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

Report No.: 50-302/86-07

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: January 18 - February 7, 1986

Inspector: S. Gunther 2/25/86
T. F. Stetka, Senior Resident Inspector Date Signed

Accompanying Personnel: J. E. Tedrow, Resident Inspector

Approved by: for S. Gunther 2/25/86
S. A. Elrod, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope: This routine inspection involved 144 inspector-hours on site by two resident inspectors in the areas of plant operations, security, radiological controls, License Event Reports and Nonconforming Operations Reports, IE Information Notices (IN), cold weather preparations, 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 violation was identified. Failure to perform adequate inspections of safety-related maintenance and verification of replacement parts as required by 10 CFR 50, Appendix B, Criterion II; paragraph 3.

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REPORT DETAILS

1. Licensee Employees Contacted

*P. Breedlove, Nuclear Records Management Supervisor
*R. Currier, Nuclear Modifications Specialist
*D. Eggleston, Nuclear Shift Supervisor
B. Hickle, Nuclear Chemistry & Radiation Protection Superintendent
*C. Long, Senior Quality Auditor
*M. Mann, Nuclear Compliance Specialist
P. McKee, Nuclear Plant Manager
*S. Powell, Senior Nuclear Licensing Engineer
*V. Roppel, Nuclear Plant Engineering & Technical Service Manager
*W. Rossfeld, Nuclear Compliance Manager
B. Simpson, Director, Nuclear Operations Engineering & Licensing
*P. Skramstad, Nuclear Chemistry/Radiation Protection Superintendent
*D. Smith, Nuclear Maintenance Superintendent
*R. Thompson, Nuclear Mechanical/Structural Engineer
E. Welch, Manager Site Nuclear Quality Control
R. Wittman, Nuclear Operations Superintendent

Other personnel contacted included office, operations, engineering, maintenance, chemistry/radiation protection 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 February 7, 1986. 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 Violation and Inspector Followup Items (IFIs).

Also during this meeting the inspectors discussed the licensee's policy of entering Technical Specification 3.0.3 to enable rendering all automatic functions of the Emergency Feedwater Initiation and Control (EFIC) System inoperable during troubleshooting and for the replacement of trip modules in this system. The inspectors stated that the maintenance bypass features of this system (which would allow only one channel to be defeated) were not being fully utilized and that instead the entire system was being rendered inoperable.

The licensee representatives acknowledged the inspector's comments and did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

The inspectors will continue to follow future activities concerning the EFIC system's maintenance bypass features during subsequent routine inspections.

3. Licensee Action on Previous Inspection Items

(Closed) Violation 302/85-42-03: The inspector verified that system drawing CR3-M-209A and maintenance procedure MP-162 contain sightglass calibration instructions for the emergency feedwater pump turbine bearings. These instructions reinstated an internal measurement method to ensure an adequate oil level in the bearing reservoir. The licensee issued an advisory, dated January 10, 1986, to all engineering personnel to inform them of this incident so that future instances can be avoided. The inspector considers this action sufficient to prevent recurrence of this violation.

(Closed) IFI 302/85-33-03: The licensee has determined that the three cable trays which had inadequate anchor supports do not carry safety-related cables and are therefore not qualified as seismic. The inspector has reviewed the licensee's cable tray listing, which specifies which cable trays are safety-related. Based on this review and discussions with licensee personnel, the inspector considers this item closed.

(Closed) IFI 302/85-33-04: The licensee has been unable to determine a cause for the non-terminated circuit in the Non-Nuclear Instrument (NNI) cabinet. This item was discovered during a major modification outage with significant work being performed in this cabinet. The absent connection separated the third mechanical seal cavity bleedoff pressure transmitter (RC-19A-PT2) for Reactor Coolant Pump (RCP) 3A-2 from its associated recorder. Due to the non-safety-related function of this instrument, the inspector will not spend any more time on this matter and considers this item closed.

(Closed) IFI 302/85-44-08: The inspectors attended the January 29 exit briefing conducted by OSHA and reviewed the licensee's activities that were taken to prevent recurrence of this event. The licensee has developed a new compliance procedure, CP-139, that requires issuance of a special diving operation work permit. This work permit will provide much improved coordination between all plant parties during diving operations thus improving personnel safety. The inspectors have reviewed this new procedure and observed the use of the diving operation work permit in the field. Based upon these reviews and the OSHA findings discussed in the exit briefing, this item is considered to be closed.

(Closed) IFI 302/85-44-07: The licensee has completed their review of IN 85-94 and has concluded that due to the high head design of their High Pressure Injection (HPI) pumps that the failure mode discussed in the notice is improbable at this plant. A review of the licensee's assessment on the HPI pumps and the inspector's review of the design of the Low Pressure Injection (LPI) and Reactor Building Spray (BS) systems, confirm the licensee's conclusion that this type of event is improbable at CR-3.

(Open) Unresolved Item (UNR) 302/85-29-01: Review of documentation by the inspector indicates that while the licensee apparently has some ongoing reviews pertaining to updating of the FSAR, clarifying the design basis of

the plant, and revising the instrumentation and controls section of the Safety Listing, there is no effort underway to verify the adequacy of this listing. Since the initial finding, the following additional items were identified:

- Electrical panel DPDP-6A was not listed in the Safety Listing though it is safety-related. (This item was an apparent typographical error in a recent revision to the listing since previous revisions included this panel.)

- Lack of clarity in the Safety Listing resulted in work being performed without proper controls on safety-related equipment (see the violation identified in UNR 302/85-41-08).

As a result of these additional findings and discussions with engineering management personnel, the licensee is re-examining their activities with regard to this item. This item remains open pending review of these activities.

(Closed) UNR 302/85-41-08: The licensee has determined that the drop target annunciator panel for the "A" Emergency Diesel Generator (EDG-3A) is a safety-related electrical panel and that the work performed on this panel should have been classified as safety-related. The inspector noted that in making this determination, the licensee considered the annunciator panel as part of the Colt Diesel Generator Control Panel, EGCP-1A, which is classified as safety-related in the Safety Listing. The inspector discussed the previous maintenance history of the annunciator panel with licensee representatives and found that past maintenance performed on this panel had also been treated as not safety-related. Not classifying this work as safety-related circumvented the licensee's quality assurance process which provides for quality replacement parts and inspections to verify the quality of work performed. This process helps to ensure the proper functioning of safety-related systems and components. ANSI Standard N18.7 - 1976, paragraph 5.2.7, implements the requirements of 10 CFR 50, Appendix B, Criterion II, and requires that maintenance which may affect the functioning of safety-related structures, systems or components, shall be performed in a manner to ensure quality at least equivalent to that specified in the original design basis and requirements, material specifications, and inspection requirements. The licensee commits to this standard in the FPC Quality Program, paragraph 1.7.1.2.

Failure to perform inspections of the quality of safety-related work and verification of the adequacy of replacement parts is contrary to 10 CFR 50 Appendix B, Criterion II, and is considered to be a violation.

Violation 302/86-07-01: Failure to perform inspections of the quality of safety-related work and verification of the adequacy of replacement parts as required by 10 CFR 50 Appendix B, Criterion II.

4. Review of Plant Operations

The plant remained in the cold shutdown condition (Mode 5) for the duration of this inspection period.

a. Shift Logs and Facility Records

The inspector reviewed plant operating records and discussed various entries with operations personnel to verify compliance with the Technical Specifications (TSs) 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; 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 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 parameters were 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.

During a tour of the reactor building on January 30, the inspectors noticed loose seal assemblies for electrical connections to several recently installed Rosemount level transmitters used

for steam generator level measurements in the EFIC system. These instruments are sealed to prevent adverse environmental conditions from damaging the internals of the transmitters.

The inspector discussed this finding with licensee representatives with regard to the adequacy of the environmental qualification of these transmitters. The inspector learned that the licensee had previously identified similar situations on steam generator level transmitters and on pressure transmitters recently installed for remote shutdown instrumentation. On January 10, nine pressure/level transmitters were observed by the licensee to have loose electrical connections and a Quality Control Inspection Report (QCIR) was written to document these findings. Licensee representatives stated that all of the recently installed Rosemount transmitters in the reactor building will be inspected and repaired as necessary prior to restart.

IFI 302/86-07-02: Review the licensee's activities to inspect and repair loose electrical connections to Rosemount transmitters in the reactor building.

(2) Safety Systems Walkdown - The inspector conducted a walkdown of the Core Flood (CF) 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 an NRC radiation monitoring instrument. The inspector also reviewed selected radiation work permits and observed the 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 were intact, guard forces were on duty, and access to the Protected Area (PA) was controlled in accordance with the facility security plan. Personnel within the PA were observed to verify proper display of badges and that personnel requiring escort were properly escorted. Personnel within vital areas were observed to ensure proper authorization for the area.

No violations or deviations were identified.

(7) Fire Protection - Fire protection activities, staffing and equipment were observed to verify that fire brigade staffing was appropriate and that fire alarms, extinguishing equipment, actuating controls, fire fighting equipment, emergency equipment, and fire barriers were operable.

No violations or deviations were identified.

(8) Surveillance - Surveillance tests were observed to verify that approved procedures were being used; qualified personnel were conducting the tests; tests were adequate to verify equipment operability; calibrated test equipment was utilized; and TS requirements were followed.

The following tests were observed and/or data reviewed:

- SP-122, T-Sat Meter Calibration;
- SP-137, ES Actuation System Time Delay Relay Calibration;
- SP-201, Accessible/Inaccessible Hydraulic Snubbers Visual Insp.;
- SP-317, RC System Water Inventory Balance;
- SP-323, Evacuation & Fire Alarm Demonstration;
- SP-354, Emergency Diesel Fuel Oil Quality & Diesel Gen. Monthly Test;
- SP-522, Station Batteries Insp. & Battery Charger Load Test;

- SP-523, Station Batteries Service Test;

- SP-701, Radiation Monitoring System Surv. Program; and

- SP-904, Calibration of 4160 Volt ES Bus Degraded Grid Relays.

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:

- Troubleshooting the transfer switch for the "D" Invertor (VBIT-1D) in accordance with maintenance procedure MP-531;

- Troubleshooting the reactor coolant flow square root extractor for the "B" reactor protection system in accordance with procedure MP-531;

- Weld repair of pressurizer relief valve RCV-8 in accordance with procedure MP-102;

- Replacement of a thrust bearing on the "B" Emergency Diesel Generator (EDG-1B);

- Periodic maintenance on EDG-1B in accordance with procedure SP-605;

- Turbine casing removal and inspection of the steam driven emergency feedwater pump in accordance with procedure MP-162;

- Teardown of the "A" reactor coolant pump seal in accordance with MP-166; and

- Snubber rebuilding and testing in accordance with procedures PT-130, MP-174 and MP-175.

During the replacement of RCV-8, the inspector observed that plant personnel had difficulty aligning the discharge flanges of the valve. Upon reviewing the completed work package for this job, the inspector noted that the pressurizer pipe weld had been reheated to allow RCV-8's discharge flanges to align. This finding was discussed with an NRC Region II welding inspector. The inspector reviewed this issue and documented his findings in NRC Inspection Report 50-302/86-08.

(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 checked 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.

5. 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 corrective actions appeared appropriate. Events, which were reported immediately, were reviewed as they occurred to determine if the TS were satisfied.

LERs 85-33 and 86-01 were reviewed in accordance with current NRC policy. LER 85-33 is closed. LER 86-01 remains open for the following reason:

LER 86-01 reported a plant trip that occurred on January 1, 1986, due to the failure of the "A" reactor coolant pump shaft. As a result of this event, two issues remain to be resolved; the cause of failure of the pump shaft and the failure of the emergency feedwater control valve (EFV-57) to operate properly. This LER remains open pending resolution of these items.

b. The inspector reviewed Nonconforming 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.

6. Nonroutine Event Followup

a. At 9:48 p.m., on February 2, 1986, the in-service "B" Decay Heat Pump (DHP-1B) failed. When operators attempted to transfer core cooling to the "A" train of the decay heat system, the hot-leg suction valve for

this train (DHV-39) would not open from the remote station in the control room. Operators were dispatched to open the valve locally using the handwheel. The valve was opened without difficulty at 10:11 p.m. At 10:12 p.m., DHP-1A was started and cooling water restored. During this time interval, reactor coolant temperature increased from approximately 98-131° F.

The licensee has inspected DHP-1B and discovered that a loose nut on the pump's impeller may have allowed enough impeller motion to cause the pump to mechanically seize. The licensee is presently repairing DHP-1B.

The licensee plans to inspect DHV-39 as soon as the "B" train of the decay heat system is repaired.

IFI 302/86-07-03: Review the licensee's activities to inspect/repair valve DHV-39.

b. On February 3, 1986, the licensee completed further ultrasonic tests on the other Reactor Coolant Pumps (RCP-1B, RCP-1C, and RCP-1D). These tests were performed when an inspection for the failure mechanism for RCP-1A revealed a broken shaft in the vicinity of the hydrostatic bearing. The ultrasonic test results showed an indication on RCP-1B, but RCP-1C and RCP-1D showed no indications. The licensee is presently preparing to replace the shaft for RCP-1B. The inspectors will continue to follow this activity during future routine inspection activities.

7. Review of IE Information Notices

The inspector reviewed the licensee's activities on the following INs to determine what actions, if required, have or will be taken:

-IN 85-82, DIESEL GENERATOR DIFFERENTIAL PROTECTION RELAY NOT SEISMICALLY QUALIFIED; and

-IN 85-84, INADEQUATE INSERVICE TESTING OF MAIN STEAM ISOLATION VALVES.

It was determined that the licensee did not have to take action on IN 85-84 since the Crystal River valve design is different than that discussed in the IN since an air supply system is not necessary to insure closure of the main steam isolation valves (MSIVs).

The licensee's actions on IN 85-82 have resulted in a determination that the relays in question (General Electric Model 12CFD) are in use at this plant. An engineering evaluation is presently in progress to determine whether relay replacement is necessary.

IFI 302/86-07-04: Review the licensee's engineering evaluation to determine whether the GE Model 12CFD relays need to be replaced as discussed in IN 85-82.

8. Cold Weather Preparations

The inspector verified that the licensee had inspected the systems susceptible to freezing to ensure that heat tracing and space heating circuits had been energized during a period when temperatures dipped below the freezing point.

No violations or deviations were identified.