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

Report No.: 50-302/85-04

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: December 21, 1984 - January 31, 1985

Inspection at Crystal River site near Crystal River, Florida

Inspector: Robert L. Carroll Jr for 3/4/85
T. F. Stetka, Senior Resident Inspector Date Signed

Accompanying Personnel: J. E. Tedrow, Resident Inspector

Approved by: V. W. Panciera 3/4/85
V. W. Panciera, Chief, Project Section 2B Date Signed
Division of Reactor Projects

SUMMARY

Scope: This routine inspection involved 70 inspector-hours on site by one resident inspector in the areas of plant operations, security, radiological controls, annual emergency preparedness drill, Licensee Event Reports (LERs) 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: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*W. Bandhauer, Nuclear Safety Supervisor
G. Boldt, Nuclear Plant Operations Manager
*J. Bufe, Nuclear Compliance Specialist
*M. Collins, Nuclear Safety and Reliability Superintendent
*J. Cooper, Jr., Manager, Site Nuclear Quality Control
*M. Culver, Senior Nuclear Reactor Specialist
*D. Fields, Nuclear Reliability Supervisor
*R. Fuller, Supervisor, Radiological Support Services
*G. Hebb, Nuclear Shift Supervisor
*C. Heckler, Nuclear Mechanic
*W. Herbert, Nuclear Technical Specification Coordinator
*B. Hickle, Nuclear Chemistry and Radiation Protection Superintendent
E. Howard, Director, Site Nuclear Operations
*W. Johnson, Nuclear Plant Engineering Superintendent
*R. Long, Chief Nuclear Operator
*J. Lyon, Chief Nuclear Technical Support Technician
D. McCollough, Nuclear Chemistry Supervisor
*P. McKee, Nuclear Plant Manager
*D. Nash, Nuclear Master Mechanic
*E. Neuschaefer, Supervisor, Radiological Emergency Planning
E. Pinner, Nuclear Chemistry Supervisor
*V. Roppel, Nuclear Plant Engineering and Technical Services Manager
*W. Rossfeld, Nuclear Compliance Manager
*P. Skramstad, Nuclear Chemistry and Radiation Protection Superintendent
*D. Smith, Nuclear Maintenance Superintendent
*K. Wilson, Supervisor, Site Nuclear Licensing
*M. Wilson, Nuclear Electrical/I&C Supervisor

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 January 31, 1985. During this meeting, the inspector summarized the scope and findings of the inspection as they are detailed in this report with particular emphasis placed on the unresolved item and inspector followup items. Also, during this meeting the High Pressure Injection (HPI) System walkdown results were discussed. The inspector noted that six HPI valves were missing identification tags and that one valve was incorrectly labeled as a drain valve on a valve checklist, when in actuality it is a vent valve.

The licensee representatives acknowledged the inspector's comments and stated they would review these issues for appropriate corrective actions.

3. Licensee Action on Previous Inspection Items

(Closed) Inspector Followup Item (302/84-33-04): The licensee revised procedure SP-312, which is used to calculate reactor plant heat balance, to add a hand calculation method for a computer cross check.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. A new unresolved item identified during this inspection is discussed in paragraph 5.b.(8) of this report.

5. Review of Plant Operations

The plant continued power operation (Mode 1) for the duration of this inspection period.

On December 28, the licensee declared an Alert when the Control Room Annunciator System was lost. The plant was stable throughout the event and no safety systems were rendered inoperable. The Alert was exited upon restoration of the annunciator system.

On January 5, the licensee declared an Unusual Event when an Auxiliary Building radiation monitor alarmed. No limits were exceeded by this event. The Unusual Event was exited after the alarm cleared.

For details of these two events, see paragraph 8 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 (STIs); and selected Chemistry/Radiation Protection Logs.

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

During the review of the Shift Supervisor's Log, the inspector noted that on January 21, 1985, an isolation valve for a main feedwater pump (FWP) control oil pressure switch (FW-323-PS) was found not fully open. This caused the pressure sensed by the pressure switch to fall, initiating a low oil pressure alarm for the "A" FWP and one half of an anticipatory reactor trip signal to the "D" channel of the Reactor Protection System. An anticipatory reactor trip is initiated when both FWPs are lost and reactor power is greater than 10%. The licensee's investigation into this incident revealed that the pressure switch isolation valve was just barely open and that the valve was last operated during the performance of procedure SP-110, Reactor Protection System Functional Testing, on January 3, 1985. The partially opened valve, coupled with a minor fitting leak on the switch, caused the pressure to bleed off the switch, resulting in a trip of the switch. The inspector's review of this event indicated that the probable cause was improper valve restoration upon completion of SP-110. The licensee is revising procedure SP-110 to provide additional instructions to ensure that these types of valves be left in the full open position at the completion of the appropriate steps.

Inspector Followup Item (302/85-04-01): Review revision to SP-110 to ensure that main feedwater pump control oil isolation valves in instrumentation sensing lines are fully opened.

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 High Pressure Injection System (part of the make-up and purification 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 (RCAs) 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 the 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-317, RC System Water Inventory Balance;
- SP-713, GOW-MAC Quarterly Surveillance Program;
- SP-715, Containment Building Spray Semiannual Surveillance Program;
- SP-349, Emergency Feedwater System Operability Demonstration;
- SP-140, In-core Neutron Detector System Calibration;
- SP-163, Waste Gas H_2/O_2 Analyzer Channel Functional Test and Channel Calibration; and
- SP-370, Quarterly Cycling of Valves (for stroke time of valve ASV-5).

As a result of these reviews, the following item was identified:

- Procedure SP-715 is performed in accordance with procedure CH-134, Determination of NaOH Concentration. CH-134 requires the temperature and specific gravity of the sample to be recorded on the data sheet for SP-715. The chemistry technician performing the procedure failed to record the sample temperature and specific gravity as required. Discussion with licensee personnel revealed that the specific gravity and temperature of the sample were actually taken but not recorded, apparently due to procedure inadequacy and/or personnel error. It appears that this recording omission did not affect the chemistry results; however, the inspectors will interview the technician to verify the proper analysis was performed. To prevent recurrence, the licensee is revising SP-715 to include appropriate blanks for logging the specific gravity and temperature of the sample.

Unresolved Item (302/85-04-02): Interview chemistry technician who performed SP-715 to ensure sample was performed properly and procedure SP-715 is revised to include blanks for logging specific gravity and temperature.

(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:

- Troubleshooting negative ground in control room annunciator panels;
- Repair of a seized shaft on Emergency Feedwater Pump (EFP) 2 in accordance with MP-124, Emergency Feedwater Pumps Disassembly and Reassembly;
- Repair of seat leak on ASV-5 in accordance with MP-120, Pressure Seal Valve Disassembly, Repair, and Reassembly; and
- Replacement of the Governor for EFP-2.

No violations or deviations were identified.

(10) Radioactive Waste Controls - Selected gaseous and liquid waste releases 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. LERs 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 84-022 was reviewed in accordance with current NRC enforcement policy.

No violations or deviations were identified and this LER 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.

NCR 84-247 reported Emergency Feedwater Pump EFP-2 tripped on overspeed several times during performance of the monthly surveillance test in accordance with SP-349B (Emergency Feedwater System Operability Demonstration). The cause for the overspeed trip was identified to be steam leakage past steam supply valve ASV-5 causing the turbine to continue to roll at a low RPM before the unit was started. With shaft motion present, the governor's speed control system is unable to respond quickly enough to prevent an overspeed trip upon pump starting. The licensee has repaired ASV-5 and thus stopped the shaft rolling. The licensee plans to install a modified governor on EFP-2 with an auto-bleed feature that will release oil pressure on the governor's speed setting cylinder and therefore prevent a pump trip on overspeed if the shaft is rolling prior to pump start.

Inspector Followup Item (302/85-04-03): Follow the licensee's activity for replacement of EFP-2 governor with a modified governor.

NCOR 85-14 reported finding breakers for Emergency Feed Valves EFV-1 and EFV-2 not properly positioned. Procedure SP-381, Locked Valve List, requires both breakers to be locked open with security locks. The EFV-1 breaker was found closed (on) and the EFV-2 breaker was locked open (off) with a system lock instead of a security lock. The actual EFV-1 and EFV-2 valves were in their closed position as required. SP-381 was recently changed to require security locks be placed on locked open valve breakers. Since SP-381 is performed quarterly, the new requirement to place security locks on circuit breakers and valves had not been implemented at this time. The improperly positioned breakers were discovered during a plant tour by operations personnel. The licensee locked open both breakers with security locks as required by SP-381. Discussion with the licensee revealed that the breaker for EFV-1 was not properly restored after equipment clearance 1-130 was released. The licensee is researching methods to prevent breaker or valve mispositioning when systems are restored after a clearance release to ensure that the return to normal configurations are consistent with plant procedures.

Inspector Followup Item (302/85-04-04): Follow licensee's activity to prevent breaker or valve mispositioning after systems are restored from clearance release.

NCOR 85-04 reported the inadvertent release of the wrong Evaporator Condensate Storage Tank (ECST). The technician analyzing the data for the liquid release of both ECSTs, WDT-10A and WDT-10B, inadvertently switched the tank data with the tank's identification by recording "WDT-10A" on the release permit using sample information from "WDT-10B". Tank WDT-10A was subsequently released by operations. Subsequent supervisory review of the release permit identified the error and the actual data for tank WDT-10A was reanalyzed to verify that no release limits had been exceeded. The inspector's review of this event showed no limits were exceeded due to the conservative limits used by the licensee.

To prevent recurrence, the licensee's short term actions were to issue a memo written to chemistry technicians to require a second review of data on the release permit prior to initiating the release. The second reviewer is required to initial the release permit. The long term corrective action will be to revise the data release permit form to require two reviewers to review the data and to sign off the data indicating completion of this review.

Inspector Followup Item (302/85-04-05): Review revision to liquid release permit form that will require two reviewers to review and sign off the permit.

7. Nonroutine Operating Event Followup

a. At 8:20 a.m., on December 28, 1984, the Control Room Annunciator System was lost due to a positive electrical ground on a component served by the system in conjunction with a pre-existing intermittent negative ground on the system. An Alert was declared in accordance with the Radiological Response Plan. Operating personnel immediately began to closely monitor vital plant parameters to compensate for the loss of annunciators and initiated ground isolation procedures for the system. At 8:30 a.m., on December 28, 1984, the positive ground was isolated to a group of 25 annunciator points and the remainder of the annunciator system was returned to service. The Alert was exited upon restoration of the annunciator system. Troubleshooting further revealed the positive ground to be on Heat Trace Recorder HTRT-1 and the ground was repaired at 2:00 p.m., on December 28, 1984. Troubleshooting continued in an effort to locate and eliminate the intermittent negative ground on the system. On January 17, 1985, the ground was discovered to be associated with a window in annunciator box ICS-CY4 and it was corrected. The licensee is considering modification to the annunciator system to minimize these types of problems.

b. At 7:35 a.m., on January 5, 1985, the licensee declared an Unusual Event when a high alarm was received on the Auxiliary Building Exhaust Radiation Monitor (RMA-2). The cause of the alarm was the failure of a loop seal on the "B" Reactor Coolant Bleed Tank (RCBT) creating a radioactive gas release to the Auxiliary Building. The Auxiliary Building was evacuated until the cause was identified and the loop seal

restored. The inspector reviewed this event and determined that no limits were exceeded. The licensee exited the Unusual Event after the alarm cleared at 7:57 a.m., on January 5, 1985. During NRC and State notifications, apparent reporting errors were made by the licensee creating confusion as to the actual status of the release. As a result of these errors, the licensee is considering possible changes to the Emergency Procedures to ensure releases are reported properly and to provide quick dose release calculations.

Inspector Followup Item (302/85-04-06): Review the licensee's activities to make applicable changes to the Emergency Procedures to ensure that releases are reported properly and to provide quick dose release calculations.

9. On January 30, 1985, the annual emergency drill was conducted by the licensee to verify the effectiveness of the Radiological Emergency Response Plan implementing procedures. In addition to the licensee, the participants in the drill included the State of Florida, Citrus and Levy Counties, and the NRC. The drill was observed by a number of personnel, including the NRC. Details of this drill, including the results of the critiques held on January 31, 1985, are discussed in NRC Inspection Report 50-302/85-02.

No violations or deviations were identified.