



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

Report No.: 50-302/85-26

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 Conducted: May 25 - June 25, 1985

Inspector: Robert E. Carroll, Jr. 7/15/85
 T. F. Stetka, Senior Resident Inspector Date Signed

Accompanying Personnel: J. E. Tedrow, Resident Inspector

Approved by: V. W. Panciera 7/15/85
 V. W. Panciera, Chief, Project Section 2B Date Signed
 Division of Reactor Projects

SUMMARY

Scope: This routine inspection involved 139 inspector-hours on site by two resident inspectors in the areas of plant operations, security, radiological controls, Licensee Event Reports and Nonconforming Operations Reports, Facility Modifications, Refueling Activities, IE Information Notices, 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. This inspection also includes a special inspection of the licensee's station battery.

Results: Two violations were identified: (Failure to adhere to procedures, paragraph 5.b.(8)(a); Failure to perform plant modifications in accordance with modification procedures and failure to conduct an adequate Quality Control inspection, paragraph 7).

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. Alberdi, Manager, Site Nuclear Operations Technical Service
- *J. Brandely, Nuclear Security & Special Projects Superintendent
- *P. Breedlove, Nuclear Records Management Supervisor
- *C. Brown, Assistant Nuclear Outage & Modifications Manager
- *J. Bufe, Nuclear Compliance Specialist
- M. Culver, Sr., Nuclear Reactor Specialist
- *D. Fields, Nuclear Reliability Supervisor
- *B. Hickie, Nuclear Chem/Rad Protection Superintendent
- *E. Howard, Director, Site Nuclear Operations
- *L. Hunsinger, Nuclear Electrician
- *W. Johnson, Nuclear Plant Engineering
- *D. Kilburn, Building Serviceman
- *K. Lancaster, Manager, Site Nuclear Quality Assurance
- *J. Lander, Nuclear Outage & Modifications Manager
- *C. Long, Senior Quality Auditor
- *P. McKee, Nuclear Plant Manager
- *W. Neuman, Sr., Nuclear Inservice Inspection Specialist
- *V. Roppel, Nuclear Plant Engineering & Technical Services Manager
- *W. Rossfeld, Nuclear Compliance Manager
- *D. Smith, Nuclear Maintenance Superintendent
- *E. Standard, Nuclear Mechanic
- *J. Telford, Director, Quality Programs
- *R. Whitman, Acting Operations Superintendent
- *K. Wilson, Supervisor, Site Nuclear Licensing
- *R. Yost, Senior Quality Auditor

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 June 25, 1985. During this meeting, the inspector summarized the scope and findings of the inspection as they are detailed in this report with particular emphasis on the violations, unresolved items and inspector followup items.

Also during this meeting, the inspector discussed the observations from a walkdown conducted on the Nuclear Services Closed Cycle Cooling (SW) System. The following items were identified:

- SW system drawing (FD-301-601) has two valves labeled SWV-488. The walkdown revealed that one of these valves is labeled SWV-448 in the field. The drawing appears to be incorrect.
- Several SW System valves are missing identification tags: SWV-29, SWV-157, SWV-158, SWV-159, SWV-592, SWV-668 and SWV-669.
- The system valve lineup presented in procedure OP-408 (Nuclear Services Cooling System) contained two listings for valve SWV-464. These duplicate listings required the same valve position but had different descriptions of the valve.

The licensee acknowledged the inspection findings and did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Inspection Items

(Closed) Unresolved Item (302/85-10-01): The licensee provided the inspector with a safety analysis of the Core Through Steam Generator (OTSG) "water slap" cleaning process. The inspector's review indicated that the process would not cause degradation of the OTSGs. Action on this item is considered to be complete.

(Closed) Violation (302/84-33-01): The licensee has revised procedure OP-412, Waste Gas Disposal System, to provide a method for adding nitrogen to the waste gas decay tanks (WGDTs) with the affected tank(s) isolated and without adding waste gas to the isolated tank(s). This procedure revision should prevent recurrence of this event.

(Open) Violation (302/85-11-01): The licensee has issued a letter of clarification to all managers and superintendents to assure that the required interdepartmental reviews are conducted. The controlling procedure, AI-401, has not yet been revised to include this clarification. This item remains open pending revision to AI-401.

(Closed) Inspector Followup Item (302/84-16-02): Procedures MP-122 and MP-132 have been revised to delete the torque values and a new procedure, MP-700, Recommended Torque Values, have been developed. The procedures now reference the new procedure (MP-700) so that the required torque values can be determined. This resolution appears to be effective by eliminating the conflicts between procedures MP-122 and MP-132.

(Closed) Inspector Followup Item (302/85-04-05): The licensee has issued revised Liquid Radwaste Release Permit forms that require two reviewers to sign off the form before a liquid release can commence. The inspectors have observed use of this form and it appears that this new form will prevent recurrence of the initial event.

(Closed) Inspector Followup Item (302/85-21-03): The inspectors have reviewed a report that provides the existing design margins for the lower core barrel (LCB) bolts. This report demonstrates that the LCB design margin is considerable and that the 5 potentially cracked bolts will have no effect upon the operation or safety margins for the plant.

(Closed) Unresolved Item (302/85-04-02): The chemistry technician who performed SP-715 was interviewed by the inspectors to ensure that the NaOH sample was performed properly. The chemistry technician provided the inspectors with the sample temperature and specific gravity which had been omitted from the data sheet for SP-715. Procedure SP-715 has been revised to include blanks for logging specific gravity and temperature.

(Open) Unresolved Item (302/85-08-06): The licensee has done a preliminary investigation to determine if the auxiliary building fans and filters should be considered as safety related. This investigation indicates that the system is properly classified as non-safety related. The complete investigation to determine the safety classification of this system is still on-going and will be completed by July 19, 1985. This item remains open pending NRC review of the investigation results.

(Open) Inspector Followup Item (302/85-19-04): The licensee disassembled two of the SBM switches that had broken cam followers in order to replace the defective parts. When new cam followers were received from the warehouse, it was determined that the new parts also exhibited cracking. The cracking appears to be caused by the use of a press fit metal pin and a rivet into the brittle LEXAN material. Therefore, it appears that the age of the cam follower (i.e., the time that the part is subjected to the forces of the metal pin and rivet) contribute to the degree of cracking.

The licensee has determined that General Electric has changed the cam follower material (it is now a material called "BALOX") and has provided for a looser fit on the metal pin. The licensee has initiated a program to replace the LEXAN cam followers with those made of the BALOX material as the parts become available.

The inspectors have observed the licensee's activities and will continue to follow the progress in this area.

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. Unresolved items are identified in paragraphs 5.b.(8).(b), 5.b.(8).(c), and 10.

5. Review of Plant Operations

The plant remained in the refueling mode (mode 6) 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 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); selected Chemistry/Radiation Protection Logs; Outage Shift Manager's Log; and Refueling Logbook.

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; Electrical Switchgear Rooms; and Reactor Building.

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 Service Closed Cycle (SW) 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 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 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, was utilized; and TS requirements were followed.

The following tests were observed and/or data reviewed:

- SP-135, Engineered Safeguards Actuation System Response Time Test;
- SP-157B, Meteorological System Surveillance (Weekly);
- SP-210, ASME Class 2 Hydrostatic Testing;
- SP-354A, Emergency Diesel Fuel Oil Quality and Diesel Generator Monthly Test;
- SP-406, Refueling Operations Daily Data Requirements;
- SP-421, Reactivity Balance Calculations; and,
- SP-702, Reactor Coolant and Decay Heat Daily Surveillance Program

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

- (a) On June 13, 1985, while observing the hydrostatic test of the Nuclear Services Seawater (RW) System performed in accordance with SP-210, the inspector noted the following:
- Equipment clearance order 6-10 that was in use at the job site was different from that retained by operations personnel due to an amendment made to the order. The correct/amended copy was held by operations personnel, whereas the copy at the job site did not reflect these changes. Compliance Procedure (CP) 115 requires a copy of the accepted clearance to be present at the job site.

- Work Request (WR) #59483, which authorized performance of this test, was signed by the Nuclear Shift Supervisor (NSS) on June 12. The inspector had observed activities such as installation of test equipment and filling and venting of the system on June 11, which indicates that work was being performed on the system prior to authorization by the NSS. Procedure CP-113 requires NSS authorization prior to the start of any work on a system.
- Procedure SP-210, paragraph 4.2 specifies that no valves will be installed in lines containing test gauges or relief valves to assure that these components are not inadvertently isolated. The test rig in use (that contained the test gauges and relief valve) had isolation valves in each test gauge line and the relief valve line. The inspector noted that the valves were open.
- Procedure SP-210, paragraph 7.4 requires the test boundary valves to be delineated on data sheet Enclosure (2) so that the test volume is identified. Following completion of the hydro, the inspector noted that valve RWV-6 was shut. With valve RWV-6 shut, the boundary of the system changed from valve RWV-14 as noted on Enclosure (2) to RWV-6 therefore changing the test volume. The inspector questioned the test engineer and the Quality Control (QC) inspector (who was acting as the ASME Level II leakage examiner) to determine the reason for the valve closure. Answers from these personnel indicate that the valve was inadvertently left shut and that pre-test walkdowns by the test engineer and QC inspector failed to identify the discrepancy.

Failure to adhere to the requirements of procedures CP-113, CP-115 and SP-210 are contrary to the procedure adherence requirements of TS 6.8.1 and is considered to be a violation.

Violation (302/85-26-01): Failure to adhere to compliance and surveillance procedures during performance of a hydro-static test.

- (b) While observing the test of the A Emergency Diesel Generator (EDG) on June 19, 1985, in accordance with procedure SP-354A, the inspector noted that the copy of SP-354A in the field was different from that in use by operators in the control room. The field copy of SP-354A contained an Interim Change (IC) whereas the control room copy did not. The inspector also

observed that the NSS was attempting to get the IC rescinded as permitted by procedure AI-401 since performance of the IC was no longer required. The testing being performed at this time was unaffected by the IC.

Review of the circumstances for this event by the inspector indicates that the field copy of procedure SP-354A was signed out from the document control (DC) consumable procedures file (as required by the licensee's administrative instruction) on June 14. When this procedure was taken to the field on June 19, the IC that was in effect on June 14 had been rescinded on June 17 and therefore was not longer in effect. The NSS was unaware of the rescision of the IC.

This observation was discussed with licensee management personnel. These licensee personnel noted the inspector's observations and stated that administrative procedures would be reviewed and revised accordingly to provide improved control over procedure and procedure change issuance and rescision. Additionally, the licensee will examine methods that could be utilized to ensure that copies of procedures that are in the field are properly dispositioned when procedure changes occur.

Unresolved Item (302/85-26-02): Revise administrative procedure to improve procedure/procedure change issuance and rescision, and to ensure that the field copies of procedures are maintained current.

- (c) During review of issues relating to the hydrostatic testing (as discussed in item a), the inspector noted that previous Inservice Inspection (ISI) hydrostatic tests were conducted with the test engineer performing the test and test leak examiner being one in the same person. Review of 10 CFR Part 50, criterion X indicates that these examinations should be conducted by an independent person.

This issue was discussed with NRC Region II personnel and licensee personnel. The licensee's ISI testing practices are being reviewed by the NRC to determine validity of the tests and inspections.

Unresolved item (302/85-26-03): Review of licensee's ISI testing practices to determine whether these practices are valid.

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:

- Reassembly of check valve RWV-36 in accordance with procedures MP-122 and MP-700;
- Replacement of expansion joints on nuclear services closed cycle cooling pumps;
- Rebuilding and testing of reactor coolant pump seals in accordance with procedure MP-166;
- Disassembly and reassembly of diesel engine fire pump for flywheel cracking check;
- Replacement of the sequence of events recorder in the annunciator system;
- Troubleshooting and repair of battery inverter 3B (VBIT-1B); and,
- Replace current limiting card on "C" battery charger in accordance with procedure PM-141.

No violations or deviations were identified.

- (10) Radioactive Waste Controls - Selected Liquid Releases and Solid Waste Compacting 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.

During this inspection period, the inspector was notified by NRC of a potential generic issue (PGI) involving corrosion in snubbers supplied by Paul-Monroe. Investigation by the inspector indicates that the Crystal River plant has large bore snubbers that are similar to those described in the PGI.

The licensee is reviewing records to determine the seal material and the fluid used in their snubbers so that corrosion potential can be determined. Visual examination of these snubbers has not indicated any corrosive effects.

Inspector Followup Item (302/85-26-04): Review the licensee's investigation results regarding corrosion potential in large bore snubbers.

6. Review of Licensee Event Reports and Nonconforming Operations Reports

- a. Licensee Event Reports (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 84-23 was reviewed in accordance with current NRC enforcement policy and is considered 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.

No violations or deviations were identified.

7. Design, Design Changes and Modifications

Installation of new or modified systems were reviewed to verify that the changes were reviewed and approved in accordance with 10 CFR 50.59, that the changes were performed in accordance with technically adequate and approved procedures, that subsequent testing and test results met acceptance criteria or deviations were resolved in an acceptable manner, and that appropriate drawings and facility procedures were revised as necessary. This review included selected observations of modifications and/or testing in progress.

The following modification approval records (MARs) were reviewed and/or associated testing observed:

- Nuclear services and decay heat seawater (RW) piping coating installation and pipe replacement in accordance with MAR 83-06-27-01;
- Control rod drive breaker shunt trip installation in accordance with MAR 83-08-29-01;
- RW piping pedestal installation in accordance with MAR 84-08-01-01; and

- Installation of seismic supports on relay racks RR-3A and RR-3B in accordance with MAR 85-03-13-01.

During the inspector's observation of MAR85-03-13-01 on June 20, 1985, the inspector noted during a record review that the torque values for eight concrete anchor bolts were 25 foot-pounds instead of 40 to 45 foot-pounds as required by the MAR. The data sheets containing these torque values were signed off as complete by the workman and the Quality Control (QC) inspector.

The NRC inspector questioned the QC inspector and workman on duty (though these personnel were not the same personnel that signed off that portion of the data sheets) to determine if subsequent changes to the MAR had changed these torque values. The QC inspector directed the NRC inspector to a drawing of the relay racks which had torque values listed in the notes. These were the incorrect torque values and when the NRC inspector identified this to the QC inspector, the QC inspector could not locate the torque values. The workman directed the NRC inspector to the correct torque values that were listed in the MAR. Based upon this discussion and the record review, the NRC inspector judged that the QC inspection on this MAR was inadequate.

The QC inspector notified his immediate supervisor who responded to the job site and reviewed the NRC inspector's findings. The correct torque value was 40 to 45 foot-pounds, and at the urging of the NRC inspector, the bolt torque was checked and found to be less than the required values. The bolts were subsequently torqued to the correct values. Additional reviews of the MAR by the NRC inspector did not identify any other discrepant conditions.

Failure to adhere to the requirements of MAR 85-03-13-01 and failure to provide an adequate inspection are contrary to the requirements of 10 CFR Part 50, Appendix B, Criteria V and X, and is considered to be a violation.

Violation (302/85-26-05): Failure to meet 10 CFR 50, Appendix B, Criteria V procedure adherence requirements and Criteria X adequate inspection requirements.

8. Review of IE Information Notices (INs)

The inspector reviewed the licensee's activities with respect to the following INs:

- IN 84-92, Cracking of Flywheels on Cummins Fire Pump Diesel Engines.

The licensee performed an inspection of the diesel fire pump engines and found no evidence of flywheel cracking. The inspector observed one of these engine inspections and reviewed the completed inspection findings for the second fire pump engine. No adverse findings were noted and this IN is considered closed.

- IN 85-38, Loose Parts Obstruct Control Rod Drive Mechanism (CRDM).

The licensee plans to perform an inspection of the CRDM after the reactor vessel head is installed and the leadscrews are inserted. A boroscope inspection will be done to verify that the leaf springs are in the latched position. The inspectors will observe and review the licensee's CRDM inspection.

Inspector Followup Item (302/85-26-06): Observe and review the licensee's CRDM inspection to verify leaf springs are in the latched position.

9. Refueling Activities

The inspectors witnessed several shifts of fuel handling operations and verified that the refueling was being performed in accordance with TS requirements and approved procedures. Areas inspected included the periodic testing of refueling related equipment, contained integrity, housekeeping in the refueling area and shift staffing during refueling.

While performing a visual inspection of fuel assemblies, the licensee discovered that two assemblies had damaged spacer grids. Spacer grids are used to provide horizontal support of the fuel rods in the fuel assembly. The damage to fuel assemblies NJ02YE and NJ03CV consisted of torn or bent spacer grid corners. The licensee is presently evaluating the extent of spacer grid damage to determine its effect on fuel rod support and coolant flow through the fuel assembly. The licensee plans to reuse the damage fuel assemblies provided favorable evaluation results are obtained.

Inspector Followup Item (302/85-26-07): Review the licensee's resolution and justification for the continued use of two damaged fuel cells.

10. Special Battery Inspection

The inspectors conducted the following special inspection of the licensee's station service battery as directed by NRC Region II. The battery is a lead calcium battery, type LCU-23, manufactured by C&D.

- a. The inspectors examined single cell charger usage, cell operation/maintenance, battery installation and battery construction to determine the following:
 - (1) No single cell chargers are in use that would violate class 1E independence.
 - (2) Cells are not improperly gassing and sediment has not collected at the bottom of the cells.
 - (3) The station battery is installed in accordance with vendor installation drawings and technical manuals and the cell-rack spacing is proper.
 - (4) The spacing material between individual cells is of an approved material.

- b. The inspectors reviewed station battery records are verified the following:
- (1) Technical Specification surveillances are conducted at the proper intervals.
 - (2) Float voltage is maintained in accordance with the vendor technical manual.
 - (3) Service and performance tests are conducted in accordance with Technical Specifications.
 - (4) Battery equalizer charges are performed in accordance with the vendor technical manual and are conducted when required.
 - (5) Individual cell voltages and specific gravity readings are properly compensated for temperature and electrolyte level.
 - (6) Post-maintenance testing is performed after cell jumpering or cell replacement.
 - (7) The licensee does not add acid to the station battery.

After discussions with licensee representatives, the inspectors have determined that some plant modifications have increased the DC loads on the station battery. The licensee has been unable to produce documentation that the battery is still capable of supplying emergency loads for two hours as specified in the Final Safety Analysis Report (FSAR), Section 8.2.2.6, and TS 3.8.2.3. The licensee is presently performing an evaluation to verify that the battery can meet FSAR and TS requirements under the increased DC loads placed on the system. Licensee representatives have stated that this evaluation will be completed by July 16, 1985. This matter is considered unresolved pending the completion of the evaluation.

Unresolved Item (302/85-26-08): Review the licensee's evaluation to verify that the battery can meet FSAR and TS requirements with the presently installed DC loads.