UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Report Nos.: 50-335/93-19 and 50-389/93-19

Licensee: Florida Power & Light Co
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: August 1 - 28, 1993

Inspectors: _____ 9/27/93
S. A. Elrod, Senior Resident Inspector Date Signed

_____ 9/27/93
M. A. Scott, Resident Inspector Date Signed

Approved by: _____ 9/27/93
K. D. Landis, Chief Date Signed
Reactor Projects Section 2B
Division of Reactor Projects

SUMMARY

Scope: This routine resident inspection was conducted onsite in the areas of plant operations review, surveillance observations, maintenance observations, onsite followup of nonroutine events, fire protection review, review of modifications made pursuant to 10 CFR 50.59, and followup of previous inspection findings. Backshift inspection was performed on August 22, 1993.

Results:

Plant Operations area (Paragraphs 3 and 8):

Operations reacted well to a dropped Control Element Assembly, a condenser tube leak requiring shutdown, and a malfunctioning turbine governor valve this period. Control room communication and coordination between operators was very good. The licensee's event response was prompt and accurate.

Maintenance (Paragraph 5) and Surveillance areas (Paragraph 4):

Maintenance activities were performed in a thorough and detailed manner. An acceptance criteria difference between the operating staff and construction services staff was resolved. Procedural improvements were made. A number of important surveillances were performed in a professional manner. Licensee staff attention to the

tests and detail of operation of the equipment was good. The licensee responded well to the results of the surveillances. Fire protection surveillance activities observed were well run.

Within the areas inspected, the following non-cited violation was identified.

NCV 335/93-19-02, Uranium Fuel Weight Noncompliance, paragraph 9.b.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

D. Sager, St. Lucie Plant Vice President
G. Boissy, Plant General Manager
J. Barrow, Fire/Safety Coordinator
H. Buchanan, Health Physics Supervisor
* C. Burton, Operations Manager
* R. Church, Independent Safety Engineering Group Chairman
* R. Dawson, Maintenance Manager
* W. Dean, Electrical Maintenance Department Head
* J. Dyer, Plant Quality Control Manager
* R. Englmeier, Site Quality Manager
H. Fagley, Construction Services Manager
R. Frechette, Chemistry Supervisor
* J. Holt, Plant Licensing Engineer
L. Rogers, Instrument and Control Maintenance Department Head
* L. McLaughlin, Licensing Manager
G. Madden, Plant Licensing Engineer
* A. Menocal, Mechanical Maintenance Department Head
J. Scarola, Site Engineering Manager
C. Scott, Outage Manager
J. Spodick, Operations Training Supervisor
* D. West, Technical Manager
J. West, Operations Supervisor
W. White, Security Supervisor
* D. Wolf, Site Engineering Supervisor
E. Wunderlich, Reactor Engineering Supervisor

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

NRC Personnel

* S. Elrod, Senior Resident Inspector
J. Norris, St. Lucie Project Manager, NRR
M. Scott, Resident Inspector
L. Trocine, Resident Inspector, Turkey Point

* Attended exit interview

Acronyms and initialisms used throughout this report are listed in the last paragraph.

2. Plant Status and Activities

Unit 1 began the inspection period at power. On August 26, during CEA exercising, CEA 3 dropped into the core, but was promptly recovered. Unit 1 ended the inspection period in day 71 of power operation since the June 18 startup.

Unit 2 began the inspection period at power. Power was reduced on August 8 for waterbox cleaning. The unit was then shut down on August 9 to repair a condenser tube leak, starting up again on August 11. The unit operated the rest of the inspection period, with power reductions for waterbox cleaning and to decrease condenser backpressure. Unit 2 ended the inspection period in day 20 of power operation since the August 11 startup.

3. Review of Plant Operations (71707)

a. Plant Tours

The inspectors periodically conducted plant tours 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 frequency of plant tours and control room visits by site management was noted to be adequate.

The inspectors routinely conducted partial walkdowns of ESF, ECCS, and support systems. Valve, breaker, and switch lineups as well as equipment conditions were randomly verified both locally and in the control room. The following accessible-area ESF system and area walkdowns were made to verify that system lineups were in accordance with licensee requirements for operability and equipment material conditions were satisfactory:

- Unit 1 RWT,
- Unit 2 AFW pumps,
- Unit 2 B ICW pump [modified and tested], and
- Unit 1 Hydrogen Sample stations

b. Plant Operations Review

The inspectors periodically 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. They observed and evaluated control room staffing, control room access, and operator performance during routine operations. The inspectors conducted random off-hours inspections to ensure that operations and

security performance remained at acceptable levels. Shift turnovers were observed to verify that they were conducted in accordance with approved licensee procedures. Control room annunciator status was verified. Except as noted below, no deficiencies were observed.

During this inspection period, the inspectors reviewed the following tagouts (clearances):

- 1-93-07-93 1B CCW Pump,
- 1-93-08-02 Pressurizer surge line sample isolation valves, and
- 2-93-08-130 Static Inverter 2D.

(1) On August 3, 4 and 5, the licensee further inspected the Unit 1 RWT, which had been found leaking during June, 1993. The licensee directly measured pits in the tank bottom, took impression molds of selected pits, ultrasonically tested the tank bottom, and videotaped the divers' work performance. The inspectors observed diver activities, reviewed collected UT data, evaluated the measured corrosion pit data, and examined the molds that were made.

(2) At 8:15 p.m. on August 8, Unit 2 operators started reducing power to facilitate condenser waterbox cleaning. At 9:32 p.m., they stabilized reactor power at 65%. Between 12:30 a.m. and 2:45 a.m. on August 9, operators again reduced power to 58% to maintain condenser back pressure below 4.0 inches of Mercury. Reactor power was then increased to 60% at 5:45 a.m. At this time, operators noted increasing 2A2 and 2B2 conductivity, and an investigation was initiated. At 6:28 a.m., when chemistry personnel reported that the 2A steam generator cation conductivity was 1.8 mho/cm and that the 2B steam generator cation conductivity was 3.0 mho/cm; the operators entered Action Level 2 of procedure ONOP 2-0610030, Secondary Chemistry - Off Normal. When steam generator cation conductivity is greater than 2 mho/cm, Action Level 2 of this procedure requires that reactor power be reduced to less than or equal to 30% within 4 hours and that normal chemistry values be established within 100 hours. As a result, another power reduction was commenced at 6:40 a.m. At 6:50 a.m., chemistry personnel reported that the 2B steam generator cation conductivity had increased to greater than 7.0 mho/cm; and the operators entered Action Level 3 of procedure ONOP 2-0610030. When steam generator cation conductivity is greater than 7 mho/cm, Action Level 3 of this procedure requires that the unit be shutdown to Mode 2 within 4 hours, that the water be cleaned until normal chemistry values are established, and that the leak source be repaired. As a result, a power reduction to remove Unit 2 from service was commenced at 7:55 a.m. The operators manually tripped the turbine and entered Mode 2 at 9:16 a.m. the same day. The inspectors witnessed portions of the power reduction.

Further investigation revealed potential condenser tube leakage in the 2B1 waterbox. As a result, the licensee fabricated boxes and utilized helium gas to localize the potential tube leak. Eddy current testing confirmed a through wall failure in one tube, which was subsequently plugged. The surrounding tubes were also examined via eddy current testing and found to be acceptable. The licensee determined that the most probable root cause of the tube failure was an external source, such as debris, impinging on or vibrating in close proximity to the tube. In order to verify that this was the actual root cause, the licensee plans to perform physical examination of the tube during the upcoming refueling outage (February 1994). As a precautionary measure, the licensee plugged four additional tubes (row 1, tube 25; row 2, tube 26; row 3, tube 30; and row 7, tube 43) located near the failed tube (row 4, tube 30).

While Unit 2 was shutdown, the licensee also removed the 2A1 intake well from service to clean the 2A1 waterbox. Portions of the intake well cleaning activities were witnessed by the inspectors. In addition, an electrical ground on the B4 pressurizer heater bank was investigated and temporarily repaired via jumpers from another heater bank, and the sync light on the 2B instrument invertor was repaired.

Following these activities, the licensee rolled the Unit 2 turbine at 3:02 a.m. on August 11. The main generator was synchronized to the grid at 4:32 a.m., and 20% reactor power was reached at 5:15 a.m. Power ascension was re-commenced at 7:44 a.m., and 100% reactor power was attained at 1:00 p.m.

(3) On August 13, the ESI group (FPL NDE technical section) issued inspection report ESI-NDE-93-172 on the partial findings from the Unit 1 RWT inspection that began at the end of last inspection period (IR 93-18). In conjunction with report ESI-NDE-93-172, the plant staff released problem report IHE No. 93-048 - stating the problem, findings, and planned action for the benefit of corporate management.

This second inspection of the RWT floor leak, found around June 15, more closely examined specifics in attempting to characterize the actual tank condition. The report stated that no obvious tank degradation had occurred since an event documented in 1974. There was no evidence of additional tank bottom thinning or evidence of external pitting. Additional chemical and physical analysis of scattered small debris was pending. These findings were consistent with the independent in-process review by the resident inspectors (documented mostly in IR 335,389/93-18). The root cause was stated to be pitting corrosion. Following tank construction, the tank was hydrostatically tested in 1973 and the potable water that was used was left in the tank for six months. The impurities in the water caused the initial pitting, which was documented at

that time. The pit that caused the June 1993 leak was thought to be an isolated worst case. The worst case pitting found by the most recent investigation was 0.060 inch while the worst case documented in 1973 was 0.090 inch on a 0.250 nominal wall thickness. The report stated that permanent RWT bottom repair would occur during the Unit 1 Fall, 1994, outage and that a material sample would be removed from the tank for analysis during that outage. With the tank presently holding water, sample removal was not safely possible.

(4) On August 19, at 11:50 a.m., Unit 1 Regulating Group 5 CEA No. 3 dropped fully into the core while it was being exercised per TS surveillance 1-0110050, Rev 28, Control Element Assembly Periodic Exercise, step 8.2. Operators immediately initiated OP 1-0110030, Rev 31, CEA Off-Normal Operation and Realignment, and stabilized power at 95 per-cent. The inspector observed and evaluated recovery activities. Prior to the attempted recovery, operations management conducted a tailboard meeting in the control room, including operators and I&C engineers. During the recovery, the I&C group monitored equipment operation at the CEA control equipment. CEA 3 was fully recovered by 12:47 p.m., within the required time. Though the coil current traces met requirements, the licensee expanded-the time of upper gripper energization to improve its function. The inspector also observed I&C monitoring CEAs 4, 17, 49, 52, 62, 65, 42, 43, 46, and 9. The inspector compared licensee actions to procedural requirements and had no further comments.

(5) On August 17, during a Unit 2 power increase, the control room operator observed that turbine governor valve GV1 had failed to respond. The operator held power at 75 percent pending review and correction. The licensee found that the solenoid-operated hydraulic pilot valve had failed, replaced it using proper techniques for work on top of a 500 degree F turbine, then continued the power increase. The inspector monitored the review, repair, and subsequent power increase. Coordination, control, and communications were excellent, including heat stress considerations, oil spray considerations, pre-work tailboard meeting, and management involvement.

c. Technical Specification Compliance

Licensee compliance with selected TS LCOs was verified. This included the review of selected surveillance test results. These verifications were accomplished by direct observation of monitoring instrumentation, valve positions, and switch positions, and by review of completed logs and records. Instrumentation and recorder traces were observed for abnormalities. The licensee's compliance with LCO action statements was reviewed on selected occurrences as they happened. The inspectors verified that related plant procedures in use were adequate, complete, and included the most recent revisions.

d. Physical Protection

The inspectors verified by observation during routine activities that security program plans were being implemented as evidenced by: proper display of picture badges; searching of packages and personnel at the plant entrance; and vital area portals being locked and alarmed.

Control room operations during plant power changes were well coordinated. Operators responded promptly and appropriately to initiating conditions for off-normal procedures.

4. Surveillance Observations (61726)

Various plant operations were verified to comply with selected TS requirements. Typical of these were confirmation of TS compliance for reactor coolant chemistry, RWT conditions, 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, LCOs were met, removal and restoration of the affected components were accomplished properly, 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 following surveillance tests were observed:

a. OSP 64.01, Rev 4, Reactor Engineering Periodic Tests, Checks, and Operational Surveillance Procedures, Data Sheet 4, Calibration of Internal Axial Shape Index (see NPWO 1010/63 in paragraph 5.a.)

The inspector observed the data collection and reviewed the satisfactory data reduction sheet. The post repair re-calibration of the power control board card met the acceptance criteria of the data sheet. The excore detector that supplied a signal to the channel drifted further as indicated below.

b. I&C 1-1200052, Rev 19, Linear Power Safety and Control Channel Monthly Calibration (see NPWO 1010/63 in paragraph 5.a.)

c. OP 1-2200050A, Rev 6, 1A Emergency Diesel Generator Periodic Test. After the test was successfully completed, the 1A EDG tripped on a spurious high cooling water temperature trip. Both the inspector and a non-licensed operator had just looked at the cooling water temperature gage and were aware that cooling temperature was within specifications. It is noted that this particular trip would not have stopped the EDG, had the EDG been operating under an emergency start, nor prevented an emergency start. It was found that the temperature sensor for the trip signal had failed. This sensor was replaced and tested within hours of its failure.

d. I&C 1-1400052, Rev 32, Engineering Safety Features Channel Functional Check

e. AP 2-0010125A, Rev 34, Surveillance Data Sheets, Data Sheet #18, Quarterly Code Run, 2B ICW pump. The 2B ICW pump performance had been degrading (see IR 92-18) for some time and, as a corrective action, had been recently rebuilt (see below). Post rebuild, the pump was satisfactorily surveilled. During the course of the testing, operations identified that the discharge cross connecting valves [2I-SH21164 and SH21210] were leaking by as much as 500 gpm (2 psig in lost head out at a test flow rate of 14,000 gpm). Misadjustment or mechanical stop damage of the positive stop of the butterfly type disk could cause the observed slight leakage through the valves. Operators thought that valve SH21210 was overtravelling approximately 1.5 inch. Slight repositioning by manually reducing the disk overtravel - (shutting) the valves increased apparent pump output. With the increased flow rate of the rebuilt pump, the valve leakage did not make the degraded pump any less acceptable. Maintenance NPWOs were generated to investigate and repair the valve stops as required.

f. OP 1-2200050B, Rev 6, 1B Emergency Diesel Generator Periodic Test. During this test, as with the other diesel test cited above, the inspector observed many attributes on the operating diesel throughout its run. Some of these were:

cooling water level;
fan belt condition and tension;
proper control panel indications;
proper fuel pressures;
evidence of unwanted leakage;
proper electrical conditions (breakers, generator output, and relay target positions; and,
governor response.

The inspector observed that this test was satisfactorily completed.

g. The inspector observed the testing of 1C AFW pump per AP 1-0010125A, Rev 31, Surveillance Data Sheet 17, which required vibration data be recorded. In addition to observing operator performance and procedure adherence, the inspector attempted to confirm the vibration readings obtained by the operator using Bently-Nevada Vibration Meter Model TK-81, Serial OPS E-598.

- The inspector could not set up the meter using the instruction card inserted in the carrying case. This meter can be set up, by repeatedly pushing buttons, to use either a velocity probe or acceleration probe, and various sensitivities of each. It will also compute outputs of displacement, velocity, acceleration etc. Correct readings require a correct setup. The card directions did not coincide with the data lines on the display and some measurement units were different, such that one could not tell what was a typographical error and what was not.

- The surveillance date sheet did not specify what units to use when recording vibration. This left the vibration trending program in question.

Licensee review and subsequent inspector followup found that the card in the meter case was copied from training material used for job performance measures training for every ASME pump in the plant. Presently, each pump surveilled has its own training guide, and they are all wrong. This occurred because a vendor manual was misread. Operators actually knew the correct setup from OJT and peer group discussions. Also, improper setup would give unreasonable readings that would be questioned because they must be trended.

The operations department had new instruction cards ordered and submitted changes to add measurement units to the twelve or so data sheets involved in both units. The training material was already being revised for issuance by October, 1993, to remove the meter operation directions, address them only in the ANPO training program, and refer to them in the other material such as the JPM.

The observed surveillances were performed in a professional manner. Licensee staff attention to the tests and detail of operation of the equipment was good. The licensee responded well to the results of the surveillances.

5. Maintenance Observation (62703)

Station maintenance activities involving 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: LCOs 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 ensure that priority was assigned to safety-related equipment. Portions of the following maintenance activities were observed:

a. NPWO 1010/63 Repair/replace electronics card for "C" channel RPS Linear power Cabinet

The linear power cabinet for the "C" channel of the Unit RPS had exhibited some calibration drift. With the resident present, a PCB card was replaced as a potential fix. The channel continued to drift slightly. Operations place the affected subchannels in bypass in accordance with TS 3.2.4 (azimuthal power tilt, potential one excore instrument inoperable) and Table 3.3-1 (Reactor Protective Instrumentation) while I&C performed some trouble shooting.

In response to the drifting and with the resident present, I&C personnel meggered the cabling to the excore detectors that enter the cabinet and provide signals for processing. A ground was discovered. The affected subchannels for the "C" RPS channel were appropriately placed in the tripped condition.

I&C entered containment to further test the cable/detector combination. The personnel found that the ground was between the penetration connections and the excore instrument. The repairs could not be made in the present at-power conditions. The licensee, as required by TS, left the channel in the trip condition until the next short notice outage.

b. NPWO 72171/62 2B ICW Pump Rebuild

The resident inspectors inspected various phases of this rebuild. During the effort, the inspectors observed rigging practices, disassembly, physical inspections, sectional re-assemblies, dimensional inspections, and the satisfactory surveillance test. The observed work was satisfactory and met the overall requirements.

c. NPWO 6785/66 Unit 2 MV 08-13 Valve Testing

As indicated in IR 93-18, MV 08-13 [Unit 2] was degraded and required additional testing and imposed limitations. The inspector observed the 2C AFW pump being surveilled this inspection period. The valve was found to be satisfactory based on vendor obtained VOTES data obtained during pump testing. The above NPWO was the administrative mechanism to obtain vendor services for the valve test. The valve operated smoothly when the pump was started and there was no thermal binding. Applied forces where within the limits established in the last engineering evaluation of the valve, discussed in IR 93-18.

Engineering re-evaluated the valve data and supporting electrical data generated by the test. The outfall of the review was a revision to the existing evaluation (JPN-PSLP-93-0583, Rev 1, August 18) that more clearly defined the important valve/actuator parameters. The inspectors observed that both the testing and review were adequate.

d. NPWO 6736/66 HFA Relay Quarterly Inspection

This maintenance activity was based on previously finding the latch on latching HFA relays to be set too tight and not latching properly. While the reasons are not obvious, relay component clearances had been found to change while in service. The inspector accompanied the electrician during four of six relay inspections and independently verified the findings. The two-sided latches are often crooked such that one side makes contact while the other has clearance. The inspector concluded that recording data more precisely than "latched/not latched" would allow the utility to

trend these items, part of the rationale for quarterly testing. This was discussed with the appropriate engineer and shop management. The inspector noted that the completed NPWO discussed conditions at length.

e. Installation of Raychem splices by construction services.

The inspector observed construction services replacing 1C AFW pump suction pressure switch PS-12-17C with a Barton 580-D1 gage, which was equipped with limit switches. The governing procedure was work process sheet 042-190-2004. The electricians were connecting new extension wires to connect the new switches to the existing circuit, using Raychem splices type NPKV-2-16. This was a two-leg pigtail splice. The inspector confirmed the correct bolt size, cable lugs, wire size, splice kit inventory, and that the kit was the one specified in the work package. One kit had been installed, one was in progress.

Work practices observed were satisfactory. The journeyman partially mis-shrunk one outer shell, stopped, and obtained another from stores. He held the second one with pliers while shrinking, not always a good idea. He had good control of the air gun, which looks like a hair dryer, but can produce 500 degree F air.

When the two splices were completed, the two legs on one splice stood out from the outer cover about 1/4 inch while the legs on the other splice were covered.

- A sketch in the kit instructions from Raychem showed the legs covered and the text implied that the outer cover, the "end cap", completely cover the "breakout", or piece with the legs where the wires go in.

- The QC inspector present indicated that they had been taught in Raychem class that legs sticking out was OK.

- Procedure ASP-23, Rev 1, Cable Terminations and Splicing, Specified many attributes of cable splices, including Lugs, bolts, techniques, etc. Attachment 4.9, Installation of Class 1E and NonClass 1E 600 Volt and Less Cables Utilizing Heat Shrink Tubing, covers the splices in question. It required that the installer follow the Raychem kit instructions unless overridden by ASP-23. ASP-23 did not override the instructions at the job site.

  Although the licensee used qualified people to install Raychem splices, and a QC check list included checking for qualified installers, ASP-23 did not itself specify qualified installers. Other construction procedures, such as for expansion anchors, did specify qualified installers. This was suggested to the licensee for the next procedure review cycle.

- QC Technique Sheet 10.32, Electrical Terminal Inspection, applied to these connections. In addition to bolt torque, calibrated tools, proper lugging, and training of spare wires, this technique sheet required Raychem splices be per PCM design requirements and ASP-23. Also, for splice kits, a specific checklist was to be used to document the splice. This included material, approved solvent, overheating, bend radius, cleanness, and installer qualifications.

- The operating plant maintenance procedures governing the shops and maintenance QC, as differentiated from ASP-23, were specific and specified a 1/4 inch overlap of the completed splice.

Three quality concerns were addressed:

- Was the splice with the exposed legs acceptable?

- Did the sketch and text in the Raychem kits constitute a mandatory procedure that is adequate for field use?

- Did classroom comments by an instructor override acceptance. criteria?

The licensee determined by letter from Raychem dated August 6, 1993, that the specific splice was acceptable since it was in a box. The same letter stated that the attributes shown on sketches in Raychem kits, unless dimensioned, were for general information. Dimensioned attributes were used for acceptance criteria.

The licensee changed ASP-23 to specify that unless specific guidance is given by Raychem or design engineering, NPKV splice covers will cover the entire splice assembly.

The inspector's final review concluded that this issue concerned a procedural weakness that has been corrected rather than a safety issue.

Maintenance activities were performed in a thorough and detailed manner.

6. Fire Protection Review (64704)

During the course of their normal tours, the inspectors routinely examined facets of the Fire Protection Program. The inspectors observed specific activities including a large scale test of a fire protection system and fire drills. The inspectors reviewed transient fire loads, housekeeping, control of hazardous chemicals, ignition source/fire risk reduction efforts, fire protection system surveillance program activities, and fire barriers.

During a plant tour on August 16, the inspector observed electrical cable, serving two temporary portable air conditioning systems, running

through Unit 2 fire door RA-49 between the hallway and B electrical penetration room. The cable also ran through fire door RA-50 between the A and B electrical penetration rooms. The configuration had been reviewed and appropriate permits 2.8.1-93 and 2.8.2-93 obtained on August 3. A roving patrol tours that area frequently. The inspector had two concerns: first, the permit stated that the irregular configuration would be needed only for 4 days and 13 days had passed. Second, there was no compelling reason to have both doors disabled at the same time. When the inspector discussed this with licensee management, the licensee promptly found a new source of power at the turbine building, totally eliminating the questionable configuration.

The inspector observed the annual test of the deluge system serving the Unit 1 Hydrogen seal oil system. This test, per MP 0959063, Rev 7, Deluge and Sprinkler System Test, Section 8.3, verified the function of each heat activated device, alarm device, and manual actuation device. It also verified the function of each control station component and valve. The flooding valve was actually disassembled and visually inspected. The test activated the system and operated it long enough to flush the piping and allow inspection of sprinkler head performance and orientation. The test required cooperation among several maintenance organizations, the fire protection staff, and plant operators.

The test, performed on August 18, was very well planned and coordinated. The persons involved were experienced and aware of expected results. They followed the procedure and followed up work items resulting from the test. The test showed that the deluge system performed its fire safety function.

During the test, a leaking pipe nipple was observed by both the inspector and the licensee's test director. The licensee initiated a work order to repair it. It did not hamper the system's fire safety function.

During the test, the inspector observed that the floor drain inside the combing around the seal oil unit did not remove water as fast as it was applied and the water overflowed onto the surrounding floor. During a fire, this could spread oil or fire to adjacent areas where the fire team might be. The drain appeared plugged, perhaps by rust from the sprinkler system. The licensee observed, after the test, that oil separator box SB-62 on the drain line had overflowed about 20 gallons of oil to the ground area around the 1A and 2A startup transformers. The causes of the various overflow conditions became potentially more complex.

In addition to investigating potential drain pipe plugging, the licensee had planned to change the procedure to require that the drain and oil separator box be free flowing and clean prior to the test. The inspector will followup the licensee's investigation. This is IFI 335,389/93-19-01, Floor Drain Capability.

Fire protection surveillance activities observed were well run.

7. Plant Modifications Made Pursuant to 10 CFR 50.59.

During the routine visit to the site on August 24-26, 1993, the NRR Project Manager conducted an audit of a select number of document files supporting plant modifications made without prior NRC approval pursuant to 10 CFR 50.59. The files were selected from the St. Lucie Unit 1 report dated July 10, 1992. Seven of the 15 cases included in the report were selected for the audit. Only the files prepared after the adoption of the guidance of NSAC 125 were audited.

The following files were audited:

Number	Supplement	Title
439-191	0	Intake Cooling Water System Flow Enhancement
252-191	0	Containment Spray Vent Valve Installation
216-191	0-1	Steam Generator Tube Stabilization with Flexible Stakes
160-191	0	Removal of Turbine Runback
090-191	0	Motor Operated Valve Arc Suppression Varistors
060-191	0	BAM Tank Low Level Alarm Selector Switch Installation
403-190	0	Removal of Acoustic Flow Monitor Recorder

The files were readily available, complete, well maintained, organized and labeled. Since the adoption of NSAC 125-based approach, the overall quality of the documentation has improved significantly. Each safety evaluation contained the following sections: (a) description and purpose, (b) an analysis of effect on safety, (c) failure modes and effect analysis, (d) effect on Technical Specifications, (e) unreviewed safety question determination, (f) plant restrictions, and (g) conclusions. The audit did not find any violations or deviations.

8. Onsite Followup of Events (Units 1 and 2)(93702)

Nonroutine plant events were reviewed to determine the need for further or continued NRC response, to determine whether corrective actions appeared appropriate, and to determine that TS were being met and that the public health and safety received primary consideration. Potential generic impact and trend detection were also considered. Events during this period included a Unit 2 condenser tube leak requiring shutdown and a dropped Unit 1 CEA. These are discussed in paragraph 3.b.

The licensee's event response was prompt and accurate.

9. Followup (Units 1 and 2) (92701)

a. Inspector Followup Items

(1) (Closed - Units 1 and 2) IFI 50-335, 389/92-20-03, Unit 2 CCW Throttle Valves. CCW cooling flow to the Unit 2 HPSI pump bearings was set by throttle valves. These valves could change position during outages and not be reset absent administrative controls. The licensee changed procedure OP 2-0310020, Rev 28, Component Cooling Water - Normal Operation [and the equivalent Unit 1 procedure, Rev 36] to obtain proper valve alignment following an outage and any time a throttle valve position was suspected to have changed. This issue is closed.

(2) (Closed - Unit 2) IFI 50-389/92-20-04, MFIV Testing Issues. The I&C department contacted the vendor on the issues discussed in the IFI writeup. Resultantly, Procedure OP 2-0810050, Rev 17, Main Steam/Feedwater Isolation Valves Periodic Test, was changed to address the testing technique [accumulator dump push button was to be held for five seconds as opposed to being depressed and quickly released]. The telephone conversation memo with the vendor-supplied information was attached to the corrective action document. Subsequent testing has produced multiple successful test results. This issue is closed.

b. Unresolved Items

(Closed - Unit 1) URI 335/92-04-02, TS 5.3.1 Uranium Fuel Weight Non-Compliance Pending NRC Review. As described in IR 92-04, FPL introduced new fuel into Unit 1 in excess of a design basis (administrative) TS 5.3.1 weight limit. This noncompliance was licensee identified. Upon identification, the licensee promptly produced a JCO indicating that the condition was not a safety concern. Further, the licensee submitted TS change request L-92-65 to make the Unit 1 TS match the Unit 2 TS which has no weight limitations for fuel. This change was subsequently approved by the NRC as Unit 1 TS revision 114.

Based on the provisions of the NRC enforcement policy, section VII.B, this condition will not be subject to enforcement action. The licensee identified this low consequence administrative error, promptly took action to ensure it had no safety significance, and took appropriate followup corrective action. This condition is documented and closed as NCV 50-335/93-19-02, TS 5.3.1 Uranium Fuel Weight Non-compliance. URI 335/92-04-02 is also closed by NCV 50-335/93-19-02.

10. Followup of Corrective Actions for Violations and Deviations (Units 1 and 2)(92702)

(Closed - Units 1 and 2) 50-335,389/91-19-01, Degraded EDG Due to Failure to Follow a Painting and Coating Procedure. Licensee response L-91-334 indicated that two site procedures would be changed as corrective action. The inspector found that procedures ASP 30, Rev 2, Protective Coatings for Steel Surfaces, and QI 13-PR/PSL-2, Rev 14, Cleanliness Control Methods had been upgraded as indicated. Additionally since that time, the licensee has implemented the above indicated changes. Although at times the licensee has struggled in its implementation (e.g., painting the Unit 1 CCW pit in 1992, IR 92-04), the implementation has been successful and painting controls have worked. Painting and physical maintenance at a largely carbon steel plant adjacent to an ocean has required much activity. This item is closed.

11. Exit Interview

The inspection scope and findings were summarized on September 3, 1993, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection results listed below. Proprietary material is not contained in this report. Dissenting comments were not received from the licensee.

Item Number	Status	Description and Reference
335,389/93-19-01	open	IFI - Floor Drain Capability, paragraph 6.
335/93-19-02	closed	NCV - Uranium Fuel Weight Noncompliance, paragraph 9.b.
335,389/92-20-03	closed	IFI - CCW Throttle Valves. paragraph 9.a.
389/92-20-04	closed	IFI - MFIV Testing Issues, paragraph 9.a.
335/92-04-02	closed	URI - Uranium Fuel Weight, paragraph 9.b.
335,389/91-19-01	closed	VIO - Degraded EDG due to Failure to Follow Painting Procedures, paragraph 10.

12. Abbreviations, Acronyms, and Initialisms

AFW	Auxiliary Feedwater (system)
ANPO	Auxiliary Nuclear Plant [unlicensed] Operator
ASME Code	American Society of Mechanical Engineers Boiler and Pressure Vessel Code
BAM	Boric Acid Makeup (tank etc.)
CCW	Component Cooling Water
CEA	Control Element Assembly
CFR	Code of Federal Regulations
cm	Centimeter
DPR	Demonstration Power Reactor (A type of operating license)

ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
ESF	Engineered Safety Feature
FPL	The Florida Power & Light Company
GE	General Electric Company
gpm	Gallon(s) Per Minute (flow rate)
HFA	A GE relay designation
HPSI	High Pressure Safety Injection (system)
ICW	Intake Cooling Water
IFI	[NRC] Inspector Followup Item
IHE	In-House-Event Report
IR	[NRC] Inspection Report
JCO	Justification for Continued Operation
JPM	Job Performance Measure
JPN	(Juno Beach) Nuclear Engineering
LCO	TS Limiting Condition for Operation
MFIV	Main Feed Isolation Valve
mho	A unit of electrical conductance
MV	Motorized Valve
NCV	NonCited Violation (of NRC requirements)
NDE	Non Destructive Examination
NPF	Nuclear Production Facility (a type of operating license)
NPKV	A Style of Raychem Brand Splice
NPWO	Nuclear Plant Work Order
NRC	Nuclear Regulatory Commission
NRR	NRC Office of Nuclear Reactor Regulation
NSAC	Nuclear Safety Analysis Center
OJT	On the Job Training
ONOP	Off Normal Operating Procedure
OP	Operating Procedure
OPS	Operations Department
PCM	Plant Change/Modification
psig	Pounds per square inch (gage)
PSL	Plant St. Lucie
QC	Quality Control
QI	Quality Instruction
RPS	Reactor Protection System
RWT	Refueling Water Tank
SB	Safety Train B
TS	Technical Specification(s)
URI	[NRC] Unresolved Item
VOTES	Valve Operation Test and Evaluation System