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

Report No: 50-302/87-40

Licensee: Florida Power Corporation
3201 34th Street, South
St. Petersburg, FL 33733

Docket No: 50-302 Licensee No.: DPR-72

Facility Name: Crystal River 3

Inspection Dates: November 13 - December 15, 1987

Inspector: _____ 2/18/88
T. F. Stetka, Senior Resident Inspector Date Signed

_____ 2/19/88
J. E. Tedrow, Resident Inspector Date Signed

Approved by: _____ 2/19/88
R. V. Crlenjak, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Scope: This routine inspection was conducted by two resident inspectors in the areas of plant operations, security, radiological controls, Licensee Event Reports and Nonconforming Operations Reports, facility modifications, refueling activities, review of special reports, review of 10 CFR Part 21 evaluations, NRC enforcement bulletin review, 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 and one deviation were identified: Failure to adhere to plant procedures, paragraphs 5.a and 6.a; Failure to install instrument recorders as committed to meet Regulatory Guide 1.97, paragraph 6.b.(1).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. Alberdi, Assistant to the Director, Nuclear Plant Operations
J. Andrews, Nuclear Engineer
*F. Bailey, Superintendent Projects
*G. Becker, Manager, Site Nuclear Engineering Services
*J. Brandely, Nuclear Security & Special Projects Superintendent
*J. Colby, Manager, Nuclear Mechanical/Structural Engineering Service
*M. Collins, Nuclear Safety & Reliability Superintendent
M. Culver, Senior Nuclear Reactor Specialist
M. Fitzgerald, Nuclear Operations Technical Advisor
*B. Hickle, Manager, Nuclear Plant Operations
D. Humphrey, Nuclear Quality Control Inspector
J. Lander, Manager, Nuclear Operations Maintenance & Outages
S. Loflin, Senior Quality Auditor
*G. Longhouser, Nuclear Security Superintendent
*M. Mann, Nuclear Compliance Specialist
*P. McKee, Director, Nuclear Plant Operations
T. Montgomery, Nuclear Maintenance Specialist
*R. Murgatroyd, Nuclear Maintenance Superintendent
W. Neuman, Supervisor Inservice Inspection (ISI)
*S. Robinson, Nuclear Chemistry & Radiation Protection Superintendent
*W. Rossfeld, Nuclear Compliance Manager
*E. Simpson, Director, Nuclear Operations Site Support
B. Stephenson, Nuclear Operations Technical Advisor
*E. Welch, Manager, Nuclear Electrical/I&C Engineering Services
*K. Wilson, Manager, Site Nuclear Licensing
R. Wittman, Nuclear Operations Superintendent

Other personnel contacted included office, operations, engineering, maintenance, chemistry/radiation and corporate personnel.

*Attended exit interview

2. Exit Interview (30703)

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on December 15, 1987. 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, Deviation, Unresolved Item and Inspector Followup Items (IFI).

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.

3. Licensee Action on Previous Inspection Items (92701 and 92702)

(Closed) IFI 302/87-01-04: The licensee has completed their investigation into the installation of the incorrectly sized resistors and determined that it was caused by personnel error during performance of the modification and processing of the modification package. The licensee has verified that system operation was not affected and that all other doors had properly installed components. The licensee has corrected the installation error, completed the modification functional testing, and counseled individuals involved with the improper installation.

(Closed) IFI 302/87-16-04: During this refueling outage the licensee has completely disassembled, inspected, cleaned, and reassembled valves RCV-13 and RCV-14. It appears that this activity will correct the operational problems experienced with these valves.

(Closed) Violation 302/87-12-01: The licensee has revised procedure SP-355C (Revision 3 dated December 8, 1987), Radiation Monitoring Instrumentation Functional Test, such that the limits and precautions are now referenced throughout the procedure. This revision should prevent recurrence of the improper procedure performance.

(Closed) Violation 302/87-30-02: Failure to adhere to the requirements of procedure OP-407H during a radioactive liquid release. The inspector reviewed and verified the implementation of the corrective actions stated in Florida Power Corporation's (FPC) letter of November 18, 1987.

(Closed) Violation 302/87-28-01: Failure to meet the Nuclear General Review Committee (NGRC) membership qualification requirements of TS 6.5.2.3.b. The inspector reviewed and verified the implementation of the corrective actions stated in FPC's letter of October 23, 1987.

(Closed) Violation 302/87-28-02: Failure to determine the reactor coolant system cooldown rate at least once every 30 minutes. The inspector reviewed and verified the implementation of the corrective actions stated in FPC's letter of October 23, 1987.

(Closed) Unresolved Item 302/87-04-03: Review procedures SP-130, Engineered Safeguards (ES) Monthly Functional Test, and SP-358A, B, C, Operations ES Monthly Automatic Actuation Logic Functional Test, to insure that no further testing deficiencies exist. The licensee has completed their review of these procedures in conjunction with plant drawings on an item-by-item basis. This review determined that the procedures adequately covered the required monthly testing.

(Closed) Violation 302/86-38-10: Failure to take adequate corrective action to identify and correct problems in the 230 KV switchyard. The inspector reviewed and verified the implementation of the corrective actions stated in FPC's letter of April 30, 1987.

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. A new unresolved item is identified in paragraph 6.b.(2) of this report.

5. Review of Plant Operations (61726, 62703, 71707 and 71710)

At the beginning of this inspection period, the plant was in a defueled condition. At 4:40 a.m. on November 26, 1987, the plant entered Mode 6 and refueling operations were commenced. Following installation and torquing of the reactor vessel head, the plant entered cold shutdown (Mode 5) at 6:55 p.m. on December 14, 1987, where it remained for the remainder 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 (STI); Selected Chemistry/Radiation Protection Logs; and Outage Shift Manager's Log.

In addition to these record reviews, the inspector independently verified clearance order tagouts.

While reviewing the clearance log on December 7, the inspector noticed that 17 clearance orders, which represented about 20 percent of the clearance orders reviewed, were active for periods of time in excess of 30 days and were not periodically certified every 30 days to be correct. Compliance procedure CP-115, In-Plant Equipment Clearance and Switching Orders, step 4.2 requires that clearances active for greater than 30 days must be certified every 30 days to visually verify that clearance tags are legible and attached to the correct equipment, and that tagged components are in their specified position. When informed of this finding, licensee management issued appropriate notifications to responsible departments to perform the required certifications. Failure to adhere to the requirements of procedure CP-115 is contrary to TS 6.8.1.a and is considered to be a violation.

Violation (302/87-40-01): Failure to perform certifications on active clearances as required by procedure CP-115.

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 and/or indications 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.

No violations or deviations were identified.

(2) Safety Systems Walkdown - The inspector conducted a walkdown of the Nuclear Services and Decay Heat Seawater systems to verify that the lineups were in accordance with license requirements for system operability and that the system drawings and procedures 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) Radiological Protection Program - Radiation protection control activities were observed to verify that these activities were in conformance with the facility policies and procedures and in compliance with regulatory requirements. These observations included:

- Selected licensee conducted surveys;
- Entry and exit from contaminated areas including step-off pad conditions and disposal of contaminated clothing;
- Area postings and controls;
- Work activity within radiation, high radiation, and contaminated areas;
- Radiation Control Area (RCA) existing practices; and,
- Proper wearing of personnel monitoring equipment, protective clothing, and respiratory equipment.

Area postings were independently verified for accuracy by the inspectors. The inspectors also reviewed selected Radiation Work Permits (RWPs) to verify that the RWP was current and that the controls were adequate.

The implementation of the licensee's As Low As Reasonably Achievable (ALARA) program was reviewed to determine personnel involvement in the objectives and goals of the program.

No violations or deviations were identified.

(6) Security Control - In the course of the monthly activities, the Resident Inspectors included a review of the licensee's physical security program. The composition of the security organization was checked to insure that the minimum number of guards were available and that security activities were conducted with proper supervision. The performance of various shifts of the security force were observed in the conduct of daily activities to include; protected and vital area access controls, searching of personnel, packages, and vehicles, badge issuance and retrieval, escorting of visitors, patrols, and compensatory posts. In addition, the Resident Inspectors observed the operational status of Closed Circuit Television (CCTV) monitors, the Intrusion Detection system in the central and secondary alarm stations, protected area lighting, protected and vital area barrier integrity, and the security organization interface with operations and maintenance.

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 was utilized; and TS requirements were followed.

The following tests were observed and/or data reviewed:

- SP-178 Containment Leakage Test-Type "A" Including Liner Plate;
- SP-210 ASME Class 2 and Class 3 Pressure Testing;
- SP-220 Source Range Functional Tests During Refueling Operations;
- SP-354B Monthly Functional Test of the Emergency Diesel Generator EGDG-1B;
- SP-406 Refueling Operations Daily Data Requirements;
- SP-512A Battery Inspection and Charger Test (Unit 1);
- SP-901 4.160 KV ES Bus "B" Undervoltage Trip Test and Auxiliary Relay Calibration; and,
- PT-311 MUP-1A Power and Flow Measurements for EGDG-1A KW Loading Verification.

During the observation of test SP-354B, the inspector noticed that step 9.3.1 of this procedure required that one of the diesel room fans (AHF-22C or AHF-22D) be secured after verification that both fans automatically start. The operation of these fans was discussed with licensee personnel who provided the inspector with an engineering evaluation which was performed to determine the maximum diesel generator room temperature. This evaluation recommended that both of the diesel room fans be operating whenever the diesel is running near a fully loaded condition. Although this monthly test does not run the diesel in a fully loaded condition, the licensee plans on revising the diesel generator surveillance procedures to require operation of both diesel room fans.

Inspector Followup Item (302/87-40-02): Review revisions to diesel generator surveillance procedures to require operation of both diesel room fans.

(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:

- Performance of maintenance on the "B" Emergency Diesel Generator (EDG-1B) in accordance with surveillance procedure SP-605, Emergency Diesel Generator Engine Inspection/Maintenance;

- Replacement of relays associated with the "D" Inverter (VBIT-1D) and post maintenance testing in accordance with procedure PM-130, Static Inverters;

- Inspection of ES "B" 480v AC breakers;

- Replacement of pressurizer relief valve RCV-9 in accordance with procedure MP-102, RCV-8 and RCV-9 Pressurizer Relief Valve Maintenance;

- Troubleshooting, repair and post maintenance test of the "B" Battery Charger (DPBC-1B) in accordance with procedures MP-531, Troubleshooting Plant Equipment, and PM-141, Tolerances and Set Points for Battery Chargers DPBC-1A thru 1F;

- Replacement of the EDG-1B radiator; and,

- Troubleshooting and repair of the EDG-1B emergency stop push button in accordance with procedure MP-531, Troubleshooting Plant Equipment.

No violations or deviations were identified.

(10) Radioactive Waste Controls - Solid waste compacting and selected liquid and gaseous releases 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 (92700)

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 87-21, 87-22, 87-24, 87-26, and 87-27 were reviewed in accordance with the current NRC Enforcement policy. LERs 87-24, 87-26, and 87-27 are closed.

(Closed) LER 87-24: This LER reported the unplanned exposure of an individual due to the removal of lead shielding during an evolution to fill the fuel transfer canal.. The corrective actions associated with this LER will be tracked by the violations issued in NRC Inspection Report 50-302/87-35.

(Closed) LER 87-26: This LER reported the placing of a fuel assembly in the incorrect spent fuel storage location. This matter was discovered by the licensee during a review of the control room's fuel location tag board. The incorrectly stored fuel assembly was immediately relocated to the proper location. The licensee has attributed the cause for this event to be from an error in the fuel movement sheets and has implemented an independent verification of fuel movement sheets prior to actual fuel movement. This matter is considered to be a licensee identified violation in which adequate corrective action was taken to prevent recurrence.

The following LERs will remain open:

(Open) LER 87-21: This LER reported that an Engineered Safeguards (ES) actuation occurred as a result of personnel error while deenergizing the 4160v ES Bus 3A. This event was also discussed in NRC Inspection Report 50-302/87-36 where the licensee was issued a violation regarding implementation of the emergency plan.

The licensee attributes the cause of this event to the failure of operating personnel to utilize the appropriate procedure while deenergizing the ES bus. Operating procedure OP-703, Plant Distribution System, section 5.18 specifies the necessary actions to deenergize this bus and step 5.18.10 requires that the undervoltage

interlocks associated with the bus be bypassed prior to bus deenergization. The control board operator performing this evolution failed to bypass the associated ES bus undervoltage interlocks which resulted in an inadvertent ES System actuation when the bus was deenergized. Failure to adhere to the requirements of procedure OP-703 is contrary to the requirements of TS 6.8.1.a and is considered to be another example of the Violation discussed in paragraph 5.a of this report.

As part of the corrective action associated with this LER, the licensee will require all operators to review this event. This LER will remain open pending completion of this corrective action.

(Open) LER 87-22: This LER reported an ES actuation which occurred while electricians were installing an electrical jumper across a reactor building pressure switch in accordance with procedure SP-178, Containment Leakage Test - Type "A", Including Liner Plate. The licensee has determined that the most likely cause for this event was the use of uninsulated jumper leads which possibly created a short circuit and actuated the ES system. The licensee plans to revise procedure SP-178 to require the use of jumper leads with insulated connections. This LER will remain open pending revision to the procedure.

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

(1) NCOR 87-230 reported that the licensee failed to meet a commitment to Regulatory Guide (RG) 1.97. In a letter dated August 24, 1984 that was issued in response to an NRC Confirmatory Order dated February 21, 1984, the licensee documented that they had installed a high range containment area radiation monitor that had both an indicating and recording display. While the instrumentation had been installed and is operational, the instrumentation does not have a recording display and therefore does not meet the commitment as documented in the August 24 letter. Failure to meet a commitment to the NRC is considered to be a Deviation.

Deviation (302/87-40-03): Failure to install a recording display as committed to meet R 1.97.

(2) NCOR 87-237 reported the inadvertent actuation of the "B" train of the Engineered Safeguards (ES) system. This actuation occurred with the plant in Mode 6 and during the licensee's investigation into the failure of the "B" Inverter (VBIT-1B). Upon inspection of the "B" and "D" vital bus transfer switches (VBXS-1B and VBXS-1D) the operator found those switches in an abnormal lineup. Restoration of the lineup to the normal condition resulted in a momentary dip in vital bus voltage during the switch transfer and resulted in the ES system sensing a loss of voltage on the "B" and "D" vital buses. Loss of voltage on these vital buses resulted in an ES actuation. The licensee is presently investigating this matter to determine the cause of this event and is reviewing the administrative controls established for electrical equipment. This matter is considered to be an unresolved item pending completion of the licensee's investigation.

Unresolved Item (302/87-40-04): Review the licensee's investigation into the inadvertent ES actuation resulting from transfer switch operation and review of administrative controls established for electrical equipment.

(3) NCOR 87-217 reported a possible design error in the containment monitoring system. This system's associated drain piping was not designed to be seismically qualified. Although further review of this matter by the licensee's architect engineer has determined that failure of this drain piping will not compromise the operation of the rest of the containment monitoring system, the licensee has decided to replace the drain piping with seismically qualified piping. The licensee plans to complete this modification before startup from the current refueling outage.

Inspector Followup Item (302/87-40-05): Review the completed modification to the containment monitoring system to replace drain piping with seismically qualified piping.

(4) NCOR 87-223 reported that the installed control transformers for two high pressure injection valves (MUV-23 and MUV-25) were not as specified by plant drawings. Plant drawings specify that these transformers should be 150 VA transformers and located in section "D" of the valve's Motor Control Center (MCC). During installation of a plant modification, electricians noticed that the control transformers were actually 500 VA transformers and located in section "E" of the valve's MCC. The licensee's preliminary investigation of this matter has determined that the oversized transformers do not affect the operation of these valves and the installed location is seismically qualified. The licensee is presently investigating this matter to determine the cause for this situation and will initiate action to correct the plant drawings.

Inspector Followup Item (302/87-40-06): Review the licensee's investigation regarding the size and location of control transformers for valves MUV-23 and MUV-25.

(5) NCOR 87-234 reported that the Reactor Coolant Drain Tank (WDT-5) was not being operated as designed. The Final Safety Analysis Report (FSAR), table 11-5, appears to specify a normal liquid tank capacity of 561 ft^3 (or an approximate tank level of 11-12 ft). The licensee normally operates this tank level between 6-9 ft to maintain better pressure control. This matter was discussed with licensee personnel who will resolve the discrepancy between the FSAR and normal operation of the tank and will consider reporting this matter as a LER.

Inspector Followup Item (302/87-40-07): Review the licensee's efforts to resolve the discrepancy between the FSAR and normal operation of the RCDT and determination of reportability.

7. Design, Design Changes and Modifications (37700)

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:

- MAR 85-09-05-01, Nuclear Services Closed Cycle Cooling Pump Vent and Recirculation; and,
- MAR 86-04-24-02, Nuclear Services and Decay Heat Seawater Pump Flush Water.

No violations or deviations were identified.

8. NRC Enforcement Bulletin Review (92703)

NRC Enforcement Bulletin 87-02, Fastener Testing to Determine Conformance With Applicable Material Specifications, required NRC Inspector participation in the selection of bolts and nuts that were to be tested. On December 3, with inspector participation, 20 bolts and 20 nuts were selected at random as directed by the Bulletin for testing. During this selection process, 2 bolts were found to not have the proper markings and were therefore included in the sample bringing the total bolt sample to 22 bolts. The samples were marked and subsequently forwarded to a testing laboratory.

As directed by the Bulletin, the results of the testing will be reported in the response to the Bulletin. This Bulletin will remain open pending review of the licensee's response by the NRC.

9. Refueling Activities (60710)

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 and instrumentation, containment integrity, housekeeping in the refueling area, shift staffing during refueling, and periodic monitoring of plant status during refueling operations. In addition, the following procedures were reviewed:

- FP-203, Defueling and Refueling Operations; and,
- FP-601, Fuel Handling Equipment Operations.

At the completion of the fuel reload, the inspectors observed the core loading verification that was conducted in accordance with procedure FP-203. In addition to these observations, the inspector conducted an independent review of the core verification video tapes to verify proper core loading.

No violations or deviations were identified.

10. Review of Special Reports (90713)

The licensee submitted a special report, dated November 18, 1987 regarding the Waste Gas hydrogen and oxygen monitors being removed from service for greater that 14 days. The inspectors reviewed this report to determine compliance with the TS.

No violations or deviations were identified.

11. Review of 10 CFR Part 21 Evaluations (92700)

The following evaluation reports were reviewed by the inspector to verify compliance with 10 CFR Part 21:

- A September 23, 1987 evaluation of NCOR 87-05 regarding the failure of the "A" Reactor Coolant Pump mechanical seal; and,

- A September 23, 1987 evaluation regarding the potential failure of Reactor Protection System flux signals.

No violations or deviations were identified.