



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

Report No. 50-302/80-33

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

Facility Name: Crystal River Unit 3 Nuclear Generating Plant

Docket No. 50-302

License No. DPR-72

Inspection at Crystal River near Crystal River, Florida

Inspectors: T. F. Stetka 7A Peebles for  
B. W. Smith 7A Peebles for

11/24/80  
Date Signed  
11/24/80  
Date Signed

Approved by: Frank Gepe  
for R. D. Martin, Section Chief, RONS Branch

11/24/80  
Date Signed

SUMMARY

Inspection on September 2, through October 3, 1980

Areas Inspected

This routine inspection by the resident inspectors of plant operations, security, radiological controls, licensee event reports (LER's), licensee action on IE Bulletins and Circulars, non-routine events and licensee action on previous inspection items. Facility tours were conducted and facility operations were observed. The inspection involved 115.5 hours onsite by two resident inspectors. This inspection report also includes a meeting with the local public officials. This meeting involved an additional 6 hours of inspection effort.

Results

One item of noncompliance was identified (Deficiency - failure to make proper temporary change to Plant Review Committee (PRC) approved procedure).

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## DETAILS

### 1. Persons Contacted

#### FPC Personnel

J. Buckner, Officer of the Guard  
\*J. Bufe, Compliance Auditor  
\*M. Collins, Reactor Specialist  
\*J. Cooper, QA/QC Compliance Manager  
\*W. Cross, Operations Engineer  
J. Hancock, Assistant Vice President - Nuclear Operations  
\*L. Hill, Radiological Licensing Specialist  
\*S. Johnson, Maintenance Staff Engineer  
W. Kemper, Plant Training Manager  
\*K. Lancaster, Compliance Supervisor  
\*T. Lutkehaus, Technical Services Superintendent  
\*P. McKee, Operations Superintendent  
\*K. Neuschaefer, Compliance Auditor  
G. Perkins, Health Physics Supervisor  
\*D. Poole, Nuclear Plant Manager  
\*G. Ruzsala, Chem/Rad Protection Manager  
D. Smith, Technical Support Engineering Supervisor  
G. Westafer, Maintenance Superintendent  
\*G. Williams, QA/QC Supervisor  
K. Wilson, Licensing Specialist, NSSD

#### Southern Sciences Personnel

\*F. Wreath, Consultant

#### Operating Licensing Branch Personnel (NRC)

B. Boyer, Examiner  
B. Wilson, Examiner

#### Members of the Public

Ms. M. Eiland, Mayor, Town of Ingles  
Mr. V. Lewis, Mayor, City of Crystal River  
Mr. R. Rausch, Mayor, Town of Yankeetown

Other personnel contacted included office, operations, engineering, chem/rad, and corporate personnel.

\*Attended exit interview

2. Exit Interview

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on October 3, 1980. During this meeting the inspectors summarized the scope and findings of the inspection as they are detailed in this report. During the meeting the item of noncompliance, unresolved items, and inspector followup items were discussed.

3. Licensee Action on Previous Inspection Items

(Closed) Noncompliance (302/80-23-05): The licensee implemented the 100% physical search during high personnel traffic periods and utilized the existing weapons detector at other times. Compliance with this commitment was observed by the resident inspectors. On September 20, 1980, the new weapons detector was installed and the licensee discontinued the 100% physical search of employees. The licensee is now complying with their approved Security Plan.

(Open) Inspector Followup Item (302/80-23-03): Monitoring of the licensee's activities by the resident inspectors, pertaining to posting and barricading of High radiation areas, indicate that the licensee's actions appear to be effective. The licensee is manufacturing spring-loaded barriers to be used on High Radiation areas. This item remains open pending installation of the barriers.

(Open) Noncompliance (302/80-23-04): The licensee's corrective actions dealing with self-frisking when leaving RCA, have been observed by the resident inspectors and appear to be effective. The licensee has also initiated actions to purchase more sensitive portal monitors. This item remains open pending review of the licensee's progress in purchasing the new portal monitors.

(Closed) Inspector Followup Item (302/80-23-11): The licensee completed inspection of all CRD Motor Tube flanges and removed any imperfections, inspected and replaced damaged flange nut rings, PT inspected all hold down bolts, and replaced all the flexitallic gaskets. These flanges were then hydrostatically tested prior to returning to service. Action on this item is considered to be complete.

(Open) Inspector Followup Item (302/80-23-13): The inspector reviewed the "Report on Valve Disc Failure - RCV-11" dated August 1, 1980. This report documented an investigation concerning the RCV-11 failure and identified specific recommendations that should be implemented. This item remains open pending NRC review of the licensee's actions on these recommendations.

(Open) Unresolved Item (302/80-24-04): The licensee has revised CP-111 as revision 16 to delegate specific individuals to perform NCOR reviews. This change will prevent the NCOR's from becoming "pigeon-holed" and ensures a

timely review process. The licensee has made considerable progress in completing the review of overdue reports. Review by the resident inspector indicates that the revised procedure has expedited the NCOR reviews. This item remains open pending review completion of overdue reports.

(Closed) Inspector Followup Item (302/80-24-14): The licensee has evaluated the leadscrew dropping events to determine reportability under Part 21. This evaluation indicates that these events do not meet Part 21 reporting criteria. The resident inspector has reviewed the licensee's evaluation and has no further questions on this item.

(Closed) Noncompliance (302/80-24-03): The licensee has reestablished test well No. 4 and resumed required sampling. Resumption of sample was verified in IE Inspection Report 50-302/80-34. The licensee's corrective actions as delineated in their September 29, 1980 letter are considered complete.

(Closed) Inspector Followup Item (302/80-24-15): At power testing has been completed on the Valve Monitoring System for the Code Safety Relief Valves and the Power Operated Relief Valve. The inspectors reviewed completed valve monitoring system installation and checkout procedure to verify satisfactory data. No problems were noted.

(Closed) Inspector Followup Item (302/80-28-07): The inspectors have reviewed the Colt Industries report on the Emergency Diesel Generator turbocharger bearing failure. The inspectors were satisfied with the report and have no further questions on this item.

(Closed) Unresolved Item (302/77-18-01): This item was concerning the correlation between the power range nuclear instrumentation calibration (SP-113) and the heat balance calculation (SP-312). This item was further reviewed during inspection reports 78-31 and 79-48. The inspectors have reviewed licensee action on their item and consider the action on the item complete.

(Closed) Inspector Followup Items (302/80-14-10 thru 13): The Tsat instrument associated with these items has been replaced with a different Tsat instrument. The inspector's concerns regarding the old Tsat instrument were reviewed for applicability to the new Tsat instrument. In addition, the overall design of the new Tsat instrument was reviewed in detail by the inspectors and documented in Inspection Report (302/80-24). Action on these items is considered complete.

#### 4. Unresolved Items

Unresolved items are matters which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. New unresolved items identified during this inspection are discussed in paragraphs 5.a.(1) and 5.b.(8).

## 5. Review of Plant Operations

The plant continued with power operations (Mode 1) for the majority of this inspection period. The plant was brought to the startup mode (Mode 2) on September 11 in preparation for unit shutdown (Mode 3) on September 12 at 0032 hours to enable cleaning of the condenser water boxes. Plant restart was commenced on this same date and the reactor was critical (Mode 2) at 1028 hours and returned to power operation shortly thereafter. The inspectors observed the reactor startup and return to power operations. The plant then continued power operations until 1304 hours on September 30 when a reactor trip occurred (see paragraph 8 for details). The plant returned to power operations this same date and was in the power operations mode through the end of the inspection period.

### 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 (TS) and the licensees' administrative procedures.

- Shift Supervisor's Logs
- Operators' Log
- Equipment Out-of-Service Log
- Equipment Clearance Order Log
- Shift Relief Checklist
- Control Center Status Board
- Short Term Instructions; and
- Operating Daily Surveillance Log.

In addition to these record reviews, the inspectors independently verified selected clearance order tag-outs. These record reviews identified the following item:

- (1) During the Shift Supervisor's log review on October 3, 1980, the inspectors noted a log entry discussing entry into the action statement of TS 3.6.3.1, operability of Containment Isolation Valves, due to Liquid Waste Disposal Valve (WDV) 94, (Reactor Coolant Drain Tank (RCDT) isolation valve) failing to close after pumping down operations had been tagging sheet EDV-808 (penetration drain), WDV-839 (drain), and WDV-840 (Reactor Coolant drain tank throttle valve). Subsequent review of the Operator's log indicated that WDV-808 and EDV-839 were red tagged closed, indicating they would not be operated and would remain in the closed position. WDV-840 was blue tagged closed, indicating it could be operated but under administrative restrictions. The inspectors questioned the shift supervisor as to the reason for the blue tag on WDV-840 and was told that WDV-840 would be opened when pumping of the RCDT became necessary and reclosed after the pumping operations were completed. The inspectors stated that this action would be defeating the intent of the TS action statement.



The shift supervisor acknowledged the inspectors comments and immediately replaced the blue tag on EDV-840 with a red tag. The inspectors verified that WDV-840 had not been operated subsequent to entry into the TS action statement.

This issue was discussed with licensee management representatives. These representatives acknowledged the inspectors' position and stated that all operators would be informed of this issue during shift briefings and that a management memo would be issued.

Unresolved Item: Verify effectiveness of the licensee's action to ensure adherence to TS 3.6.3.1. (302/80-33-01)

b. Facility Tours and Observations

Throughout this inspection period, facility tours were conducted to observe operations and maintenance activities in progress. The tours encompassed the following areas:

- perimeter fence;
- turbine building;
- Control Room;
- Diesel generator rooms;
- Auxiliary building;
- Intermediate building;
- Battery rooms; 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 radiation monitors;
  - Electrical system lineup;
  - Control Rod position; and,
  - Reactor power level.
- (2) Shift Staffing. The inspectors verified by spot checks that the operating shift staffing was in accordance with technical specification requirements.
- (3) Plant Housekeeping and 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 inspector noted a considerable improvement in housekeeping in the auxiliary and intermediate buildings.

- (4) Fire Protection. Fire extinguishers and fire fighting equipment were observed to be unobstructed and inspected for operability.
- (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. The following observations were made:

- (a) A considerable effort has been made by the licensee to reduce the size and number of contaminated areas in the auxiliary building. The problem of contaminated areas has been discussed with the licensee in the past. This effort shows improvement in this area.
- (b) The inspector checked various radiation area postings with the inspector radiation monitoring instrument to verify accuracy of the posted dose rates. All but one dose rate posting were in agreement. At the entrance to the makeup valve gallery room the posted dose rate was less than 2 millirem per hour. The inspectors' measurements indicated between 9 and 12 millirem per hour. The area was resurveyed by the licensee and the posting was changed to 9 millirem per hour. This is considered to be an isolated case and the inspectors have no further questions on this item.
- (c) The inspector surveyed numerous low specific activity (LSA) storage drums that are stored in the waste storage area outside the auxiliary building. A contact dose rate of 130 millirem per hour was measured between two of the storage drums and the inspector was unable to determine if the dose rate was the result of the activity in just one or both of the storage drums due to the physical arrangement. The licensee's procedures do not allow storage of LSA drums outside of the auxiliary building if the contact readings are greater than 100 millirem per hour. The licensee surveyed both storage drums in question and found the highest contact reading to be 70 millirem per hour. The inspectors have no further questions on this item.

(6) Surveillance Testing

The inspector observed the performance of surveillance procedure (SP)-113, Power Range Nuclear Instrumentation Calibration and SP-112, Heat Balance Calculation. In addition, the inspector performed a hand calculated heat balance per SP-113 to verify agreement with computer calculations (Baily 855 computer and IBM-5100 computer). The three methods agreed within .2% of each other. Two problems were identified during these observations and are described as follows:

- (a) SP312, Heat Balance Calculation, requires the out-of-core power range instrumentation be maintained such that the (Heat Balance Power)-(NI power) is less than or equal to 0.8% on all operable NI power range channels. SP-113, Power Range Nuclear Instrumentation Calibration, requires channel calibration of the Reactor Protective System power range total flux channel when (Heat Balance Power) - (NI power) is greater than 2.0%. This conflict was discussed with the licensee and it was determined that the correct specification was 0.8% as specified in SP-312 and that SP-113 would be changed to 0.8% to correct the conflict. The licensee has committed to make this procedure change by 10/31/80.

Inspector Followup Item: Review SP-113 to verify the specification for the difference between heat balance and NI power is less than or equal to 0.8%. (302/80-33-02).

- (b) SP-312, Enclosure 2, page 2 of 4, incorrectly identifies the test locations for measuring Once-Through-Steam-Generator (OTSG) pressure voltage readings for use in the hand calculation of reactor power. This was discussed with the licensee and the licensee agreed to change SP-312 to correctly identify the test point locations.

Inspector Followup Item: Review SP-312 to verify the OTSG pressure test points have been changed to reference the correct test point location. (302/80-33-03).

(7) Maintenance Activities

During the period of September 22-23, the inspector observed maintenance being performed on Auxiliary Building air handling fan AHF-14-C. This observation included review of radiological controls in effect, installation and dye penetrant testing of fan blades, and review of the work requests involved in fan thermocouple installation.

The failure of this fan had placed the licensee in a 7 day Technical Specification action statement. These repairs were completed within the allowable time frame.

No inadequacies were identified.

(8) Operations Activities

The inspectors witnessed a gas release being performed on waste decay tank (WDT) 1B. The inspectors reviewed the Gaseous Radwaste Release permit to verify it was filled out properly. Operating Procedure (OP) 412, Waste Gas Disposal System, was



reviewed to verify the procedure was being followed. During this review the inspectors noted that the initial conditions section of the procedure had not been initialed by the operator. The operator stated that it is not routine to reverify initial conditions if the system had not undergone extensive maintenance since it had last been used. The Shift Supervisor was questioned on this and he stated that as long as a system has not been taken out of service or had maintenance performed on it then it was not necessary to reverify initial conditions. The inspectors stated the initial conditions section of a procedure should be used to reverify that all systems required for that procedure are in a condition that will ensure proper operation of the system. This issue was further discussed with the plant manager and he concurred with the inspectors position and stated that a management memorandum would be issued to all operators to ensure they reverify all initial conditions of a procedure prior to performance of that procedure.

Unresolved Item: Verify issuance of the licensee's management memorandum on reverification of initial conditions of a procedure and verify operator adherence to this requirement. (302/80-33-04)

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

a. The inspector reviewed Licensee Event Reports (LERs) 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 80-18, 80-20, 80-23, 80-25, 80-26 and 80-32 were reviewed. This review identified the following item.

- (1) LER 80-32 reported tripping of Emergency Diesel Generator (EDG) 1A due to actuation of a field over-current relay. Investigation of this event by the licensee indicated that relay setpoint drift was the cause of the relay actuation. The licensee is developing a surveillance program to include periodic examination of the field over-current relay.

Inspector Followup Item: Review licensee's progress in developing field over-current relay surveillance program implementation. (302/80-33-05)

b. The inspector reviewed NCOR 80-233, Incorrect Pressure Gauge Installed on Motor Driven Emergency Feed Pump, to determine the cause and resolution of this report.

A 0-3000 psig gauge was installed on the discharge of Emergency Feed-water Pump (EFP) 1 in place of the existing 0-2000 psig gauge. The new gauge has superior "damping" characteristics and therefore will allow more accurate readings to be obtained. The new gauge is equivalent in accuracy to the old gauge.

The inspector had no problem with the installation of this gauge, however, in reviewing surveillance procedure SP-161, Remote Shutdown Instrument Calibration, that was used to calibrate this gauge, it was determined that a temporary change had been made to Data Sheet XX on April 12, 1980. Technical Specification 6.8.3 requires temporary changes to approved procedures be approved by two members of the plant management staff (at least one of which holds a Senior Reactor Operator's license) and is subsequently reviewed by the Plant Review Committee (PRC) within 14 days of implementation. Neither of these requirements were complied with and this is considered to be a noncompliance with Technical Specification 6.8.3.

Item of Noncompliance: Failure to properly initiate a temporary change to surveillance procedure SP-161. (302/80-33-06)

#### 7. Review of IE Bulletins and Circulars

The following IE Bulletins (IEB) and Circulars (IEC) were reviewed to verify adequacy of the licensee's actions.

- a. IEB 79-03A, Longitudinal Weld Defects in ASME SA-312, Type 304 Stainless Steel
- b. IEB 80-15, Possible Loss of Emergency Notification System (ENS) With Loss of Offsite Power
- c. IEB 80-16, Potential Misapplication of Rosemount Inc., Models 1151 and 1152 Pressure Transmitters With Either "A" or "D" Output Codes.

The inspectors have reviewed the licensee's response to bulletin 80-16 and determined it to be inadequate. The bulletin mentions a potential misapplication problem that occurs when the specified transmitters are exposed to excessive reverse or overpressure conditions. The licensee's response only covers overpressure conditions and fails to respond to the reverse pressure condition. The licensee will submit a new response to this bulletin by October 31, 1980. This bulletin remains open.

- d. IEC 80-01, Service Advice For General Electric Induction Disc Relays.
- e. IEC 80-17, Fuel Pin Damage Due To Water Jet From Baffle Plate Corner
- f. IEC 80-12, Valve-Shaft-To-Actuator Key May Fall Out of Place When Mounted Below Horizontal Axis

With the exception of IEB 80-16, the licensee's actions on these Bulletins and Circulars are considered to be adequate and complete.

#### 8. Nonroutine Events

At 1304 hours on September 30 a reactor trip from full reactor power occurred. All plant systems responded normally and a stable shutdown condition was established. The inspectors arrived in the control room approximately five minutes after the trip and observed operator response in returning the plant to a stable condition.

The trip was caused when, during the performance of surveillance procedure SP-113, Power Range Nuclear Instrument Calibration, a test lead slipped off a terminal in the Reactor Protection System (RPS) cabinet and shorted against another terminal in the cabinet. This shorting caused the RPS channel A 15 volt power supply breaker to trip. The loss of RPS A power caused a loss of the reactor coolant system (RCS) flow signal into the integrated control system (ICS) which resulted in a rapid runback of the main feedwater pumps and a subsequent high RCS pressure reactor trip.

The inspectors reviewed this event with licensee representatives and as a result have identified the following items:

- a. The RCS flow signal fed to the ICS is powered from either RPS A or RPS B by removing and inserting a plug into the selected receptacle. The inspectors commented that prior to conducting testing on RPS A or B, RCS flow signal should be selected to the RPS channel not under test. This would insure that if a channel loss of power occurred as a result of testing, that a loss of the RCS flow signal would not occur. The licensee acknowledged the inspector's comments and stated that this issue would be reviewed for possible incorporation into procedure SP-113.

Inspector Followup Item: Review surveillance procedure SP-113 to determine the validity of switching RCS flow signal inputs to ICS during testing. (302/80-33-07)

- b. To enable proper performance of SP-113, the technician connects a digital voltmeter (DVM) and an X-Y plotter in parallel across certain instrument jacks. Since there is only one front panel jack, the technician must make connections to terminals located in the back of the RPS cabinet. It was this back-panel connection that slipped off the terminal and caused the loss of the 15 volt supply.

The licensee is investigating the purchase of special plugs that will enable paralleling of two test instruments from the front of the panel thereby eliminating the need to make back panel connections during testing.

Inspector Followup Item: Review the licensee's progress in obtaining special plugs to facilitate only front panel connections during performance of SP-113. (302/80-33-08)

9. Meeting with Local Public Officials

On September 15, 1980 the resident inspectors held a meeting with the Mayors of the Town of Inglis, the Town of Yankeetown and the City of Crystal River. Personnel from the NRC Region II office, Mr. R. Lewis, Acting Branch Chief of the Reactor Operations and Nuclear Support Branch and Mr. R. Martin, Section Chief of Reactor Projects Section No. 2 were also in attendance at this meeting.

The purpose of this meeting was to:

- Acquaint local officials with the mission of the NRC;
- Introduce the Resident Inspectors stationed at the Crystal River Nuclear Plant;
- Discuss the lines of communication between the local officials and the NRC Resident Inspector and Regional Offices;
- Discuss the operating status of the Crystal River Nuclear Plant; and
- Discuss any related community concerns with the plant or its operation.

The inspectors and NRC Regional management were impressed with the interest the community leaders showed in the Crystal River plant. It is felt that all participants benefitted from this meeting and that the purpose of the meeting was accomplished.

10. Operator Licensing Branch (OLB) Exit Interview

On September 11, 1980 the inspector attended an exit interview conducted by OLB. The OLB was on-site during the period of September 8-11, 1980 conducting operator licensing examinations.

One of the comments discussed during this exit was the apparent inaccuracy in abnormal operating procedure AP-109, Loss of Nuclear Services Cooling, in that the procedure does not accurately reflect system operation. The licensee will review AP-109 and make the necessary procedure corrections.

Inspector Followup Items: Review the revision to AP-109 to ensure the procedure accurately reflects system operation. (302/80-33-09).