



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30333

Report Nos.: 50-335/88-07 and 50-389/88-07

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: April 10 - May 5, 1988

Inspector: *[Signature]* 6/16/88
 H. E. Bibb, Resident Inspector Date Signed

Approved by: *[Signature]* 6/16/88
 R. V. Crljenjak, Section Chief Date Signed
 Division of Reactor Projects

SUMMARY

Scope: This inspection involved on site activities in the areas of Technical Specification (TS) compliance, operator performance, overall plant operations, quality assurance practices, station and corporate management practices, corrective and preventive maintenance activities, site security procedures, radiation control activities, surveillance activities, and 10 CFR inspections.

Results: In the areas inspected, violations or deviations were not identified. One *Unresolved Item was identified involving 10 CFR 50.59 reviews, paragraph 9.

*Unresolved Items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *K. Harris, St. Lucie Site Vice President
- *G. Boissy, Plant Manager
 - R. Sipos, Service Manager
 - J. Barrow, Operations Superintendent
 - T. Dillard, Maintenance Superintendent
- *J. Harper, QA Superintendent
- *C. Burton, Operations Supervisor
 - R. Frechette, Chemistry Supervisor
 - C. Leppla, I&C Supervisor
 - C. Pell, Technical Staff Supervisor
 - E. Wunderlich, Reactor Engineering Supervisor
 - H. Buchanan, Health Physics Supervisor
 - W. White, Security Supervisor
 - B. Sculthorpe, Reliability and Support Supervisor
 - J. Barrow, Fire Prevention Coordinator
 - R. Dawson, Assistant Plant Superintendent - Electrical
- *C. Wilson, Assistant Plant Superintendent - Mechanical
- N. Roos, Quality Control Supervisor

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

NRC Inspectors Providing Site Coverage:

- G. Paulk, Senior Resident Inspector - St. Lucie, select
- J. Caldwell, Senior Resident Inspector - North Anna
- L. Nicholson, Resident Inspector - Surry

*Attended exit interview

2. Plant Tours (Units 1 and 2) (71707 and 71710)

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 expeditiously disposed of. During tours, the inspectors looked for the existence of unusual fluid leaks,

pipings 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 Component Cooling Water, High/Low Pressure Safety Injection, and Auxiliary Feedwater Systems to verify that the lineups were in accordance with licensee requirements for operability, and equipment material conditions were satisfactory. Additionally, flowpath verifications were performed on the following systems: chemical and volume control, and emergency diesel generator fuel supply and air start.

No violations or deviations were identified.

3. Plant Operations Review (Units 1 and 2) (71707)

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):

Unit 1

<u>Clearance No.</u>	<u>Description</u>
1-2-71	Spent fuel machine - prevent operation
1-4-61	Fuel cask crane - repair brakes
1-4-90	1B Component Cooling Water (CCW) heat exchanger - investigate leak

Unit 2

2-4-4	Lube water to 2C intake cooling water (ICW) pump.
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No violations or deviations were identified.

4. Technical Specification Compliance (Units 1 and 2) (71707)

During this reporting interval, the inspectors verified compliance with limiting conditions for operations (LCOs) 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 was reviewed on selected occurrences as they occurred.

No violations or deviations were identified.

5. Maintenance Observation (62703)

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 the status of outstanding jobs and to assure that priority was assigned to safety-related equipment. The inspectors observed portions of the following maintenance activities:

Unit 1

Plant Work Order (PWO) No.

0768	Replace broken pipe on intake cooling water pump lube
1861	1A diesel generator - lube oil analysis
1912	Cable spreading room halon system - vendor inspection

Unit 2

3085	Boric acid make-up tank 1A - repair leaking flange
3086	Boric acid make-up tank 1B - remove boric acid crystals - repair leaking flange

No violations or deviations were identified.

6. Physical Protection (Units 1 and 2) (71881)

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; proper access control and badging; and adherence to procedures.

No violations or deviations were identified.

7. Surveillance Observations (61726)

During the inspection period, the inspectors verified that plant operations complied with selected technical specification (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 the following surveillance(s):

Unit 1

OP 0030126	Estimate critical conditions calculation worksheet
OP 1-0110056	Shutdown margin verification
OP 1-0110057	Periodic surveillance of DNB margin
OP 1-0700050	Auxiliary feedwater periodic test

Unit 2

OP 2-0410050	HPSI/LPSI periodic test
OP 2-0530021	Gaseous release permit for containment mini-purge
OP 2-0810050	Main steam/feedwater isolation valves periodic test

No violations or deviations were identified.

8. 10 CFR Part 21 Inspection (36100)

This inspection objective was to determine if the licensee had established and was adequately implementing procedures and controls to ensure the reporting of defects and non-compliances, as required by 10 CFR 21.

- a. The following procedures were reviewed to assure compliance with 10 CFR 21.6 posting requirements:
- (1) Quality Procedure 16.4 - Evaluating and reporting of defects and non-compliances for substantial safety hazards in accordance with 10 CFR 21, and
 - (2) Administrative Procedure 0010721 - NRC required non-routine notifications and reports.

These procedures were found to adequately address the regulations.

Additionally, a tour was made to assure posting was in areas where one would reasonably expect workers to notice the posting upon entering the plant. The following areas were found to have proper posting:

- (1) Entry to East Security Building
- (2) Entry to North Security Building
- (3) Unit 1 Radiation Controlled Area Entry
- (4) Unit 2 Radiation Controlled Area Entry
- (5) Training Building (outside protected area)
- (6) Unit 2 South Craft Entry
- (7) Health Physics Training Building Entry

The postings contained the required information for 10 CFR Parts 19 and 20 as well as 10 CFR 21.

- b. The following additional areas were addressed to assure implementation of 10 CFR 21 requirements:
- (1) Procedures for evaluating deviations or informing the licensee or purchaser of deviations (21.21.(a));
 - (2) Procedures for informing a director or responsible officer of:
 - (a) Deviations evaluated to be a defect, or
 - (b) Failures to comply with requirements relating to a substantiated safety hazard (21.21.(a));
 - (3) Controls or procedures that will assure that a director or responsible officer will inform the Commission as required when receiving information of a defect or reportable failure to comply (21.21.(b));



- (4) Controls or procedures to assure that each procurement document for a facility or basic component, when applicable, specifies that provisions of 10 CFR Part 21 apply (21.31);
- (5) Controls or procedures to assure licensee maintenance of records (21.51.(a)); and
- (6) Controls or procedures to assure the preparation and appropriate disposition of records (21.51.(b)).

Quality Procedure 16.4 was reviewed in depth to assure that it addressed each of the preceding requirements. All items were addressed.

c. Safety-related documents and components were reviewed as described below.

- (1) Two safety-related purchase documents were reviewed to assure that the provisions of 10 CFR 21 were specified. The documents were found to be satisfactory.
- (2) Two safety-related components which the licensee had received, inspected and found to have a deviation not resulting in a Part 21 report to the Commission were selected and evaluated against the following standards:
 - (a) The item was identified for evaluation/review consistent with established procedures, or by other means.
 - (b) The information and data used in the evaluation/review appear to be factual and complete.
 - (c) The deviation, or condition or circumstance, was evaluated, or forwarded to the purchaser for evaluation consistent with established procedures.
 - (d) The finding of the evaluation/review that a substantial safety hazard does not exist is a logical conclusion of the evaluation/review.

The documentation for the two components was reviewed and found to be in accordance with QP 16.4. The licensee's Power Plant Engineering staff evaluated both components and provided documentation authorizing their use - one satisfactory due to a model number change, and the other satisfactory only if a circuit modification was first made on the presently installed system in order to accommodate a wiring change on the new component.

No violations or deviations were identified in this area.



9. 10 CFR 50.59 Audit (37700)

The inspectors reviewed the licensee's program for the use of jumpers and lifted leads on plant systems. Administrative Procedure (AP) 0010124, "Control and Use of Jumpers and Disconnected Leads," provides the requirements and guidance for the use of jumpers and lifted leads for temporary modifications to the plant. These temporary modifications are performed primarily for maintenance purposes to allow interim operation of the plant while awaiting permanent modifications or replacement components.

The inspector's review of AP 0010124 determined that there were no requirements or guidance for performing a documented 10 CFR 50.59 safety evaluation for jumpers or lifted leads which change the facility as described in the Safety Analysis Report (SAR). The procedure does require a qualified Senior Reactor Operator (SRO), normally the shift supervisor, to review the jumper/lifted lead request to ensure that no condition hazardous to plant safety will be created.

The SRO reviewing the request will also make a determination whether or not prior safety committee approval is required. This determination is made based on the SRO's understanding as to whether the intent of the system or component which is being modified has been altered or if a safety function will be bypassed. If the intent has been altered or a safety function bypassed, prior safety committee approval will be required; if not, then the safety committee has 14 days in which to review the jumper/lifted lead request. This is consistent with the TS requirements for conducting intent and non-intent procedure changes, but is not related to the requirements of 10 CFR 50.59 for the review of changes to the facility as described in the SAR. According to TS 6.5.1.6, the safety committee's responsibilities include review and approval of all proposed changes or modifications to plant systems or equipment that affect nuclear safety. This safety committee responsibility does not provide a different review schedule for intent and non-intent plant modifications.

AP 0010124, step 5.3.4, states that the safety committee review will determine whether or not an unreviewed safety question has been created by the jumper or lifted lead. However, there is no requirement to document this review and submit it in an annual report as required by 10 CFR 50.59. The licensee informed the inspector that it was their understanding that since the temporary modifications created by jumpers or lifted leads were done for the purpose of maintenance, then the requirements of 10 CFR 50.59 were not applicable. However, a review of the jumper/lifted lead request log revealed that there were greater than 70 total jumpers and lifted leads incorporated in each of the units; a few dating back as far as 1984. The majority of the requests were for late 1987 and were at least greater than four months old. This indicates that even though the jumpers and lifted leads are used to support maintenance, they are relatively long-term modifications to the facility, and if they modify the facility as described in the SAR, they would fall under the requirements of 10 CFR 50.59.



The inspector selected several jumper/lifted lead requests from each of the units and reviewed the SAR to determine whether or not these jumpers or lifted leads modified the facility as described in the SAR. The requests which did not appear to have documented 10 CFR 50.59 safety evaluations are as follows:

Unit 1

- a. Request number 7-220, initiated October 23, 1987, resulted in the input to a Reactor Coolant Pump (RCP) high temperature annunciator in the control room being jumpered out. This temperature input was from the RCP lower cavity seal temperature detector and was jumpered out due to a failed resistance temperature detector (RTD). This detector and its alarm function are described in the Unit 1 SAR, Figure 5.5-7.
- b. Request number 7-235, initiated December 31, 1987, resulted in the removal of one of the Reactor Coolant System (RCS) loop cold leg temperature (Tc) inputs to one of the four Reactor Protection System (RPS) channels. This Tc input to the RPS was jumpered out due to a failed RTD. Its function is described in the Unit 1 SAR, Sections 5.6.1.2 and 7.2.1.2, and Figure 7.2-15.
- c. Request number 7-232, initiated December 26, 1987, installed a mechanical jumper (piping) around the remote operated Volume Control Tank (VCT) vent valves. This jumper allows manual venting of the VCT at an increased flow rate. The VCT vent system is described in the Unit 1 SAR, Figure 9.3-5.

Unit 2

- a. Request number 5-109, initiated November 15, 1985, installed a mechanical jumper (piping) around the remote operated VCT vent valves. This jumper allows manual venting of the VCT at an increased flow rate. The VCT vent system is described in the Unit 2 SAR, Figure 9.2-5.b.
- b. Request number 7-179, initiated November 22, 1987, resulted in the removal of an RCS Tc input to one of the RPS channels. This Tc input to RPS is described in the Unit 2 SAR Figure 7.2-6, and was jumpered out due to a failed RTD.
- c. Request number 7-193, initiated December 21, 1987, resulted in the removal of an RCS hot leg temperature (Th) input to one of the RPS channels. This Th input to the RPS, which was jumpered out due to a failed RTD, is described in the Unit 2 SAR, Figure 7.2-6.
- d. Request number 8-2, initiated January 20, 1988, resulted in the removal of the control room boron dilution alarm from service due to a failed power supply. This boron dilution alarm system is described in the Unit 2 SAR, Section 7.7.1.1.11 and Figure 7.7-8a.

- e. Request number 8-6, initiated January 20, 1988, resulted in the removal of the RCS letdown line temperature indication and alarm in the control room, and the capability of this temperature instrument to automatically isolate letdown due to a high temperature. This letdown line temperature instrument is described in the SAR Section 9.3.4.6.1.b.

10 CFR 50.59 states, in part, that the licensee may make changes to the facility as described in the SAR without prior Commission approval unless the proposed change involves a change in TS or an unreviewed safety question. 10 CFR 50.59 further states that the licensee shall maintain records of changes in the facility as described in the SAR, and these records must include a written safety evaluation that provides the basis for the determination that the change does not involve an unreviewed safety question. Finally, 10 CFR 50.59 requires the licensee to submit, at least annually, a report containing a brief description of any changes including a summary of the safety evaluation for each change. The failure of the licensee to formally document the performance of 10 CFR 50.59 safety evaluations for modifications to the facility as described in the SAR, such as those described above, will be identified as an unresolved item pending further review of additional information being supplied by the licensee (335,389/88-07-01).

The inspector reviewed the licensee's program for ASME Section XI valve stroke time testing. This involved a review of AP 0010132, ASME Code Testing of Pumps and Valves, and completed data sheets (8A, 8B and 10) associated with AP 1-0010125A and 2-0010125A, Surveillance Data Sheets.

During the review of AP 0010132, the inspector discovered that Step 8.1.3.E allowed valves whose initial stroke time exceeded the alert stroke time to be exercised several times and then retimed. If the new stroke time placed the valve back in the acceptable range, the test frequency for that valve did not have to be increased. Consequently, the licensee could, by procedure, take credit for valve stroking as adequate corrective action for taking a valve out of the alert status. The inspector discussed this situation with Region II, and determined that valve stroking may or may not be considered adequate corrective action, depending on the circumstances. In any event, the licensee must always document the initial (as found) stroke time and the evaluation which was used to make the determination that exercising the valve was adequate corrective action.

The inspector was unable to determine if the allowance of Step 8.1.3.E for removing a valve from alert status was actually used, but a review of the last several completed data sheets on valve stroking indicated that it may have been used. Several of the valves had longer stroke times (e.g., in the alert status) lined through and a shorter time (e.g., in the acceptable range) inserted. However, there are other explanations for the line-throughs, such as a mistake in reading the stop watch, stroking the valve initially in the wrong direction, and a different condition of the medium passing the valve (e.g., flow or no flow condition). The inspector

questioned the licensee to determine if they had used valve stroking as corrective action. The licensee was not aware of the use, but could not say for sure that it had not been done. The inspector could not determine from the limited review of the completed data sheets, if the use of valve stroking for corrective action had led to any valve degradation or failures.

Review of the completed data sheets and discussions with the licensee revealed several other potential problems. There exists the potential for valves to be stroke time tested in the wrong direction, valves could be stroke time tested with different conditions (e.g., flow or not flow conditions), valves could be increasing in stroke time over several tests cycles without going into the alert range even through the overall effect would be a significant increase in stroke time, and finally there was a number of valves whose stroke time had decreased significantly but were not evaluated.

Based on the above observations, the licensee committed to the following items:

- a. The licensee will change procedure AP-0010132 to eliminate the allowance for exercising a valve to remove it from the alert status. Just prior to leaving the site, the inspector was given a copy of a temporary change to AP-0010132 which changes step 8.1.3.E to step 8.1.3.F. Step 8.1.3.F., now requires that if the initial stroke time places the valve in the alert status, then frequency of the testing will be increased to once per month until corrective action is taken and the valve retested. If properly implemented, this change should prevent inadvertent use of valve stroking as adequate corrective action for removing a valve from the alert status without proper review.
- b. The licensee committed to issue shift orders to ensure that the operators record the initial as found valve stroke time. The inspector was given a copy of a memo from the Technical Staff to the Operations Supervisor stating that the first valid stroke time test shall be recorded on the data sheet, and if a valve falls into the alert status then subsequent stroke times may be recorded in the remarks section to aid in the evaluation for required corrective action. This memo, if properly relayed to the operators, should take care of this commitment.
- c. The licensee will establish a program to graph and trend valve stroke times to be able to detect slow degradation of valve performance.
- d. The licensee has agreed to establish a policy to evaluate significant decreases in stroke times as well as increases.

- e. The licensee will be modifying the valve stroke data sheets to inform the operators of the proper direction to stroke test each valve and the condition which should be established prior to stroking the valve. This should ensure that the valves are stroked to their accident position and provide more consistent data to evaluate valve performance.

These above items will be followed up by the inspectors to ensure implementation and will be identified as Inspector Followup Item (IFI) 335,389/88-07-02.

10. Exit Interview (30703)

The inspection scope and findings were summarized on May 3, 1988, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below.

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

<u>Item Number</u>	<u>Description and Reference</u>
335,389/88-07-01	Unresolved item - Failure to perform 10 CFR 50.59 evaluations, paragraph 9
335,389/88-07-02	IFI - Develop program for valve stroke time trending