



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

Report No.: 50-302/84-19

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: June 1-26, 1984

Inspection at Crystal River site near Crystal River, Florida

Inspector: John F. Rogge Jr. for  
T. F. Stetka, Senior Resident Inspector

7/18/84  
Date Signed

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

7/19/84  
Date Signed

SUMMARY

Scope: This routine inspection involved 103 inspector-hours on site by one resident inspector in the areas of plant operations, security, radiological controls, Plant Review Committee activities, Licensee Event Reports and Nonconforming Operations Reports, licensee action on previous inspection items, and IE Bulletin 84-02. Numerous facility tours were conducted and facility operations observed. Some of these tours and observations were conducted on back shifts.

Results: Two violations were identified (Failure to control maintenance activities, paragraph 5.b(9); Failure to have a calibration procedure and to calibrate plant instrumentation, paragraph 5.b(8) b).

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*\*\*G. Boldt, Operations Manager
- \*R. Clarke, Plant Health Physicist
- \*\*W. Clemons, Nuclear Compliance Specialist
- J. Cooper, Manager Site Nuclear Quality Control
- \*\*R. Carbiener, Nuclear Compliance Specialist
- \*\*G. Hebb, Nuclear Shift Supervisor
- \*E. Howard, Director, Site Nuclear Operations
- \*P. Hughes, Engineer I
- \*\*\*W. Johnson, Acting Maintenance Superintendent
- \*J. Kraiker, Operations Superintendent
- \*\*\*S. Mansfield, Compliance Supervisor
- R. Mathews, Calibration Laboratory Supervisor
- \*P. McKee, Plant Manager
- \*V. Roppel, Assistant Engineering and Technical Services Manager
- \*B. Rossfeld, Compliance Manager
- \*P. Skramstad, Nuclear Chemistry and Radiation Protection Superintendent
- \*\*K. Wilson, Site Nuclear Licensing Supervisor

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

- \*Attended June 22 exit interview
- \*\*Attended June 26 exit interview
- \*\*\*Attended both exit interviews

### 2. Exit Interview

The inspector met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on June 26, 1984. During this meeting, the inspector summarized the scope and findings of the inspection as they are detailed in this report. During this meeting, the violations and inspector followup items were discussed.

### 3. Licensee Action on Previous Inspection Items

(Closed) Unresolved Item (302/83-27-06): The licensee has revised procedure SP-137 (Revision 21 dated May 31, 1984) to include appropriate correction factors for changes in pressurizer level and average reactor coolant system (RCS) temperature. In addition, the revised procedure includes corrective calculations to account for changes in the reactor coolant drain tank inventory.

(Closed) Unresolved Item (302/80-24-04): The licensee has completed a review of overdue reports and no longer has a backlog of old NCOR's of greater than approximately one month. The new review and evaluation system for NCOR's appears effective in preventing these reports from becoming excessively overdue.

(Closed) Inspector Followup Item (302/80-33-05): The licensee has added the generator field over-current relays to the preventive maintenance program. These relays are now checked annually in accordance with procedure PM-102, Protective Electrical Relays.

(Closed) Inspector Followup Item (302/83-30-01): The Relay System Quality Operating Manual was revised on March 19, 1984, and now provides a  $\pm 3\%$  tolerance for the time over-current unit.

(Closed) Unresolved Item (302/80-14-03): The licensee revised procedures SP-169 and PM-132 that calibrates this instrumentation, and OP-501 to ensure appropriate precautions are taken prior to removing or replacing NNI buffer amplifiers.

(Closed) Violation (302/82-29-01): Operations personnel were re-instructed to log all Technical Specification action statement entries. Review of plant operations by the Resident Inspector subsequent to this event indicates that this re-instruction was effective in preventing recurrence of this event.

(Closed) Violation (302/82-29-07): In a letter to Florida Power Corporation from NRC dated October 13, 1983, the licensee was informed that as a result of subsequent reviews by NRC, it was determined that a violation did not occur.

(Closed) Violation (302/82-11-13): The licensee completed system walk-downs and revised flow diagrams to be consistent with the "as built" system configurations. The licensee has also implemented the Computerized Drafting System (CAD). This CAD system appears effective in keeping drawings current by reducing the drawing revision time. The inspector has completed several system walk-downs since the occurrence of this violation and has determined that the present diagrams are accurate for present system configurations.

(Closed) Violation (302/82-11-12): In their response letters dated September 24 and November 2, 1982, the licensee stated that valve lineups would be corrected by November 9, 1982. A subsequent NRC inspection conducted on June 28 - July 29, 1983 (NRC Report 50-302/83-18) determined that these activities were not complete and that the licensee was not in full compliance. As a result, an additional violation was issued at the time (NRC Violation (302/83-18-01)). Subsequent system walk-downs by the inspector indicate a considerable improvement in the accuracy of the valve lineup check lists. Based upon the reviews, this violation is considered to be closed. Additional followup with regard to valve lineups and other improvements will be followed under violation (302/83-18-01).

(Open) Violation (302/83-18-01): The licensee has completed some of the activities discussed in the response letter dated November 30, 1983, and some completed activities have been observed by the resident inspector during system walk-downs. The licensee has stated that procedure revisions will be completed by July 31, 1984, and that drawing deficiencies discovered by the licensee will be corrected by September 17, 1984. This item remains open pending review of these corrective actions.

(Closed) Inspector Followup Item (302/84-02-08): As a result of the licensee's investigation of the circuit breaker insulation failures, it has been determined that the insulation failure will not make the breaker inoperable. The licensee intends to replace all failed insulation when replacement material is received (it is presently on order) and when plant conditions will permit replacement. In the meantime, a Short Term Instruction (STI) has been issued to provide an operational notice to inspect any applicable breaker that trips as the result of an overcurrent conditions. This STI will be reissued periodically until all damaged insulation material has been replaced.

(Closed) Inspector Followup Item (302/80-42-10): The licensee has implemented two plant modifications (MARs 78-06-12 and 78-06-12A) that will upgrade the rad-waste tank level instrumentation. Improved operating procedures have minimized recurrence of these events.

(Closed) Violation (302/81-15-02): The inspector verified that the sight glasses on the applicable emergency feedwater pump were restored to their proper configuration and that the management memorandum was issued. Changes made to the modification program since this event appear effective to prevent recurrence.

(Closed) Violation (302/81-15-10): The inspector verified that the required seismic analyses were performed and that the "as-installed" modification is adequate. In addition, the inspector verified by review of the emergency feedwater flow analysis that the modified flow was sufficient to meet decay heat removal requirements. Changes made to the modification program since this event appear effective to prevent recurrence.

(Closed) Violation (302/82-18-01): The licensee has completed revising those maintenance procedures (MPs) by utilizing procedure sign-off blanks within the body of the procedure in lieu of separate check-off lists for those procedures that have time constraints. In addition, the licensee has decided to revise all MP's in this manner to provide user friendly procedures. Approximately sixty-eight percent of the procedures have been revised with the remaining procedures being completed by December 1984. The inspector's numerous observations of work activities in progress indicate high personnel awareness to use of procedure sign-offs and procedure adherence.



(Open) Violation (302/84-02-01): The inspector reviewed the licensee's corrective actions, as stated in the response letter to this violation dated April 30, 1984, and determined through discussions with licensee personnel and observation of activities that the control of the calibration laboratory key by the shift supervisor does not appear to be fully effective in preventing a recurrence. The licensee is considering other methods to insure more effective control of calibration lab activities during times when a QC inspector is unavailable. This item remains open pending review and implementation of these additional corrective actions.

(Open) Inspector Followup Items (302/83-30-02): The licensee has not yet conducted re-training of qualified reviewers but has scheduled this training to be completed by the end of September 1984. In addition the licensee has substantially reduced the number of qualified reviewers and is making other changes to improve the program. This item remains open pending completion of the training and program changes.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Review of Plant Operations

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

a. Shift Logs and Facility Records

The inspector reviewed records and discussed various 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.

During the check of a clearance order tagout on June 15, the inspector noted that the DC disconnect switch panel (DPDP 6A) referenced on the clearance order did not have the individual switches numbered. The clearance order required a tag on "DPDP 6A Fuse 12". While the correct switch was tagged, the inspector judged that requiring operators to count the switches to locate the correct switch could result in inadvertently securing the incorrect circuit. Most of the disconnect switch and circuit breaker panels have the individual switches/breakers

identified by number and name. When notified of the observation by the inspector, the licensee instituted a program to identify and label all panels that do not have labeled switches and/or breakers.

Inspector Followup Item (302/84-19-01): Review the licensee's activities to identify and label individual disconnect switches and circuit breakers on electrical panels.

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 Nuclear Services Seawater System (RW) 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.

During this walkdown the inspector noted two valves that have the same tag number (RWV-112) and also noted that these valves showed duplicate numbers on the flow system diagram (FD 302-611). The inspector also noted that the system valve lineup in procedure OP-408, Nuclear Services Cooling System, did not list valve(s) RWV-112. The licensee is still revising flow diagrams and valve lineup lists as discussed in paragraph 3 of this report under open violation (302/83-18-01). The licensee's activities to correct these findings will be tracked under this violation's corrective actions.

- (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 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, 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 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-130, Engineered Safeguards Monthly Functional Tests;
- SP-317, RC System Water Inventory Balance;
- SP-340, ECCS Pump Operability;
- SP-354A & B, Emergency Diesel Fuel Oil Quality and Diesel Generator Monthly Test; and,
- SP-650, Main Steam Code Safety Valves Test.

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

- (a) On June 12 the licensee determined, through their test instrument control program, that the pressure gauge used to set main steam relief valve MSV-33 had been damaged and was out of calibration. This pressure gauge was used to monitor the main steam header pressure. The licensee took immediate action to reset the valve in accordance with procedure SP-650. During observation of the resetting activities and review of procedure SP-650, the inspector noted that the procedure does not specify use of installation of a calibrated test gauge to measure the steam header pressure though this has been the practice. Further investigation by the inspector indicates that the licensee has special test gauges set aside for use with this procedure; however, these gauges were not used during the initial setting of MSV-33.

The findings was discussed with licensee personnel who concurred that the procedure should specify the installation and use of a test gauge and specifically the test gauges controlled for use with this procedure. The licensee is revising procedure SP-650 to specify the installation and use of the specified test gauges.

Inspector Followup Item (302/84-19-02): Review the procedure SP-650 revision to specify installation and use of specific test gauges to measure steam header pressure.

- (b) On June 19, the inspector observed licensee personnel attempting to calibrate one of the Emergency Feedwater Ultrasonic Flow Indicators (FW-312-FI). The inspector noted that no procedure was available and that the calibration was being performed in accordance with the vendor's technical manual. Subsequent to this observation the inspector requested calibration data for both flow indicators



(FW-312-FI and FW-313-FI). The licensee is unable to locate calibration data and therefore is unable to demonstrate that these instruments were calibrated.

Technical Specification (TS) surveillance requirement 4.3.3.6 requires this instrumentation to be calibrated at least once per 18 months and TS 6.8.1.a and Regulatory Guide 1.33 requires a procedure for each surveillance requirement delineated in the TS. These requirements have been in effect since April 17, 1981. Failure to have a procedure to calibrate and failure to calibrate this instrumentation is contrary to the requirements of TS 4.3.3.6 and 6.8.1.a and is considered to be a violation.

Violation (302/84-19-03): Failure to have a procedure to calibrate and to calibrate emergency feedwater ultrasonic flow indicators FW-312-FI and FW-313-FI.

- (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:

- Resetting of main steam relief valve MSV-33;
- Verification of makeup pump (MUP) 1B engineered safeguards circuit continuity;
- Replacement of the detector in radiation monitor RMA-12;
- Cleaning and shooting the tubes in nuclear services closed cycle cooling heat exchanger (SWHE) 1A in accordance with preventative maintenance procedure PM-112;
- Troubleshooting for repair of emergency feedwater ultrasonic flow indicator FW-312-FI;
- Alignment of reactor building spray pump (BSP) 1B; and,
- Replacement of the speed governor motor on the A emergency diesel generator (EDG).

On June 18, while observing the troubleshooting activities to repair flow indicator FW-312-FI, the inspector noted that the flow indicator was secured and therefore was made inoperable. A subsequent check with operations personnel revealed that these personnel were unaware of the inoperable status of this instrument. The inoperability of this instrument placed the plant in a TS Action Statement and upon notification by the inspector the plant entered the applicable Action Statement.

Review of this event by the inspector revealed that a Work Request (W/R) was written on May 20, 1984 to troubleshoot and repair the instrument. At that time the instrument was not considered to be inoperable. During the period from May 20 through June 18 maintenance on this instrument continued but operations personnel were not kept aware of the instruments' status (i.e., whether the instrument was made inoperable or not) and therefore, were unaware as to whether they were in TS Action Statement or not.

A review of the licensee's maintenance program indicates that the licensee does not have an effective method to control ongoing maintenance (i.e., maintenance that continues over a long period of time) to insure that operations personnel are aware of the effect of this maintenance on the operability of various systems and components. Failure to adequately control maintenance activities is contrary to the requirements of 10 CFR 50, Appendix B, Criterion II and ANSI N 18.7-1976 and is considered to be a violation.

Violation (302/84-19-04): Failure to provide adequate control of maintenance activities.

- (10) Radioactive Waste Controls - 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.

## 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's 83-35, 83-46, 84-10, and 84-11 were reviewed in accordance with current NRC enforcement policy. LER's 83-35 and 83-46 that were being held open pending review of the safety evaluation (Ref. NRC Reports 50-302/83-27 and 50-302/83-29) and LER 84-10 are closed. LER 84-11 remains open for the following reason:

LER 84-11 reported the failure of check valve RWV-38 in the open position. Upon disassembly of the valve, it was determined that valve failure was caused by corrosion (this valve is used in a seawater system). As a result of the licensee's failure to recognize in a timely manner that the valve failure had degraded a safety system, the licensee has instituted a review of other safety systems so that should pump discharge check valve failures occur, it will have been pre-determined that the failure has degraded a safety system and appropriate action can be taken. This LER remains open pending completion of this review and implementation of the results.

- 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 TS.

All NCOR's were reviewed in accordance with the current NRC enforcement policy. As a result of this review the following item was identified:

NCOR 84-141 reported the possible violation of TS 3.3.2.1 due to the failure to include a check of the annunciator alarms during the channel calibration and functional checks of the Engineered Safety Feature Actuation System (ESFAS). This apparent deficiency was discovered during the licensee's ongoing review to determine the adequacy of their surveillance procedures used to test the ESFAS.

Inspector Followup Item (302/84-19-05): Review the licensee's activities to determine if ESFAS test procedures are deficient in testing of annunciator alarms.

## 7. Review of IE Bulletins (IEB)

The licensee's response to IEB 84-02, Failure of GE type HFA Relays In Use In Class 1E Safety Systems, was reviewed to verify that the Bulletin requirements had been accomplished. As a result of this review the inspector determined that the response was not complete since it did not discuss findings from a recent relay inspection conducted prior to the Bulletin response issue date. In addition, the Bulletin does not discuss the use of re-built relays in lieu of new relays to correct the cracking problem. The licensee will issue a supplemental Bulletin response. This Bulletin remains open pending review of the revised response.