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

Report Nos.: 50-335/86-21 and 50-389/86-20

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

Docket Nos.: 50-335 and 50-389 License Nos.: DPR-67 and NPF-16

Facility Name: St. Lucie 1 and 2

Inspection Conducted: September 9 - October 13, 1986

Inspectors: _____ 11/18/86
R. V. Crlenjak, Senior Resident Inspector Date Signed

_____ 11/18/86
H. E. Bibb, Resident Inspector Date Signed

Approved by: _____ 11/18/86
S. A. Elrod, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope: This inspection involved on site activities in the areas of Technical Specification compliance, operator performance, overall plant operations, quality assurance practices, station and corporate management practices, corrective and protective maintenance activities, site security procedures, radiation control activities, surveillance activities, and drawing/design change review.

Results: Of the areas inspected, one violation and no deviations were identified.

Violation (335/86-21-01, 389/86-20-01), Failure to submit to the Nuclear Regulatory Commission, a report containing a brief description of plant changes, including a summary of the safety evaluation of each change.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

K. Harris, St. Lucie Vice President
D. A. Sager, Plant Manager
*J. H. Barrow, Operations Superintendent
T. A. Dillard, Maintenance Superintendent
L. W. Pearce, Operations Supervisor
C. F. Leppla, I&C Supervisor
E. J. Wunderlich, Reactor Engineering Supervisor
H. F. Buchanan, Health Physics Supervisor
J. Barrow, Fire Prevention Coordinator
H. Scarola, Assistant Plant Superintendent - Electrical
C. Wilson, Assistant Plant Superintendent - Mechanical
*N. G. Roos, Quality Control Supervisor
*L. L. McLaughlin, Technical Staff Engineer
*R. A. Symes, Quality Assurance Engineer

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

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on October 17, 1986, with those persons indicated in paragraph 1 above. Subsequently the licensee was notified that the failure to properly report per the requirements of 10 CFR 50.59 was considered to be a violation.

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

3. Plant Tours (Units I and 2)

The inspectors conducted plant tours periodically during the inspection interval to verify that monitoring equipment was recording as required, equipment was properly tagged, operations personnel were aware of plant conditions, and plant housekeeping efforts were adequate. The inspectors also determined that appropriate radiation controls were properly established, critical clean areas were being controlled in accordance with procedures, excess equipment or material was stored properly and combustible materials and debris were disposed of expeditiously. During tours, the inspectors looked for the existence of unusual fluid leaks, piping vibrations, pipe hanger and seismic restraint settings, various valve and breaker positions, equipment caution and danger tags, component positions, adequacy of fire fighting equipment, and instrument calibration dates. Some tours were conducted on backshifts.

The inspectors routinely conducted partial walkdowns of emergency core cooling (ECCS) systems. Valve, breaker/switch lineups and equipment conditions were randomly verified both locally and in the control room. During the inspection period, the inspectors conducted a complete walkdown in the accessible areas of the unit 1 and 2 diesel generators and unit 2 component cooling water (CCW) systems to verify that the lineups were in accordance with licensee requirements for operability and that equipment material conditions were satisfactory. Additionally, flowpath verifications were performed on the following systems: Unit 1 and 2 auxiliary feedwater, containment spray and chemical and volume control.

4. Plant Operations Review (Units 1 and 2)

The inspectors, periodically during the inspection interval, reviewed shift logs and operations records, including data sheets, instrument traces, and records of equipment malfunctions. This review included control room logs and auxiliary logs, operating orders, standing orders, jumper logs and equipment tagout records. The inspectors routinely observed operator alertness and demeanor during plant tours. During routine operations, operator performance and response actions were observed and evaluated. The inspectors conducted random off-hours inspections during the reporting interval to assure that operations and security remained at an acceptable level. Shift turnovers were observed to verify that they were conducted in accordance with approved licensee procedures. The inspectors performed an in-depth review of the following safety-related tagouts (clearances):

1-10-27	1A CCW Heat Exchanger - clean tubes
1-10-40	1C Charging Pump - repair packing leak
1-10-42	1B Boric Acid Pump Discharge Pressure Gauge Isolation Valve - rebuild
2-9-110	2A Component Cooling Water Pump - inspect bearing
2-9-111	V-2160 (Relief valve) - repair

5. Technical Specification Compliance (Units 1 and 2)

During this reporting interval, the inspectors verified compliance with limiting conditions for operations (LCO's) and results of selected surveillance tests. These verifications were accomplished by direct observation of monitoring instrumentation, valve positions, switch positions, and review of completed logs and records. The licensee's compliance with LCO action statements were reviewed on selected occurrences as they happened.

6. Maintenance Observation

Station maintenance activities of selected safety-related systems and components were observed/reviewed to ascertain that they were conducted in accordance with requirements. The following items were considered during this review; limiting conditions for operations were met, activities were

accomplished using approved procedures, functional tests and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; and radiological controls were implemented as required. Work requests were reviewed to determine status of outstanding jobs and to assure the priority was assigned to safety-related equipment. The inspectors observed portions of the following maintenance activities:

Unit 1, Plant Work Order (PWO) numbers

6927 - Tave/Tref Recorder - Tref indicating 4 degrees higher than normal.

6941 - 1B LPSI (Low Pressure Safety Injection) Pump Discharge Pressure Gauge - reading high.

6945 - AFW (Auxiliary Feedwater) Actuation System - bistable lamps intermittent.

6977 - FCV-03-1F, Safety Injection Tank - no position indication lights.

Unit 2, PWO numbers

4446 - 2C Component Cooling Water Pump - annual PM.

4577 - 2B 125VDC System - Weekly Battery PM.

7. Review of Nonroutine Events Reported by the Licensee (Units 1 and 2)

Licensee Event Reports (LER's) were reviewed for potential generic impact, to detect trends, and to determine whether corrective actions appeared appropriate. Events which were reported immediately were also reviewed as they occurred to determine that technical specifications were being met and that the public health and safety were of upmost consideration.

On September 15, 1986, at 12:50 a.m., while operating at 100% power, a Unit 2 turbine trip actuated a reactor trip on "Loss of Load". All systems functioned as designed. At 8:25 a.m., a reactor startup was commenced, however, because the cause of the turbine trip was not apparent, turbine startup was delayed. At 11:00 a.m., a meeting was conducted to analyze available data and determine a course of action for further investigation of the turbine trip root cause. At 4:00 p.m., the Facility Review Group (FRG) met to perform an independent review of the event. After extensive troubleshooting, testing and review the exact cause of the turbine trip could not be determined. On September 15, at 10:26 p.m., the unit was placed on line without incident.

On September 19, 1986, at 2:45 p.m., while operating at 100% power, Unit 1 was manually tripped due to smoking isophase bus cable jumpers. The subject jumpers were noticed by the turbine operator during a routine tour. Based on the information provided, the Operations Supervisor deemed it necessary,

for equipment protection, to manually trip the unit. At 3:10 p.m., the unit was stabilized in hot standby and startup preparations commenced. At 7:52 p.m., the unit was critical and the turbine had just been synchronized to the grid. The increased steam demand required a shift in controlling steam generator (SG) feedflow from the 15% bypass valves to the main feed regulation valves (MFRVs). At this time, the 1A SG level exceeded its Hi-Hi level setpoint due to the operator failing to check shut the MFRVs prior to opening the block valves. The Hi-Hi level actuated a trip of the turbine and running main feedpumps. Subsequent shrinking of the 1B SG level below the low level trip setpoint actuated an automatic reactor trip at 8:03 p.m. All systems functioned as designed and the unit was returned to service the following day.

On September 20, 1986, at 8:50 p.m., the licensee declared an unusual event when a hydrogen leak was identified coming from the blowout valve (relief) from one of the hydrogen tanks on the "tube trailer". The leaking tank was isolated from the other tanks and allowed to blowdown to atmosphere. Additionally, the surrounding area was roped off and, as a precaution, a fire cart dispatched. Open flames and smoking were prohibited. The leaking tank was fully depressurized and the unusual event secured at 12:14 a.m., on September 21, 1986. The tube trailer supplies hydrogen for both unit's turbine generator cooling systems and primary addition.

8. Physical Protection (Units 1 and 2)

The inspectors verified by observation and interviews during the reporting interval that measures taken to assure the physical protection of the facility met current requirements. Areas inspected included the organization of the security force, the establishment and maintenance of gates, doors and isolation zones in the proper conditions, that access control and badging was proper, and procedures were followed.

9. Surveillance Observations

During the inspection period, the inspectors verified plant operations in compliance with selected technical specifications (TS) requirements. Typical of these were confirmation of compliance with the TS for reactor coolant chemistry, refueling water tank, containment pressure, control room ventilation and AC and DC electrical sources. The inspectors verified that testing was performed in accordance with adequate procedures, test instrumentation was calibrated, limiting conditions for operations were met, removal and restoration of the affected components were accomplished, test results met requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel. The inspectors observed portions of the following surveillance(s):

Unit 1 and 2 Diesel Generator Surveillance Testing

OP 1-0030151	-	Remote Shutdown Instrumentation Channel Check
OP 1-0410050	-	HPSI (High Pressure Safety Injection)/LPSI Periodic Test
OP 2-0700050	-	AFW Pumps Periodic Test
OP 2-0420050	-	Containment Spray Pumps Periodic Test

10. Design Change and Safety Analysis Review

A review of 10 CFR 50.59 safety analysis was conducted on June 26-27, 1986, by the NRC Office of Nuclear Reactor Regulation (NRR) Project Manager, with a followup review by the resident inspectors during the current report period. The regulation requires the licensee to maintain records of changes, including a written safety evaluation justifying the changes. In addition, the licensee shall provide to the Commission annually or at an interval as specified in the license, a report containing a brief description of the changes, including a summary of the safety evaluation. Based upon the review of the submittals and twenty-one plant changes/modifications (PC/M) changes, the licensee does maintain records of changes readily available on site. PC/Ms reviewed were stored on site in one of two vaults, had a written safety evaluation and the changes were submitted periodically as required. No change reviewed appeared to result in an unresolved safety question. Two additional positive observations were that problems at other plants were factored into the change program at this plant and that check lists were used to prompt the licensee to consider important issues such as fire protection and equipment qualification. Two observed weaknesses were that the depth of the written safety analysis was not always commensurate with the scope of the change and a summary of all changes was not provided to the commission as required. In regard to providing a brief summary of the change as part of the report to the Commission, the licensee does this for changes to procedures as described in the FSAR and for tests or experiments not described in the FSAR, but does not completely fulfill the intent of this requirement for the PC/M changes. This amounted to 283 of 287 changes in which the licensee did not fully meet the intent of 10 CFR 50.59(b).

In summary, the licensee's annual FSAR update submittal to the NRC, which includes a listing, by title, of all PC/Ms is not complete in fulfilling the reporting requirements. A report including a short description of the change and a summary of the safety analyses should be provided to fully meet the intent of IO CFR 50.59(b). The inspectors have discussed the reporting shortcomings described above with the licensee. The licensee has committed to revising their last annual report to include the required short description of the PC/Ms and a summary of the safety analyses. All future submittals will follow this format.

Failure to submit a short description of the change and a summary of safety analysis is a violation of 10 CFR 50.59(b) (335/86-21-01, 389/86-20-01).

Additionally, during the inspection period, the inspectors reviewed the following documents to ensure that appropriate changes/revisions have been made and compatibility does exist between system drawings and operational procedures:

- 2998-G-088, Flow Diagram - Containment Spray and Refueling Water Systems
- 2-0420020, Containment Spray Initial Valve Alignment
- 2998-G-079, Flow Diagram - Main, Extraction and Auxiliary Steam
- 2998-G-080, Feedwater and Condensate
- 2-0700022, Auxiliary Feedwater - Normal Operation

In general, there was agreement between drawing and procedure. Minor discrepancies noted were referred to the licensee for corrective action. However, one item of significance was noted. Because, in some cases, several valves, different systems, with identical numbers exist in the plant, there is a potential for causing tagout and other operational problems. One example is the containment spray and the waste management systems, where valves have the same identifying numbers. This is due to two different designers numbering valves in the two separate systems. The licensee was notified of this condition and is seeking a long term solution to this problem. (IFI 335/86-21-02, 389/86-20-02)

11. Review of License Conditions (Unit 2)

(Closed) License Appendix 1, Item III. Facility operating license NPF-16 contains items to be completed prior to initial criticality. During an on-site review on September 29 and 30, 1986, prior to preparing a license amendment to delete these license conditions, the Resident Inspector at the time of initial criticality verified by review of objective evidence, interviews with licensee supervisors who directed the project and personal memory of extensive on-site inspection at the time. That Item III involving the inspection and cleaning of electrical cabinets associated with safety-related equipment was conducted and conditions were consistent with the jumper/lifted lead records at the time of initial criticality. Through an oversight, this inspection activity was not reported in an inspection report at that time.

12. IE Bulletins

The following IE Bulletin (IEB) was reviewed to determine whether it had been received and reviewed by appropriate management, responses, where necessary, were accurate and complete, and that action taken, if required, was complete.

(Closed - Unit 1) IEB 80-04 - Analysis of Main Steam Line Break with Continued Feedwater Addition. This report updated previous reports 50-335/80-36 and 50-335/81-05. The IEB had remained open pending review of FPL's response by the NRC Office of Nuclear Reactor Regulation (NRR). That review was completed, concluding that FPL's analysis was satisfactory, and forwarded to FPL in an NRR letter of January 17, 1983.

13. Review of Previously Identified Items.

(Closed) IFI 335/81-05-02. This item addressed apparent conflicts in planned (at the time) timing setpoints for an automatic auxiliary feedwater initiation system. A three minute delay appeared to be needed but not planned for. The system was installed and, per license amendment 72, the time delay is 205 seconds or (three minutes plus 25 seconds uncertainty). The inspector had no further questions on this subject.