UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

IE Inspection Report No. 50-302/75-13

Licensee: Florida Power Corporation
3201 34th Street, South
Post Office Box 14042
St. Petersburg, Florida 33733

Facility Name: Crystal River 3
Docket No.: 50-302
License No.: CPPR-51
Category: B1

Location: Crystal River, Florida

Type of License: B&W, PWR, 2452 Mwt

Type of Inspection: Routine, Unannounced

Dates of Inspection: September 23-26, 1975

Dates of Previous Inspection: September 10-12, 1975 (Construction)

Principal Inspector: K. W. Whitt, Reactor Inspector
Facilities Section
Facilities Test and Startup Branch

Accompanying Inspector: R. F. Rogers, Reactor Inspector
Engineering Section
Facilities Test and Startup Branch

Other Accompanying Personnel: R. C. Lewis, Senior Reactor Inspector
(September 11-12, 1975)
Facilities Section
Facilities Test and Startup Branch

Principal Inspector: K. W. Whitt 10/6/75
K. W. Whitt, Reactor Inspector Date
Facilities Section
Facilities Test and Startup Branch

Reviewed By: E. C. Lewis 10/10/75
R. C. Lewis, Senior Reactor Inspector Date
Facilities Section
Facilities Test and Startup Branch

SUMMARY OF FINDING

I. Enforcement Matters

There were no items of noncompliance identified during the inspection.

II. Licensee Action on Previously Identified Enforcement Matters

There were no previously identified enforcement matters requiring resolution.

III. New Unresolved Items

75-13/1 Incorrect FSAR Drawings

Drawings in chapter six of the FSAR show the wrong type of valves in the decay heat exchanger discharge lines. (Details I, paragraph 5)

75-13/2 Turbine and Generator Trip From 100% Power

The licensee has not committed to performing the turbine and generator trip tests from 100% power. (Details I, paragraph 6)

IV. Status of Previously Identified Unresolved Items

75-8/2 Preoperational Test Procedure Review

One general comment regarding provisions for prevention of safeguards systems pump runout has not been resolved. This item remains open. (Details I, paragraph 2)

V. Unusual Occurrences

None

VI. Other Significant Findings

A. Project Status

The present projected fuel load date is March, 1976. The licensee reported that Construction is 95.5% complete and approximately 45% of the overall test program has been completed. In order to support the March, 1976 fuel load date, the following key test start dates have been tentatively established: (Details I, paragraph 7)

1. Primary System Hydrostatic Test - October 29, 1975
2. Containment Leak Rate Test - December 28, 1975
3. Hot Functional Testing - January 10, 1976.

B. Performance Testing of the Sodium Thiosulfate - Reactor Building Spray System

The drawdown test to determine the flow rate from the sodium thiosulfate and sodium hydroxide tanks relative to the flow rate from the borated water storage tank has been completed, but the test results have not been evaluated by the licensee. This item remains open. (Details I, paragraph 3)

VII. Management Interview

A management interview was held at the conclusion of the inspection on September 26, 1975. The findings of the inspection were discussed. The following licensee personnel participated.

J. Alberdi - Project Manager
G. P. Beatty - Plant Superintendent
E. E. Froats - Manager, Site Surveillance
J. C. Hobbs, Jr. - Manager Generation Testing

DETAILS I

Prepared by: K. W. Whitt 10/6/75
K. W. Whitt, Reactor Inspector Date
Facilities Section
Facilities Test and Startup Branch

Dates of Inspection: September 23-26, 1975

Reviewed by: R. C. Lewis 10/10/75
R. C. Lewis, Senior Reactor Inspector Date
Facilities Section
Facilities Test and Startup Branch

1. Individuals Contacted

Florida Power Corporation (FPC)

J. Alberdi - Project Manager
B. Beatty - Plant Superintendent
C. Clapp - Manager, Site Quality Surveillance Audits
E. Froats - Manager, Site Surveillance
J. C. Hobbs, Jr. - Manager, Generation Testing
C. E. Jackson - Construction Superintendent
P. F. McKee - Assistant Plant Superintendent
D. A. Morrison, Jr. - Nuclear Operator
A. P. Vogt - Manager, Test Procedures

NUS

J. N. Burford - Test Engineer

2. Preoperational Test Procedure Review

This unresolved item (75-8/2) was initially identified in IE Report No. 50-302/75-8, Details II, paragraph 2, and subequently discussed in IE Report No. 50-302/75-11, Details I, paragraph 4.b. Preliminary evaluation by the licensee of provisions to prevent safeguards systems pump runout has afforded the following information:

a. Reactor Building Spray System (RBSS)

This system has installed orifices in each loop. A licensee representative stated that FPC would verify that these orifices plus the system pipe resistances are sufficient to prevent

pump runout. In addition, manually operated valves that can be throttled and locked out are located at the discharge of the pump in each loop.

b. Low Pressure Injection System (LPIS)

Each loop of this system contains two motor operated valves in series. The limit switches of these valves can be set so that the flow is restricted to prevent pump runout. Since the valves are in series, if one valve fails in the full open position, redundancy is achieved by the second valve to prevent pump runout.

c. High Pressure Injection System (HPIS)

This system contains a motor operated valve in each of four parallel lines between the pumps and the inlet nozzle to the reactor vessel. The limit switches of these valves can be set to restrict the flow to the desired rate. The licensee agreed to take precautions against pump runout in case of a single failure if these valves are used for flow restriction.

The licensee has requested assistance from the design engineer in determining the most desirable method for prevention of safeguards system pump runout. This item will remain open until the evaluation has been completed and Region II has reviewed the resolution.

3. Performance of Sodium Thiosulfate-Reactor Building Spray System

This item was identified in IE Report No. 50-302/75-8, Details II, paragraph 4, and subsequently discussed in IE Report No. 50-302/75-11, Details I, paragraph 6. The drawdown test, a portion of which was observed by the inspector, has been completed. The borated water storage tank, the sodium thiosulfate tank, and the sodium hydroxide tank were all filled with water and then pumped to the refueling canal using the engineered safeguards pumps. A licensee representative stated that the results of the test were being transmitted to the design engineer for evaluation. FPC had not drawn any conclusions from the collected data according to the licensee representative. This item will remain open until the results evaluation has been completed and IE, Region II has reviewed the resolution.

4. Verification of Review and Approval of Category II Test Procedures

This item was identified in IE Report No. 50-302/75-11, Details I, paragraph 7. Nine of the category II tests selected on a sample basis still have not been approved. This item will remain open until the selected procedures have been approved by the licensee and reviewed by IE, Region II.

5. Incorrect FSAR Drawings

Chapter 6, page 6.1, of the FSAR states that figure 6-1 schematically depicts the safeguard systems related to core and building protection. Figure 6.1 indicates that each loop of the low pressure injection system contains a manually operated valve at the discharge of the decay heat exchanger. Figure 9.6 of the FSAR, which is a flow diagram of the decay heat system, indicates that these valves are motor operated. Visual inspection of the installed valves confirmed that they are motor operated. A licensee representative stated that the site would recommend that figure 6.1 and any other incorrect figures relating to the material of chapter 6 be updated by amendment to the FSAR. This commitment was reaffirmed during the management interview, at which time the inspector stated that this was designated unresolved item 75-13/1.

6. Turbine and Generator Trip from 100% Power

In Chapter 13 of the FSAR, the licensee has committed to performing a turbine and generator trip test at 100% power or as near as practical. Licensee management has not defined "as near as practical" or explained their intentions regarding performance of these tests. This is designated unresolved item 75-13/2.

7. Project Status

The status of various plant activities was inspected in an effort to identify outstanding items that could have an affect on the issuance of an operating license. The following information was obtained:

a. Overall construction is approximately 95.5% complete.

b. Construction is 100% complete for 8 of 58 systems.

c. Average construction completeness for all systems is approximately 93%.

d. 46 of the 58 system have been turned over to the licensee testing group from the construction contractor.

e. All systems that have been turned over have punchlist items to be completed and/or resolved.

f. Approximately 64% of the identified test procedures have been approved.

g. Approximately 25% of the tests have been performed.

h. Approximately 17.5% of the performed tests are clear and 7.5% have test related deficiencies that must be resolved.

i. Approximately 7.7% of the test results have been approved.

j. No systems have been turned over to the operations group in their entirety.

K. Approximately 45% of the overall test program including construction and component tests (not included in any of the above status) has been completed.

DETAILS II

Prepared by: R. F. Rogers for 10/10/75
R. F. Rogers, Reactor Inspector Date
Nuclear Engineering Section
Facilities Test and Startup Branch

Dates of Inspection: September 23-26, 1975

Reviewed by: R. F. Rogers for 10/10/75
H. C. Dance, Senior Reactor Date
Inspector
Nuclear Engineering Section
Facilities Test and Startup Branch

1. Personnel Contacted

J. C. Hobbs, Jr. - Manager, Generation Testing
G. R. Westafer - Technical Support Engineer
R. Bright - Reactor Engineer
P. F. McKee - Assistant Plant Superintendent

2. Fuel Receipt and Storage

A review was conducted of the fuel receipt and storage procedures and facilities to verify the requirements of 10 CFR Part 70 - Special Nuclear Material and the provisions of the licensee's Part 70 license SNM-1275 issued June 20, 1973, as amended. The results of this review are indicated below.

a. Fuel Storage

The security measures to protect new fuel after it arrives at the plant site have not been developed to comply with the requirements of the Part 70 licensee. An indepth inspection of the security provisions will be conducted during a subsequent inspection.

b. Implementing Procedures

The inspector reviewed the following implementing procedures:

(1) FP-302, REV. 2 - Fresh Fuel Unpacking, Inspection, and Storage.

(2) FP-603, REV. 3 - Fresh Fuel Shipping Container Operations

(3) Special Nuclear Materials Handling and Accountability Manual, VOL. XII

The special nuclear materials handling and accountability manual is not yet approved by the station. Approval is planned prior to the receipt of the fuel.

c. Training and Drills

Section 3.2.5.2 of the Part 70 license requires instruction of personnel and conduct of drills to familiarize the personnel with evacuation plans should an emergency occur in the fuel handling process. At the time of the inspection, no formal instruction had been performed nor drills conducted to support receipt of the fuel. A licensee representative stated that the instruction and drills would be performed prior to receipt of the fuel. This item will be examined on a subsequent inspection.

3. Review of Preoperational Test Procedures

The following procedures were reviewed for consistency with the requirements of Regulatory Guide 1.68, Appendix C, "Preparation of Procedures," FSAR Table 13-1, "Refueling Test Summary," and the referenced Regulatory Guides.

a. Loose Parts and Vibration Monitoring

The test procedure for this test has not been written yet. The inspector did review TP 7 2 200 17 0, "Reactor Diagnostic System Test," which is an instrumentation switch position and calibration procedure for the loose parts monitor and had no questions. A comparison of the test requirements of Regulatory Guide 1.20, "Comprehensive Vibration Assessment Program for Reactor Internals During Preoperational and Initial Startup Testing," and the test procedure will be performed when the test is written.

b. TP 71 201 3 - Core Flood System Functional Test

A draft of this procedure was required to verify compliance with Regulatory Guide 1.79 - "Preoperational Testing of Emergency Core Cooling Systems for Pressurized Water Reactors." The procedure was not in agreement with Regulatory Guide 1.79 in many areas. A licensee representative stated that the procedure will be re-written to be in agreement with the Regulatory Guide. The re-written procedure will be reviewed on a subsequent inspection.

4. Review of Preoperational Test Program

A review was conducted of 68 of the approximately 325 Class I and Class III test procedures to determine compliance with Regulatory Guide 1.68, "Preoperational and Initial Startup Test Programs for Water Cooled Power Reactors," and FSAR Section 13.2.5, "Test Procedure Development and Review." Tests were selected to be representative of the total scope of the test program. For the selected tests, it was verified that a procedure existed which was properly reviewed and approved by plant personnel. Approximately one-third of the procedures selected have not yet been approved for use. These procedures will be inspected when approved.

5. Review of Preoperational Test Results Evaluation

The inspector attempted to review selected procedures to assure that the licensee was performing an adequate evaluation of test results; however, only 18 of the approximately 325 preoperational tests have been reviewed by the plant staff. None of the procedures selected had yet been reviewed. This area will be referred to a subsequent inspection.