



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

Report No.: 50-302/84-26

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 1-27, 1984

Inspection at Crystal River site near Crystal River, Florida

Inspector: John F. Rogge, for
J. F. Stetka, Senior Resident Inspector

10/22/84
Date Signed

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

10/22/84
Date Signed

SUMMARY

Scope: This routine inspection involved 98 inspector-hours on site by one resident inspector in the areas of plant operations, security, radiological controls, Licensee Event Reports and Nonconforming Operations Reports, licensee action on IE Bulletin 79-02 and IE Information Notices, contractor welder qualifications, 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 deviation was identified: (Failure to complete corrective actions as described in the response to an NRC violation, paragraph 3).

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *G. Boldt, Nuclear Plant Operations Manager
- *C. Brown, Assistant Nuclear Outage and Modifications Manager
- *J. Buckner, Nuclear Security Officer
- *M. Collins, Nuclear Safety and Reliability Superintendent
- *J. Cooper, Manager, Site Nuclear Quality Control
- *H. Gelston, Nuclear Electrical/I & C Engineering Supervisor
- *W. Herbert, Nuclear Technical Specification Coordinator
- E. Howard, Director, Site Nuclear Operations
- *A. Jackson, Chief Health Physics Technician
- W. Johnson, Nuclear Plant Engineering Superintendent
- *L. Kasper, Nuclear Operator
- J. Kraiker, Nuclear Operations Superintendent
- *J. Lander, Nuclear Outage and Modifications Manager
- *W. Marshall, Nuclear Shift Supervisor
- *P. McKee, Nuclear Plant Manager
- V. Roppel, Nuclear Plant Engineering and Technical Services Manager
- *P. Skramstad, Nuclear Chemistry and Radiation Protection Superintendent
- *D. Smith, Nuclear Maintenance Superintendent
- *D. Spires, Nuclear Compliance Specialist
- *W. Thomas, Chief Nuclear Chemistry Technician
- *K. Wilson, Supervisor, Site Nuclear Licensing

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 September 27, 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 Deviation, unresolved items, inspector followup items, and previously inspected items that remain open were discussed.

3. Licensee Action on Previous Inspection Items

(Closed) Inspector Followup Item (302/80-38-07): The licensee completed the engineering evaluation concerning the flow control problems on valves DHV-110 and DHV-111 and has completed an 10 CFR Part 21 evaluation on March 6, 1984. As a result of these evaluations, the flow controllers for these valves will be replaced and the valve operators modified to improve

control sensitivity. This replacement and modification will be completed during Refuel V scheduled to begin in March 1985.

(Closed) Violation (302/84-19-04): The inspector has observed maintenance activities since the occurrence of this violation and has noted that personnel are highly aware that maintenance is not started unless all applicable parties are informed. In addition the inspector has made numerous observations of the licensee's new practice of shop personnel attending operations shift turnover meetings. This practice appears to be well accepted by personnel and insures all personnel are aware of newly initiated and ongoing shift activities. This practice should prevent recurrence of this violation.

(Closed) Inspector Followup Item (302/84-19-02): Procedure SP-650 was revised on July 31, 1984 to specify use of the test gauges specifically reserved for main steam safety valve testing.

(Closed) Inspector Followup Item (302/84-02-07): Procedure PM-118, a preventive maintenance procedure for testing the control rod drive trip breakers, was revised to include "as found" breaker settings, additional bearing lubrication instructions, and verification signoffs to insure that all test equipment has been removed from the breaker. The inspector has observed use of this revised procedure in the field and has no further questions on this item at this time.

(Closed) Violation (302/83-27-01): The inspector verified that changes have been made to the surveillance tracking systems to assure that surveillances are not overlooked. These changes included revisions to the manual surveillance tracking system as designated in procedure SP-443 and initiation of the new computer controlled surveillance tracking system. While the computer system is not fully operational due to hardware problems and the need for personnel training, the system should be effective to prevent recurrence.

(Closed) Violation (302/83-27-02): The inspector verified that procedure OP-502 has been revised to include instructions for freeing a jammed control rod. Also the inspector verified that an Immediate Temporary Change (ITC) was written to procedure OP-409 and that the Operations Section Implementation Manual (OSIM) has been revised to reinforce the policy that Short Term Instructions (STI) will not be used to substitute for a procedure change. The inspector's review of STI's since this event has indicated no further violations of this nature.

(Open) Unresolved Item (302/82-28-04): The licensee has revised procedure SP-187, which tests the Auxiliary Building ventilation filters, to incorporate the vendor's data sheets. Review of this revised procedure by the inspector indicates that the revision appears confusing and could be difficult to follow. This review was discussed with licensee personnel who acknowledged the inspector's concern. The licensee will again revise procedure SP-187 and incorporate similar changes into procedures SP-185 and SP-186.

(Open) Inspector Followup Item (302/84-19-05): The licensee has determined that the Engineered Safety Feature Actuation System (ESFAS) testing procedures are deficient in that they do not include testing of the annunciator alarms as required by the Technical Specifications (TS). As a result of this determination, the licensee will revise the applicable procedures and is planning to complete this effort by July 30, 1985. The inspector reviewed the licensee's corrective actions and judged that the July 30, 1985 completion date is not timely and is not consistent with the NRC enforcement policy regarding licensee identified violations. After discussing this review with licensee personnel, the licensee has begun action to provide corrective actions within thirty days. This item remains open pending completion of these actions.

(Open) Violation (302/84-09-05): In the response letter dated May 18, 1984, the licensee listed the immediate action that would be taken to correct the violation and the corrective action to prevent recurrence of this event. The licensee stated that these corrective actions would be completed by July 31, 1984. The inspector verified that the licensee performed an additional reactor coolant system leakrate determination in accordance with procedure SP-317 to verify that the uncalibrated computer points did not adversely affect the results and that calibration of the applicable computer points was completed. These activities were completed prior to the July 31 date. In addition to these activities, the licensee stated in the response letter that the applicable computer point inputs would be added to the proper calibration procedures. The inspector's review of this corrective action indicated that revision of procedure SP-113, to include the reactor power computer point, was not completed until September 13, 1984, and of procedure SP-112, for the RCS average temperature computer point, had still not been completed.

Failure to complete corrective actions as described in a response to an NRC violation is considered to be a deviation from a commitment to the NRC.

Deviation (302/84-26-01): Failure to complete corrective actions as described in the response to an NRC violation.

(Open) Violation (302/83-09-01) and Deviation (302/84-06-01): As discussed in paragraph 3 of NRC Inspection Report 50-302/84-06, the inspector has verified implementation of the licensee's calibration program. The inspector has also verified that the evaluation of the effects of uncalibrated instrumentation on equipment operability was completed as stated in the licensee's response to the deviation. The inspector has requested the licensee to supply calibration data for a list of instrumentation used to verify equipment operability. This information was still being compiled by the licensee at the end of this inspection period. This remains open pending NRC review of the calibration data.

(Closed) Violation (302/84-19-03): Procedure PM-240, Calibration of Flow Indicators, has been revised to include a calibration procedure for the emergency feedwater ultrasonic flow indicators. This instrumentation was calibrated and is now included in the licensee's calibration program.

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. New unresolved items identified during this inspection are discussed in paragraphs 5.b(10) and 8.

5. Review of Plant Operations

The plant continued in Mode 1 (Power Operation) 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 (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 Decay Heat Removal/Low Pressure Injection 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 exist.

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 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 ensure 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 are 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; test 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-104, Hot Channel Factors Calculations;
- SP-187, Auxiliary Building Ventilation Exhaust System Testing;
- SP-300, Operating Daily Surveillance Log;
- SP-317, RC System Water Inventory Balance;
- SP-344, Nuclear Services Cooling System Operability;
- SP-349, Emergency Feedwater System Operability Demonstration; and,
- SP-365, Fire Pump Operability and Recirculation.

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:

- Timing check, cleaning, and adjustment of a control rod drive trip breaker in accordance with procedure PM-118;
- Replacement of a high pressure injection pump on the A emergency diesel generator;

- Calibration and adjustment of the 4160 volt power relays for the A nuclear services closed cycle cooling pump in accordance with procedure PM-102;
- Troubleshooting and repair of the valve position indication for containment isolation valve CAV-2;
- Replacement of packing on the 2B fire service pump;
- Shooting and cleaning of the C nuclear services closed cycle cooling heat exchanger in accordance with procedure PM-112; and,
- Calibration of the fuel oil pressure gauge on the B emergency diesel generator.

No violations or deviations were identified.

- (10) Radioactive Waste Controls - Selected solid waste compacting operations 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.

During observation of the liquid waste release on September 20 (release permit number L-84-149) the inspector noted that the release path radiation monitor (RML-2) trip setpoint was set unrealistically low by the release computer and during subsequent manual calculations by licensee personnel, was incorrectly re-calculated. The setpoint that was calculated was considerably lower than allowed and therefore no unprotected release occurred. Review of this observation and discussion with licensee personnel indicate that these calculation errors were caused by an apparent lack of understanding of the calculation methods presented in the Off-site Dose Calculation Manual (ODCM) and of the release computer software. The licensee will revise the ODCM to clarify the manual calculation methods for setting the RML-2 trip setpoint and modify the release computer software to provide a realistic RML-2 trip setpoint.

Unresolved Item (302/84-26-02): Revise the ODCM to clarify manual calculation and modify the release computer software to provide a realistic RML-2 trip setpoint.

- (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 83-34 and 84-17 were reviewed in accordance with current NRC enforcement policy. LER 83-34 is closed. LER 84-17 is also closed and further activities with respect to this LER will be tracked by Inspector Followup Item (302/84-22-03).

- 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 84-199 reported the finding that valves supplying fluid to the cyclone separators on the reactor building spray pumps (BSP) and decay heat removal/low pressure injection (DHR) pumps were not adequately pressure rated. Subsequent reviews by the licensee indicate that the valve ratings are marginal for emergency operation of the pumps (and therefore meet the operability requirements of the Technical Specifications) and would be exceeded during the normal decay heat removal operation of the DHR pumps. The licensee is developing a modification package to replace these valves, has the replacement valves onsite, and expects to have the valve replaced in the near future. The inspector has reviewed the licensee's activities to date and will continue to monitor the progress of valve replacement.

Inspector Followup Item (302/84-26-03): Review the licensee's progress in replacing the cyclone separator valves on the DHR pumps and BS pumps.

7. Review of IE Bulletins (IEB) and Information Notices (IN)

- a. IEB 79-02, Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts, was issued to have licensee's investigate the types and loadings on concrete anchor bolts at their facilities. The licensee responded to this Bulletin and this response is being reviewed by the NRC.

Florida Power Corporation (FPC) has recently determined that revised manufacturer's data concerning the Wej-it expansion anchors in use at

the Crystal River plant, has resulted in anchor de-rating. This de-rating has caused a reduction of the safety factor of some hangers and base plates to be less than 2.0. The licensee's consulting engineer, Gilbert Associates, is performing an evaluation of this de-rating as to the effect upon plant systems. As hangers or base plates are identified to have a safety factor less than 2.0, the component is modified to increase this factor.

The licensee will issue a revised response to IEB 79-02 identifying this development and the corrective actions. Progress in this area will be tracked in accordance with IEB 79-02.

b. The inspector reviewed the licensee's activities with respect to the following IN's:

- IN 84-20 Service Life of Relays in Safety-Related Systems;
- IN 84-40 Emergency Worker Doses;
- IN 84-42 Equipment Availability For Conditions During Outages Not Covered By Technical Specifications;
- IN 84-45 Reversed Differential Pressure Instrument Sensing Lines;
- IN 84-49 Intergranular Stress Corrosion Cracking Leading to Steam Generator Tube Failure;
- IN 84-50 Clarification of Scope of Quality Assurance Programs For Transport Packages Pursuant to 10 CFR 50, Appendix B;
- IN 84-56 Respirator Users Notice For Certain 5-Minute Emergency Escape Self-Contained Breathing Apparatus;
- IN 84-58 Inadvertent Defeat Of Safety Function Caused By Human Error Involving Wrong Unit, Wrong Train, Or Wrong System; and,
- IN 84-73 Downrating Of Self-Aligning Ball Bushings Used In Snubbers.

As a result of this review IN's 84-40, 84-45, 84-49, 84-50, 84-56, and 84-58 are considered complete. IN's 84-20, 84-42, and 84-73 require further action as follows:

- (1) The licensee's activities with respect to IN 84-20 does not appear to adequately address the problem. The following activities must still be addressed:
 - Investigation of replacement of the Agastat GP relays (used in the meteorological system) has been forwarded to nuclear

engineering for resolution. The replacement has not yet been resolved.

- The licensee's investigation into the Sylvania AC relays appears incomplete since this investigation did not include previous history of problems with these relays.
- The relay coil problem discussed in the IN had not been addressed.

The licensee will renew activities to address these concerns.

Inspector Followup Item (302/84-26-04): Review activities to resolve the relay problems identified in IN 84-20.

- (2) IN 84-42 addresses equipment availability while in operational modes not addressed by the Technical Specifications (TS). The licensee has a policy that considers the plant to be in Modes 5 (Cold Shutdown) or 6 (Refueling) even though the core may be defueled; however, this policy is not identified in plant procedures. The licensee will revise plant procedures to address this policy.

Inspector Followup Item (302/84-26-05): Review revisions to plant procedures to address equipment availability discussed in IN 84-42.

- (3) IN 84-73 identified a problem with snubber end bushings and the licensee has determined that this problem applies to their large bore snubbers. The licensee has a review in progress to determine resolution.

Inspector Followup Item (302/84-26-06): Review progress with respect to snubber end bushing problem identified in IN 84-73.

8. Review of Contractor Welder Qualifications

Based upon an allegation received by the NRC concerning qualifications of the contracted welding organization (FLUOR), the inspector reviewed the welder qualification process used by Fluor to meet the requirements of the ASME Section XI code.

As a result of this review it appears that welder qualifications may not be in accordance with the code as follows:

- Welders formally qualified by the licensee's former contractor, Catalytic, have not been requalified by Fluor; and,
- Current Fluor welders have been qualified by Florida Power Corporation (FPC) procedures but not by Fluor procedures.

These practices appear to be in conflict with Interpretation XI-81-09 and Article III, section QW-300.2 of the code. These findings are being reviewed by the NRC.

Unresolved Item (302/84-26-07): Review the licensee's contractual relationship with the onsite contractor to determine welder qualification requirements.