



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

Report No.: 50-302/84-12

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 at Crystal River site near Crystal River, Florida

Inspectors: V. W. Panciera  
 for T. F. Stetka, Senior Resident Inspector

6/11/84  
 Date Signed

V. W. Panciera  
 for R. V. Crlenjak, Senior Resident Inspector  
 (April 23-27)

6/11/84  
 Date Signed

Approved by: V. W. Panciera  
 V. W. Panciera, Section Chief, Project Section 2B  
 Division of Reactor Projects

6/11/84  
 Date Signed

SUMMARY

Inspection on March 28 - April 27, 1984

Areas Inspected

This routine inspection involved 121 inspector-hours on site by two resident inspectors in the areas of plant operations, security, radiological controls, emergency preparedness, Plant Review Committee activities, License 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 back shifts.

Results

One violation was identified (Failure to conduct adequate inspections subsequent to plant maintenance and/or modification activities; paragraph 5.b.(12)).

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- G. Boldt, Operations Manager
- R. Clarke, Plant Health Physicist
- \*\*\*W. Clemons, Nuclear Compliance Specialist
- \*G. Edge, Secretary II
- \*\*V. Hernandez, Senior Quality Auditor
- E. Howard, Director, Site Nuclear Operations
- W. Johnson, Acting Maintenance Superintendent
- \*J. Kraiker, Operations Superintendent
- \*P. McKee, Plant Manager
- \*\*S. Mansfield, Nuclear Compliance Supervisor (Acting)
- \*\*R. Murgatroyd, Assistant Nuclear Maintenance Superintendent
- J. Roberts, Nuclear Chemistry Manager
- S. Robinson, Nuclear Waste Manager
- \*\*V. Roppel, Engineering and Technical Services Manager
- \*\*R. Thompson, Licensing Engineer
- \*\*K. Wilson, Site Nuclear Licensing Supervisor

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

- \*Attended exit interview held on April 25.
- \*\*Attended exit interview held on April 27.
- \*\*\*Attended both exit interviews.

### 2. Exit Interview

The inspectors met with licensee representatives (denoted in paragraph 1) on April 25 and 27, 1984. During these meetings, the inspectors summarized the scope and findings of the inspection as they are detailed in this report. At the April 25 meeting, inspector followup items were discussed. At the April 27 meeting, the violation was discussed and acknowledged by the licensee.

### 3. Licensee Action on Previous Enforcement Matters

(Closed) Inspector Followup Item (302/83-18-08): An engineering evaluation was performed on air operated containment isolation valve (CIV) MUV-49. As a result of this evaluation, it was determined that MUV-49 was properly designed to meet single failure criteria and as a result does not represent a design deficiency. The inspector reviewed this report and has no further questions on this item.

#### 4. Unresolved Items

There were no unresolved items identified during this inspection period.

#### 5. Review of Plant Operations

The plant continued power operation (Mode I) until March 29, when the plant was shutdown to hot standby (Mode III) to check oil levels on reactor coolant pumps (RCPs). The plant returned to Mode I at 1:15 p.m. on the same day and continued in this operation until April 5, when at 6:40 a.m., the plant was shutdown to Mode III to perform some control rod work, check RCP oil levels and to inspect some inaccessible hydraulic snubbers. The plant returned to Mode I at 5:46 p.m. on April 8 and continued operation until Friday, April 13, when a shutdown to cold shutdown (Mode V) was initiated. Mode V was attained at 2:43 p.m. on April 15. During this shutdown, major maintenance included replacement of a leaking feedwater nozzle on a steam generator, inspection completion of the inaccessible hydraulic snubbers, and replacement of a pressurizer relief valve (RCV-8). The plant returned to Mode I operation at 5:35 a.m. on April 20 and continued in the mode until 10:39 a.m. on April 26, when a plant trip occurred (see paragraph 8 of this report for details). The plant returned to Mode I operation at 6:17 p.m. on April 26 and continued in this mode for the remainder of the inspection period.

##### a. Shift Logs and Facility Records

The inspector reviewed records and discussed various log entries with operations personnel to verify compliance to 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.

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 observed 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; Electrical Switchgear Room; and, Cable Spreading Room.

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.

- (2) Safety Systems Walkdown - The inspector conducted a walkdown of the Core Flood 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.

During the plant shutdown to Mode III on April 5, the licensee established a dedicated operator watch at a manually operated containment isolation valve (SAV-23) to enable this valve to be opened so that breathing air could be supplied to personnel working within the reactor building. TS 3.6.3.1 requires this valve to be shut during Mode III operations, however, NRC has taken the position that such manually operated valves can be opened to perform necessary functions as long as a dedicated operator in continuous contact with the control room is stationed at the valve such that the valve can be immediately closed in the event of an accident.

At approximately 1:00 a.m. on April 6, the inspector observed the dedicated operator at SAV-23 to be asleep. Upon waking up the operator, the inspector notified the control room of this finding. The operator was immediately replaced and periodic checks were established to assure the operator remained awake.

The inspector's review of this event indicates that the operator came on watch at approximately 11:45 p.m. on April 5. Therefore,

the maximum time, the operator could have been asleep was 1 hour and 15 minutes.

The immediate corrective action taken by the licensee, to prevent recurrence, was to replace the operator and establish periodic checks to assure the operator remains alert. Long term corrective action includes development of a procedure to address the dedicated operator issue.

Inspection Followup Item (302/84-12-01): Review development of a procedure to direct implementation and use of a dedicated operator.

- (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 exist.

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 monitoring instrument. The inspector also reviewed selected radiation work permits and observed personnel use of protective clothing, and respirators, and that personnel monitoring policies were being followed.

No violations or deviations were identified.

- (6) Security Controls - 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 insure proper display of badges and that personnel requiring escort were properly escorted. Personnel within vital areas were observed to insure proper authorization for the area.

No violations or deviations were identified.

- (7) Fire Protection - Fire protection activities, staffing and equipment was 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 are operable.

No violations or deviations were identified.

- (8) Surveillance testing was observed to verify that approved procedures were being used; qualified personnel were conducting the tests; testing was 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-110, Reactor Protective System Functional Testing;
- SP-113, Power Range Nuclear Instrumentation Calibration;
- 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-333, Control Rod Exercises;
- SP-336, Triaxial Time-History Accelograph Channel Check;
- SP-421, Reactivity Balance Calculations; (For the reactor shutdown margin determination. The inspector also independently calculated a shutdown margin and verified good agreement between the two results).
- SP-430, Containment Air Locks; and
- SP-521, Quarterly Battery Check.

No violations or deviations were identified.

- (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:

- Electrical checks of the control rod drive system in accordance with preventive maintenance procedure PM-126;
- Replacement of the control rod absolute position indication (API) and relative position indication (RPI) switchover relays;
- Modification and qualification of GE Type HFA relays;
- Replacement of the motor operator on valve DHV-5; and
- Replacement of a low pressure bistable in the engineered safeguards system.

No violations or deviations were identified.

- (10) Radioactive Waste Controls - Selected liquid and gaseous 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 insure 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.

- (12) Electrical Cables and Cable Trays - Several safety-related electrical cables and cable trays were surveyed to determine if their present condition reflected "as-built" plant conditions and, if not, that the present condition was covered by an outstanding Work Request (WR).

During a tour of the cable spreading room, the inspector noted that several junction box, cable tray and conduit covers were removed or ajar. While these findings were considered to be minor, the inspector also noted a deficiency involving the loss of a fire barrier separating two safety-related electrical tray cable trays in which barrier sections, consisting of metal tray covers with a flame retardant material applied to the cover, were removed and/or ajar. These cable trays, numbers 185 (green) and 171 (red), passed one above the other in the northeast section of the cable spreading room.

During a tour on the 119 foot level of the auxiliary building, the inspector identified a vertical run of cable tray, number 522 (red), that had cables hanging out of the tray and draped across several fluid system pipes where the tray turns from the vertical to a horizontal run. Further investigation of this configuration indicates that no consideration had been taken for the effect of excessive piping temperatures on cable insulation or for the effect of the inadequate support on the cable conductors.

Review of these findings by licensee personnel indicate that these non "as-built" conditions were not covered by an active work request. It appears that these conditions were the result of inadequate restoration to design (as found) status following plant maintenance or equipment alteration as specified in Compliance Procedure CP-113, Handling and Controlling Work Requests and Work Packages.

Failure to restore safety-related systems to design (as found) status following plant maintenance and/or equipment alteration is contrary to the requirements of Technical Specification 6.8.1a and 10 CFR 50, Appendix B, Criterion V, and is considered to be a violation.

Violation (302/84-12-02): Failure to restore safety-related systems to design (as found) status following equipment alteration and/or system modification.

6. Review of Licensee Event Reports and Non-Conforming Operations Reports

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

LERs 84-003 through 84-006 were reviewed in accordance with the current NRC enforcement policy. LERs 84-005 and 84-003 are closed. LERs 84-006 and 84-004 remain open for the following reasons:

- (1) LER 84-006 reported the failure to test the cable tunnel sump pumps within one hour after removing an emergency diesel generator from service. Discussion with licensee personnel indicated that in addition to counseling personnel, the licensee intends to revise appropriate procedures to prevent recurrence of this event, however, the LER does not discuss this corrective action. The licensee will submit a supplemental LER to discuss this corrective action. This LER remains open pending issuance of the supplemental report and implementation of the corrective action.
  - (2) LER 84-004 reported the finding that manual isolation valves were left shut preventing operation of the newly installed Post Accident Sampling System (PASS). To prevent recurrence of this event, the licensee is revising some operating procedures and changing the methodology for system turnovers upon completion of a plant modification. This LER remains open pending completion of these activities.
- b. The inspector reviewed Non-Conforming Operations Reports (NCOR) 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 the TS.

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



As a result of this review, the following items were identified:

- (1) NCOR 84-103 reported a start failure on the "B" emergency diesel generator (EDG) during surveillance testing. When a second attempt was made to start the diesel soon thereafter, the diesel started, operated normally, and is considered to be operable. The licensee is investigating the reason for the start failure.

Inspector Followup Item (302/84-12-03): Review licensee activities to determine EDG-B start failure.

- (2) NCOR 84-106 reported the failure to perform the monthly engineered safeguards (ES) surveillance test (SP-130) within the required surveillance interval. The test was completed approximately two days late and successful completion of the test verified all applicable ES equipment to be operable.

The licensee is presently re-evaluating the methods used to insure timely completion of surveillance requirements to prevent recurrence of this event.

This item is considered to be a licensee identified violation in which prompt corrective action was completed. The licensee's long term corrective action remains to be reviewed.

Inspector Followup Item (302/84-12-04): Review the licensee's long term corrective actions to prevent exceeding TS required surveillance intervals.

## 7. Emergency Drill

On April 25, 1984, 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 that included the NRC. Details of this drill, including the results of the critiques held on April 26, are discussed in NRC Inspection Report 50-302/84-13.

The inspector has no questions in this area at this time.

## 8. Plant Trips - Safety Systems Challenges

- (1) On April 24 at approximately 10:40 a.m., an engineered safeguards (ES) actuation occurred on the 'B' side during surveillance testing of the ES system. The plant was operating at near full power during this event and a plant trip did not occur due to rapid operator action. The actuation resulted in approximately 40 gallons of borated water being injected into the reactor coolant system.

The licensee determined the cause of this event to be the failure of a bistable amplifier in the low pressure injection circuitry. The amplifier was replaced and the test was successfully completed. The inspector observed replacement of the amplifier, questioned licensee personnel during the investigations and reviewed the completed test data.

As a result of these reviews, the inspector has no further questions on this item at this time.

- (2) On April 26 at approximately 10:39 a.m., a reactor trip from near full power occurred due to the failure of the "Y" non-nuclear instrumentation (NNI) power supply. The failure of the NNI Y supply caused a reduction in main feedwater flow resulting in a reactor trip on high reactor coolant system pressure. The trip resulted in a normal plant shutdown.

Investigation by the licensee indicates that the failure in the NNI Y supply was caused by a shorted capacitor in the internal 24 volt power supply. The licensee repaired the supply and commenced a plant startup. The plant entered the startup mode (Mode II) at 5:58 p.m. and returned to power operation (Mode I) at 6:17 p.m.

The inspector arrived in the control room soon after the reactor trip and observed shutdown operations. Plant parameters were reviewed and no abnormalities were observed.

The inspector has no further questions on this event at this time.