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

Report Nos.: 50-335/85-12 and 50-389/85-12

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: May 13-17, 1985

Inspectors: D. P. Falconer — Date Signed: 6-12-85

H. O. Christensen — Date Signed: 6-12-85

S. D. Stadler — Date Signed: 6-12-85

Approved by: C. Julian, Section Chief
Division of Reactor Safety — Date Signed: 6/12/85

SUMMARY

Scope: This routine, unannounced inspection entailed 105 inspector-hours on site in the area of maintenance programs.

Results: Within the areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

   Licensee Employees

   K. Harris, Vice President
   *D. A. Sager, Plant Manager
   *C. A. Pell, Technical Staff
   *D. L. Newberry, Mechanical Maintenance
   *J. Scarola, Electrical Maintenance
   *J. Krumins, Engineering
   *B. Sculthorpe, Electrical Maintenance
   *C. G. Crider, Mechanical Maintenance
   *J. J. Walls, Quality Control
   *N. G. Roos, Quality Control

   Other licensee employees contacted included technicians and mechanics.

   NRC Resident Inspectors

   *R. V. Crlenjak, Senior Resident Inspector
   *H. E. Bibb, Resident Inspector

   *Attended exit interview

2. Exit Interview

   The inspection scope and findings were summarized on May 17, 1985, with those persons indicated in paragraph 1 above. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters

   (Closed) Violation 335/84-09-01, 389/84-12-01: The licensee has utilized the estimation techniques provided in 232 NFPA-1975 to calculate the adequacy of one-hour fire rated cabinets for the storage of training documentation.

   (Closed) Unresolved Item 335/84-26-02, 389/84-28-02: The inspector reviewed previous inspection reports and interviewed selected plant personnel to verify that training on mitigating core damage had been provided to all applicable plant personnel.

4. Unresolved Items

   Unresolved items were not identified during this inspection.

5. Inspector Followup Items

(Open) Inspector Followup Item 335/84-09-02, 389/84-12-02: A draft revision of QP 17.1 correcting the reference to 232 NFPA in Section 5.3.b is in the approval chain. Pending implementation, this item will remain open.

(Closed) Inspector Followup Item 335/84-09-03, 389/84-12-03: AP 0005720 has been revised to require that all control manipulations be performed annually.

6. Corrective Maintenance

The inspector reviewed the corrective maintenance program for conformance to applicable regulatory criteria and licensee commitments. Administrative Procedure 0010432, Plant Work Orders, defines the initiation, approval, and implemention of plant work orders. Once a plant work order (PWO) is written, it is routed through the appropriate department supervisor to the mechanical, electrical or instrumentation and control planners/coordinators. The planners process the plant work order, and make several determinations including:

a. if the PWO is nuclear safety-related;

b. if a radiation work permit (RWP) is required;

c. if a written procedure or vendors manual is required;

d. what priority should be assigned;

e. if post-testing is required;

f. if a clearance is required;

g. if fire prevention precautions are required such as a hot work permit or fire watch.

The determination of nuclear safety-related is made informally by the planners utilizing drawings, valve listings, and experience. Administrative Procedure 0010432, Section 8.4.1.A, states that the determination of whether a PWO is safety-related should be made per Quality Instruction 2 PR/PSL-1. This quality instruction defines the Quality Assurance Program, and in Appendix A, contains a list of equipment and activities which fall under QA jurisdiction. The instruction does not address the determination of safety-related, and the licensee has not established a "Q list" for this purpose. The methods utilized by the licensee to determine whether a PWO is safety-related should be proceduralized for consistency, and to ensure that a safety-related component is not inadvertently designated as non-safety-related.

In determining whether a radiation work permit (RWP) is required for a PWO, the planners utilize plant drawings and "common sense". Of three planners interviewed, none were familiar with the guidance provided in health physics procedure HP-1, Section 4, for deciding if an RWP is required. Although the inspector observed no areas where the planners had been non-conservative in making this RWP determination, they should all be familiar with and able to implement these procedural requirements. This is particularly important if the planner designates no RWP required because the health physics personnel are then removed from the PWO review chain. The proceduralization of the process for determining whether a PWO is safety-related, and utilization of HP-1, Section 4, for determining if an RWP is required, will be an Inspector Followup Item (335,389/85-12-01).

The work packages assembled by the planners for a PWO appeared to be very comprehensive and provided excellent guidance for craft personnel. A controlled copy of the latest revision of the applicable procedure or vendor's manual was attached, as well as applicable P&IDs and drawings. The inspector noted that since considerable time may elapse before a PWO is actually worked, there should be a procedural requirement that the procedure and drawing revisions be reverified just prior to beginning the work. If a planner determines that post-maintenance testing will be required for a PWO, a post-maintenance test form, QI-11, is attached to the work package. This form designates the testing to be completed, and provides an initial block for the performer and a signature block for the return to service. If special fire precautions are required, a hot work permit is also attached to the work package. One area of concern was noted by the inspector. In addition to determining if a PWO is safety-related, the planner determines if a clearance (protection) will be required. If a PWO is marked as non-safety-related, review by the shift supervisor is not required. If the same PWO was marked such that no clearance was required, it appears that work could begin on a secondary system without the cognizance of the shift supervisor. This potential problem could be resolved by requiring that all PWOs be approved by the shift supervisor, or that all PWOs have a clearance provided.

Per Administrative Procedure AP 0010432, all specific PWOs are forwarded to Quality Control for review. PWOs which are not nuclear safety-related may be stamped "NO QC REQUIRED" and returned to the planner. If the PWO is nuclear safety-related, QC reviews the package and places any special requirements, including "witness points", on the PWO. Section 8.10 allows work to be performed under emergency conditions without a complete PWO package. Section 8.10, Item 3, requires that a quality control supervisor evaluate the emergency and indicate necessary requirements. In the absence of a QC supervisor on back shifts and weekends, the shift supervisor (NPS) actually performs this QC evaluation. This exception should be provided for in the body of the procedure.

When a PWO is written, a numbered green PWO tag is placed on or near the specific piece of equipment in need of repair, and the bottom tab is removed and attached to the PWO. The green PWO tag provides information to other personnel that a work request has already been generated on the deficiency,

and prevents duplicate PWOs. The PWO tag also helps to ensure that personnel performing the work are working on the correct equipment. One problem noted by the inspector was that the PWO tag number does not coincide with the PWO number. A number of PWO tags which were quite old were observed hanging on various plant components. The licensee could not readily determine, by the PWO tag number, whether these PWOs were still active or whether they had been completed and the tags not removed. One PWO tag (06993), dated October 6, 1984, was traced back to a safety-related PWO which had not been worked. This PWO was written on the 1-A emergency diesel generator soak-back pump leaking oil. This pump is utilized in the standby mode to circulate oil, and to keep the diesel warmed-up and ready to start. The PWO priority sheet assigns a number code from 1, which is one day to start, to a 5, which is 30 days to start. This PWO had been open for over seven months with no work performed. Another PWO, 391378, was written on November 3, 1984, on the "A" diesel generator governor losing oil. According to the PWO, oil was being added two times per week to replace the lost oil. The priority assigned to the PWO was a C-3. A "C" rating, according to the priority sheet, is equipment important to unit availability such as heaters and cooling water pumps. It appears that the priority assigned to this PWO should have been an "A", which is equipment vital to plant safety. The "3" assigned, according to the priority sheet, meant work should have started within seven days. Work was not started until March 25, 1985, nearly five months later. Another PWO tag was observed by the inspector on the demineralized water make-up valve to the 1-A diesel generator. This PWO was written in February 1984, nearly a year and a half ago. The primary reason provided by the licensee for these excessively overdue PWOs on safety-related equipment was a shortage of maintenance personnel. In addition to a general long-term shortage, St. Lucie has loaned maintenance personnel to Turkey Point to support a refueling outage. The timely performance of maintenance on safety-related systems and supporting equipment will be an Inspector Followup Item (335,389/85-12-02).

The inspector reviewed two PWOs written on safety-related equipment to ensure that maintenance records were being properly retained. PWOs 396311 on the "A" boric acid pump, and 391378 on the "A" diesel generator, were reviewed. Both PWO records were complete; containing all required approvals, a QC review, a description of the work performed, recommendations for future planning, and the names of personnel performing the work. Parts requisitions, procedures, vendor drawings, and the completed post-test Q-11 forms were also attached. The clearances associated with these PWOs were filed separately. They were complete; including a list of protection provided, and independent verification for restoration of breakers and valves to the required positions. St. Lucie Technical Specification 6.10.1.b requires records and logs of principal maintenance activities, inspections, repairs and replacement of equipment related to nuclear safety, to be retained at least five years. Clearances contain records of safety-related valves and breakers repositioned, the names of personnel performing tagging, and a record of restoration and independent verification. This documentation should be retained five years. According to the record vault index, the five year retention is occurring, but operating procedure OP-0010122, Section 7.2, requires clearance orders to be retained for only

one year. The revision of this procedure to conform with the Technical Specification will be an Inspector Followup Item (335,389/85-12-03).

The inspector observed several maintenance tasks in progress; including modification and repair of a condensate pump on Unit 2, troubleshooting of the 1-A diesel generator, and the erecting of pipe hangers. In general, all work appeared to conform to applicable procedures and safety requirements. The condensate pump was lifted outside of the building in order to remove flow vanes which were breaking off. The inspector physically verified all protection tagging for the clearance order covering this work. Since the pump had to be lifted over safety-related cable trays, approval was obtained from the Facility Review Group (FRG). The 1-A diesel generator was experiencing a 100 KW oscillation every four minutes and extensive trouble-shooting over a two-week period had failed to resolve the problem. The inspector observed a coordinated effort between plant engineers, FP&L corporate trouble specialists, and vendor personnel to resolve the problem. The effort appeared well organized and planned, including a very systematic isolation of possible causes and replacement of components such as relays and the frequency controller. The inspector verified that the required Technical Specification surveillance testing was performed on the 1-B diesel generator during this 1-A diesel outage period. For the pipe hanger erection work, the inspector reviewed the posted hot work permit. No fire watch was required, but a fire extinguisher was provided as stipulated by the hot work permit during the welding.

7. Feedback of Operational and Maintenance Experience

The inspector reviewed the disposition of several I&E Information Notices at St. Lucie. The Notices are distributed by FP&L to the plants for further action. The plant Technical Group is responsible for determining which plant groups should receive the information and for establishing a file for each I&E Notice. The Notices are then distributed by the Technical Group with a due date for response.

Administrative Procedure AP 0005724, Operating Experience Feedback, requires the technical staff to followup and verify that "priority" items are completed as scheduled. The file for I&E Information Notice 84-58, Inadvertent Defeat of Safety Function Caused by Human Error Involving Wrong Unit, Wrong Train, or Wrong Systems, was reviewed by the inspector. The records indicated that this Notice was not sent to mechanical, electrical, or I&C. The wrong unit, wrong train, wrong system Notice is definitely applicable to all of these groups, as evidenced by increasing numbers of LERs generated by utilities involving personnel error. The response by the operations group to this priority I&E Notice appeared to be very poor, considering the following chronology of events:

a. July 25, 1984 - Notice issued by the NRC

b. July 30, 1984 - FP&L Licensing receives Notice

c. August 6, 1984 - Distributed to plant with a due date of October 1, 1984

d. October 8, 1984 - Sent to Operations

e. November 4, 1984 - Second request for response from Operations

f. April 30, 1985 - Third request for response from Technical Group to Operations

g. May 16, 1985 - Still active and open with no documented response

This particular I&E Notice utilized, as an example, an event at the FP&L Turkey Point facility in which an operator mistakenly valved-out the containment spray pumps on an operating unit. There is no documented evidence in the I&E Notice file that the licensee has taken adequate action to ensure that the contributing causes to this event have been resolved at St. Lucie including:

- the same access keys for both units

- identical identification tags on both units

- the operator did not carry the tag sheet (clearance) with him while performing valve isolations

- no independent verification was performed

The inspector also reviewed the file for I&E Notice 84-66, Undetected Unavailability of the Turbine Driven Auxiliary Feedwater Train, issued by the NRC on August 17, 1984. This Notice was provided to the licensee with a corporate due date of October 30, 1984, and a plant due date of November 15, 1984. The response to the corrective actions listed in Table I of the I&E Notice was not received by the due date, and another request was issued by the Technical Group to Operations on April 30, 1985. I&E Notice 84-42, Equipment Availability for Conditions During Outages Not Covered by Technical Specifications, was issued by the NRC on June 5, 1984, and received by FP&L on June 11, 1984. The Notice was distributed on June 16, 1984, with a due date of August 14, 1984. The Technical Group distributed the Notice to the QC, Training, and Operations Groups. QC responded on October 11, 1984, stating that the Notice had been reviewed with Operations inspectors. Training responded on September 14, 1984, stating that the information had been incorporated into the license requalification program. Operations did not respond until April 25, 1985, and the response was that the shift supervisors were aware of the system interrelationships. There was no indication that the corrective actions listed in the Notice were individually addressed and resolved including:

- A review of the management control of equipment for plant conditions not covered by the requirements of the Technical Specifications. The review will specifically address electrical system requirements during cold shutdown to ensure sufficient equipment remains available to maintain the plant in a safe condition and to meet the commitments of the Site Emergency, Security, and Fire Protection Plans.

- Establishing minimum equipment availability for specific conditions not covered by the Technical Specifications.

- Provide classroom training for all operators on the use and intent of the Site Emergency Plan.

- Integrate the use of the Site Emergency Plan into simulator training.

- Discuss the need for strict adherence to operating procedures with all operations personnel.

The NRC issues Information Notices in order to alert licensees of problems occurring at facilities, and to help avoid repetition. Although no specific response is required, it is expected that the recipients will review the information for applicability and consider actions to preclude similar problems at their facilities. FP&L and St. Lucie have established a program for this purpose, but it does not appear that the implementation is adequate. The responses are not timely enough to avoid potential repetition, and do not provide sufficient detail to ensure that all corrective actions have been evaluated for applicability. In addition, the plant distribution for some I&E Notices such as 84-58, Wrong Unit/Wrong Train, is too limited and should include mechanical, electrical and I&C personnel. The distribution and review of I&E Notices and the incorporation, as necessary, of the information into procedures, training courses, and/or required reading will be an Inspector Followup Item (335,389/85-12-04).

ANSI Standard N18.7, 1976, states that the causes of malfunctions shall be determined, evaluated, and recorded. Experience with the malfunctioning equipment and similar components shall be reviewed and evaluated to determine whether a replacement component of the same type can be expected to perform its function reliably. Currently, the control of this evaluation process at St. Lucie is informal. Documentation of both corrective and preventive maintenance activities are maintained in component files. These files are available for historical review of component maintenance on an as-needed basis. Identification of adverse maintenance trends is not administratively controlled in the licensee's program. However, the licensee is developing a computerized equipment data base that will improve the overall documentation, evaluation, trending and control of maintenance activities. Pending the establishment of formal administrative controls for the evaluation of component maintenance histories to identify repetitive failures and adverse trends, this item will be identified as an Inspector Followup Item (335,389/85-12-05).

8. Preventive Maintenance Program (PM)

The inspector conducted a review of the licensee's implemented preventive maintenance program (PM). This review consisted of reviewing the licensee's administrative, quality, and maintenance department procedures, numerous completed preventive maintenance work orders, and interviewing the PM planners for each maintenance department. Additionally, the inspector ascertained whether the licensee's program is in conformance with Technical

Specifications and commitments made to applicable regulatory guides and industry standards.

The licensee's PM program is implemented by Administrative Procedure 0010431, Preventative Maintenance Program. This procedure places overall responsibility for implementation and administration of the PM program with the maintenance superintendent. Additionally, the appropriate maintenance department heads are responsible for ensuring that the PMs are completed within the allotted time. Each department is assigned a planner, who is responsible for maintaining the schedule and frequency records, issuing PM work orders, and maintaining a followup system.

The mechanical, electrical, and instrumentation and control planners have organized the scheduling and tracking of PMs differently, but in conformance with the implemented administrative procedures. The PM program consists of a manual scheduling and tracking system. At the first of each month, the planners review the PM schedule and make up work order packages on each PM that is due. The packages consist of a work order with instructions, a copy of the appropriate procedure, and a retest data sheet, if needed. Having a planner develop the work packages for the maintenance shops is helpful and time saving.

The inspector noted a potential problem concerning the use of current procedures. After the planner makes up a PM work package using controlled procedure copies, it is given to the shops for completion. The PM may not be worked in a timely manner, and the licensee has no requirement for a journeyman to verify and document that the procedure he will use is still current. The journeyman could perform the PM using an outdated procedure and the mistake may not be caught until the post-work review. Additionally, the inspector noted that the electrical planner was assembling PM work packages using "information only" procedures, with no indication that they had been verified to be correct and current.

One other area of concern is the lack of timeliness in completing numerous safety-related PMs. Examples of this are:

- Unit 2, Charging Pumps "B" and "C" Lube Oil Change is a semi-annual PM, which was issued on December 1, 1984, and had not been completed as of May 6, 1985.

- Unit 2, Diesel "B" Fuel Oil Transfer Pump PM is a semi-annual PM, which was issued on December 1, 1984, and had not been completed as of May 6, 1985.

- Unit 2, Diesel Generator "B" Air Line Strainer PM is a semi-annual PM, which was issued on December 1, 1984, and had not been completed as of May 6, 1985.

- Unit 2, Charging Pump "C" Accumulator PM is a weekly PM which was issued on January 18, 1985, and had not been completed as of May 6, 1985.

- Unit 1, "1C" 125V DC Charger PM, issued on February 28, 1985, had not been completed as of May 3, 1985.

The licensee's administrative procedure on PMs requires the planners to submit a report to their appropriate assistant maintenance superintendents on all PM work orders not completed within 30 days of issuance. St. Lucie's PM program lacks guidance on the maximum time for completing PM work packages.

With the exception of the above concerns, the St. Lucie PM program appears to be adequate in meeting the requirements and commitments made in Technical Specifications, applicable regulatory guides, and industry standards.

9. Special Processes

The inspector reviewed the licensee's maintenance and QA programs to ensure that special processes are administratively controlled and accomplished with qualified procedures in accordance with applicable codes, standards, and specifications. The inspector verified that for applicable special processes, the licensee maintained current and proper certifications and qualifications of personnel designated to perform these functions. Selected special processes underway in the plant were observed by the inspector and several completed plant work orders were reviewed to verify that they had been accomplished in accordance with the licensee's program.

Topical Quality Assurance Report (TQR) - 9.0, Control of Special Processes, administratively implements the regulatory requirements for special processes at St. Lucie. Provisions for the control of specific processes are contained in various plant Quality Instructions (QIs).

QI 9 PR/PSL-3, Welding Control, provides the requirements for the control of materials, procedure qualification, training, personnel qualification, quality control, examination and verification of welding and related activities. The inspector observed several welding-related activities and verified that they were accomplished by qualified personnel utilizing approved procedures. The inspector also verified that appropriate burn permits were obtained and properly posted at the work location.

QI 9 PR/PSL-2, Control of Nondestructive Examination, provides the requirements for training, qualification and certification of NDE personnel. The instruction requires that all NDE activities be accomplished in accordance with approved procedures and by certified personnel. The inspector reviewed documentation of several completed maintenance activities that required visual examinations and verified that they had been accomplished.

QI 13 PR/PSL-2, Cleanliness Control Methods, provides the requirements and acceptance criteria for cleanliness during maintenance on applicable systems and components. The instruction describes cleanliness classifications, approved solvents, barrier materials, types and flushing methods. The inspector noted that the instruction addresses material accountability only for work being performed in the vicinity of the refueling cavity with the

head removed. The licensee was informed that the requirements for material accountability are applicable for all maintenance on safety-related systems and components when misplaced tools, equipment, or materials could be detrimental to a safety function.