



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931**

October 27, 2000

Mr. John P. Cowan, Vice President
Nuclear Operations
Florida Power Corporation
ATTN: Manager Nuclear Licensing (NA1B)
Crystal River Energy Complex
15760 West Power Line Street
Crystal River, FL 34428-6708

SUBJECT: CRYSTAL RIVER UNIT 3 - NRC INSPECTION REPORT 50-302/00-03

Dear Mr. Cowan:

On September 30, 2000, the NRC completed an inspection at your Crystal River Unit 3 facility. The enclosed report documents the inspection findings which were discussed on October 17, 2000, with Mr. J. Holden and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the NRC identified one issue of very low safety significance (Green). The issue was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it has been entered into your corrective action program, the NRC is treating the issue as a Non-Cited Violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny the non-cited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at Crystal River Nuclear Plant.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Leonard D. Wert, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos. 50-302
License Nos. DPR-72

Enclosure: Inspection Report 50-302/00-03
w/attached NRC's Revised Reactor Oversight Process

cc w/encl:

Daniel L. Roderick, Director
Nuclear Plant Operations (NA2C)
Florida Power Corporation
Crystal River Energy Complex
Electronic Mail Distribution

Sherry L. Bernhoft, Director
Nuclear Regulatory Affairs (NA2H)
Florida Power Corporation
Crystal River Energy Complex
Electronic Mail Distribution

Sarah G. Johnson, Acting Director
Quality Programs (SA2C)
Florida Power Corporation
Crystal River Energy Complex
Electronic Mail Distribution

R. Alexander Glenn
Corporate Counsel MAC - BT15A
Florida Power Corporation
Electronic Mail Distribution

Attorney General
Department of Legal Affairs
The Capitol
Tallahassee, FL 32304

William A. Passetti
Bureau of Radiation Control
Department of Health
Electronic Mail Distribution

Joe Myers, Director
Division of Emergency Preparedness
Department of Community Affairs
Electronic Mail Distribution

Chairman
Board of County Commissioners
Citrus County
110 N. Apopka Avenue
Inverness, FL 36250

Michael A. Schoppman
Framatome Technologies
Electronic Mail Distribution

Distribution w/encl:

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 50-302
License No. DPR-72
Report No: 50-302/00-03
Licensee: Florida Power Corporation (FPC)
Facility: Crystal River Unit 3
Location: 15760 West Power Line Road
Crystal River, FL 34428-6708
Dates: July 2, 2000 - September 30, 2000
Inspectors: Scott Stewart, Senior Resident Inspector
Steven Sanchez, Resident Inspector
Approved by: Leonard Wert, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000302-00-03, on 07/02-09/30/2000, Florida Power Corporation, Crystal River Unit 3. Finding in other activities (event followup).

This inspection was conducted by the resident inspectors. The inspection identified one green issue which was a non-cited violation. The significance of the issue is indicated by the color (green, white, yellow, red) and was determined by the Significance Determination Process (see Attachment; NRC's Revised Reactor Oversight Process).

Cornerstone: Mitigating Systems

- Green. A Non-Cited Violation of Technical Specification 3.4.8, Condition B was identified because requirements for electrical power supplies to the pressurizer heaters were not met in one instance. Breakers supplying one train of emergency power to the pressurizer heaters were removed from service for greater than the allowed period.

The finding was determined to be of very low safety significance. Florida Power Corporation recently identified that procedures did not incorporate the power supply technical specification requirements and subsequently identified this single instance of noncompliance through a detailed review. The intent of the requirements is to ensure that the reactor coolant system is maintained subcooled with natural circulation flow under specific plant conditions. Although the pressurizer heaters support pressure control during natural circulation, there were other alternative methods available to maintain pressure. These methods are proceduralized and addressed in operator training. (Section 4OA3)

Report Details

Summary of Plant Status:

On September 9, Unit 3 was shutdown to replace a leaking reactor coolant system safety valve and support other maintenance activities to reduce reactor coolant system leakage. The plant was returned to full power on September 16. Except for this shutdown, Unit 3 operated at or near full power during the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity (Reactor-R), and Emergency Preparedness (EP)

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors conducted walkdowns of essential plant structures and systems to verify that these systems would remain functional during the high winds and potential flooding associated with a hurricane affecting the site. The inspectors reviewed the Updated Final Safety Analysis Report and two Florida Power Corporation (FPC) procedures, Emergency Management Procedure EM-202, Duties of the Emergency Coordinator, and EM-220, Violent Weather, to evaluate readiness plans. The inspectors verified that the station violent weather committee had met and completed their initial walkdowns and related precautions to deal with severe weather. The inspectors also walked down the technical support center and checked readiness for severe weather communications. During the threat of Hurricane Gordon, on September 17, the inspectors observed FPC site preparations and activities associated with violent weather readiness.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors conducted partial alignment walkdowns of the safety related systems listed below to evaluate the operability of the redundant trains or backup systems while the other trains were inoperable or out of service. The walkdowns included reviews of FPC Operating Procedures OP-707, Operation of the Engineered Safeguards Emergency Diesel Generators, OP-409, Plant Ventilation System, and Decay Heat Closed Cycle Cooling Water System flow diagram FD-302-631, to determine correct system lineups. The walkdowns included verification of electrical power to critical components and control room switch positions to identify any discrepancies which could affect operability and reliability of the redundant train during maintenance.

- B Decay Heat Closed Cycle Cooling System
- A and B Emergency Diesel Generator
- B Control Complex Chiller

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors conducted tours of the areas considered important to safety listed below to evaluate conditions related to control of transient combustibles and ignition sources; the material condition and operational lineup of fire protection systems, and condition of the fire barriers used to prevent fire damage or fire propagation. The FPC Fire Protection Plan and Administrative Instruction AI-2200, Guidelines for Handling, Use, and Control of Transient Combustibles, were reviewed during these inspections.

- Makeup and Purification Pump Rooms
- Emergency Diesel Generator Rooms (two occurrences)
- Emergency Feedwater Pumps and Areas
- Control Complex
- 480 Volt Engineered Safeguards Electrical Equipment

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed Final Safety Analysis Report Section 2.4.2, Flood Studies and Hurricane Effects, including related figures and drawings; Abnormal Procedure (AP) - 1050, Flooding; and Emergency Plan Implementing Procedure EM - 220, Violent Weather; to identify areas that may be affected by internal or external flooding and that depicted the design flood levels and protection for areas containing safety-related equipment. The inspectors then verified that flooding mitigation structures and equipment were consistent with the design requirements and the risk analysis assumptions. The inspectors walked-down the ten foot high hurricane wall around the various areas of the plant, multiple watertight doors and seals, and interviewed various personnel knowledgeable of flood protection measures. The inspectors verified that deficiencies involving the watertight seals around the containment equipment hatch missile shields and seals between the emergency diesel building and the auxiliary building were identified in Precursor Card 00-2158. The inspectors also reviewed corrective actions for past flooding issues.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors sampled portions of the systems listed below due to performance problems and assessed the effectiveness of maintenance efforts on these systems. Reviews focused on maintenance rule scoping in accordance with 10 CFR 50.65 and characterization of system or component problems. Additionally, the (a)(1) or (a)(2) classifications and the existence of goals for those systems classified as (a)(1) were reviewed. Procedures reviewed included FPC compliance procedures CP-153A, Maintenance Rule Implementation and CP-153B, Monitoring the Performance of Structures, Systems, and Components Under the Maintenance Rule. Other documents reviewed included selected portions of the First and Second Quarter, Year 2000, System Health Reports and Precursor Cards 3-C00-2160, 3-C00-2162, 3-C97-8080, 3-C99-3014.

- 1B Vital Bus Inverter
- Nuclear Services Closed Cycle Cooling (SW)(two occurrences)
- Reactor Coolant System Integrity
- 1A Makeup Pump

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the resultant risk associated with emergent maintenance tasks identified during or associated with scheduled work. Included in the review were the procedures listed below, to evaluate the effectiveness of FPC risk assessments performed before maintenance activities were conducted. The inspectors verified that FPC was managing overall risk appropriately and that upon identification of an unplanned situation, resulting emergent work activities were properly planned and controlled. The inspectors also confirmed that problems with maintenance risk assessments and emergent work were identified and resolved.

- OP-208, Plant Shutdown
- OP-604, Circulating Water System

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions and Events

a. Inspection Scope

The inspectors reviewed personnel performance during power reductions on August 15 and 17, 2000. The inspectors observed operator response to routine and unexpected alarms and conditions, determined if operator responses were in accordance with the response required by procedures and training, and confirmed that personnel performance deficiencies were captured in the FPC corrective action program.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed operability evaluations during this period and determined that two were risk significant:

- Borated Water Storage Tank Vacuum Breaker Relief Capacity
- Nuclear Services Closed Cycle Cooling (SW) Operability

The inspectors reviewed Precursor Card 3-C00-2427 concerning the Borated Water Storage Tank vacuum breaker, Operations Required Action Logs, Operability Condition Report 00-0004 on the vacuum breaker, Operability Evaluation SE00-0128 for the cooling system, and NRC Bulletin 80-05, Vacuum Condition Resulting in Damage to Chemical and Volume Control System Holdup Tanks, to assess the technical adequacy of the FPC evaluations, and whether system operability was adequately supported. Additionally, the inspectors ensured that other existing degraded conditions were considered by FPC when completing these evaluations.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed FPC Operations Instruction OI-19, Operator Workarounds, OP-407G, Operation of the Reactor Coolant Bleed Tanks (RCBTs), and Temporary Instruction TI-OP-407-01, Operations for "A" RCBT with Waste Disposal Pump WDP-5A Out of Service. One operator workaround, Reactor Coolant Makeup Due to Reactor Coolant System Leakage, was evaluated for potential affects on mitigating systems. Precursor Cards PC-3-C00-2327 concerning hydrogen buildup in the reactor building was also reviewed. The inspectors noted that FPC operators were making multiple liquid and hydrogen additions to the reactor coolant system and pumping the reactor

coolant drain tank to the miscellaneous waste storage tank due to the increased reactor coolant system leakage. The workaround was reviewed to determine if the functional capability of the systems or system reliability in responding to initiating events was affected. Also, the inspector evaluated the effect on the operator's ability to implement abnormal or emergency procedures, and if operator workaround problems were captured in the FPC corrective action program.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following post-maintenance test procedures and test activities for selected risk significant mitigating systems to assess the following (as applicable): (1) the effect of testing on the plant had been adequately addressed by control room and/or engineering personnel; (2) testing was adequate for the maintenance performed; (3) acceptance criteria were clear and demonstrated operational readiness consistent with design; (4) test instrumentation had current calibrations, range, and accuracy consistent with the application; (5) tests were performed as written with prerequisites satisfied; (6) jumpers installed or leads lifted were controlled; (7) test equipment was removed following testing; (8) and that equipment was returned to the status required to perform its safety function.

- WR 357246 Decay Heat Valve DHV-42 Actuator Inspection and Lube Check
- WR 356266 Building Spray Pump BSP-1A Motor and Breaker Inspection
- WR 364084 Building Spray Valve BSV-4 Limitorque Actuator Inspection/Lube Check/Change
- WR 367428 Decay Heat Valve DHV-12 Did Not Fully Close During Surveillance
- SP 340C 1A Makeup Pump return to service following oil leak
- PC 00-1897 Replace Reactor Trip Breaker

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

a. Inspection Scope

The inspectors observed outage activities associated with repair of reactor coolant system primary safety valve, RCV-8, and temporary repair of shutdown cooling isolation

valve, DHV-3. Prior to the shutdown, the inspectors reviewed FPC Administrative Instruction AI-504, Guidelines for Cold Shutdown and Refueling, and Operating Procedure OP-209, Plant Cooldown, and discussed outage risk management with outage planners and supervisors. At the end of the outage, the inspectors reviewed surveillance SP-324, Containment Inspection, observed plant restart activities, and discussed outage conduct with involved personnel to determine that risk was appropriately considered and that electrical system lineups were maintained according to the outage plan. The inspector also verified that decay heat removal redundancies were maintained during the outage, and that the reactor shutdown and startup were conducted in a methodical manner, consistent with procedures and technical specifications. Testing and system restorations at the end of the outage were verified to be consistent with procedures.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed surveillance testing (SPs) and/or reviewed test data of risk-significant systems or components listed below, to assess whether they met Technical Specifications, Updated Final Safety Analysis Report, and FPC procedure requirements. The inspectors verified that the testing effectively demonstrated that the systems were operationally ready and capable of performing their intended safety functions.

- SP-340B Decay Heat Pump (DHP-1A), Building Spray Pump (BSP-1A), and Valve Surveillance
- SP-110D D Channel Reactor Protection System Functional Testing
- SP-149A Power-Operated Relief Valve Low Temperature Overpressure Functional Test
- SP-340E DHP-1B, BSP-1B, and Valve Surveillance
- SP-435 Valve Testing During Cold Shutdown
- SP-332 Monthly Steamline and Feedwater Isolation Functional Test
- SP-317 RCS Water Inventory

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

Inspection Scope

The inspectors observed the FPC, August 30, 2000, Radiological Emergency Response Plan Training Drill, and verified that notifications, emergency class declarations, and protective action recommendations made from the Emergency Offsite Facility were consistent with the relevant forms in the FPC Emergency Response Plan. The

inspector verified that issues identified by FPC were entered into the corrective action program.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verifications

.1 Emergency Diesel Generator Unavailability

a. Inspection Scope

The inspector reviewed two months of data including control room logs and equipment status sheets for emergency diesel generator unavailability related to maintenance and surveillance activities and discussed the tracking activities with the responsible system engineer and work control group. The Second Quarter System Health Report for the emergency diesel generators was reviewed for consistency.

b. Findings

No findings of significance were identified.

.2 Barrier Integrity

a. Inspection Scope

The inspectors verified the accuracy of the performance indicator (PI) for reactor coolant system activity which was reported to the NRC. The inspectors reviewed data applicable to four quarters of operation beginning with the third quarter of 1999 and ending with the second quarter of 2000. The inspectors compared the data contained in the chemistry data management system to the values utilized to generate the PI data to ensure the values reported were consistent. The inspectors reviewed surveillance procedure SP-702A, Reactor Coolant System Dose Equivalent Iodine-131 Surveillance Program, compliance procedure CP-142, Primary Water Chemistry Program Guidelines, and chemistry sampling procedure CH-602, Reactor Coolant Letdown Sampling. The inspectors also reviewed the FPC corrective action program for relevant issues related to the collection of PI data.

b. Findings

No findings of significance were identified.

4OA3 Event Followup

(Closed) Licensee Event Report (LER) 50-302/00-002: Inadequate Identification of Components for Operability Results in Exceeding a Limiting Condition For Operability. The LER described an occurrence on March 3, 1994, that involved removing one source of emergency electrical power to pressurizer heaters for greater than the 72 hours allowed. Improved Technical Specification 3.4.8, Condition B, requires restoration of the pressurizer heaters capability of being powered from an emergency power supply within 72 hours or be in Mode 3 within 6 hours. These requirements were not met since the breakers remained inoperable for about 6 days and the unit was not placed in Mode 3.

The safety significance of the issue was evaluated. The issue involved a failure to meet regulatory requirements and was not limited to FPC administrative requirements. Because the pressurizer heaters support decay heat removal during accident mitigation, the significance determination process was used to assess the safety and risk implications. This issue was determined to be of very low safety significant and characterized as a green finding by the SDP. There were alternative methods available to maintain pressure control under natural circulation conditions. These methods are addressed in the emergency operating procedures and in operator training sessions.

Because the violation is of very low safety significance and was entered into FPC's corrective action program (precursor card 3-C00-1670), this finding is considered a Non-Cited Violation (NCV) in accordance with Section VI.A.1 of the NRC Enforcement Policy. The finding is identified as NCV 50-302/00-03-01, Failure to Meet Technical Specification Requirements for Pressurizer Heaters.

4OA6 Meetings

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Holden and other members of FPC management at the conclusion of the inspection on October 17, 2000. The managers acknowledged the findings presented. The inspectors asked FPC whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Florida Power Corporation

M. Annacone, Assistant Plant Director, Operations
 R. Grazio, Acting Director, Nuclear Regulatory Affairs
 J. Cowan, Vice President, Nuclear Operations
 R. Davis, Director, Nuclear Operations Training
 C. Gurganus, Assistant Plant Director, Maintenance
 S. Johnson, Acting Director, Nuclear Quality Programs
 J. Holden, Vice President and Director, Site Nuclear Operations
 D. Roderick, Director, Nuclear Plant Operations
 T. Taylor, Director, Nuclear Engineering & Projects
 G. Chick, Assistant Plant Director, Outage

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

Nuclear Regulatory Commission

L. Plisco, Director, Reactor Projects
 L. Wert, Chief, Reactor Projects Branch 3

ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

| | | |
|-----------------|-----|---|
| 50-302/00-03-01 | NCV | Failure to Meet Technical Specification Requirements for Pressurizer Heaters (Section 40A3) |
|-----------------|-----|---|

Closed

| | | |
|---------------|-----|--|
| 302/00-002-00 | LER | Inadequate Identification of Components for Operability Results in Exceeding a Limiting Condition For Operability (Section 40A3) |
|---------------|-----|--|

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

Radiation Safety

- Occupational
- Public

Safeguards

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for

inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.