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

Report No.: 50-302/85-25

Licensee: Florida Power Corporation
3201 34th Street, South
St. Petersburg, FL 33733

Docket No.: 50-302 License No.: DPR-72

Facility Name: Crystal River 3

Inspection Conducted: May 20-24, 1985

Inspectors: F. R. McCoy — Date Signed 6/12/85

W. K. Poertner — Date Signed 6/12/85

for D. P. Loveless — Date Signed 6/12/85

Approved by: C. A. Julian, Section Chief, Division of Reactor Safety — Date Signed 6/17/85

SUMMARY

Scope: This routine, unannounced inspection entailed 90 inspector-hours on site in the area of maintenance programs.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*G. Boldt, Operations Manager
*R. Wittman, Operations Superintendent
*L. Floyd, Records Management
*R. Murgatroyd, Maintenance
*C. Bennett, Planning
*W. Putman, Mechanical Maintenance
*S. Sullens, Electrical Maintenance
*J. Bufe, Compliance Specialist
*R. Thompson, NPE Mechanical Supervisor
*W. Johnson, Engineering Superintendent
*V. Roppel, Manager Plant Engineering and Technical Services
*W. Rossfeld, Nuclear Compliance Manager
*D. Smith, Maintenance Superintendent
S. Thadhani, Senior Nuclear Quality Engineer
T. Montgomery, Planning Coordinator
S. Baggett, Welding Engineer

Other licensee employees contacted included engineers, technicians, operators, and mechanics.

NRC Resident Inspectors

*T. Stetka
*J. Tedrow

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 24, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee.

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

Violation 83-04-01 (Closed): A review of the four quarterly procedure review records contained in Attachment 2 of Training Department Procedure TDP-203 (Revision 2 dated January 10, 1985) against the current index of Emergency and Abnormal procedures reflected that the four quarterly

procedure review records did, in fact, include all Emergency and Abnormal procedures. Consequently it is considered that actions taken in response to this violation have been effective. This item is considered closed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Inspector Followup Items

The inspectors reviewed documentation of IFI 84-16-02 concerning discrepancies between Maintenance Procedures MP-122 and MP-132. Although it is apparent efforts have been made by the licensee to resolve this issue, insufficient information was available to close this item due to absence of key licensee personnel. Therefore, IFI 84-16-02 remains open.

6. Planning and Scheduling of On Line Maintenance Activities

Crystal River Unit 3 utilizes a Nuclear Operations Planning Department staffed with a supervisor and two staff personnel to plan and coordinate the scheduling of all maintenance activities from all plant departments. The main objective of this department is to minimize the number of outages and consequently down time associated with each component of safety-related equipment. This is accomplished by coordinating all work activities, including non-immediate corrective maintenance and preventative maintenance, to be accomplished under one clearance just prior to the normally scheduled surveillance of the system comprised of the components of concern. Such a program requires a computer-based system of scheduling and maintaining status on required surveillance and work activities and requires that the schedule for periodic surveillance testing be held fixed and constant.

This program appears to be working very well at Crystal River Unit 3 as evidenced by data compiled by the licensee which shows significant reduction (50% or greater) in the number of clearances required to be issued for a given system or component and which shows reduction in the duration of time that maintenance requests remain outstanding.

7. Preventive Maintenance, Instrument Calibration Recall, and Predictive Maintenance Programs

Preventative Maintenance Procedures PM-100 and PM-200 respectively define the Preventative Maintenance and Instrument Calibration Recall Programs at Crystal River Unit 3. These programs are computer-based systems that schedule regular periodic preventative maintenance and calibration activities and document performance and review of these activities. Discrepancies noted during performance of an activity are required to be properly reported and, where required, corrected via the corrective maintenance work request program.

Activities which are not accomplished as scheduled are reported to the appropriate supervisor responsible for the program. The activity will then be rescheduled or cancelled with the reason for nonaccomplishment documented. Activities which are not accomplished are reported as overdue on an overdue calibration report and on a preventative maintenance jobs report. A review of overdue preventative maintenance and calibration activities for safety-related, Technical Specification and other surveillance procedure related equipment reflected that overdue activities were not excessive and were not extensively overdue.

Crystal River Unit 3 has contracted through an independent organization to implement a predictive maintenance program for safety-related pumps and turbines. This program is conducted on a regular basis coincident with the normal surveillance test program and provides for analysis of oil, vibration, and temperature data to trend performance of each applicable component. This program is intended to reduce premature equipment failure and minimize unscheduled downtime and appears to be an effective program for accomplishing these goals.

8. Equipment Control

All in-plant maintenance activities are required to be authorized by the Nuclear Shift Supervisor prior to accomplishment of the activity. Where isolation is required to perform the maintenance, clearances are issued to properly isolate portions of systems or components in accordance with Compliance Procedure CP-115. Clearances are set and issued with independent verification, and system restoration is accomplished with independent verification for boundary valves and all other valves within the clearance boundary during release of the clearance. Completed maintenance activities are reviewed by the Nuclear Shift Supervisor upon completion of work.

Required functional testing is specified on the work request and performed by the operations department prior to returning the equipment to service. Additionally, the operations department will review the master surveillance schedule for post maintenance testing of inservice inspection pumps, inservice inspection valves, and containment isolation valves in accordance with surveillance procedures SP-448 and SP-449 to determine any additional testing requirements prior to return of the equipment to service. Review of selected records indicates that this program of equipment control is properly implemented.

9. Trend Analysis

The Crystal River Unit 3 trend analysis program is delineated in Preventative Maintenance Procedure, PM-150. This program utilizes a computer based equipment history and two trending programs in order to provide for a semi annual review of those systems and components with excessive work history entries. A review of the trending programs reflected that, as utilized, these programs provide generalized data which does not really lend itself effectively to definitive analysis of past equipment problems. A review of

the equipment history data reflected that, as inputed, the data is difficult to understand and cumbersome to use for effective trend analysis.

The inspectors consider that the tools utilized in this program have excellent capability for effective trend analysis; however, improvements in the utilization of these tools are necessary if this program is to be used effectively for assessing the adequacy of the preventative maintenance program, and assessing the adequacy of component and system design based on repetitive failures.

The inspectors noted that in addition to the formal trend analysis program delineated in PM-150, comments are received from technicians on Preventative Maintenance Control Sheets and input is provided by other plant personnel through the use of Preventative Maintenance Activity Input Sheets. These sheets provide a vehicle for effecting necessary design and/or preventative maintenance program changes. Additionally, the Predictive Maintenance program provides an effective method for trending particular pumps and turbines.

The licensee acknowledged the inspectors' observations and stated that it has been recognized by the licensee that the current trend analysis program is not as effective as it could be. Long term corrective actions, such as evaluating increased dedication of personnel to this effort, have been underway in order to attempt to improve this situation. The inspectors concur with the licensee's efforts to improve this program.

10. Mechanical, Electrical and I&C Maintenance

References:

a. Administrative Instruction (AI)-600, Conduct of Maintenance

b. AI-400, Plant Operating Quality Assurance Manual Control Document (POQAM)

c. AI-900, Conduct of Quality Assurance and Quality Control Compliance Program

d. AI-1000, Good Housekeeping

e. AI-1805, Safe Working Procedures for Confined Spaces

f. Compliance Procedure (CP)-113, Handling and Controlling Work Requests and Work Packages

g. CP-111, Procedure for Documenting, Reporting and Reviewing Nonconforming Operations Reports

h. CP-115, In-plant Equipment Clearance and Switching Orders

i. CP-116, Standard Cleanliness Specifications

j. CP-118, Fire Prevention Work Permit Procedure

k. CP-0125, Corrective Action Procedure

l. Maintenance Procedure (MP)-111, Valve Packing Procedure and Specifications

m. MP-118, Valve Bonnet Removal and Reinstallation

n. MP-0524, Control and Issue of Welding Material

o. MP-0525, Control of Welding

p. Surveillance Procedure (SP)-111, Valve Lineup Verification for Critical Instrumentation

q. SP-601 - Procedure for Load Testing Slings and Lifting Fixtures

r. FPC Special Process Specification Manual

The inspectors reviewed the references and other implementing procedures and conducted interviews with plant management, and maintenance personnel and verified that the licensee's maintenance program contained the following attributes.

- Written procedures were established for initiating requests for routine and emergency maintenance.

- Criteria and responsibilities for development, review and approval of maintenance requests were established.

- Criteria and responsibilities that form the basis for designating the activity as safety or non-safety-related were established.

- Criteria and responsibilities were designated for performing work inspection of maintenance activities.

- Administrative controls for special processes were established.

- Methods and responsibilities for equipment control were clearly defined and established.

- Written procedures were established and responsibilities designated for cleanliness control of safety-related components and systems.

- Administrative controls and responsibilities for general housekeeping were established.

Compliance Procedure (CP) 113 defines the initation, approval and implementation of plant work requests. The inspectors reviewed numerous work requests and work packages to determine compliance with CP-113. The inspectors noted some confusion in the need for workers to sign or print

their name on the work request in the "work completed by" block. There was also some ambiguity on whose signature really constitutes responsibility for the work having been completed. CP-113 is presently under revision and the Maintenance Superintendent acknowledged these inconsistencies and committed to clarifying these points in the procedure. Until clarification, this will be identified as an Inspector Followup Item (IFI 85-25-01). The inspectors reviewed several work packages requiring special processes. These packages were reviewed to verify use of proper procedures, work performance by qualified individuals, all required documents contained in work packages, and proper signatures in required blocks. No discrepancies were identified.

The inspectors made several entries into the reactor building to observe maintenance work in progress and the general condition of the plant. The inspectors observed that licensee craft personnel who were interviewed were working to approved procedures and the work packages appeared complete. Crystal River is presently in a major outage. The cleanliness of the plant did not appear excessively cluttered considering the amount of maintenance being conducted during the outage.

Within this area no violations or deviations were observed.