



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

Report No: 50-302/88-11

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

Docket No: 50-302

License No.: DPR-72

Facility Name: Crystal River 3

Inspection Conducted: March 12 - April 15, 1988

Inspectors:	<u><i>T. Stetka</i></u>	<u>4/22/88</u>
	T. Stetka, Senior Resident Inspector	Date Signed
	<u><i>J. Tedrow</i></u>	<u>4/29/88</u>
	J. Tedrow, Resident Inspector	Date Signed
Approved by:	<u><i>R. Crlenjak</i></u>	<u>5/2/88</u>
	R. 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, refueling activities, 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 a surveillance test on the emergency power supply to the pressurizer heaters, paragraph 4.a).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. Alberdi, Manager, Nuclear Plant Technical Support
- *P. Breedlove, Nuclear Records Management Supervisor
- W. Candy, Nuclear Results Specialist
- *J. Colby, Manager, Nuclear Mechanical/Structural Engineering Services
- *M. Collins, Nuclear Safety & Reliability Superintendent
- *A. Gelston, Supervisor, Site Nuclear Engineering Services
- D. Green, Nuclear Licensing Specialist
- C. Halnon, Nuclear Operations Technical Advisor
- *B. Hickie, Manager, Nuclear Plant Operations
- *S. Horvath, ALARA Specialist
- *M. Jacobs, Area Public Information Coordinator
- *W. Lagler, Health Physics Supervisor
- *K. Lancaster, Manager, Site Nuclear Quality Assurance
- *G. Longhouser, Nuclear Security Superintendent
- *W. Marshall, Nuclear Operations Superintendent
- P. McKee, Director, Nuclear Plant Operations
- *V. Roppel, Manager, Nuclear Operations Maintenance & Outages
- *W. Rossfeld, Manager, Nuclear Compliance
- W. Squires, Nuclear Modification Specialist
- *D. Wilder, Manager, Radiation Protection
- *M. Williams, Nuclear Regulatory Specialist
- *K. Wilson, Manager, Nuclear Licensing
- *R. Wittman, Superintendent, Nuclear Operations
- C. Woody, Nuclear Engineer II

Other licensee employees 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 April 15, 1988. 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 (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 inspector during this inspection.

3. Licensee Action on Previously Identified Inspection Findings (92702 and 92701)
- a. (Closed) Violation 302/86-23-02: Failure to properly install the containment hydrogen monitoring system. The licensee attempted a post-installation retest of the check valves during Refuel VI but was unable to successfully complete the test due to leakage past the check valve seats. These valves were replaced during the refueling outage with valves of a slightly different design in accordance with modification approval records (MAR) 87-11-19-01. The new check valves were tested and certified by the manufacturer to be leak tight. The inspector reviewed the licensee's documentation of these activities and conducted a system walkdown. Action on this item is complete.
 - b. (Closed) IFI 302/85-19-04: Review the licensee's activities to study and resolve the SBM switch failure. The licensee has completed replacement of the 314 switches in accordance with MARs 84-08-10-04 and 87-01-14-01.
 - c. (Closed) IFI 302/85-19-04: Replacement of GE Model 12CFD relays. The licensee completed MAR 80-09-13-03 on December 21, 1987. This modification replaced the GE relays.
 - d. (Open) IFI 302/87-16-02: As the result of their review regarding the possibility of cross-connecting contaminated and uncontaminated fluid systems, the licensee has identified some areas where such contamination is possible. To minimize this possibility, the licensee has defeated the automatic opening of domestic water valves DOV-210 and DOV-238 on low suction pressure in accordance with MAR 85-09-05-01. In addition, the licensee will install a backflow preventer in the line that provides demineralized water to the auxiliary building (to be installed in accordance with MAR 88-01-21-01) and provide administrative controls (via procedure) to lock close domestic water valve DOV-128. This item remains open pending completion of these activities.
 - e. (Closed) IFI 302/87-40-02: Review revisions to diesel generator surveillance procedures to require operation of both diesel room fans. The licensee has revised procedures SP-354A (revision 22 dated February 19, 1988) and SP-354B (revision 20 dated February 19, 1988) to require operation of both diesel room fans.
 - f. (Closed) IFI 302/87-30-05: Review the repairs to the degraded motor leads on Limitorque motor operated valve operators. The licensee has completed repairs to the following valves: ASV-5, ASV-204, EFV-11, EFV-14, EFV-32, EFV-33, MSV-55 and MSV-56. The inspector reviewed completed work requests associated with the listed valves and considers action on this item complete.

- g. (Closed) IFI 302/87-34-03: Review the licensee's monitoring activities for the coolant leak and worn camshaft lobe associated with the "A" emergency diesel generator. The licensee has incorporated these two items into the preventive maintenance program that will be performed on a quarterly basis.
- h. (Closed) Unresolved Item 302/87-16-01: Performance of channel checks on instrumentation which is pegged during normal operation. The licensee has resolved three of the four instruments identified by this item by selecting other instrumentation which is not pegged or by appropriate changes to the Technical Specifications (TS). For the fourth instrument (EFIC OTSG A/B low range level), the licensee has decided to perform a monthly functional test to bring the indication down off the peg and verify that the instrument has not failed high. The licensee is planning to submit a TS change to clarify the definition of performing channel checks of instrumentation in this condition or to change the specific requirement to a channel check this instrumentation once per shift. The inspector considers the monthly functional test to be appropriate interim action until the TS are clarified.

4. Review of Plant Operations (71707)

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

a. Shift Logs and Facility Records (71707)

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); and Selected Chemistry/Radiation Protection Logs.

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

During these reviews on March 24, the inspector noticed that the pressurizer heaters associated with the "B" Pressurizer Heater Motor Control Center (MCC-3B) had been removed from service on March 23, to repair a failed current limiting reactor. The plant was operating at 100% power utilizing the "A" pressurizer heaters to control reactor coolant system pressure. The inspector reviewed the Technical Specifications (TS) to verify licensee compliance and further reviewed procedure SP-417, Refueling Interval Integrated Plant

Response to Engineered Safeguards Actuation, to verify adequate testing of the emergency power supply to the operable set of pressurizer heaters as required by TS 4.4.4.2.

As the result of this review, the inspector determined that while procedure SP-417 contains instructions to test the emergency power source to the pressurizer heaters, the procedure only tests this source to the "B" set of pressurizer heaters and not to the "A" set of pressurizer heaters. This matter was subsequently discussed with licensee personnel. From these discussions the inspector concluded that the "A" set of pressurizer heaters had never been tested in accordance with TS 4.4.4.2.

Failure to periodically test the emergency power supply to the operable "A" set of pressurizer heaters is contrary to the requirements of TS 4.4.4.2 and is considered to be a violation.

Violation (302/88-11-01): Failure to test the emergency power supply to the "A" set of pressurizer heaters as required by TS 4.4.4.2.

b. Facility Tours and Observations (71707)

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 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.

During a walkdown of instrumentation located on the Remote Shutdown Panel (RSP), the inspector noticed that several of these instruments were missing calibration stickers specifying when the instruments had last been calibrated. The inspector discussed this matter with licensee personnel and reviewed the licensee's computerized preventive maintenance calibration

program (PM-200) to verify when the instruments were last calibrated. Most of the instruments were calibrated on a routine basis during the performance of refueling interval surveillance procedures. However, one instrument (MU-24-FI-2, Normal Makeup Flow) was not included in any of the procedures reviewed. Although a review of past calibration records revealed that the instrument was last calibrated in June 1986, the licensee does not appear to be routinely calibrating this instrument string.

The inspector reviewed the TS, instrument drawings and consulted the plant's Safety Listing, to determine the function of this instrumentation. This instrument was not included in the Safety Listing. Further discussion with licensee personnel determined that the instrument does not appear to perform any safety function, however the instrument is considered to be "safety related" due to its location on the RSP. The licensee has initiated a work request to calibrate the instrument. In addition, the licensee will add the instrument to the Safety Listing and to the routine calibration program.

IFI (302/88-11-02): Review the licensee's activities to calibrate MU-24-FI-2 and to add this instrument to the Safety Listing and routine calibration program.

- (2) Safety Systems Walkdown (71710) - The inspector conducted a walkdown of Reactor Building Spray (BS) 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.

During a walkdown of this system, the inspector entered the Borated Water Storage Tank (BWST) room which encases two sodium hydroxide spray additive tanks. Sodium hydroxide is added to the BS water to establish a PH chemistry which will help absorb iodine in the containment building during post accident conditions. The inspector observed that several valves and instrument lines exhibited a buildup of sodium hydroxide crystals which formed as a result of system leakage. It was apparent from this buildup of crystals that this condition had existed for some time.

This observation, and the possible corrosion effects that sodium hydroxide may have, were discussed with licensee personnel. The licensee does not believe a significant corrosion hazard exists due to the type of material being exposed (stainless steel), however an evaluation of the corrosion potential is being performed and activities are underway to clean up the tank room.

IFI (302/88-11-03): Review the licensee's activities to cleanup the BWST tank room and evaluate the corrosion effects of sodium hydroxide.

- (3) Shift Staffing (71707) - 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 (71707) - 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 (71709) - 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) exiting practices; and
- Proper wearing of personnel monitoring equipment, protective clothing, and respiratory equipment.

Area postings were independently verified for accuracy by the inspector. The inspector 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 (71881) - In the course of the monthly activities, the inspector 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 inspector 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 (71707) - 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 (61726) - 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-210, ASME Class 2 and Class 3 Pressure Testing;
- SP-300, Operating Daily Surveillance Log;
- SP-311, Diesel Generator Fuel Oil Transfer Pump Surveillance;
- SP-317, RC System Water Inventory Balance;
- SP-332, Monthly Steam Line and Feedwater Isolation Functional Test;
- SP-333, Control Rod Exercises;
- SP-340B, "B" Train ECCS Pump & Valve Operability;
- SP-343, Main Steam Isolation Valves Part-Stroke Exercising;
- SP-702, Reactor Coolant & Decay Heat Daily Surveillance Program; and,
- SP-722, Secondary Coolant Thrice Weekly Surveillance Program.

During the performance of procedure SP-343, a Main Steam Isolation Valve (MSIV) stroked fully closed. Operators responded to this event expeditiously and controlled the

resultant reactor coolant system pressure transient thereby preventing a reactor trip. The licensee investigated the cause for the valve closure and determined that an actuating arm for a limit switch, which should have stopped valve movement, was misaligned causing the limit switch operation failure. The licensee adjusted the limit switch actuating arm and is presently evaluating this event. The licensee is considering corrective action to modify the configuration of the limit switch actuating arms and possibly the relocation of an air isolation valve to allow local operator intervention to stop valve closure.

IFI (302/88-11-04): Review the licensee's corrective action for preventing MSIV closure during SP-343.

- (9) Maintenance Activities (62703) - 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:

- Installation of an electrical jumper around cell #12 in Station Battery 3A1 in accordance with procedures MP-401, DC System Maintenance, and PM-141, Battery Change Preventive Maintenance Set Point Adjustments (DPBC-1A thru 1F);
- Inspection of the "B" Emergency Diesel Generator (EDG-1B) output breaker 3210 and replacement of a defective arc shoot in accordance with procedure PM-101, 4.16 KV and 6.9 KV Switchgear;
- Inspection of EDG-1B blower clearances;
- Removal and replacement of heat exchanger tubes for the "A" Nuclear Services Heat Exchanger (SWHE-1A) in accordance with procedures MP-132, Erection of Piping, and PM-112, Inspection/Cleaning/Shooting and Plugging of Heat Exchangers;
- Troubleshooting of a diesel fuel oil transfer pump (DFP-1D);
- Replacement of a current limiting reactor for the "3B" pressurizer heater motor control center;

- Troubleshooting and replacement of the test push button for main steam isolation valve MSV-411 in accordance with procedures MP-531, Troubleshooting Plant Equipment, and SP-343, Main Steam Isolation Valves Part-Stroke Exercising;
- Emergency Feedwater Initiation and Control (EFIC) time delay relay testing in accordance with procedure PM-167, EFIC Time Delay Relay Testing;
- Disassembly and reassembly of the "A" Nuclear Services Closed cycle Cooling Pump (SWP-1A) in accordance with procedure MP-123, Nuclear Service Closed Cycle Cooling Water Pump Maintenance; and,
- Troubleshooting the spurious trip of the high flux bistable in the Reactor Protection System (RPS) channel "D" in accordance with procedures MP-531 and SP-113.

Troubleshooting associated with RPS channel "D" did not determine a cause for the spurious trip. This RPS channel has tripped on two occasions, February 21, 1988, and April 10, 1988. The high flux bistable has been tested and calibrated satisfactory on both occasions. The licensee is continuing to monitor the bistable and associated power supplies with chart recorders to detect any abnormalities.

IFI (302/88-11-05): Follow the licensee's troubleshooting activities associated with spurious trips of RPS channel "D".

- (10) Radioactive Waste Controls (71707) - Selected liquid 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 (71707) - 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.

5. Review of Licensee Event Reports (92700) and Nonconforming Operations Reports (71707)

- 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 88-04, 88-05, 88-06, 88-07 and 88-09 were reviewed in accordance with the current NRC Enforcement policy. LERs 88-07 and 88-09 are closed.

- (1) (Closed) LER 88-07: This LER reported that the "A" Reactor Building Spray Pump (BSP-1A) operated below its design flow rate. This matter was identified during a NRC inspection (Inspection Report 50-302/88-05) and is being tracked by Unresolved Item 302/88-05-01. Further action on this item will be tracked with the unresolved item.
- (2) (Closed) LER 88-09: This LER reported a violation of 10 CFR Part 50, Appendix R requirements regarding the reactor coolant pump oil collecting system. Upon discovering this situation, the licensee has made weekly entries into the RB to pump down the oil collection tank to maintain level less than 15% full. In addition, the licensee has changed procedure SP-300, Operating Daily Surveillance Log, to specify a maximum limit of 14% on tank level. This matter is considered to be a licensee identified violation in which appropriate corrective action was taken to prevent recurrence.

LERs 88-04, 88-05 and 88-06 will remain open for the following reasons:

- (3) (Open) LER 88-04: This LER reported that the weekly channel check of the incore detector system required by TS 4.3.3.2 was not completed within the required frequency and that the initial data collected by the performance of this channel check was not evaluated to determine that the system was operable. To preclude recurrence of this event, the licensee has revised the master surveillance plan and will revise procedure SP-433, Incore Neutron Detectors Channel Check, by April 30, 1988 to separate responsibilities. This matter is considered to be a licensee identified violation in which appropriate corrective action was taken to prevent recurrence. This LER remains open pending revision of procedure SP-433.
- (4) (Open) LER 88-05: This LER reported that personnel error resulted in the failure to enter the TS action statement for exceeding the maximum allowed stroke time for containment isolation valve DHV-41. The personnel involved in this event have been counseled and all licensed operators will be required to review the event. This matter is considered to be a licensee identified violation in which appropriate corrective action was taken to prevent recurrence. This LER will remain open pending completion of the corrective action.
- (5) (Open) LER 88-06: This LER reported a reactor trip and feedwater transient which occurred on February 28, 1988. This event is discussed in more detail in NRC Inspection Reports

50-302/88-06 and 50-302/88-08. The licensee's corrective action associated with this event will include a failure analysis of the broken stem nut for valve FWV-29 and of the turbine trip solenoid. In addition, the licensee will evaluate the cause for a corroded fuse holder in the turbine trip circuitry. This LER will remain open pending completion of these activities.

- b. The inspector reviewed Nonconforming Operations Reports (NCORs) to verify the following: TS are complied with, 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. Refueling Activities (60710)

The inspector observed the movement of new Control Rod Assemblies (CRA) from dry storage into fuel assemblies located in the spent fuel pools. Inspection of the new CRAs by Quality Control personnel was also observed. In addition, a review and verification of proper implementation of the following procedures was conducted:

- FP-303, New Control Component Receipt, Inspection, and Storage;
and,
- FP-601F, Manual CRA Handling Tool.

No violations or deviations were identified.