UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

October 22, 2004

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 05000302/2004005

Dear Mr. Young:

On September 25, 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 September 28, 2004, with Mr. Roderick 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, there were three findings of very low safety significance (Green). The findings were determined to involve violations of NRC requirements. However, because of the very low safety significance of the issues, and because they were entered into your corrective action program, the NRC is treating the issues as a Non-Cited violations (NCVs) consistent with Section VI.A of the NRC Enforcement Policy. If you wish to contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-001; 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 Unit 3.

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 05000302/2004005
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	50-302
License No.:	DPR-72
Report No.:	05000302/2004005
Licensee:	Progress Energy Florida (Florida Power Corporation)
Facility:	Crystal River Unit 3
Location:	15760 West Power Line Street Crystal River, FL 34428-6708
Dates:	June 27 to September 25, 2004
Inspectors:	S. Stewart, Senior Resident Inspector R. Reyes, Resident Inspector R. Baldwin, Senior Operations Engineer, DRS (1RO1) M. Bates, Operations Engineer, DRS (1RO1) M. King, Resident Inspector, V. C. Summer (4OA1)
Approved by:	Joel T. Munday, Chief Reactor Projects Branch 3 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000302/2004-005; 06/27/2004 - 09/25/2004; Crystal River Unit 3; Equipment Alignment, Fire Protection, Event Followup.

The report covered a three month period of inspection by resident inspectors and announced inspections by region based emergency preparedness and radiation protection specialists. Three Green findings were identified, which were Non-Cited Violations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. 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

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion V, for failure to follow boric acid corrosion control program procedures that required an investigation of boric acid leakage identified on decay heat pump DHP-1B.

  This finding is more than minor because if left uncorrected it could become a more significant concern, that being loss of integrity of components in the low pressure injection system. The finding was of very low safety significance because only minimal corrosion was observed when inspected. (Section 1RO4)

- Green. The inspectors identified a Non-Cited Violation (NCV) of Crystal River 3 Operating License Condition 2.C.(9) when prompt corrective measures were not taken to ensure the availability of a fire brigade member to respond to a fire emergency.

  This finding is more than minor because if left uncorrected, adequate fire response capability would be challenged which would be a more significant safety concern. A significance determination process review assumed fire confinement was affected with a low degradation rating which resulted in the finding being screened as having very low safety significance. The finding involved the cross-cutting element of problem and identification of resolution, in that interim corrective actions were narrowly focused and ineffective to prevent recurrence. (Section 1RO5)

- Green. A self-revealing Non-Cited Violation (NCV) of Technical Specification 3.3.17 D was identified when both channels of the Degrees of Subcooling Monitor were found to have their respective power supplies crossed.

  The finding was more than minor because the failure of degrees of subcooling monitor indication during certain LOCA scenarios could challenge the control

room operators in taking timely action to establish the plant conditions (trip reactor coolant pumps within one minute) needed to assure safety. The finding was of very low safety significance because operators retained the ability to diagnose a loss of subcooling margin using emergency operating procedures had a loss of subcooling margin occurred. (Section 4OA3)

B. Licensee Identified Violations

Violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violations and the associated corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Crystal River 3 operated at full power during the inspection period with the following exceptions: On August 9, reactor power was reduced to 92 percent for turbine valve testing and planned maintenance. During the maintenance, power dropped to 82 percent when a faulty signal occurred in the integrated control system. Power was restored to 100 percent on the same day. On September 6, while operating at 97 percent power, a reactor trip occurred due to a partial loss of offsite power. The reactor was restarted on September 11 and returned to full power on September 12.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection

.1 Seasonal Susceptibility: Hot Weather Preparations

a. Inspection Scope

The inspectors reviewed the licensee's plans and actions taken for operations in a hot weather environment to assure that vital systems and components were protected from hot weather in accordance with the licensee's Administrative Instruction AI-513, Seasonal Weather Preparations. The inspectors walked down portions of the emergency feed pump (EFP-3) building; make up pump rooms; and diesel generator MTDG-1 to check for any observable susceptibilities. Nuclear condition reports were reviewed to verify that the licensee was identifying and correcting any hot weather protection issues. The inspectors reviewed control room logs and quality records to verify that the licensee had completed Enclosure 4 of AI-513 (Hot weather preparation check list) prior to the intake water temperature reaching 80 degrees Fahrenheit, as required per the procedure. Throughout this inspection period, the inspectors reviewed operator logs to verify that the reactor building was maintained below the maximum temperature allowed by Technical Specifications.

b. Findings

No findings of significance were identified.

.2 Seasonal Susceptibility: Hurricane Charlie

d. Inspection Scope

On August 12 and 13, in preparation for Hurricane Charlie which was forcasted to enter through the Tampa Bay / Crystal River area, the inspectors reviewed the licensee's implementation of hurricane preparations using the licensee's Emergency Management Procedure EM-220, Violent Weather, Revision 27. The inspectors reviewed licensee

activities to verify that they maintained the ability to protect vital systems and components from high winds and flooding associated with hurricanes. Additionally, the inspectors toured the four plant areas listed below to check for any observable vulnerabilities, such as inadequate sealing of water tight penetrations, inoperable sump pumps, or degraded barriers, that could affect the associated systems. The inspectors verified that the licensee's violent weather committee had been established and that an initial preparatory walkdown had been completed. Nuclear condition reports were reviewed to verify that the licensee was identifying and correcting adverse weather protection issues. The inspectors followed emergency diesel generator testing to verify the diesels were in a state of readiness. As the storm approached, the inspectors monitored control room activities and attended the licensee's status briefings to verify that actions were consistent with violent weather planning. The inspectors remained on-site until the hurricane warning was down graded.

- Emergency diesel generator building flood walls and doors
- Berm area
- Instrument air compressors
- OPT and BEST transformers

b. Findings

No findings of significance were identified.

.2 Seasonal Susceptibility: Hurricane Frances

a. Inspection Scope

On September 2 to 6, 2004, the inspectors observed the licensee's hurricane preparations for Hurricane Frances which was predicted to enter through the Crystal River area. The licensee implemented Emergency Management Procedure EM-220, Violent Weather, Revision 27. The inspectors checked that the licensee maintained the ability to protect vital systems and components from high winds and flooding associated with the storm. The inspectors toured the four plant areas listed below to check for any vulnerabilities, such as inadequate sealing of water tight penetrations, inoperable sump pumps, or degraded barriers, that could affect the associated systems. The inspectors verified that the licensee's violent weather committee had been established and that a walkdown had been completed. Nuclear condition reports were reviewed to verify that the licensee was identifying and correcting adverse weather protection issues. As the storm approached, the inspectors monitored control room activities and attended the licensee's status briefings to verify that actions were consistent with violent weather planning. The inspectors remained on-site until the emergency classification (Unusual Event) was down graded.

- Emergency diesel generator rooms
- Berm area

- Intake Area
- Intermediate building (EFP-2) area

b. Findings

No findings of significance were identified.

.3 Seasonal Susceptibility: Hurricane Ivan

a. Inspection Scope

On September 13 to 16, 2004, the inspectors reviewed the licensee hurricane preparations for Hurricane Ivan which had entered the Gulf of Mexico. The licensee used the checklists in Emergency Management Procedure EM-220, Violent Weather, Revision 27, to plan actions should the storm approach. The inspectors verified that the licensee's violent weather committee had been established and that an initial preparatory walkdown had been completed. Fuel and water inventories were checked to assure adequate supplies were available. Nuclear condition reports were reviewed to verify that the licensee was identifying and correcting adverse weather protection issues.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial Equipment Walkdowns

a. Inspection Scope

The inspectors performed the following four 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 were reviewed to verify that the licensee was identifying and correcting component alignment issues.

- June 30; Power Distribution Alignment using SP-321, Power Distribution Alignment and Power Availability Verification, following failure of an under-voltage relay (SLUR) during testing (NCR 130903)

- On July 26, 27, and 28; Emergency Core Cooling 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' train outage.

- August 18; Emergency feedwater pump EFP-2 using operating procedure OP-450, Emergency Feedwater System, when EFP-3 was out of service for oil bubbler adjustments per Work Order WO 567246

- September 13, Emergency diesel generator EGDG-1B, using Operating Procedure OP-707, Operation Of The Engineered Safeguards Diesel Generators, while the EGDG-1A was out of service for testing.

b. Findings

Introduction. A Green NCV was identified when the licensee did not follow procedures and investigate boric acid leakage on a carbon steel decay heat removal pump suction flange and casing.

Description. During a walkdown of the B train of decay heat removal system on July 28, the inspectors identified boric acid deposits on the suction flange and pump casing of the decay heat removal pump. At the time of discovery, the system was being returned to service following maintenance. On questioning, the inspectors learned that the leakage had been identified by the licensee on December 19, 2003 and documented in a work request (WR 126236). However, the deposits had not been checked for active leakage nor assessed for corrosion, nor had any corrective actions been taken regarding the deposits. When identified by the inspectors, the licensee documented the leakage in the corrective actions program as NCR 133510 and did an engineering assessment as required in the boric acid control program procedure. The assessment found no measurable leakage with the system in standby but the casing flange leak showed signs of carbon steel wear products and was classified as an active leak. No external wastage was observed and an evaluation was done to assess internal corrosion. Work orders were written and scheduled to inspect the affected bolting and measure leakage during pump operation. Also, an extent of condition review was conducted to assure that other boric acid leakage sites were promptly evaluated.

Analysis. Initially identified by the licensee, the evidence of leakage from the carbon steel decay heat removal pump casing and suction flange was not investigated and resolved as required by the licensee's boric acid corrosion control program. Because it had been documented in a work request, it was within the licensee's ability to foresee and correct the problem, and was therefore determined to be a performance deficiency affecting the mitigating systems cornerstone. The inspector determined the finding was more than minor because if left uncorrected it would become a more significant concern, that being wastage of the carbon steel components affected by the leakage. However only minimal corrosion was observed when inspected and the amount of boric acid residue was small (few tablespoons). No inoperabilities were identified. The significance determination process, phase 1 review was done, all questions in the mitigating systems checklist (page 2) were answered no, and the issue screened as Green.

Enforcement. 10 CFR 50, Appendix B, Criterion V, states, in part, that activities affecting quality shall be prescribed by procedures and shall be accomplished in accordance with

these procedures. The licensee implements this requirement, in part, with procedure EGR-NGGC-0207, Boric Acid Corrosion Control, which states, where borated water leakage is detected, the leak path shall be investigated to determine the extent of components affected. Contrary to the above, as of July 28, 2004, for the boric acid leaks found on the Decay Heat Pump DHP-1B, flange and casing, the leak path had not been investigated to determine the extent of components affected. After identification by the inspectors, the licensee documented the problem in the corrective actions program as NCR 133510, and completed an engineering investigation, assured operability, scheduled repair, and performed an extent of condition review to establish compliance with the boric acid corrosion control procedure. Because the failure to investigate the boric acid leakage was of very low safety significance and had been entered into the licensee's corrective action program as NCR 136305 this violation is being treated as an Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000302/2004005-01 , Failure to investigate deficient condition of boric acid leakage affecting the low pressure injection system as required by boric acid corrosion control procedure.

.2 Complete System Walkdown

a. Inspection Scope

On July 22 and 23, the inspectors conducted a detailed review of the alignment and condition of the nuclear services closed cycle cooling system (SW). The inspectors used licensee operating procedure, OP-408, Nuclear Services Cooling System, as well as Final Safety Analysis Report (FSAR) Chapter 9.5, Cooling Water Systems, to verify proper system alignment.

The inspectors verified selected electrical power lineups and alignment of related engineered safeguards systems including reactor building air handling units and the raw water system. The walkdowns also included evaluation of selected system piping and supports against the following considerations:

- Piping and pipe supports did not show evidence of water hammer.
- Oil reservoir levels indicated normal.
- Snubbers did not indicate any observable hydraulic fluid leakage.
- Component foundations were not degraded
- No fire protection hazards

A review of outstanding maintenance work orders was performed to verify that any deficiencies did not significantly affect the system function. In addition, the inspectors reviewed the open nuclear condition reports (NCRs) to verify that system problems were being identified and appropriately resolved. The system walkdown report, Administrative Instruction AI-1701, Quarterly Walkdown of SW and RW systems, dated June 25, 2004, was reviewed by the inspectors. The inspectors routinely checked operability of the heat removal system during heat exchanger maintenance using the licensee's operating procedure OP-103B, Operating Curves, Curve 15, SW System Heat Transfer Capability.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Routine Inspections

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 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 observed performance of weekly fire alarm checks done in accordance with surveillance procedure SP-323, Evacuation and Fire Alarm Demonstration and monitored for transient combustibles during plant tours.

- Emergency Feed Pump (EFP-3) Building
- Emergency Feedwater Tank (EFT-2) Building
- A and B Control Complex Chillers
- A and B 480-Volt Switch Gear Rooms
- B Decay Heat Pump Vault
- Main Control Room
- A Emergency Diesel Generator Room
- B Emergency Diesel Generator Room
- Boric Acid Storage Tank Areas

b. Findings

No findings of significance were identified. Two issues of very low safety significance were identified by the licensee and are described in Section 4OA7 of this report.

.2 Annual Fire Drill

a. Inspection Scope

On July 16, 2004, the inspectors observed the licensee fire brigade respond to a simulated fire in the emergency feedwater pump EFP-3 battery room. The inspectors checked the brigade's communications, ability to set-up and execute fire operations, and

their use of fire fighting equipment. The inspectors attended the post-drill critique to check that the licensee's drill acceptance criteria were used and that any discrepancies were discussed. The crew did not meet the performance objectives and the problems were documented in the corrective action program as NCR 132254. In addition to the drill observation, Administrative Instruction AI-2205, Fire Drill Planning and Evaluation Report, dated July 16, 2004, was checked to assure that the deficiencies were documented and remediated, as appropriate, as the fire response crews were evaluated. On July 15, the inspectors observed the fire brigade team leader perform the weekly fire brigade radio check as described in SP-804, Surveillance of Plant Fire Brigade Equipment, and obtained the location of each fire brigade team member to determine if they could respond to a fire in a timely manner.

b. Findings

Introduction. A Green NCV was identified when the licensee did not implement the Fire Protection program in that on three separate occasions the plant fire brigade was not available to readily respond. Interim actions were insufficient after a June 26, occurrence where two members of the fire brigade could not be located, such that on July 3 and again on July 4, a member of the plant fire brigade was beyond the range of the plant protected area that would allow timely response to a fire alarm.

Description. Crystal River Unit 3 Operating License Condition 2.C.(9), states that all provisions of the approved fire protection plan, as described in the Final Safety Analysis Report shall be implemented. The FSAR, in Section 9.8.5, Fire Brigade Composition, states that a five member Fire Brigade is formed for each shift. The FSAR in Section 9.8.6, Fire and Emergency Response Activities, states that notification is provided to personnel over the plant PA system. Further, the Fire Protection Plan in Section 7.8, states that measures are established to ensure that conditions adverse to fire protection are promptly corrected.

The licensee identified on June 26, 2004, (NCR 130530) that two members of the plant fire brigade were not able to be located after repeated plant page (PA) and radio announcements. The plant security department was notified and the individuals were later found cutting grass within the protected area, wearing double hearing protection, as required by plant safety procedures. The individuals did not hear plant page announcements nor could they be contacted by radio because they had placed their radios in a storage area. This inability to contact fire brigade members was documented in the corrective action program and interim action was taken to counsel the workers to assure they were always located such that they could hear plant page and radio announcements should a fire occur.

The inspectors found that on July 3 and July 4, 2004, a member of the plant fire brigade had left the protected area for extended periods and went to the site access control area, about one mile away, to cut grass. Neither the plant page (PA) nor the plant fire alarm could be heard at this remote location, nor could the individual respond in a timely manner to a fire if notified by radio. The inspector determined the corrective actions to the first occurrence on June 26, were narrow in scope and insufficient to assure that

plant fire brigade personnel could readily respond to a fire when completing collateral duties.

Analysis. The inspectors found that in the first case, on June 26, fire brigade members had been performing collateral duties such that they could not be contacted and respond in a timely manner. This issue was appropriately identified and documented in the corrective action program by the licensee. However, interim actions taken to prevent recurrence were narrowly focused and did not address the problem of response of fire brigade members when, on July 3 and again on July 4, a fire brigade member was assigned to the site access control area, about one mile from the protected area boundary with no provisions to assure timely response should a fire occur.

Failing to assure adequate interim measures for fire brigade response when collateral duties were assigned to fire brigade members was identified as a performance deficiency. The issue was more than minor because if left uncorrected, the challenge to adequate fire response capability due to collateral duties for fire brigade members would become a more significant safety concern. The fire protection significance review using Inspection Manual Chapter 0609, Appendix F assumed a finding category of fire confinement and a low degradation rating and the finding screened as Green, of very low safety significance. The low degradation rating was assigned because minimum staffing using the fire brigade leader was available to fight a fire, should a full complement of brigade members not respond to a fire alarm. The finding involved the cross-cutting element of problem and identification of resolution, in that interim corrective actions were narrowly focused and ineffective to prevent recurrence.

Enforcement. On June 26, 2004, two members of the fire brigade could not be located while cutting grass. Crystal River 3 Operating License Condition 2.C.(9), states, in part, that the licensee shall implement all provisions of the approved fire protection program. The CR3 Fire Protection Plan, in section 7.8, states that measures are established to ensure that conditions adverse to fire protection shall be promptly corrected. Contrary to the above, on July 3 and again on July 4, prompt corrective measures had not been taken to ensure the availability of a fire brigade member to respond to a fire emergency while assigned collateral duties of cutting grass at the site boundary. The violation represents a failure in the fire protection program to assure that corrective measures to conditions adverse to fire protection are taken in a timely manner, to prevent recurrence. There were no fires during the period. Once identified by the inspectors, the licensee established a protocol for routine activities that assured availability of brigade members to respond to a fire. Because the failure to take timely corrective action to the fire brigade availability was of very low safety significance and had been entered into the licensee's corrective action program as NCR 136336 this violation is being treated as an Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 50-332/2004-005-02: Failed corrective actions for fire brigade response results in a recurrent problem.

1R06 Flood Protection Measures

.1 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 turbine building and auxiliary building was conducted to ensure that flood protection measures were in accordance with design specifications. Abnormal procedure AP-1050, Flooding, was checked to assure that adequate measures were established to minimize the effects of turbine building flooding due to rupture of a main condenser diaphram. Specific plant attributes that were checked included structural integrity, sealing of penetrations below the design flood line, adequacy of watertight doors between flood areas, and operability of sump systems. Work requests 129465 and 129435, regarding problems with turbine building sumps, were checked to verify that timely repairs were completed.

b. Findings

No findings of significance were identified.

.2 External 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 the design flood levels and protection for areas containing safety-related equipment to identify areas that may be affected by external flooding. A general site walkdown was conducted, with a specific walkdown of the external areas of the turbine building, auxiliary building, and berm to ensure that flood protection measures were in accordance with design specifications. Emergency procedure EM-220, Violent Weather was checked to verify that adequate measures were established to protect against external flooding due to hurricanes. Specific plant attributes that were checked included structural integrity, sealing of penetrations below the design flood line, and adequacy of watertight doors between flood areas. On August 12, the inspectors did specific checks of the licensee's flood protection measures for the impending Hurricane Charlie. A check of NCR 129893 regarding minor flooding in an external cable vault was done to ensure no leakage path existed through the plant flood barriers.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the thermal performance of the service water heat exchanger system which provides cooling to safety related equipment during normal and emergency operations. The inspectors reviewed selected service water heat exchanger performance results, to determine if the frequency of cleaning provided for acceptable heat sink performance. On July 26, 2004, the inspectors observed maintenance personnel perform a heat exchanger operability assessment as part of work order number 560500, service water heat exchanger SWHE-1B, shoot and clean. The inspectors checked the licensees determination of heat exchanger fouling to verify that the flow degradation was within the limit of operability of the heat exchanger and that the licensee used operating procedure OP-103B, Plant Operating Curves, which described heat exchanger acceptance criteria to verify that heat exchanger performance results matched design criteria. The inspectors reviewed licensee test, PGT-2004-1114, Crystal River 3 Nuclear Services Closed Cycle Cooling Heat Exchanger Thermal Performance Test Data Evaluation (Proprietary) and calculation, M97-0133, Service Water Loads During Large Break Loss of Coolant Accident and Service Water Temperature Decay Times to assess operational readiness of the system should it be needed for accident mitigation.

Findings

No findings of significance were identified. A licensee identified issue is documented in Section 4OA7 of this report.

1R11 Licensed Operator Requalification

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On August 16, the inspectors observed licensed operators response and actions on the Crystal River Unit 3 simulator to Simulator Evaluated Session, SES-15, 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 Loss of Nuclear Service Cooling, Loss of Offsite Power, and a Large Break Loss of Cooling Accident . 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, EOP-3, Inadequate Sub-Cooling Margin; and EOP-13 Rule 3, EFW / AFW Control

- 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 Effectiveness

a. 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 two equipment issues described in the condition reports listed below, the inspectors reviewed the licensee's implementation of the Maintenance Rule (10CFR50.65) with respect to the characterization of failures, the appropriateness of the associated a(1) or a(2) classifications, and the appropriateness of either the associated a(2) performance criteria or the a(1) goals and corrective actions. The inspectors checked that 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, July to December 2003, 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 130903, Broken Wire on second level undervoltage relay (SLUR) relay, Including Progress Energy Memo SE04-0078, Maintenance Rule - Auxiliary Electrical (MT) System to a(1), dated August 10, 2004

- NCR 134244, Maintenance rule unavailability during post-maintenance testing B train of Building Spray. This review included a check of NCR 119855 written when the repetitive aspect of the failure of MUV-544 was not immediately identified

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the following six risk assessments to assess the effectiveness of the licensee's risk evaluation of maintenance and testing. The inspectors reviewed daily maintenance schedules and observed work controls to check risk management while maintenance was conducted. The inspectors assessed operability of equipment using technical specifications, the Final Safety Analysis Report, licensee procedures, and regulatory information such as NRC Generic Letter 91-18, Revision 1, Information to Licensees Regarding NRC Inspection Manual Section on Resolution of Degraded And Nonconforming Conditions. 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 and that risk management actions were promptly initiated.

- Work Week 04W26 risk assessment for preventive maintenance on Vital Inverter VBIT-1B and inspection of makeup valve MUV-62 resulting in Condition Yellow, revised when the Vital Inverter VBIT-1D amperage indication failed requiring its removal from service for repair per Work Order 152209 (NCR 130573)

- Work Week 04W30 risk assessment for B train emergency core cooling equipment outage (Condition Yellow) revised when safety related battery DPBA-1B, Cell 15 was replaced after failing to meet surveillance requirements (NCR 133065)

- Work Week 04W31 risk assessment for work on: Emergency Feed Valve EFV-32; Feedwater Valve FWV-216; Service Water Heat Exchanger SWHE-1B; Diesel Generator MTDG-1; and Feed Water Pump FWP-7, revised when the work was delayed due to hurricane preparations.

- Work Week 04W32 risk assessment for tube replacement on the C service water heat exchanger revised to risk Condition Yellow for an EM-220, Violent Weather entry on August 12 due to a tornado warning.

- Work Week 04W34 risk assessment for monthly testing of emergency diesel generator EGDG-1B revised when excessive fouling was found in the D service water heat exchanger SWHE-1D requiring corrective actions per operating procedure OP-103B, Operating Curves.

- Work Week 04W38 risk assessment for preventive maintenance on emergency diesel generator EGDG-1B revised when a high temperature was found on instrument air compressor IAP-3B, requiring corrective maintenance.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions

a. Inspection Scope

For the three non-routine events described below, the inspectors observed the activity and/or reviewed operator logs, records, and applicable procedures to determine that the evolution was properly conducted.

- Unusual Event Declaration and associated preparations for Hurricane Charlie (August 13, 2004)

- Unusual Event Declaration and associated preparations for Hurricane Francis (September 5, 2004)

- Reactor Trip on September 6, 2004. The inspectors were in the control room and observed operator response to a reactor trip due to partial loss of offsite power. The inspectors observed use of abnormal and emergency procedures to stabilize the plant in natural circulation. The operators verified key safety parameters, such as reactor shutdown, cooling using emergency feedwater and atmospheric steam dumps, and availability of electric supplies including the B emergency diesel generator. Command and control by supervisors was observed during conduct of plant operations, including a partial natural circulation cooldown. During the transient, the inspectors focused on cooling water inventories, ultimate heat sink operating levels, availability of instrument air, operator response to alarms, and implementation of technical specifications. The inspectors also monitored the plant recovery and return to power operation on September 11 and 12.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following 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 nuclear condition reports (NCRs), work plans, 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-200, Corrective Action Program. The inspectors checked that when plant problems were identified, the resulting change in plant risk was identified and managed.

Additionally, for NCR 136750, Pressurizer Sensing Line Boric Acid Buildup on valve RCV-75, the inspectors interviewed licensee personnel involved in the inspections and observed the health physics survey of the samples obtained from the pressurizer sensing line. The inspectors observed the removed material for density, weight, and color to determine if there was boric acid. The inspectors noted that Event Report 41024 regarding potential reactor coolant system leakage was retracted by the licensee.

The following six issues, including the related nuclear condition reports (NCRs), were specifically checked:

- NCR 131003: SWV-45 Failed Stroke Time During surveillance procedure SP-344C
- NCR 130384: Reduced Emergency Diesel Generator Kilowatt Margin
- NCR 124543: Once Through Steam Generator OTSG-B, Loose Part Sound Detected
- NCR 135456: Service Water Heat Exchanger SWHE-1D in the degraded heat transfer region of Operating Curve 15 of operating procedure OP-103B, Operating Curves
- NCR 133510: Boron Accumulation On Decay Heat Pump DHP-1B Suction Flange And Pump Casing
- NCR 136750: Pressurizer Sensing Line Apparent Boric Acid Buildup RCV-75 (Event Report Number 41024, retracted)

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

Selected Issue Review

On July 18, 2004, the inspector reviewed the operator work around (OWA) listed below, taken from the licensee's OWA list. The inspector reviewed the operations activity and the nuclear condition report associated with the OWA. Compensatory actions addressing the OWA were reviewed. The inspector checked that the function of the affected system was maintained while the deficient condition existed.

- NCR 121177 Reactor Coolant Drain Tank Vent is Obstructed (OWA 04-04)

Cumulative Effects

The inspectors performed a semi-annual evaluation of the potential cumulative effects of all outstanding OWAs. At the time of the inspection, there were five OWAs. The inspectors evaluated these OWAs along with issues on the degraded equipment log for their cumulative effects, and discussed these potential effects with control room supervisors and operators. The inspectors reviewed the equipment out-of-service logs and walked down the control room and plant areas to verify OWAs were being identified and properly entered into the corrective action program. The inspector conducted a tour with a plant auxiliary operator to check for deficient conditions that could be classified as operator workarounds but had not been identified and scheduled for resolution.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors evaluated the design change package listed below for potential adverse effects on raw water system availability, reliability, and functional capability. Attributes reviewed included; adequacy of analyses; material composition, pressure/temperature rating, code requirements satisfied; applicable testing requirements satisfied; environmental and seismic qualifications satisfied; installation requirements, including welding, satisfied; verification of conformance to design basis; and, appropriate licensee documents updated.

The inspectors observed the as-built configuration of the modification and observed installation, including licensee quality inspections.

Documents reviewed included procedures, engineering calculations, modifications design and implementation packages, work orders, site drawings, corrective action

documents, applicable sections of the updated final safety analysis report supporting analyses, Technical Specifications, and design basis information.

The inspectors observed and reviewed the welding and the non-destructive inspections when they were performed on the raw water piping, and performed a general walkdown on the valve alignment after the modification clearance was lifted.

The inspectors also reviewed selected corrective action documents associated with modifications to confirm that problems were identified at an appropriate threshold, were entered into the corrective action process, and appropriate corrective actions had been initiated.

- Engineering Change 50436R1; Addition of Al-6XN to SP-5206 and Alternate use in Raw Water Flush Piping

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors observed or reviewed the following five 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 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-334A, Spent Fuel Pump SFP-1A Quarterly Surveillance, performed on July 19, after performing motor replacement and coupling lubrication per work order 553706-01.

- Work Order 502105-02, Post maintenance testing for service water pump, SWP-2A performed on July 19 to 22 after replacing the pump impeller.

- Surveillance Procedure SP-344B, RWP-2B, SWP-1B and Valve Surveillance (SWP-1B only) performed on August 4, 2004, after performing maintenance per work order 554453-01.

- Surveillance Procedure SP-348A, Feedwater Pump 7, performed on August 6, 2004, after performing maintenance per work order 221722-02.

- SP-340E, Decay Heat Pump DHP-1B, Building Spray Pump BSP-1B, and Valve Surveillance for testing of valves following preventive maintenance on decay heat system valve DHV-35 following work order 302376, valve DHV-211 following work order 510715, and building spray valve BSV-4, following work order 373511.

b. Findings

No findings of significance were identified.

1R20 Outage Activities

a. Inspection Scope

Following the reactor trip on September 6, 2004, the licensee entered their forced outage plan. The inspectors checked outage schedules and observed portions of the licensee's conduct of operations, including parts of the plant cooldown. Work controls were checked to assure that risk management plans were followed. Specific checks were done of the following attributes:

- Controls associated with reactivity management, electrical power alignments, and containment integrity
- Implementation of equipment clearance activities
- Reactor mode changes were checked for adherence to plant operating procedures
- Reactor startup and power ascension (September 11, 2004)

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. The tests included RWP-2B pump and RCV-11 block valve ISTs.

- SP-347, Emergency Core Cooling System and Boration Flow Paths, performed on July 9
- SP-370, Quarterly Cycling of Valves, RCV -11 Block Valve, performed on July 12 (IST)
- SP-344C, Containment Cooling System Fan and Valve Surveillance, performed on July 1, and July 14
- SP-344B, RWP-2B, SWP-1B and Valve Surveillance (RWP-2B only) performed on August 4, 2004 (IST)
- SP-108, Reactor Trip Module and Control Rod Drive Trip Functional Test on August 25
- SP-179C, Containment Leakage Test - Type C (DHV-95 only) (Containment Isolation Valve) on September 10
- SP-354A, Monthly Functional Test of Emergency Diesel Generator EGDG-1A on September 13

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the two temporary modifications listed below to ensure that they did not adversely affect plant operations. The inspectors screened temporary plant modifications for systems that were ranked high in risk for departures from design basis and for inadvertent changes that could challenge the systems to fulfill their safety function. 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.

- Temporary Modification 55260, RCV-11 Annunciator Ground
- Temporary Modification 48843, Furmanite Repair of the High Pressure Turbine Steam Flange

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness (EP)

1EP6 Drill Evaluation

Inspection Scope

On August 11, 2004, the inspectors observed the licensee in a simulator based emergency preparedness drill. Results of the drill are used by the licensee as inputs into the Drill/Exercise Performance and Emergency Response Organization Drill Participation Performance Indicators. The drill involved a partial loss of electrical power, a loss of coolant accident, and resulted in a site evacuation exercise. During the scenario, which included staffing of the technical support center, the inspectors assessed the licensee's ability to classify emergent situations and make timely notification to State and Federal officials in accordance with 10 CFR Part 50.72. Emergency activities were checked to be in accordance with the Crystal River Radiological Emergency Response Plan, Section 8.0, Emergency Classification System, and 10 CFR Part 50, Appendix E. At the conclusion of the drill, the inspectors observed the drill critique. Additionally, the inspectors reviewed the Training Drill Report.

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 June 2003, to June 2004, was compared for consistency to data obtained through the review of chemistry department records, monthly operating reports, and control room records. Surveillance Procedure SP-317, Reactor Coolant System Water Inventory Balance, and Chemistry Department Procedure, CHA-263, Dose Equivalent Iodine, were reviewed. Data gathering using both procedures was monitored. During routine plant tours, the inspectors checked proper controls for plant personnel exposure and radioactive releases.

- Reactor Coolant System Activity
- Reactor Coolant System Leakage

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Corrective Action Program Submittal Reviews

a. 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 Review

a. Inspection Scope

The inspectors selected the following nuclear condition report (NCR) for detailed review and discussion with the licensee.

- NCR 131963, Incorrect Relief Valve Installed on SWHE-1A

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 NCRs were reviewed by the inspectors to check for common cause or generic implication:

- NCR 110023, Feed Water Transient Causes Reactor Trip
- NCR 128256, Incorrect Part Installed During MU Post Filter Changeout
- NCR 084801, Incorrect Part Was Ordered For WO 346893-01
- NCR 087807, Incorrect Fuse Installed in RM-A2-RY2
- NCR 103457, Incorrect Lock Washer Material Found Installed On Spare CWP
- NCR 108376, Replacement Valve For FWV-19 CAT#63190006 Is Incorrect
- NCR 090325, DWT-1 Level Indicator DW-20-LI Scale Is Incorrect

b. Findings and Observations

One licensee identified finding of significance was identified and is listed in Section 4OA7 of this report. The inspectors found that although a number of wrong part issues had occurred, no common causes were evident. In addition, a weakness in quality controls necessary to assure that correct parts are installed in standby systems that are important to safety was identified. The licensee had entered individual problems into the corrective actions program and had taken action to prevent recurrence.

.3 Cross-References to PI&R Findings Documented Elsewhere

Section 1R05 describes a finding where the licensee's interim corrective actions for an identified deficiency involving readiness of fire brigade members to respond to a fire were inadequate to prevent recurrence.

4OA3 Event Followup

.1 (Closed) LER 05000302/2003-04. Redundant Channels of Post-Accident Monitoring Function Not Operable Due to Reversed Power Supplies

a. Inspection Scope

The inspectors reviewed the licensee event report which documented that both channels of the control room display of Degrees of Subcooling were inoperable. This resulted in a condition prohibited by technical specifications. Corrective actions included correcting and verifying the correct power supplies to the monitors, correcting labeling, and conducting a root cause evaluation. The inspector reviewed the licensee's root cause evaluation, and conducted a walkdown of the power supplies. Operating procedure OP-509, Safety Parameter Display System, was revised to show the power supply separations and lineup for safety display indication. No additional findings of significance were identified by the inspectors. The issue was documented in the licensee's corrective actions program as NCR 108023.

b. Findings

Introduction. A Green self-revealing NCV for failure to comply with technical specifications was identified when the degrees of subcooling power supplies were found crossed.

Description. The licensee found crossed power supplies for the degrees of subcooling monitor on October 17, 2003, during a modification installation. The licensee determined that the cause was inadequate instructions for labeling the power supply strips in the control room during a modification implemented in 1999.

Analysis. The inspectors determined that the finding was a performance deficiency because it was within the licensee's ability to correctly align the monitor power supplies using plant electrical drawings during installation in 1999. The finding was more than minor because the failure of degrees of subcooling monitor indication during certain LOCA scenarios could challenge the control room operators in taking timely action to establish the plant conditions (trip reactor coolant pumps within one minute) to prevent core damage and assure safety. The violation was determined to be of very low safety significance because operators retained the ability to diagnose a loss of subcooling margin using other plant instruments and take emergency operating procedure actions had a loss of subcooling margin indication occurred. A significance determination was completed in the mitigating systems cornerstone, all screening questions were answered 'NO', and the issue screened as Green, of very low safety significance.

Enforcement. Crystal River 3 Technical Specification 3.3.17.D, requires the reactor to be placed in Mode 3 within 6 hours and Mode 4 within 12 hours if both channels of Degrees of Subcooling are inoperable. Contrary to the above, during periods of plant operation since 1999 and prior to October 17, 2003, both channels of Degrees of Subcooling were inoperable because their power supplies were reversed and the plant was not placed in Mode 3 or Mode 4 as required. Upon discovery, proper train separation was established and the operating procedure for the system was revised to show proper electrical supply lineups. Because the issue was of very low safety significance and was identified in the licensee's corrective action program as NCR 108023, the violation is being treated as an Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 50-332/2004-005-03: Redundant Channels of a Post-Accident Monitoring Function Not Operable Due to Reversed Power Supplies

.2 Automatic Reactor Trip

a. Inspection Scope

On September 6, 2004, the inspectors observed a Unit 3 reactor trip from 97% power due to a partial loss of offsite power that occurred during violent weather conditions related to Hurricane Frances. The trip occurred when the startup transformer deenergized causing a loss of non-vital bus power. Reactor coolant pumps, condensate and feedwater system pumps, and main circulating water pumps lost power, the reactor tripped, and the plant recovered in natural circulation on emergency feedwater with steam dumped through the atmospheric steam dump valves. The inspectors observed operator use of Abnormal Procedure AP-770, Emergency Diesel Generator Actuation; Emergency Operating Procedures EOP-2, Vital System Status Verification; and EOP-10, Post-Trip Stabilization. During the transient, the inspectors monitored cooling water inventories, status of the fire service system, status of the instrument air system, supervisory command and control, and management oversight of recovery operations. The inspectors examined operator and plant response by reviewing plant parameters, strip charts, operator logs, and discussed the event with operations personnel and members of the licensee's Event Review Team. The inspectors verified that appropriate notifications were made in accordance with 10 CFR 50.72. Furthermore, the inspectors

reviewed the post-trip report and attended the September 9, 2004, Plant Nuclear Safety Committee meeting prior to restart.

b. Findings

No findings of significant were identified.

4OA6 Meetings. Including Exit Meeting

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Roderick and other members of licensee management at the conclusion of the inspection on September 28, 2004. 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.

4OA7 Licensee Identified Violations

The following issues of very low safety significance (Green) were identified by the licensee and were violations of NRC requirements. These issues meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as Non-Cited Violations.

- Technical Specification 5.6.1.1.a, requires that written procedures shall be implemented as specified by NRC Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. The regulatory guide appendix specifies in section 2.g, procedures for Power Operation. The licensee implements this requirement, in part, with procedure, OP-103B, Operating Curves, which states in Curve 15, Service Water System Heat Transfer Capability, Criterion 7, that when a service water heat exchanger is determined to be blocked within Region C of the operating curve (Unacceptable Region), then immediately pick and clean the affected heat exchanger and return it to service, and inspect and pick clean the next scheduled heat exchanger. Contrary to the above, on July 26, 2004, after determining that the B service water heat exchanger was within the Unacceptable Region of Curve 15, the licensee maintained the heat exchanger out of service for discretionary maintenance (bullet cleaning). The finding is more than minor because of the potential to impact safety should the second heat exchanger reveal a common cause for tube blockage that further impacted operability of the heat removal system. The finding was of very low safety significance because the second heat exchanger, when inspected on July 28, 2004, was found to be minimally fouled and no common cause blockage was identified. The issue screened as Green in the Phase 1 screening using Manual Chapter 0609, Appendix A. The issue is documented as nuclear condition report 133068. This violation was identified by the licensee during their plant status reviews.

- 10 CFR 50, Appendix R, Fire Protection Program for Nuclear Power Facilities, Subpart II.O, requires that the reactor coolant pump shall be equipped with an oil collection system and that leakage (of oil) shall be collected and drained to a vented closed container. Contrary to the above, on September 7, 2004, and on prior occasions, varying amounts of oil were not collected and had been found in puddles outside of the reactor coolant pump oil collection system. The finding was a performance deficiency because the leaking oil was preventable by maintenance of the oil collection system. The finding is more than minor, because if left uncorrected, the oil could further collect and contribute to a fire within the reactor building which would be a more significant safety concern. The finding was of very low safety significance because the amount of leaking oil was very small, less than required to sustain a fire. The issue screened as Green in the Phase 1 screening using Manual Chapter 0609, Appendix F, using the Fire Prevention and Administrative Controls category, low degradation rating. The leaking joints were tightened/repaired prior to resumption of plant operation. The issue is documented as nuclear condition report 136775. The oil leaks had been identified during post-trip reactor building walkdowns by licensee personnel.

- 10 CFR 50, Appendix R, Fire Protection Program for Nuclear Power Facilities, Subpart G.2.c, requires that inside noninerted containments equipment shall be separated by a horizontal distance of more than 20 feet, or automatic fire suppression shall be installed, or equipment shall be separated using a noncombustible radiant energy shield. Contrary to the above, inside the containment equipment (portions of the three sensing lines of pressurizer level) is not separated by at least 20 feet, with no automatic fire suppression nor radiant energy shielding. The finding was a performance deficiency in that the provisions of Appendix R fire protection had not been implemented and it was reasonable for the licensee to identify and correct this deficiency during Appendix R compliance reviews. The finding was more than minor because the issue involves degradation of a safe shutdown feature, that being control of pressurizer level during and following a fire. A Manual Chapter 0609, Appendix F analysis was completed and the finding was determined to be of very low safety significance, Green, because of the very low likelihood of a fire that could disrupt pressurizer level indication and challenge reactor safety. The issue is documented as nuclear condition report 124391 and had been identified by licensee personnel during fire protection engineering reviews.

- Technical Specification 5.6.1.1.a, requires that written procedures shall be implemented as specified by NRC Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. The regulatory guide appendix specifies in Section 9.c procedures for replacement of safety valves. The licensee implemented this requirement, in part, with work order 434582-01, which required that safety valve number 62690049 be installed in the service water heat exchanger, SWHE-1A. Contrary to the above, on July 12, 2004, safety valve number 62690073 (the wrong valve), was installed in the service water system. The issue was more than minor, because it could be reasonably viewed as a precursor to a significant

event, that being inadequate quality controls to assure that the design of standby safety systems is retained during maintenance. The issue was of very low safety significance because although the wrong valve had been installed, the capability of the heat exchange to perform its function had not been affected. The issue screened as Green in the Phase 1 screening using Manual Chapter 0609, Appendix A. The issue is documented as nuclear condition report 131963. The wrong component had been identified by the licensee during a supervisory review of completed work.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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. Kreuhm, Manager, Work Controls and Outage
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
S. Young, Security Manager

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

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

50-302/2004005-01	NCV	Failure to investigate deficient condition of boric acid leakage affecting the low pressure injection system as required by boric acid corrosion control procedure
50-302/2004005-02	NCV	Failure to establish adequate corrective actions for fire brigade response results in a recurrent problem
50-302/2004005-03	NCV	Redundant channels of a post-accident monitoring function not operable due to reversed power supplies

Closed

50-302/2003-004	LER	Redundant Channels of a Post-Accident Monitoring Function Not Operable Due to Reversed Power Supplies

Attachment