



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

January 27, 2005

Mr. Dale E. Young, Vice President
Crystal River Nuclear Plant (NA1B)
ATTN: Supervisor, Licensing &
Regulatory Programs
15760 West Power Line Street
Crystal River, FL 34428-6708

SUBJECT: CRYSTAL RIVER UNIT 3 - NRC INTEGRATED INSPECTION REPORT
05000302/2004006

Dear Mr. Young:

On December 31, 2004, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Crystal River Unit 3. The enclosed integrated inspection report documents the inspection findings, which were discussed on January 4, 2005, with you and 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, no findings of significance were identified.

In accordance with 10 CFR 2.390 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/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Joel T. Munday, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket No.: 50-302
License No.: DPR-72
Enclosure: Inspection Report 05000302/2004006
w/Attachment: Supplemental Information

cc w/encl: (See page 2)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 50-302

License No.: DPR-72

Report No.: 05000302/2004006

Licensee: Progress Energy Florida (Florida Power Corporation)

Facility: Crystal River Unit 3

Location: 15760 West Power Line Street
Crystal River, FL 34428-6708

Dates: September 26 - December 31, 2004

Inspectors: S. Stewart, Senior Resident Inspector
R. Reyes, Resident Inspector

Approved by: Joel T. Munday, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000302/2004-006; Florida Power Corporation; 09/26/04 - 12/31/2004; Crystal River Unit 3; routine integrated report.

The report covered a three month period of inspection by resident inspectors. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector Identified and Self-Revealing Findings

None

B. Licensee Identified Violations

None

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REPORT DETAILS

Summary of Plant Status

Crystal River 3 operated at full power during the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity [Reactor-R]

1R04 Equipment Alignment

Partial Equipment Walkdowns

a. Inspection Scope

The inspectors performed the following three partial system walkdowns to verify the alignment of the selected risk-significant systems. The inspectors checked switch and valve positions using the alignments specified in the listed operating procedures and checked electrical power alignment to critical components. The inspectors reviewed applicable sections of the Crystal River 3 Final Safety Analysis Report to obtain design and operating requirements. Nuclear condition reports (NCRs) were reviewed to verify that the licensee was identifying and correcting component alignment issues.

- October 6 and 7; Emergency Core Cooling System (ECCS) Train 'B' (DC Closed Loop, Decay Heat, and Building Spray) using procedures OP-404, Decay Heat Removal system, and OP 405, Reactor Building Spray System, during an 'A' ECCS train outage.
- November 9; Emergency Feed Pump EFP-2, using procedure OP-450, Emergency Feed Water System, during the period when the Emergency Feed Pump EFP-3 was out of service for maintenance.
- November 16 and 17; Emergency Core Cooling System Train 'A' (DC Closed Loop, Decay Heat, and Building Spray) using procedures OP-404, Decay Heat Removal system, and OP 405, Reactor Building Spray System, during a 'B' ECCS train outage.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors walked down the following nine risk-significant plant areas to verify that control of transient combustibles and ignition sources were consistent with the licensee's

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Fire Protection Plan and 10 CFR Part 50, Appendix R. The inspectors also evaluated the material condition and operational lineup of fire protection systems and assessed the condition of selected fire barriers used to contain fire damage. The inspections were completed using the standards of the Crystal River Fire Protection Plan; 10 CFR Part 50, Appendix R; and the Final Safety Analysis Report. The inspectors reviewed sections of OP-880, Fire Service System, and checked performance of SP-800, Monthly Fire Extinguisher Inspection, to monitor the operational condition of fire protection equipment. When applicable, the inspectors checked that compensatory measures for fire system problems were implemented. On a routine basis, the inspectors monitored performance of SP-809, Weekly Inspection Fire Program, and weekly fire alarm checks done in accordance with surveillance procedure SP-323, Evacuation and Fire Alarm Demonstration.

- A Emergency Diesel Generator Rooms
- B Emergency Diesel Generator Rooms
- Main Control Room
- A and B 480 volt Switchgear Rooms
- Cable Spreading Room
- Emergency Feed Pump EFP-3 Building
- Control Complex Chiller Room
- A Decay Heat Pump Vault
- B Decay Heat Pump Vault

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

Internal Flooding

a. Inspection Scope

The inspectors reviewed the Crystal River Unit 3, Final Safety Analysis Report, Chapter 2.4.2.4, Facilities Required for Flood Protection, that depicted protection for areas containing safety-related equipment to identify areas that may be affected by internal flooding. A walkdown of the internal areas of the auxiliary building including the A-train Decay Heat Pump Vault and Seawater Room was conducted to ensure that flood protection measures were in accordance with design specifications. Specific plant attributes that were checked included structural integrity, sealing of penetrations, and operability of sump systems. Nuclear condition report 115698 was checked to assure that degraded turbine building sump pumping capability had been corrected.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator RequalificationResident Inspector Quarterly Reviewa. Inspection Scope

On October 18, the inspectors observed licensed operators response and actions on the Crystal River Unit 3 simulator to Simulator Evaluated Session, SES-133. In addition to responding to some safety related equipment failures, the session required the crew to use plant abnormal and emergency operating procedures to respond to a dropped rod; feedwater pump trip; and a main steam line break. The inspectors observed implementation of emergency procedure EOP-5, Excessive Heat Transfer. The inspectors specifically evaluated the following attributes related to operating crew performance:

- Clarity and formality of communication including crew briefings
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Implementation of Emergency Operating Procedures, including EOP -02, Vital System Status Verification, and EOP-5, Excessive Heat Transfer
- Control board operation and manipulation, including operator actions
- Oversight and direction provided by supervision, including ability to identify and implement appropriate technical specification actions, event classification, and notification of state authorities within the 15 minute requirement
- Effectiveness of the training oversight, evaluation, and critique

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectivenessa. Inspection Scope

The inspectors checked corrective maintenance items to evaluate the licensee's implementation of the maintenance rule (10CFR50.65). The inspectors checked that licensee personnel monitored unavailability of equipment important to safety and trended key performance parameters. For the equipment issue described in the condition report listed below, the inspectors reviewed the licensee's implementation of the Maintenance Rule (10CFR50.65) with respect to the assessment of potential failures and determination of unavailability, the appropriateness of the associated a(2) classification, and corrective actions. The inspectors checked if the licensee maintained safety functions when equipment important to safety was removed from service for maintenance. The inspectors also periodically reviewed the licensee's implementation of 10 CFR 50, Appendix B and technical specification requirements regarding safety system problems. The inspectors checked that the licensee promptly entered problems with plant equipment into the corrective action program and the corrective maintenance

program. The inspectors checked that the licensee monitored work practices and when appropriate, documented these problems in the corrective action program. The licensee's System Health Reports, January to July 2004, were selectively reviewed to check that problems were being documented and resolved and that industry information was being used in system assessments. Licensee maintenance rule data and evaluation criteria were reviewed as part of these inspections.

- NCR 138396 Oil Analysis Indicates Wear Products in Service Water Pump SWP-1B Lubrication Oil

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the following five risk assessments to assess the effectiveness of licensee's risk evaluation of maintenance and testing. The inspectors reviewed daily maintenance schedules and observed work controls to check risk management actions were implemented when maintenance was conducted. The inspectors also reviewed maintenance schedules and the degraded equipment log to check that overall risk was minimized through preservation of safety functions such as decay heat removal capability, reactor coolant system inventory control, electric power availability, reactivity control, and primary containment control. The inspectors checked if licensee personnel were managing risk by assuring that key safety functions were preserved and that upon identification of an unplanned situation, the resulting emergent work was evaluated by the licensee for risk and controlled as described in technical specifications, licensee Compliance Procedure CP-253, Power Operations Risk Assessment and Management, and licensee Administrative Instruction AI-500, Conduct of Operations. The inspectors checked that risk significant emergent work was documented in the corrective action program.

- Work Week 04W40 Risk Assessment for A train emergency core cooling system outage (Condition Yellow).
- Work Week 04W41 Risk Assessment for integrated control system tuning and condenser maintenance.
- Work Week 04W43 Risk Assessment for the two year surveillance on the 1B control complex chiller, and emergent work during the week.
- Work Week 04W44 Risk Assessment for the two year surveillance on the 1A control complex chiller, and emergent work during the week.

- Work Week 04W46 Risk Assessment for B train emergency core cooling system outage (Condition Yellow).

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following three degraded or nonconforming conditions to determine if operability of systems or components important to safety was consistent with technical specifications, the Final Safety Analysis Report, 10 CFR Part 50 requirements, and when applicable, NRC Generic Letter 91-18, Revision 1, Information to Licensees Regarding NRC Inspection Manual Section on Resolution of Degraded and Nonconforming Conditions. The inspectors monitored licensee NCRs, work schedules, and engineering documents to check if operability issues were being identified at an appropriate threshold and documented in the corrective action program, consistent with 10 CFR 50, Appendix B requirements, and licensee procedure NGGC-CAP-200, Corrective Action Program.

- NCR 139106, Water In the Diesel Fuel Tank DFT-1A Exceeds 3/4 Inch Limit.
- NCR 142951, Emergency Feed Pump EFP-3 Engine Stored Lube Oil Inventory Could Not Be Located.
- NCR 141890, Blockage in the Service Water Heat Exchanger 1A Caused a Small Restriction In The Flow of Raw Water.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors observed or reviewed the following six post-maintenance testing activities for risk significant systems to check the following (as applicable): (1) the effect of testing on the plant had been adequately addressed; (2) testing was adequate for the maintenance performed; (3) acceptance criteria were clear and demonstrated operational readiness; (4) test instrumentation was appropriate; (5) tests were performed as written; and (6) equipment was returned to its operational status following testing. The inspectors evaluated the licensee activities using the technical specifications, the Final Safety Analysis Report, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications. Final Safety Analysis Report

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Section 14.1.2.9 Station Blackout Accident, was specifically reviewed for applicability to diesel testing. The inspectors routinely checked that post maintenance testing issues were resolved in the licensee's corrective action program.

- Surveillance Procedure SP-130, Engineered Safeguards Monthly Functional Test after maintenance per work order 588353
- Surveillance Procedure SP-340B, DHP-1A, BSP-1A and Valve Surveillance, after a maintenance outage on the ECCS 'A' train per work order 602981
- Surveillance Procedure SP-354B, Monthly Functional Test of the Emergency Diesel Generator EGDG-1B after maintenance per work order 596385
- Surveillance Procedure SP-340E, DHP-1B, BSP-1B and Valve Surveillance after maintenance on the ECCS 'B' train per work order 525173
- Surveillance Procedure SP-349C, EFP-3 And Valve Surveillance after engine and pump maintenance per work order 417527
- Surveillance Procedure SP-365B, Diesel Fire Service Pump, FSP-2A Operability after 24-month engine overhaul per work order 615331

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors checked the following seven surveillance tests for risk-significant systems or components, to assess compliance with Technical Specifications, 10 CFR Part 50, Appendix B, and licensee surveillance procedure (SP) requirements. The testing was also checked for consistency with the Final Safety Analysis Report. The inspectors checked if the testing demonstrated that the systems were ready to perform their intended safety functions. During the inspections, the inspectors verified that licensee personnel were documenting surveillance problems in the corrective action program in accordance with 10 CFR Part 50, Appendix B, Criterion XVI, and licensee procedure CAP-NGGC-0200, Corrective Action Program. Inservice test (IST) activities were reviewed to ensure testing methods, acceptance criteria, and corrective actions were in accordance with the ASME Code, Section XI, and Florida Power Corporation ASME Section XI, Ten Year Inservice Testing Program, dated May 4, 1998.

- SP-354A, Monthly Test Of the Emergency Diesel Generator EGDG-1A
- SP-334A, Spent Fuel Pump -1A Quarterly Surveillance (IST)
- SP-385B, Control Complex Chiller (CHHE-1B) Surveillance
- SP-370, Quarterly Testing of Valves, MUV-543,544,and 545 (IST)

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- SP-340F, MUP-1C And Valve Surveillance (IST)
- SP-365C, Diesel Fire Service Pump, FSP-2B Operability
- SP-348A, Auxiliary Feedwater Pump (FWP-7) Testing And MTDG-1 Surveillance Testing

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the temporary modification listed below to ensure that it did not adversely affect the operation of the system. The inspectors conducted plant tours and discussed system status with engineering and operations personnel to check for the existence of temporary modifications that had not been appropriately identified and evaluated.

- Engineering Change 59132R0, Install temporary jumper between pins 13 and 32 Row 4 Slot 12 (Pressurizer Heater - Loss of DC Power Interlock).

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors checked the accuracy of the performance indicators listed below. Performance indicator data submitted from October 2003, thru September 2004, were compared for consistency to data obtained through the review of engineering department records, monthly operating reports, licensee event reports, and control room logs. The inspectors interviewed licensee personnel associated with the performance indicator data collection, evaluation, and distribution. During routine plant tours, the inspectors checked proper controls for minimizing plant personnel exposure and radioactive releases. There were no safety system functional failures identified during the review period.

- Safety System Functional Failures
- Safety System Unavailability, High Pressure Injection

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution.1 Corrective Action Program Submittal Reviewsa. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a screening of all items entered into the licensee's corrective action program. This review was accomplished by reviewing corrective action summary reports and attending management meetings where corrective action items were reviewed and assigned priority.

b. Findings

No findings of significance were identified.

.2 Annual Sample Reviewc. Inspection Scope

The inspectors selected the following NCR for detailed review and discussion with the licensee.

- NCR 138396 Increased Wear Products in Service Water Pump (SWP-1B) Oil Sample

The inspectors checked that the problem had been completely and accurately identified in the licensee's corrective action program. Other attributes checked included disposition of operability, resolution of the problem including cause determination and corrective actions, and extent of condition. A number of related nuclear condition reports were reviewed by the inspectors to check for common cause or generic implication:

d. Findings and Observations

No findings of significance were identified.

Semi-Annual Trend Reviewe. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors performed a review of the licensee's corrective action program (CAP) and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in section 4OA2.1 above, plant status reviews, plant tours, and licensee trending efforts. The inspectors' review nominally considered the six month period of July 2004 through December 2004, although some examples may have expanded beyond those dates when the scope of the trend warranted. The review also included issues documented outside the normal CAP in equipment problem lists such as the Equipment Performance Priority List dated November 30, 2004; the July 30, 2004 System Health Reports for the Turbine Generator, Reactor Coolant, and Main Steam, and Nuclear Services Closed Cycle Cooling systems, various nuclear assessment section reports, material condition reports (including boric acid corrosion program walkdowns) of the reactor building, and various maintenance rule assessments. The inspectors' reviewed turbine vibration monitoring results for emergency feedwater pump EFP-2, maintained by the emergency feedwater system engineer, and main turbine equipment status report, 3rd Qtr 04 Equipment Walkdown Summary Report, Turbine Generator System, maintained by the main turbine system engineer. The inspectors compared and contrasted their results with the results contained in the licensee's October 2004 Key Performance Indicator report. Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy.

f. Assessment and Observations

No findings of significance were identified. The inspectors in reviewing licensee performance over the last six months, noted two trends, discussed below.

First, a negative trend in fire prevention and mitigation preparedness was noted. The inspectors found on July 18, a fire extinguisher that had been missed in the licensee's monthly fire extinguisher surveillance. Missed fire extinguishers during the monthly surveillance had been an area of concern in the NRC Problem Identification and Resolution inspection documented in IR 04-07. When the added example of a missed extinguisher was raised with the licensee, a CAP item was initiated and second independent checks were initiated for the remaining months of the year. (When checked, the fire extinguisher passed its surveillance check.) During fire protection walkdowns on October 14, the inspectors noted an amount of flammable debris (boxes, rolls of paper) had accumulated in the control complex locker area. Although the debris was within the licensee's fire loading analysis, its storage in the control complex was unnecessary and after being identified to the licensee, it was removed. The inspectors documented a number of findings in the fire protection area in Inspection Report 04-05. Also, the licensee had found that on October 1, 2004, a fire alarm had been disabled, but not tracked in the switch out-of-position log and this was documented in the CAP

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(NCR 138962). The inspectors discussed the basis for the conclusion that a trend existed with the licensee. When the inspectors raised a general concern of lowering of standards in the area of fire protection to the licensee, the licensee refocused attention on fire protection problems, the operations department established ownership of fire programs and made plant employees aware that fire prevention and mitigation were important aspects in minimizing risk. The licensee also initiated a review of adequacy of fire protection corrective actions (NCR 147824).

The second trend was identified when the inspectors found during system walkdowns a number of small boric acid leaks in the makeup, decay heat removal, and building spray systems. When identified to the licensee and consistent with their boric acid control program, work orders were written to remove the boric acid and engineering assessed the source to determine if any leakage was active. No active leaks were found by the inspectors. An active boric acid leak on the B decay heat pump was previously identified by the inspectors and documented in Inspection Report 04-05. The licensee had emphasized their program to identify any areas of suspected boric acid leakage for evaluation and repair and leaks were being repaired as identified.

40A3 Event Followup

(Closed) LER 05000302/2004-001: Reactor Trip Caused by Failed Circuit Board in the Main Feedwater Integrated Control System

a. Inspection Scope

The event report summarized an event that occurred on March 24, 2004, caused by a failed component in the integrated control system that initiated a feedwater transient resulting in a reactor trip. The inspectors reviewed the licensee event report and the licensee's review of the trip documented in their Administrative Instruction AI-704, Reactor Trip Review and Analysis Report. The inspectors also discussed aspects of the event with plant personnel. The inspectors checked the accuracy and completeness of the LER and the appropriateness of the licensee's review and corrective actions. No performance deficiencies or violations of NRC requirements were identified.

b. Findings

No findings of significance were identified. The LER is closed.

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4OA5 Other Activities

Institute of Nuclear Power Operations (INPO) Assessment Report Review

a. Inspection Scope

The inspectors reviewed the final report of the INPO assessment of site activities conducted in May 2004. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of licensee performance and if any significant safety issues were identified that needed further NRC followup.

b. Findings

No findings of significance were identified

4OA6 Meetings, Including Exit

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Young and other members of licensee management at the conclusion of the inspection on January 4, 2005. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. The licensee did not identify any proprietary information.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

J. Holt, Manager, Operations
W. Brewer, Manager, Maintenance
R. Davis, Manager, Training
J. Franke, Plant General Manager
J. Hays, Manager, Outage and Scheduling
D. Roderick, Director Site Operations
D. Hanna, Supervisor, Self Evaluation and Emergency Preparedness
S. Powell, Supervisor, Licensing
M. Rigsby, Radiation Protection Manager
M. Annacone, Manager, Engineering
J. Stephenson, Principal Nuclear Emergency Preparedness Specialist
R. Warden, Manager, Nuclear Assessment
D. Young, Vice President, Crystal River Nuclear Plant

NRC personnel:

J. Munday, Chief, Reactor Projects Branch 3, NRC Region II

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

05000302/2004-001 LER Reactor Trip Caused by Failed Circuit Board in the Main Feedwater Integrated Control System