IST testing of CCW components requires that one header of CCW be separated from the remaining part of the system. Simultaneously, a clarification revision to the design basis document for the system was in progress to clarify that the CCW system is normally operated in a cross-connected configuration. Because of the design of the CCW system, header separation in combination with a single active failure could result in less than the required two ECCs. Section 14.3.4 of the FSAR assumes 2 of 3 ECCs operable during a Design Basis Accident. The licensee performed an operability assessment for the CCW split header configuration. A safety significance evaluation concluded that following a LBLOCA, the resultant peak containment temperature/pressure is suppressed by the containment structural mass acting as a passive heat sink. The subsequent cooling provided by the containment spray flows and the heat removal of the ECCs results in containment temperatures/pressures being suppressed, thereby reducing the duration at elevated temperature/pressure. This ensures that sufficient margin exists to protect electrical equipment from the effects of prolonged elevated containment temperature/pressures. Based on previous sensitivity studies that have been performed to quantify the containment pressure/temperature response, the licensee does not expect containment design pressure to be exceeded, even without ECCs operating. However, exposure of equipment inside containment to prolonged elevated temperature/pressure for time periods in excess of those qualified for, could shorten the service life of equipment. Based on this concern, the licensee reviewed the required safety functions for the long term post-LOCA period and determined that safety significance was minimal. However, as an immediate corrective action, Turkey Point now requires the plant to enter the appropriate equipment LCO during times when the CCW headers are split. The licensee is expanding their review of this issue to determine if other safety related systems have similar unrecognized discrepancies. The licensee determined that the above information is reportable under 10 CFR 50.72 (b)(2)(iii)(D) and subsequently reported to the NRC at 5:01 p.m., on October 18, 1990.



FSAR Section 14.3.4 defines the design basis for the containment pressure and temperature transients assuming the availability of one spray pump and two fan coolers starting at 60 seconds for the LBLOCA. This minimum equipment availability assumption is made with consideration for the single failure criterion in the emergency power system, the containment spray system, and the ECC systems. The environmental qualification of equipment required to mitigate the consequences of a design basis accident as required by 10 CFR 50.49 is documented in the FSAR, Appendix 8A, which references EQ Documentation Package 1001. EQ Document Package 1001 analysis of the containment pressure/temperature transients assumed one containment spray pump and two ECCs were available to quickly reduce the pressure after peak pressures were reached. Therefore, operation with the CCW headers split results in operation outside the design basis (worst case scenario) and is a violation. Since this discrepancy was identified by the licensee, the effects of extending the duration at elevated containment pressure/temperature (under postulated accident conditions) were minimal, and the licensee took extensive and comprehensive corrective action, the inspectors determined that this item met the criteria specified for an NCV in Section V.G.1 of 10 CFR 2, Appendix C. This item will be tracked as NCV 50-250,251/90-36-04.

9. Management Meeting (30702, 94702)

A management meeting was held at the site on October 5, 1990, to present the SALP for the period August 1, 1989, thru July 31, 1990. The SALP report is documented in IR 50-250,251/90-26.

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 November 2, 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:

<u>Item Number</u>	<u>Description and Reference</u>
50-250,251/90-36-01	NCV - Failure to perform a TS required surveillance on 4160V switchgear room louver sprays (paragraph 4).
50-250,251/90-36-02.	NCV - Failure to perform a TS required surveillance within the time period allotted (paragraph 8).
50-250,251/90-36-03.	NCV - Failure to follow procedure resulting in the use of non QL parts being used in a safety-related reach rod assembly (paragraph 6).



50-250/251/90-36-04.

NCV - Operation of CCW system with split header
resulting in operation outside the design basis
(paragraph 8).

11. Acronyms and Abbreviations

ADM	Administrative
AFW	Auxiliary Feedwater
AP	Administrative Procedures
ASME	American Society of Mechanical Engineers
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CS	Containment Spray
DP	Differential Pressure
ECC	Emergency Containment Coolers
EDG	Emergency Diesel Generator
ENS	Emergency Notification System
EQ	Environmental Qualification
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
IST	Inservice Test
LBLOCA	Large Break Loss of Coolant Accident
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LIV	Licensee Identified Violation
LOCA	Loss of Coolant Accident
MP	Maintenance Procedures
NCR	Non-conformance Report
NCV	Non Cited Violation
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
OTSC	On the Spot Change
PC/M	Plant Change/Modification
PM	Preventive Maintenance
PNSC	Plant Nuclear Safety Committee
PSN	Plant Supervisor Nuclear
PSP	Physical Security Procedures
PWO	Plant Work Order

QA	Quality Assurance
QC	Quality Control
QL	Quality Level
RCC	Rod Control Cluster
RCO	Reactor Control Operator
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RVLMS	Reactor Vessel Level Monitor System
SALP	Systematic Assessment of Licensee Performance
SFP	Spent Fuel Pit
SFW	Standby Feedwater
SG	Steam Generators
SNPO	Senior Nuclear Plant Operator
SRO	Senior Reactor Operator
TPCW	Turbine Plant Cooling Water
TS	Technical Specification
TSA	Temporary System Alteration
URI	Unresolved Item