UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report No.: 50-302/78-23

Docket No.: 50-302

License No.: DPR-72

Licensee: Florida Power Corporation
P. O. Box 14042, Mail Stop C-4
St. Petersburg, Florida 33733

Facility Name: Crystal River 3

Inspection at: Crystal River, Florida

Inspection conducted: August 30 - September 1, 1978

Inspectors: D. R. Quick
T. J. Donat

Reviewed by: H C Dance 10/20/78
H. C. Dance, Chief Date
Reactor Projects Section No. 1
Reactor Operations and Nuclear Support Branch

Inspection Summary

Inspection on August 30 - September 1, 1978 (Report No. 50-302/78-23)
Areas Inspected: Routine, unannounced inspection relating to the review of the Unit Jumper (Bypass) Log; Control Room and Supervisor Logs; quarterly performance of Surveillance Procedures; Operator Training on Small Break Interim Actions; Qualification of Safety-Related Electrical Equipment; review of system realignments; Safety Injection System Reset Features; and tour of plant areas. The inspection involved 40 inspector-hours on site by two NRC inspectors.
Results: Within the seven areas inspected, no items of noncompliance were found in six areas. One item of noncompliance was identified concerning completion and verification of procedures during the review of system realignments (Infraction - failure to follow procedures - 302/78-23-01 as stated in paragraph I.5.d).

DETAILS I

Prepared by: Thomas J. Donat 10/26/78
T. J. Donat, Reactor Inspector
Nuclear Support Section No. 1
Reactor Operations and Nuclear
Support Branch
Date

Dates of Inspection: August 30 - September 1, 1978

Approved by: R. D. Martin 10/26/78
R. D. Martin, Chief
Nuclear Support Section No. 1
Reactor Operations and Nuclear
Support Branch
Date

1. Persons Contacted

Florida Power Corporation (FPC)

*G. P. Beatty, Jr., Nuclear Plant Manager
W. R. Nichols, Operations Superintendent
*P. F. McKee, Technical Services Superintendent
*J. Cooper, Compliance Engineer
*G. M. Williams, Compliance Plant Engineer
G. R. Westafer, Maintenance Superintendent
*K. O. Vogel, Operations Engineer

*Denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

None

3. Unresolved Items

None

4. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on September 1, 1978. The inspector summarized as reported in the following paragraphs, the purpose and findings of the inspection. One item of noncompliance was identified concerning proper signing of procedure steps and conducting shift supervisor reviews and signoff of procedures.

During the course of the exit interview, the plant management made a commitment to delete the system preparation signoffs which had been

made in OP-202 (Plant Heatup) until the subsystem valve lineups had been reverified and the fill, vent, and initial operation sections of the subsystem Operating Procedures had been completed.

5. Evaluation of Plant Operations

Crystal River's Administration Instruction 500 and Technical Specification 6.8.1 and 6.8.2 establish that procedures would be implemented concerning the Administrative Control of Plant Operations, the Performance of General Plant Operations, and the Startup, Operation, and Shutdown of Safety-Related Systems. A review of plant records and documents for the last two months of the refueling outage was performed to verify that they were being performed in compliance with Administrative Instruction and Technical Specification requirements. The review was performed against Administrative Instruction AI-500 Sections 2.5, 2.7, 2.12, 2.13 and 2.17, Surveillance Procedure SP-440 Enclosure 3, and Operating Procedure 202 Section 6.1.

a. Jumper Log Review

Jumper Log entries for the months of July and August were reviewed for jumper compliance with all Technical Specification requirements, completeness of information, initiation and review signatures, and installation dating and verification signature; and upon jumper removal, removal from the file and signoff in the master list. The inspection identified no deficiencies in the jumper log entries reviewed.

b. Review of Reactor Operator and Shift Supervisor Log

The Reactor Operator Daily Log and the Shift Supervisor Daily logs for the months of July and August were reviewed for completeness, clarity of information, proper handling of late entries and strikeouts, signature of Reactor Operator or Shift Supervisor, and review of log by succeeding shift personnel as evidenced by initial blocks. The inspector review identified no deficiencies in the logs or their usage.

c. Review of Surveillance Procedures

The inspector reviewed surveillance procedures performed during the months of July and August to ensure that the normal surveillance program requirements as well as those required under the Unit Startup Surveillance Plan were being complied with. The review utilized completed Quality Assurance Department Surveillance Procedure Check Sheets, sample surveillance procedures, and the Shift Supervisor Log entries. No discrepancies were noted in the review.

d. Review of System Valve Lineup and System Readiness to Support Plant Heatup

As part of the review of the plant readiness to conduct a plant heatup on September 3, 1978, various subsystems were selected and their status reviewed. All of the systems selected to be reviewed had been signed off in paragraph 6.1.2 of the Plant Heatup Procedure, OP-202, prior to August 31, 1978 as having been lined up, filled and vented, and placed in the mode required for startup using their respective System Operating procedures.

The first system selected for review was the Makeup and Purification System which is controlled by OP-402. Using the initial valve lineup sheets for this procedure approximately 40% of this system's valves in the auxiliary building were checked. Two valves were found in positions different from those signed in the valve check list; these were MUV-126 (MU&P Demins, Bypass Vlu) and MUV-47 (Block Orifice Manual Bypass Downstream Iso. Vlv). Discussions with the Licensed Operators indicated that these valves had been so positioned because of the plant condition in effect. A review of the portion of the valve check list pertaining to valves operated and indicated in the control room found that ten valves were not signed to indicate their being in the required position. A further review of the procedure identified that Steps 7.1, 7.6 and 7.7 of the system's startup paragraph concerning respectively the initial valve lineup, the setting of failed fuel element flow, and the adjustment of makeup tank temperature had not been signed. Also the Shift Supervisor review and signoff as required by Administrative Instruction 500 had not been made.

The valve lineup of the Decay Heat Removal system was checked as well as that of the Nuclear Services Cooling System. No discrepancies were noted between the valves checked and the valve line up lists. A review of the Decay Heat Removal System Operating Procedure, OP-404, showed that various steps in Section 6.0 (initial conditons), 7.0 (Fill and Vent), and 8.0 (Decay Heat Removal) had been either initialed or marked "NA" but no Shift Supervisor review and signoff had been performed on any of these sections. A similar situation was found upon reviewing OP-408 for the Nuclear Services Cooling System Operating procedure in that all three sections had been marked "NA" but no review and anotation of the reason for declaring the steps to be "Not Applicable" had been made by the shift supervisor.

A review was also performed on Operating Procedure OP-405-Reactor Building Spray System. Step 6.1.1 was signed off indicating that the spray system was lined up for normal standby mode per valve check list I; however, a review of the check list showed that ten

control room operated valves had not been verified and signed off as being in the required position. Also steps within Section 6.1 (Conditions for Modes 1 thru 4) and Section 6.2 (condition for Modes 5 and 6) had not been signed nor had the shift supervisor made his signoff.

Two additional procedures OP-411 (Instrument and House Service Air System) and OP-416 Domestic Water Supply System) were reviewed and in those cases no problems were identified.

The Crystal River Technical Specification in paragraph 6.8.1 states that written procedures shall be established, implemented and maintained covering activities such as the procedures recommended in Appendix A of Regulatory Guide 1.33. Appendix A of Regulatory Guide 1.33 includes a procedure covering the review of completed procedures. This was implemented in Crystal River Administrative Instruction AI-500 (Conduct of Operations), which states in part:" Section 2.7 "Procedures" Procedures requiring verification will be handled in the following way:

When the operator has performed an operation or verification of the status of the item as required by the specific procedural step, he initials the space provided for that step in the procedure or on a Check-Off List. Completed procedures are reviewed by Shift Superintendent for completeness and determination of unusual or abnormal conditions. When the review is completed, the Shift Supervisor signs in the approved space..."

The above review demonstrates that the operating staff was not complying with the requirements of AI-500 when making signoffs in OP-202 or when not completing the necessary reviews in OP-402, 404, 405, and 408. This failure to comply with the requirements of AI-500 is considered to be an item of noncompliance.

DETAILS II

Prepared by: D. R. Quick, Reactor Inspector
Reactor Projects Section No. 1
Reactor Operations and Nuclear
Support Branch

10/20/78
Date

Dates of Inspection: August 30 - September 1, 1978

Reviewed by: H. C. Dance, Chief
Reactor Projects Section No. 1
Reactor Operations and Nuclear
Support Branch

10/20/78
Date

1. Persons Contacted

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*Denotes those persons at exit interview.

2. Licensee Action on Previous Inspection Findings

Not inspected.

3. Unresolved Items

a. None identified during this inspection.

b. Fire Brigade Training Technical Specification Requirement Clarification

Technical Specification 6.4.2 requires training sessions to be provided to the Fire Brigade at least quarterly. This is the subject of unresolved item number 78-21-03. The licensee requested an interpretation of this requirement from the standpoint of whether or not all fire brigade members were to be trained at least quarterly. The inspector informed the licensee, initially by telephone on August 22, 1978 and again during this inspection,

that the requirement does in fact mean that all fire brigade members are to attend training sessions at least quarterly. The licensee stated that he would comply with the requirement.

Unresolved Item 78-21-03 is closed.

4. Exit Interview

A meeting was held by D. R. Quick and T. J. Donat with G. P. Beatty, Jr. and members of his staff on September 1, 1978. Items covered by the inspection, as delineated in the following paragraphs, were discussed.

5. Operator Training in Small Break Interim Actions

The inspector reviewed records and interviewed licensee personnel in connection with the licensee committment to NRR, dated June 14, 1978, relating to operator training in the interim actions required during a small Reactor Coolant System break. The inspector confirmed that training of all operating personnel had been completed in accordance with the commitment.

This item is closed.

6. IE Bulletins and Circulars

The inspector reviewed the actions taken onsite by the licensee to verify proper environmental qualification of safety-related electrical equipment on accordance with IE Circular 78-08. This circular encompasses the following previously issued IE Bulletins: 78-05 and 77-05A (Electrical Connector Qualification); 77-06 (Containment Electrical Penetration Qualification); 78-02 (Unprotected Terminal Block Qualification); and 78-04 (Qualification of Stem Mounted Limit Switches). In addition Circular 78-08 addresses qualification of cables, cable splices, solenoid valves, electrical transmitters, and sequential vs separate effect testing methods. The inspector toured the Reactor Building to verify that items of concern in the listed bulletins were not present. The inspector found no discrepancies onsite during the review or the tour however, this item will be inspected further at corporate headquarters in the near future. This is necessary since all engineering review records and supporting documentation are maintained at that location. This item remains open.

7. Safety Injection System Reset Feature

The inspector reviewed wiring diagrams and circuit logic with licensee personnel for the Engineered Safety Feature Actuation System. This review was conducted to determine possibility of the existance of the following PWR concerns:

(1) Prevention of automatic safety injection or equipment resequencing once the initial safety injection actuation system signal is reset.

(2) Ability of certain automatic control equipment to revert from the emergency to the normal operating condition following actuation system reset.

The inspector determined that these concerns are not valid at this facility due to design to the actuation system.

8. Decay Heat Closed Cycle Cooling Heat Exchanger Problem

The inspector reviewed licensee actions in connection with the cracked water box on the Decay Heat Closed Cycle Cooling Heat Exchanger. Initial inspector notification was by telephone on August 30, 1978. The water box was cracked during reinstallation of the water box end-bell following routine maintenance while the reactor was in mode five. The water box is fabricated from cast iron. Since the heat exchanger is safety-related and required for operation in modes one through four operability was restored by accomplishing a temporary repair and initiating an engineering review to provide a permanent solution.

The temporary repair consisted of applying GE-RTV sealant to the crack and installing through rod bolts, through every fourth water box bolt hole, extending from the heat exchanger shell flange to the end bell flange. This applies the stress forces created to the carbon steel shell and shell flange on one side of the water box and to the carbon steel end bell on the other side reducing stress on the cast iron water box. The licensee has evaluated that since the crack is located on the discharge side of the heat exchanger and sufficient room drainage capability exists the system would continue to provide its intended safety function in the event of crack propagation with resulting leakage.

The permanent solution is presently thought to be installation of qualified carbon steel water boxes within three to six months. This time period is contingent upon availability.

The inspector finds licensee action to be appropriate to date but will continue to follow the progress of this modification during future inspection (78-23-01).