UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report No. 50-302/80-42

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

Facility Name: Crystal River

Docket No. 50-302

License No. DPR-72

Inspection at Crystal River site near Crystal River, FL.

Inspectors: Virgil Brownlee for — 3/3/81
T. F. Stetka, Senior Resident Inspector — Date Signed

Virgil Brownlee for — 3/3/81
B. W. Smith, Resident Inspector — Date Signed

Approved by: P. C. Dunnicliff for — 3/6/81
P. J. Kellogg, Section Chief, RRPI Division — Date Signed

SUMMARY

Inspection on December 1, 1980 through January 5, 1981.

Areas Inspected

This routine inspection involved 128 resident inspector-hours onsite in the areas of plant operations, security, radiological controls, Licensee Event Reports (LER's) and Non-Conforming Operations Reports (NCOR's), non-routine events, licensee action on IE Bulletins and Circulars, 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 back shifts.

Results

Of the five areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

Licensee Employees

J. Buckner, Officer of the Guard
*J. Bufe, Compliance Auditor
M. Collins, Reactor Specialist
*J. Cooper, QA/QC Compliance Manager
*W. Cross, Operations Engineer
*V. Hernandez, Compliance Auditor
*K. Lancaster, Compliance Supervisor
*J. Lander, Maintenance Superintendent
*S. Lashbrook, Health Physics Supervisor
*T. Lutkehaus, Technical Services Superintendent
*P. McKee, Operations Superintendent
*D. Poole, Nuclear Plant Manager
*G. Ruszala, Chemistry/Radiation Protection Manager
H. Sassard, Fossil Shift Supervisor, Units 1 and 2
D. Smith, Technical Support Engineering Supervisor
L. Tittle, Performance Engineering Supervisor
G. Williams, QA/QC Supervisor

Other licensee employees contacted included maintenance engineering, operators, chem/rad, corporate, and office personnel.

*Attended exit interview

2. Exit Interview

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on January 5, 1981. During this meeting the inspectors summarized the scope and findings of the inspection as they are detailed in this report. During the meeting, the unresolved items and inspector followup items were discussed.

3. Licensee Action on Previous Inspection Items

(Open) Unresolved Item (302/80-39-07): The licensee revised Short Term Instruction (STI) 80-81 on December-3, to require the Shift Supervisor to verify that adequate retesting has been performed following maintenance. The licensee is also revising compliance procedure CP-113 to include these new re-test review requirements. The effectiveness of the licensee's new program will be examined during subsequent inspections.

(Open) Inspector Followup Item (302/80-39-01): Due to additional auxiliary building evacuations caused by tank draining operations, the licensee has decided to include operator training to insure operators are familiar with

the new procedures under development. It is expected that the procedure revisions and operator training will be completed by January 31, 1981.

(Open) Unresolved Item (302/80-33-01): The licensee continues to have interpretation problems with Technical Specification (TS) 3.6.3.1 as identified in paragraph 5.b.(1) of this report. This item remains open.

(Open) Noncompliance (302/80-33-06): The licensee has correctly revised procedure SP-161 to include calibration of 0-3000 psig gauges and has initiated modification 80-9-76 to install a new 0-3000 psig gauge. This modification is expected to be completed by May 1, 1981. this item remains open pending completion of this modification.

(Closed) Unresolved Item (302/80-28-02): The licensee has changed their Equipment Out of Service (OOS) system and now utilizes OOS stickers and a new logging method. The resident inspectors have observed implementation of this system and the system now appears adequate to monitor OOS equipment.

4. Unresolved Items

Unresolved items are matters which more information is required to determine whether they are acceptable or may result in violations. New unresolved items identified during this inspection are discussed in paragraphs 5.a.(3) and 5.b.(5)(a).

5. Review of Plant Operations

The plant continued with power operations (Mode 1) for the majority of this inspection period. On December 8, a brief shutdown was performed in order to add oil to the Reactor Coolant Pump Motors and to replace a failed Control Rod Drive Position Indication Coil. The plant returned to power operations on December 8 and continued operation in this mode for the remainder of the inspection period. The inspector was present in the control room to observe the return to criticality on December 8.

a. Shift Logs and Facility Records

The inspectors reviewed the records listed below and discussed various entries with operations personnel to verify compliance with technical specifications and the licensee's administrative procedures.

- Shift Supervisor's Log;
- Operator's Log;
- Equipment Out-of-Service Log;
- Equipment Clearance Order Log;
- Shift Relief Checklist;
- Control Center Status Board;
- Short Term Instruction;
- Auxiliary Building Operator's Log; and
- Operating Daily Surveillance Log.

In addition to these record reviews, the inspectors independently verified selected clearance order tagouts. These record reviews identified the following:

(1) On December 12, the inspector noted from the Shift Supervisor's log entries that fire service valve FSV-107 was closed to isolate a leaking hydrant. Approximately one hour and 55 minutes later the operators re-opened the valve after realizing that they had isolated the auxiliary building fire suppression system and had not established a continuous fire watch as required by Technical Specification 3.7.11.2.a. The licensee promptly reported this event in LER 80-51. (see paragraph 5.a.(3))

The licensee's corrective actions for this event includes a critique of the event by all personnel involved and a presentation of the lessons learned to all operational shifts by January 15, 1981.

Inspector Followup Item: Verify training to the FSV-107 event is given to all operational shifts. (302/80-42-01).

(2) During review of the operator work schedules on December 29, the inspector noted that two operators had worked an eight hour shift (1600 hours to 2400 hours) on December 24 and then returned to work another eight hour shift (0800 hours to 1600 hours). This schedule only provides eight hours between each work period and is not consistent with NRC guidelines for operator working hours as discussed in NUREG 0737.

This item was discussed with licensee management personnel and it was re-emphasized that the NUREG 0737 guidelines should be followed. The inspectors will continue to follow this item as delineated in NRC Inspection Report 50-302/80-28, paragraph 7.c.

(3) On December 10, the inspector requested completed equipment clearance orders dated November 16 and November 23, for review. The licensee has been unable to locate these records and has also determined that all the completed equipment clearance orders for October and November 1980, appear to be missing. The licensee is continuing the search for these records.

Unresolved Item: Locate completed equipment clearance order sheets for the months of October and November 1980. (302/80-42-02).

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 activities were observed during back shifts. Also during this inspection period, numerous licensee meetings were

attended by the inspectors to observe planning and management activities.

The facility tours and observations encompassed the following areas:

- Security perimeter fence;
- Turbine Building;
- Control Room;
- Emergency Diesel Generator Rooms;
- Auxiliary Building;
- Intermediate Building;
- Battery Rooms;
- Reactor Building; and
- Electrical Switchgear Rooms.

During these tours, the following observations were made:

(1) Monitoring Instrumentation - The following instrumentation was observed to verify that indicated parameters were in accordance with the Technical Specifications for the current operational mode:

- Equipment operating status;
- Area, atmospheric and liquid radiation monitors;
- Electrical system lineups;
- Reactor operating parameters; and
- Auxiliary equipment operating parameters.

As a result of these observations, the following was identified:

On December 9, upon failure of containment isolation valve CAV-3 to close, the licensee entered the action statement of Technical Specification 3.6.3.1. Soon after entering the action statement, the inspector noted that containment isolation valve CAV-2 was closed and red tagged to remain in this position, however, the valve was not de-energized to meet the de-activate statement of Technical Specification 3.6.3.1. The inspector questioned the operator to determine why the valve was not de-energized. The operator responded that they could not de-energize this valve by opening the breaker because it supplied power to other valves that are necessary for plant operation. The inspector stated that the intent of the TS action statement was that an automatic valve will be disconnected from its actuating supply (i.e., either an electrical supply, air supply, etc.) and that red tagging of the valve control switch did not meet this intent.

The operator acknowledged the inspector's comments and had personnel lift the leads supplying power to CAV-2 thus de-energizing the valve. The inspector verified that this action was accomplished within the four hour time limit provided by the TS.

This issue was discussed with licensee management representatives. Interpretation of Technical Specification 3.6.3.1 is the subject of unresolved item 302/80-33-01. While the licensee's actions in this instance are different than that which occurred before, the action indicates continued confusion over the interpretation of this TS. The licensee wrote and issued Short Term Instruction (STI) 80-04 on December 11 to insure that all operators understand what de-activation of a valve means. The inspectors will continue to observe the licensee's implementation of TS 3.6.3.1 as identified in unresolved item 320/80-33-01.

(2) Shift Staffing - The inspectors verified by numerous checks that the operating shift staffing was in accordance with Technical Specification requirements. In addition, the inspectors observed shift turnovers on different occasions to verify that continuity status, operational problems and other pertinent plant information was being accomplished.

(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 exist. The general housekeeping conditions are acceptable.

(4) Fire Protection - Fire extinguishers and fire fighting equipment were observed to be unobstructed and inspected for operability. No evidence of smoking was observed in designated "No Smoking" areas.

(5) Radiation Areas - Radiation control zones were observed to verify proper identification and implementation. These observations included review of step-off pad conditions, disposal of contaminated clothing, and area posting. Area postings were verified for accuracy through the use of the inspector's own radiation monitoring instrument. As a result of the inspector's verification of adequate postings and observations of radiation control zones, the following items were identified:

(a) On December 30, while touring the plant berm inside the protected area and outside of the radiation control area (RCA), the inspector measured dose rates of 3 to 4 mr/hr near trailers containing refueling support equipment. These trailers, located on the west side of the plant, were enclosed within a posted radiation barrier. The inspector noted that the 3 to 4 mr/hr dose rate could be received while standing just outside the radiation control barrier and that this area of the barm could be frequented by non-TLD badged personnel.

The inspector's concern of possible dose rates to non-TLD badged personnel while within the protected area was

previously discussed on December 17 with licensee management representatives.

The inspector was informed that a modification evaluation is underway to build a wall around the trailers and the RCA fence located on the berm to assure that unmonitored dose rates would not be received.

Inspector Followup Item: Review progress of the licensee modification to install a wall around the RCA fence and trailers (302/80-42-03).

While this modification is being developed, the licensee has extended the barriers further from the trailers and verified correct posting.

Unresolved Item: Insure that posting and barriers for the RCA's are adequate and correct (302/80-42-04).

(b) On December 30, while touring the Spent Fuel Pool (SFP) floor in the auxiliary building, the inspector measured high radiation readings near drums containing debris vacuumed from the SFP. The inspector noted that the posting around this area did not agree with the inspector's measurements and that a portion of the barrier was down. The inspector alerted a Chem/Rad Technician about these conditions and they were immediately corrected. This issue was also discussed with licensee management and followup on the licensee's actions is inlcuded in unresolved item (302/80-42-04).

(c) On December 16, while observing maintenance on a Reactor Building Spray pump, the inspector noted that some personnel were not dressed in specific anti-contamination clothing as stated on the Radiation Work Permit (RWP) in that the personnel were wearing a surgeon's cap in lieu of a hood. This issue was discussed with licensee management and further observations of work and maintenance activities indicate that personnel are properly dressing out.

Inspector Followup Item: Observe for proper dress-out of personnel working within contaminated areas. (302/80-42-05)

(6) Fluid Leaks - Various plant systems were observed to detect the presence of leaks. No problems were identified in this area.

(7) Piping Vibration - On December 29, the inspector noted a banging sound emanating from the check valve on the discharge side of Nuclear Services Closed Cycle Cooling (NSCCC) pump (SWP-1c). Discussions with operators and licensee management indicate that this has been a problem with this pump since pre-operational testing and that subsequent engineering evaluations have been

unable to identify the cause. The licensee is considering reorientation of the check valve as a possible solution.

Inspector Followup Item: Review licensee actions to stop check valve slamming on SWP-1c. (302/80-42-06)

(8) Pipe Hangers/Seismic Restraints - Several pipe hangers and seismic restraints (snubbers) on safety-related systems were observed. No problems were identified in this area.

(9) Secuirty Controls - Security controls were observed to verify that security barriers are intact, guard forces are on duty and access to the protected area is controlled in accordance with the facility security plan. During these observations, the inspector discovered the automatic closure mechanism on a vital area access door damaged such that the door had to be closed manually. The door was found in its normal closed position. The inspector notified the licensee of the broken automatic closure mechanism on the vital area access door and maintenance activities were initiated to repair the door.

Inspector Followup Item: Verify the automatic closure mechanism on the vital area access door is in working order (302/80-42-07).

(10) Surveillance Testing - Surveillance testing was observed to verity that:

- -- Approved procedures were being used;
- -- Qualified personnel were conducting the tests;
- -- Testing was adequate to verify equipment operability; and,
- -- Calibrated equipment, as required, were utilized.

The following tests were observed:

- -- Surveillance Procedure (SP)-333, Control Rod Exercises;
- -- SP-401, Control Rod Programming Verification (tests SP-333 and SP-401 were observed as part of post maintenance testing following completion of the position indication (PI) coil replacement on December 8);
- -- SP-421, Reactivity Balance Calculations (including independent calculation by the inspector of control rod ECP and shutdown margin);
- -- SP-322, Cable Tunnel Sump Pumps Operability Verification;
- -- SP-340, ECCS Pump Operability (for Building Spray Pump post-maintenance operability test);
- -- SP-510, Weekly Battery Check (Units 1 and 2);
- -- SP-187, Auxiliary Building Ventilation Exhaust System Testing (portions of this test); and,
- -- SP-179, Containment Leakage Test - Types "B" and "C" (only for type C testing of AHV 1A and 1B).

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

(a) The inspector observed the performance of a pressure decay test conducted in accordance with SP-179. The inspector noted that while procedure SP-179 discussed such a test, the directions for test performance do not exist. In addition, during the performance of the test, the inspector identified to the engineer conducting the test that the results were invalid due to the failure of the engineer to remove the air supply hose from the test rig. Failure to remove the air supply from the test rig caused air to leak past the air supply isolation valve thus providing invalid pressure decay readings. The air hose was removed and the test was completed.

This item was discussed with licensee management. The licensee will revise SP-179 thus providing instructions for conducting a pressure decay test.

Inspector Followup Item: Review status of revision to procedure SP-179 to include pressure decay test. (302/80-42-11)

(b) Crystal River Units 1 and 2 (Coal Fired Plants) contain batteries that are used to operate switchgear that provide offsite power to Unit 3. The maintenance of these batteries is under the cognizance of the fossil plant operating staff. Procedure AI-1300, Crystal River Units 1 and 2 Interface with Crystal River Unit 3, discusses how such activities are interfaced between the three units, however, the inspector questioned whether the fossil plant staff is sufficiently cognizant of the Technical Specifications to enable them to notify "the CR-3 Shift Supervisor of any maintenance on safety-related equipment which will in any way render it out of service as defined by Technical Specificatoins", (the quoted passage is from procedure AI-1300).

The licensee acknowledged the inspector's comments and will re-examine the fossil nuclear plant interface to assure adequate maintenance controls exist.

Inspector Followup Item: Review licensee actions to assure that the fossil/nuclear plant interface contains adequate maintenance controls (302/80-42-12).

(11) Maintenance Activities - The inspector observed maintenance activities to verify that:

-- Approved procedures were being utilized;
-- Correct equipment clearances were in effect;

-- Work Requests (W/R's), Radiation Work Permits (RWP's) and Fire Prevention Work Permits, as required, were issued and being followed; and,
-- Quality Control personnel were available for inspection activities as required.

The following maintenance activities were observed:

-- Replacement of a control rod position indication (PI) coil in accordance with maintenance procedure (MP)-108, Control Rod Drive Handling;
-- Replacement of a mechanical seal in Building Spray Pump 1A in accordance with procedure MP-131, Disassembly And Reassembly Of BSP-1A And 1B And DHP-1A And 1B; and
-- Activities on the spent fuel pool floor associated with the installation of high density spent fuel racks including review of procedure MP-135, Fuel Rack Removal Procedure, and review of modification M-79-3-18-D (Modification of Hardstop on Fuel Carriage).

With the exception of the RCA posting/barrier item and anti-contamination clothing dressing item discussed in paragraph 5.b.(5) of this report, no inadequacies were identified.

6. Review of Licensee Event Reports and Non-Conforming Operations Reports (NCOR)

a. The inspector reviewed Licensee Event Reports (LER's) to verify that:

-- The reports accurately describe the events;
-- The safety significance is as reported;
-- The report satisfies requirements with respect to information provided and timing of submittal;
-- Corrective action is appropriate; and,
-- Action has been taken.

LER's 80-44, 80-42, 80-48, 80-49, 80-50 and 80-51 were reviewed. This review identified the following items.

(1) LER's 80-48 and 80-49 reported failures of containment isolation valves (CIV's) CAV-3 and CAV-12. Failure of CIV's is a continuous problem and has been identified as Inspector Followup Item (302/80-39-06). The licensee's activities to minimize these failures will be followed under this item.

(2) LER 80-50 reported a failure of the level instrumentation for the sodium hydroxide tanks. The cause of the instrument failure was found to be water in the level transmitter dry sensing line. The instrument was returned to service and the licensee is investigating the reason for water formation in the line.

Inspector Followup Item: Review results of licensee's investigation of water in soduim hydroxide tank level instrument sensing lines (302/80-42-08)

(3) LER 80-81 reported the disabling of the Auxiliary Building fire suppression system due to operator error. This event is described in detail in paragraph 5.a.(1) of this report.

b. The inspector reviewed NCOR's to verify the following:

-- Compliance with Technical Specifications;
-- 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 the Technical Specifications.

The following NCOR's were reviewed:

80-72, 80-79, 80-80, 80-107, 80-112, 80-123, 80-124, 80-145, 80-166, 80-167, 80-178, 80-183, 80-190, 80-202, 80-210, 80-222, 80-228, 80-229, 80-237, 80-239, 80-251, 80-262, 80-270, 80-281, 80-282, 80-289, 80-303, 80-307, 80-309, 80-311, 80-312, 80-313, 80-314, 80-315, 80-316, 80-318, 80-324, 80-328

As a result of this review, the following items were identified:

(1) NCOR 80-289 reported a high radiation alarm and subsequent evacuation of the Auxiliary Building on November 4, 1980. This event was reviewed as reported in NRC Report 80-39 and is being being followed by Inspector Followup Item (302/80-39-01)

(2) NCOR 80-324 reported the use of non-quality "O"-rings (BUNA-N) in approximately 13 hydraulic snubbers. As a result of this use, the licensee entered the 72 hour action statement of Technical Specification 3.7.9.1(b) and applied to Nuclear Reactor Regulation (NRR) for approval of the BUNA-N material used. This approval was granted within the 72 hour action statement time period and the licensee is allowed to utilize this material until the next scheduled refueling outage (estimated to be approximately September/October 1981).

The inspector's review of this event indicates that 15 hydraulic snubbers may be utilizing the BUNA-N material and that 14 of these snubbers are considered to be inaccessible due to their locations within the containment building. One snubber (MSH-248), located in the Intermediate Building, is accessible and the licensee is conducting a monthly visual surveillance of this snubber to detect if any leakage is occurring.

The inspector reviewed a letter compiled by the licensee that compares the BUNA-N material with the acceptable ethylene propylene (EP) material. Based upon this review, the inspector consideres the licensee's surveillance program to be necessary and adequate to detect seal failures.

In addition, the inspector has questioned the licensee to determine the mechanism that caused the incorrect seals to be installed. The licensee is still reviewing this matter.

Inspector Followup Item: Review the monthly surveillance conducted on snubber MSH-248 and the licensee's investigation into the reason for use of the incorrect seal material. (302/80-42-09)

(3) NCOR 80-328 reported a high radiation alarm and subsequent evacuation of the Auxiliary Building on December 21, 1980. The inspector was present when this event occurred and the event is detailed in paragraph 7 of this report.

7. Nonroutine Events

Auxiliary Building (AB) Evacuations (NCOR's 80-314 and 80-328)

a. At 2215 hours on December 9, an AB evacuation was initiated due to alarms on AB gaseous radiation monitors RM-AZ and RM-A3. The tripping of these RMA channels resulted in the automatic securing and isolation of various AB fans and ventilation dampers. The licensee began an immediate search of the AB to determine the source of the high gaseous activity. This action included isolation of selected waste gas headers and waste gas equipment that could cause waste gas leakage into the AB atmosphere.

At 0500 hours on December 10, gaseous levels decreased sufficiently to clear the alarms on RM-A2 and RM-A3 and access to the AB was resumed. By approximately 1015 hours, the source of the leakage was identified (a fitting leak on a pressure switch monitoring the waste gas compressor suction lines and a seal leak on the Reactor Coolant (RC) Evaporator vacuum pump) and these leaks were isolated for repair.

The event resulted in a gaseous release from the plant. The release amounted to 0.437% gamma and 0.242% beta of the Technical Specification instantaneous release limit which consisted primarily of Xe-133 and Xe-135 gas.

The inspector was onsite when this event occurred and observed the licensee's actions. The inspector has no further questions at this time.

b. At 0932 hours on December 21, an AB evacuation was initiated due to alarms on AB gaseous radiation monitor RM-A2. The licensee began a search of the AB to determine the source of the gaseous activity. At

1000 hours, a second radiation monitor (RM-A3) alarmed and the licensee continued their search with personnel in protective clothing. The source of the activity was traced to an open drain line on the reactor coolant evaporator feed tank. The valve was closed and AB radiation levels returned to normal. Building access was restored at 1055 hours.

This event caused by failure of the level indicator on the feed tank which, in turn, caused an operator draining the tank to not realize the tank had gone completely empty. Complete emptying of the tank caused waste gas to vent from the tanks to the AB atmosphere.

The event resulted in a gaseous release from the plant. The release amounted to 0.991% gamma and 0.57% beta of the Technical Specification instaneous release limit. The inspector verified that this event taken cumulatively with the December 9 event did not approach nor exceed the quarterly and annual release limits.

The licensee has had similar problems with tank draining evolutions resulting in gaseous releases (Reference NRC Report 80-39). As the result of an event that occurred on November 4, the licensee wrote a short term instruction (SIT 80-75) and is revising procedures that direct tank draining operations. Followup on these revisions are being carried as inspector followup item (302/80-39-01).

The licensee is also planning modifications to the rad-waste tank level instrumentation to improve the reliability ard accuracy of this equipment.

Inspector Followup Item: Review licensee's progress in modifying rad-waste tank level instrumentation (302/80-42-10).