UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report No.: 50-302/84-29

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 Dates: September 28 - October 23, 1984

Inspection at Crystal River site near Crystal River, Florida

Inspector: T. F. Stetka, Senior Resident Inspector — 11/16/84 Date Signed

Accompanying Personnel: J. E. Tedrow, Resident Inspector

Approved by: V. W. Panciera, Chief, Project Section 2B, Division of Reactor Projects — 11/16/84 Date Signed

SUMMARY

Scope: This routine inspection involved 93 inspector-hours on site by one resident inspector in the areas of Plant Operations, security, radiological controls, Licensee Event Reports and Nonconforming Operations Reports, and licensee action on previous inspection items. Numerous facility tours were conducted and facility operations observed. Some of these tours and observations were conducted on backshifts.

Results: One violation was identified: (Failure to follow surveillance procedures: paragraph 5.b.(8)).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*G. Boldt, Nuclear Plant Operations Manager
*R. Carbiener, Nuclear Compliance Specialist
*R. Clarke, Radiation Protection Manager
*M. Collins, Nuclear Safety and Reliability Superintendent
*M. Culver, Senior Nuclear Reactor Specialist
*D. Fields, Nuclear Reliability Supervisor
*H. Gelston, Nuclear Electrical/I&C Engineering Supervisor
*D. Green, Nuclear Licensing Specialist
E. Howard, Director, Site Nuclear Operations
*R. Hudnet, Nuclear Chief Electrician
*A. Jackson, Chief Health Physics Technician
J. Kraiker, Nuclear Operations Superintendent
*J. Lyon, Chief Nuclear Technical Support Technician
*P. McKee, Nuclear Plant Manager
*D. Nash, Nuclear Master Mechanic
*W. Rossfeld, Nuclear Compliance Manager
*P. Skramstad, Nuclear Chemistry and Radiation Protection Superintendent
*D. Smith, Nuclear Maintenance Superintendent
*J. Smith, Nuclear Shift Supervisor
*D. Spires, Nuclear Compliance Specialist
*R. Tyrie, Assistant Nuclear Operator

Other personnel contacted included office, operations, engineering, maintenance, chem/rad and corporate personnel.

*Attended exit interview

2. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on October 23, 1984. During this meeting, the inspector summarized the scope and findings of the inspection as they are detailed in this report. Also during this meeting the following items were discussed:

a. On October 15, the inspector observed an individual in a potentially contaminated area without protective clothing. The individual was not contaminated and review of the event indicates the individual inadvertently stepped into the area due to confusion over the area's posted requirements. This is considered to be an isolated event and not a programmatic problem but demonstrates the need to ensure area postings are clear and concise.

b. On October 10, the inspector observed what appeared to be an unproperly posted security zone. Further review indicated that the zone was properly compensated with guards from other zones and therefore, in compliance with the facility security plan.

c. An audit of active equipment clearances indicated some clearances were overdue for their monthly audit by one or two days. More attention to the audit system is necessary to assure audits are completed on a timely basis.

d. The inspector noted some "Information Only" copies of procedures in the "Working Copy" file in the chemistry laboratory. While no individual was observed using the "Information Only" copy, the potential exists for use of these procedures.

The licensee representatives acknowledged the inspector's comments and stated that actions to correct the applicable observations had already been taken.

3. Licensee Action on Previous Inspection Items

(Closed) Inspector Followup Item (302/84-22-03): The licensee has revised procedures, SP-731, SP-735, and SP-442 to include necessary information to assure that the required RMS-2 sampling is performed after a 15% or greater power change.

(Open) Unresolved Item (302/84-26-02): The licensee has revised the Off-site Dose Calculation Manual (ODCM) to clarify the manual calculation methods for setting the RML-2 trip setpoint. The licensee is also contacting the computer software vendor so that appropriate software changes can be made. It is expected that these changes will be completed by the end of 1984. This item remains open pending completion of the computer software change.

(Closed) Inspector Followup Item (302/83-27-04): The licensee has fabricated new sills for those fire doors that had excessive clearances to assure that all fire doors have an under door clearance of less than or equal to 3/8 of an inch. This work was completed on September 4, 1984. Selected doors were inspected by the inspector and were found to be in conformance with the fire code.

(Closed) Violation (302/84-09-05): The licensee has revised procedure SP-112 to include a calibration check of the Reactor Coolant System average temperature computer point (R-731). This revision was approved on September 28, 1984.

(Open) Inspector Followup Item (302/84-19-05): The licensee has conducted a test of the Engineered Safety Features Actuation System (ESFAS) in accordance with surveillance procedure SP-130 and verified during this test that expected annunciator alarms occur. Any discrepancies are being resolved and

procedure SP-130 will be revised accordingly. This item remains open pending completion of the procedure revisions.

(Closed) Violation (302/83-09-01) and Deviation (302/84-06-01): The licensee has supplied the inspector with calibration data for the selected instruments as discussed in paragraph 3 of NRC Report 50-302/84-26. The licensee has assigned specific personnel to implement and improve this calibration program and has made sufficient progress to ensure that all required instrumentation is calibrated on a periodic basis.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Review of Plant Operations

The plant continue to power operation (Mode 1) for the duration of this inspection period. On October 16, at 8:05 p.m., a control rod dropped into the reactor core causing a plant reduction in power to approximately 40% of full power. The control rod was retrieved and the plant returned to near full power by 5:00 a.m. on October 17. Details of this event are discussed in paragraph 7 of this report.

a. Shift Logs and Facility Records

The inspector reviewed records and discussed various entries with operations personnel to verify compliance with the Technical Specifications (TS) and the licensee's administrative procedures.

The following records were reviewed:

Shift Supervisor's Log; Reactor Operator's Log; Equipment Out-of-Service Log; Shift Relief Checklist; Auxiliary Building Operator's Log; Active Clearance Log; Daily Operating Surveillance Log; Work Request Log; Short Term Instructions (STI's); and selected Chemistry/Radiation Protection Logs.

In addition to these record reviews, the inspector independently verified clearance order tagouts.

No violations or deviations were identified.

b. Facility Tours and Observations

Throughout the inspection period, facility tours were conducted to observe operations and maintenance activities in progress. Some operations and maintenance activity observations were conducted during backshifts. Also, during this inspection period, licensee meetings were attended by the inspector to observe planning and management activities.

The facility tours and observations encompassed the following areas: Security Perimeter Fence; Control Room; Emergency Diesel Generator Room; Auxiliary Building; Intermediate Building; Battery Rooms; and Electrical Switchgear Rooms.

During these tours, the following observations were made:

(1) Monitoring Instrumentation - The following instrumentation was observed to verify that indicated parameters were in accordance with the TS for the current operational mode:

Equipment operating status; Area, atmospheric and liquid radiation monitors; Electrical system lineup; reactor operating parameters; and Auxiliary equipment operating parameters.

No violations or deviations were identified.

(2) Safety Systems Walkdown - The inspector conducted a walkdown of the emergency feedwater system to verify that the lineup was in accordance with license requirements for system operability and that the system drawing and procedure correctly reflect "as-built" plant conditions.

No violations or deviations were identified.

(3) Shift Staffing - The inspector verified that operating shift staffing was in accordance with TS requirements and that control room operations were being conducted in an orderly and professional manner. In addition, the inspector observed shift turnovers on various occasions to verify the continuity of plant status, operational problems, and other pertinent plant information during these turnovers.

No violations or deviations were identified.

(4) Plant Housekeeping Conditions - Storage of material and components and cleanliness conditions of various areas throughout the facility were observed to determine whether safety and/or fire hazards existed.

No violations or deviations were identified.

(5) Radiation Areas - Radiation Control Areas (RCA's) were observed to verify proper identification and implementation. These observations included selected licensee conducted surveys, review of step-off pad conditions, disposal of contaminated clothing, and area posting. Area postings were independently verified for accuracy through the use of the inspector's own radiation monitoring instrument. The inspector also reviewed selected radiation work permits and observed personnel use of protective

clothing, respirators, and personnel monitoring devices to assure that the licensee's radiation monitoring policies were being followed.

No violations or deviations were identified.

(6) Security Control - Security controls were observed to verify that security barriers are intact, guard forces are on duty, and access to Protected Area (PA) is controlled in accordance with the facility security plan. Personnel within the PA were observed to verify proper display of badges and that personnel requiring escort were properly escorted. Personnel within vital areas were observed to ensure proper authorization for the area.

No violations or deviations were identified.

(7) Fire Protection - Fire protection activities, staffing and equipment were observed to verify that fire brigade staffing was appropriate and that fire alarms, extinguishing equipment, actuating controls, fire fighting equipment, emergency equipment, and fire barriers were operable.

No violations or deviations were identified.

(8) Surveillance - Surveillance tests were observed to verify that approved procedures were being used; qualified personnel were conducting the tests; tests were adequate to verify equipment operability; calibrated equipment, as required, were utilized; and TS requirements were followed.

The following tests were observed and/or data reviewed:

- SP-130, Engineered Safeguards Monthly Functional Tests;
- SP-154, Functional Testing and Calibration of the Triaxial Time-History Accelographs and Triaxial Seismic Switch;
- SP-317, RC System Water Inventory Balance;
- SP-321, Power Distribution Breaker Alignment and Power Availability Verification;
- SP-336, Triaxial Time-History Accelograph Channel Check;
- SP-354A, Emergency Diesel Fuel Oil Quality and Diesel Generator Monthly Test;
- SP-709, Reactor Coolant and Decay Heat Non-scheduled Surveillance Program; and

- SP-735, Turbine Building Sump Continuous Release Surveillance Program.

As a result of these observations and reviews, the following items were identified:

(a) While reviewing the data for procedure SP-317 completed on September 28, the inspector noted that data sheet enclosure (3) was completed using data that assumed the reactor coolant pump seal leak-off valve (RCV-150) was closed. The data was subsequently reviewed by supervisory personnel and certified as correct. Since this procedure is performed three times a week, the inspector reviewed completed data just prior to the September 28 data run (September 26) and just after this data run (October 1) and noted that in these two leakrate determinations RCV-150 was open. The inspector also noted that re-positioning of RCV-150 required a reactor building entry and that no entries had been made during the period.

When these findings were discussed with licensee personnel, it was acknowledged that the procedure was completed with an error and the data was subsequently corrected. The erroneous and corrected data did not exceed any TS limit.

(b) While observing the performance of procedure SP154 on October 12, the inspector noted that step 6.1.1.6 of the procedure had been signed off as completed by the I&C technician performing the procedure and by the quality control inspector witnessing performance of the procedure. SP154 is performed under the guidance of a vendor representative who performs steps necessary for returning the system to operable status. In addition, step 6.1.1.6 requires the performance of surveillance procedure SP-336 by operations personnel. This surveillance procedure requires performance of the same steps as performed under the guidance of the vendor representative in order to further verify that the system has been returned to an operable status.

Review of records and discussion with licensee personnel indicated that SP-336 had not been performed and that personnel signed off step 6.1.1.6 after the vendor representative (who performs this procedure under observation of licensee personnel) told them that the system was operational. Based upon this information, the inspector reviewed the history for the performance of SP-154 (which is performed semi-annually) and determined that for at least the last five tests, dating from April 21, 1982, step 6.1.1.6 had not been performed but had been signed off as completed.

Failure to adhere to the requirements of procedures SP-317 and SP-154 are contrary to the requirements of Technical Specification 6.8.1 and is considered to be a violation.

Violation (302/84-29-01): Failure to adhere to the requirements of surveillance procedures SP-317 and SP-154.

(9) Maintenance Activities - The inspector observed maintenance activities to verify that correct equipment clearances were in effect; Work Requests and Fire Prevention Work Permits, as required, were issued and being followed; Quality Control personnel were available for inspection activities as required; and TS requirements were being followed.

Maintenance was observed and work packages were reviewed for the following maintenance activities:

- Alignment of the pump, motor, and gearbox for the "C" makeup pump in accordance with maintenance procedure MP-126;

- Repacking of vent and drain valves on the "C" makeup pump; and,

- Troubleshooting of the power supply circuit breaker for control rod 5-6.

No violations or deviations were identified.

(10) Radioactive Waste Controls - Liquid releases and solid waste compacting operations were observed to verify that approved procedures were utilized, that appropriate release approvals were obtained, and that required surveys were taken.

No violations or deviations were identified.

(11) Pipe Hangers and Seismic Restraints - Several pipe hangers and seismic restraints (snubbers) on safety-related systems were observed to ensure that fluid levels were adequate and no leakage was evident, that restraint settings were appropriate, and that anchoring points were not binding.

No violations or deviations were identified.

6. Review of Licensee Event Reports and Nonconforming Operations Reports

a. Licensee Event Reports (LER) were reviewed for potential generic impact, to detect trends, and to determine whether corrected actions appeared appropriate. Events, which were reported immediately, were reviewed as they occurred to determine if the TS were satisfied.

LER 84-18 was reviewed in accordance with current NRC enforcement policy and is closed.

b. The inspector reviewed Non-Conforming Operations Reports (NCORs) to verify the following: compliance with the TS, corrective actions as identified in the reports or during subsequent reviews have been accomplished or are being pursued for completion, generic items are identified and reported as required by 10 CFR Part 21, and items are reported as required by TS.

All NCORs were reviewed in accordance with the current NRC enforcement policy.

As a result of these reviews, the following items were identified:

(a) NCORs 84-201 and 84-210 reported failures of the Agastat time delay relays in the reactor coolant pump power monitor (RCPPM) system. These relays have a high rate of failure and the licensee is presently investigating a suitable replacement relay. All relay failures to date have resulted in conservative system response (i.e., a trip signal was generated).

Inspector Followup Item (302/84-29-02): Review the licensee's activities to replace the Agastat time delay relays in the RCPPM system.

(b) NCOR 84-210 reported the discovery that the presently installed "B" AC reactor trip breaker does not have a previous plant modification (MAR 77-11-14) installed. The inspector reviewed this modification and noted that the modification does not affect the tripping ability of the breaker. The modification was performed to prevent a manual reset action from causing a breaker trip (this has caused plant trips in the past). The licensee is presently scheduling the replacement of the installed breaker with a spare modified breaker and will modify the existing breaker accordingly.

Inspector Followup Item (302/84-29-03): Review the licensee's activity to remove and modify the "B" AC reactor trip breaker.

7. Nonroutine Operating Event Followup

At 8:05 p.m., on October 16, while operating at near full power, the plant experienced an operational transient when control rod 6 in rod group 5 (Rod 5-6) dropped into the reactor core. As designed, a plant runback to 60% of full power occurred thus preventing a plant trip. The resulting abnormal control rod configuration caused the quadrant power tilt (QPT) limits of 3.31 (steady state) and 8.81 (transient) to be exceeded. At 8:25 p.m. the operators reduced plant power to approximately 40% of full power as required by TS 3.2.4b. The maximum QPT observed was approximately 12.33.

The cause of the dropped rod was traced to an open control rod drive motor (CRDM) power supply breaker. The breaker was checked and exercised and no apparent abnormality was detected. The breaker was reclosed, the control rod relatched, and at 9:05 p.m. control rod withdrawal was commenced. At 10:39 p.m. the control rod was re-positioned at its fully withdrawn position. Following return of QPT to within TS limits, a return to full power commenced. The plant had returned to its operating full power limit at approximately 5:00 a.m. on October 17.

The inspector arrived in the control room shortly after the event occurred and verified the status of plant operating parameters and observed the activities of re-latching and returning rod 5-6 to its fully withdrawn position. During these observations and parameter reviews, the inspector noted two items that need further attention by the licensee.

(1) The QPT is monitored by the plant computer which alarms when the TS limits of 3.31 and/or 8.81 are exceeded. The inspector noted that the computer alarm setpoints were set at 3.31 and 8.81 thereby preventing adequate warning that the QPT was going out of specification. Additional warning time would allow corrective action to be taken prior to exceeding the TS limits.

(2) TS 3.2.4.b.3 requires a special surveillance be conducted if a power increase occurs prior to returning the QPT within limits. While the licensee returned QPT within limits prior to the power increase, and therefore this surveillance did not apply, no system exists to remind personnel to conduct this surveillance when it is applicable.

The licensee will reset the computer alarm points in a conservative manner to provide an early warning alarm and is investigating a means to inform personnel of the special surveillance requirements.

Inspector Followup Item (302/84-29-04): Review the licensee's progress in resetting the QPT computer alarms and in developing a means to inform personnel of QPT special surveillance requirements.