



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

Report No: 50-302/89-29

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

Docket No: 50-302

License No.: DPR-72

Facility Name: Crystal River Unit 3

Inspection Conducted: November 9 - December 15, 1989

Inspectors:	<u>S. VIAS</u>	<u>12/21/89</u>
	for P. Holmes-Ray, Senior Resident Inspector	Date Signed
	<u>S. VIAS</u>	<u>12/21/89</u>
	for W. Bradford, Resident Inspector	Date Signed
Approved by:	<u>[Signature]</u>	<u>12/22/89</u>
	R. Crlenjak, Chief	Date Signed
	Reactor Projects Section 2B	
	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, Fitness for Duty Training, 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: No violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*J. Alberdi, Manager, Nuclear Plant Technical Support
- \*W. Bandhauer, Nuclear Operations Superintendent
- \*G. Becker, Manager, Site Nuclear Engineering Services
- \*D. Black, Nuclear Results Specialist
- G. Boldt, Vice President Nuclear Production
- \*J. Brandely, Manager, Nuclear Integrated Planning
- \*P. Breedlove, Nuclear Records Management Supervisor
- \*L. Cecilia, Nuclear Project Engineer
- \*J. Cooper, Superintendent, Technical Support
- \*G. Cowles, Senior Nuclear Results Engineer
- R. Fuller, Senior Nuclear Licensing Engineer
- B. Hickie, Manager, Nuclear Plant Operations
- \*S. Johnson, Manager, Site Nuclear Services
- \*H. Koon, Assistant Nuclear Maintenance Superintendent
- \*K. Lancaster, Manager, Site Nuclear Quality Assurance
- W. Marshall, Nuclear Operations Superintendent
- \*P. McKee, Director, Nuclear Plant Operations
- V. Roppel, Manager, Nuclear Operations Maintenance and Outages
- \*W. Rossfeld, Manager, Nuclear Compliance
- \*J. Russell, Senior Nuclear Fire Protection Specialist
- \*R. Thompson, Supervisor, Site Nuclear Engineering Services
- E. Welch, Manager, Nuclear Electrical/Instrumentation and Control Engineering Services
- \*R. Widell, Director, Nuclear Operations Site Support
- \*M. Williams, Nuclear Regulatory Specialist
- \*K. Wilson, Manager, Nuclear Licensing

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

\*Attended exit interview

Acronyms and initialisms used throughout this report are listed in the last paragraph.

### 2. Review of Plant Operations (71707)

Crystal River Unit 3 operated at a maximum power level of 96% during the reporting period with the following exceptions:

- Power was reduced to 86% on November 17, 1989 to repair a leak on the feedwater line for the 5B feedwater heater.
- Power was reduced to 75% on November 25, 1989 to repair a salt water leak on "A" condenser waterbox.

- The plant was taken off line on December 8, 1989 for a maintenance outage to replace a control rod drive stator. The plant was returned to power operation December 10, 1989.
- Power was reduced to 75% on December 12, 1989 to replace a sheared pin on the condenser circulating water inlet filter on "D" water box.
- Power was increased to 96% and was limited by condenser delta temperature. The plant operated at maximum allowed power for the remainder of the report 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; Short Term Instructions (STI); and Selected Chemistry/Radiation Protection Logs.

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

No violations or deviations were identified.

b. Facility Tours and Observations

Throughout the inspection period, facility tours were conducted to observe operations and maintenance activities in progress. Some operations and maintenance activity observations were conducted during backshifts. Also, during this inspection period, licensee meetings were attended by the inspector to observe planning and management activities.

The facility tours and observations encompassed the following areas: security perimeter fence; control room; emergency diesel generator room; auxiliary building; intermediate building; battery rooms; and, electrical switchgear rooms.

The inspectors also observed conditions in the following areas:

(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) 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.

(3) 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.

(4) 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:

- Entry to 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.

No violations or deviations were identified.

(5) Security Control

In the course of the monthly activities, the inspector included a review of the licensee's physical security program. The performance of various shifts of the security force was 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.

(6) 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.

3. Review of Maintenance (62703) and Surveillance (61726) Activities

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-110, Reactor Protective System Functional Testing;
- SP-130, Engineered Safeguards Monthly Functional Test; and,
- SP-349B, Emergency Feedwater Pump (EFP-2) Monthly Operability Demonstration.

In addition, 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:

- Check and clean stator windings, rotor insulation test/check of brushes, stator insulation test, and generator bearing insulation check, in accordance with Preventive Maintenance procedure (PM) 123, Periodic Electrical Checks of Emergency Diesel Generator;
- DC ground investigation in accordance with Maintenance Procedure (MP) 531, Troubleshooting Plant Equipment;
- Motor replacement of penetration cooling fan Air Handling Fan (AHF) 9A;
- Clean engine oil strainer and replace strainer Delta P pressure gage on Diesel Generator 1B;
- Isolation of the 5B feedwater heater for leak repair and return to service in accordance with Operating Procedure (OP) 605, Feedwater System;
- Modification of spent fuel handling mechanism; and,
- Motor operated valves environmental qualification walkdown.

No violations or deviations were identified.

4. 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 that were reported immediately were reviewed as they occurred to determine if the TS were satisfied. LERs were reviewed in accordance with the current NRC Enforcement Policy.
    - (Open) LER 89-39: This LER reported a 10 CFR 50 Appendix R separation criteria violation which would prevent the isolation of the letdown flow in the makeup system by remotely operated valves. Manual valves were available and accessible. This error in separation was discovered by the licensee during an engineering review of drawings to support an inspection by NRC personnel. Upon discovery of the condition it was confirmed that a roving fire watch was in effect. The control circuit for the third letdown cooler outlet valve was checked and found to be acceptable. This item is an additional part of licensee identified violation NCV 50-302/89-26-01. This LER will remain open to track the corrective action stated.

5. Cold Weather Preparations (71714)

The inspector verified that cold weather protection measures were established in accordance with the requirements listed in Enclosure 16 "Adverse Weather Conditions Checklist" of Administrative Instruction (AI) 500, Conduct of Operations.

Also, as part of this inspection, discussions were held with licensee personnel to verify that areas of the plant normally heated during plant operation were adequately protected during periods of prolonged plant shutdown.

Generally, the climate at the Crystal River Facility is such that freezing temperatures do not occur for extended periods of time and do not generally create freezing problems.

6. Fitness for Duty Training (TI 2515/104)

On December 04, 1989, the inspector attended the licensee's Fitness for Duty (FFD) training sessions. The training covered general employee FFD training, general employee escorts FFD, and managers and supervisors FFD. Approximately 54 employees attended the general employee and escort training, and 15 managers/supervisors attended the managers and supervisors training.

The general employee escort training presentation was designed to make the employee aware of the personal responsibility to be competent in his work performance; to recognize the signs and symptoms that may indicate that an individual might not be fit for duty; the options available for help; and that all employees remain fit for duty in order to ensure safe plant operation.

The managers and supervisors training pointed out the managers/supervisors responsibility to be aware of the employee's work habits and personality; how alcohol and drugs, as well as personal problems, can affect the employee's job performance; and how to refer the employee for professional care.

The inspector had no further questions. This TI is closed.

7. Followup of On-Site Events (93702)

On November 30, 1989 at 12:51 PM the reactor experienced a turbine runback from 97% power to 60% power. The runback was caused by safety control rod #2 in group 3 dropping into the core. The control rod dropped during the conduct of Surveillance Procedure (SP) 110, Reactor Protection System Functional Testing, Section 9.12.12. The cause of the dropped control rod was a failed stator in the rod control mechanism.

The licensee initiated the required actions of Technical Specification 3.1.3.1. The plant was stabilized at 55% power. The ejected control rod analysis was performed. The ejected rod worths are less than the zero power and full power limits specified in the technical specifications. Due to system load restrictions and cool weather predictions the plant remained on line at 55% to 60% power until 11:00 PM, on December 8, 1989. The planned 5 day maintenance outage was completed in 3 days and the unit was returned to service on December 10, 1989 at 10:38 AM.

A strength was observed during this event: After the rod drop a meeting was held to plan the trouble shooting and determination of the cause of the rod drop. Operations, maintenance, quality control, plant management, health physics, and system engineering discussed the probable causes, formulated a trouble shooting plan and implemented the plan. The failed stator was identified in a timely and professional manner.

8. Licensee Action on Previously Identified Inspection Findings (92702 & 92701)

- a. (Closed) IFI 302/87-34-05, Replace Undersized Relay Coils and Balance Relay Contacts for the Engineered Safeguards (ES) System. The completion of work to balance the relays in the ES System is planned for refuel 7 outage and will be tracked as an outage item. This IFI is closed.
- b. (Closed) Violation 302/87-17-07, Failure to Retain ISI Records as Required by TS 6.10.2.B. The licensee's corrective action was to review the testing done in the 1980 and 1983 outages and a review of hydrostatic testing associated with plant modifications. The hydros of the 1985 outage were also reviewed. Any tests that could not be verified to have sufficient evidence of being properly performed were retested during refueling 6. This item is closed.

9. Evaluation of Licensee Quality Assurance Program Implementation (3F502)

An internal office evaluation was conducted on November 28, 1989, of the licensee's quality assurance program implementation by reviewing recent inspection reports. SALP reports, open items, licensee corrective actions for NRC inspection findings, and licensee event reports. Particular emphasis was placed on new items or findings since the last SALP report period (December 31, 1988). It was recognized that there has been an improvement in engineering support, in the day-to-day support to the operations staff. In the area of the electrical systems, it was determined to continue the in-depth review of the licensee's corrective actions and modifications.

10. Exit Interview (30703)

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on December 15, 1989. During this meeting, the inspector summarized the scope and findings of the inspection as they are detailed in this report.



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.

10. Acronyms and Abbreviations

AHF	- Air Handling Fan
AI	- Administrative Instruction
CCTV	- Closed Circuit Television
CFR	- Code of Federal Regulations
EFP	- Emergency Feedwater Pump
ES	- Engineered Safeguard System
FFD	- Fitness for Duty
IFI	- Inspector Followup Item
LER	- Licensee Event Report
MAR	- Modification Approval Record
MP	- Maintenance Procedure
NCOR	- Nonconforming Operation Report
NCV	- Non-Cited Violation
NRC	- Nuclear Regulatory Commission
OP	- Operating Procedure
PM	- Preventive Maintenance
RCA	- Radiation Control Area
RWP	- Radiation Work Permit
SP	- Surveillance Procedure
STI	- Short Term Instruction
TS	- Technical Specification