



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

July 19, 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
05000302/2004004

Dear Mr. Young:

On June 26, 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 July 1, 2004, 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, there was one finding of very low safety significance (Green). The finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance of the issue, and because it was entered into your corrective action program, the NRC is treating the issue as a Non-Cited violation (NCV) 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,

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

Docket No.: 50-302
License No.: DPR-72

Enclosure: Inspection Report 05000302/2004004
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.: 05000302/2004004

Licensee: Florida Power Corporation

Facility: Crystal River Unit 3

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

Dates: March 28, to June 26, 2004

Inspectors: S. Stewart, Senior Resident Inspector
R. Reyes, Resident Inspector
L. Mellen, Senior Emergency Preparedness Inspector (Sections 1EP1, 1EP4, 4OA1)
J. Kreh, Emergency Preparedness Inspector (Sections 1EP1, 1EP4, 4OA1)
S. Ninh, Senior Project Engineer (1R15, 4OA3)
R. Hamilton, Health Physicist (Sections 2OS1 & 4OA1)
R. Carrion, Project Engineer (Section 2OS3)
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Approved by: Joel T. Munday, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000302/2004-004; 03/28/2004 - 06/26/2004; Crystal River Unit 3; 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. One Green Finding was identified, which was a Non-Cited Violation. 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: Initiating Events

Green: An NRC identified, Non-Cited Violation (NCV) of Technical Specification 5.6.1.1 was identified for failure to fully implement a procedure which required a 10 CFR 50.59 evaluation to be completed for a one-time test of the power operated relief valve (PORV). Because the required evaluation was not completed, the licensee was unaware that the test would result in opening the PORV. As a result, the PORV unexpectedly opened for a very short period while the plant was operating and caused a reactor pressure transient.

This finding is more than minor because it affected the Primary System Loss of Coolant Accident (LOCA) Initiator attribute of the Initiating Events Cornerstone. The issue was of very low safety significance because although PORV opened for a short period of time with the reactor operating at power, mitigating systems, including the PORV block valve, were available had the valve failed to shut. The cause of the finding involved the cross-cutting element of human performance. (Section 4OA3)

B. Licensee Identified Violations

None

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]

1R01 Adverse Weather Protection

Seasonal Susceptibility: Hurricanes

a. Inspection Scope

The inspectors reviewed the licensee's hurricane season preparations using the licensee's 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 hurricanes. Additionally, the inspectors toured the three 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 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.

- Emergency diesel generator building flood walls and doors
- Emergency feedwater pump 3 building, including internal sump
- Berm area

b. Findings

No findings of significance were identified.

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 were reviewed to verify that the licensee was identifying and correcting component alignment issues.

- Emergency Feedwater Pump 3 (EFP-3) using Operating Procedure OP-450, Emergency Feedwater, when the redundant feedwater pump, EFP-2, was out of service for scheduled maintenance under Clearance Number 68152
- Emergency Core Cooling Train 'B' (Decay Heat System, DC Closed Loop, and Building Spray) using procedures OP-404, Decay Heat Removal System, and OP-405, Reactor Building Spray System, while the ECCS 'A' Train was out of service for preventive maintenance
- Control Complex Chiller CHHE-1B and associated chill water piping using operating procedure OP-409, Plant Ventilation System, when CHHE-1A was removed from service for preventive maintenance per Work Order 508698 and 508697

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 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; the Florida Power Corporation Analysis of Safe Shutdown Equipment; the Final Safety Analysis Report and sections of Amendment Number 212 to the Crystal River 3 operating license. 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. The inspectors observed performance of weekly fire alarm checks done in accordance with surveillance procedure SP-323, Evacuation and Fire Alarm Demonstration.

- Control Rod Drive Power Supply Area
- Control Complex Ventilation Room
- Main Control Room and Alternate Shutdown Panel
- Cable Spreading Room (Accessible areas)
- 'A' and 'B' ES 480-Volt Switch Gear Room
- 'A' and 'B' Battery Room
- 'A' and 'B' Decay Heat Pump And Building Spray Pump Vaults
- Seawater Room
- Emergency Diesel Generator Rooms

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

Resident Inspector Quarterly Review

a. Inspection Scope

On May 10, the inspectors observed licensed operators response and actions on the Crystal River Unit 3 simulator to Simulator Evaluated Session, SES-13, In addition to responding to some equipment failures, the session required the crew to use plant abnormal and emergency operating procedures to respond to a steam line break outside the reactor building, which subsequently required entry into EOP-05, Excessive Heat Transfer (EHT). The crew was challenged during the EHT event with a failed make-up pump, resulting in pressurizer level lowering at a fast rate. The crew had to address the pressurizer level issue to maintain subcooling margin.

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 including a loss of a mitigating system pump during the EHT event
- Implementation of Emergency Operating Procedures, including EOP-2, Vital System Status Verification; EOP-10, Post Trip Stabilization; 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 Effectiveness

a. Inspection Scope

The inspectors checked planned maintenance activities 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. The inspectors attended the Maintenance Rule Expert Panel Meeting held on 4/13/04. For the four equipment issues described in the Nuclear

Condition Reports (NCRs) 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 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 or 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. Also, the inspectors reviewed the results of licensee Self-assessment Number 114590, maintenance rule 10 CFR 50.65 (a)(3) assessment.

- NCR 118881 and SE04-0036, Makeup System exceeds Maintenance Rule performance criterion, Enter into a(1) and establish goals
- NCR 76622 and SE04-0037, Substation System meets a(1) goals, return to a(2)
- NCR 111677 Tube End Cracks result in Once-Through-Steam-Generator leakage exceeding maintenance rule performance criterion
- NCR 113645 Penetration System Exceeds Maintenance Rule Performance Criteria

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 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 04W13, Revision 1, Work Week Risk Assessment for Condition Yellow during a planned A train Emergency Core Cooling System Outage
- Work Week 04W15 Risk assessment for planned corrective maintenance on Emergency Feedwater Pump EFP-2 under clearance boundary 68152 for auxiliary steam valve ASV-144 that removed auxiliary steam supply from Units 1 and 2
- Work Week 04W16 for preventive maintenance on the Control Complex Chiller CHHE-1A and surveillance testing of emergency diesel generator EGDG-1A per SP-354A revised when the EGDG-1A failed its surveillance requirement to start within 10 seconds (NCR 125075)
- Work Week 04W18, for preventive maintenance on the Service Water Heat Exchanger 1D and surveillance testing of EDG-1B per SP-354B revised when EGDG-1B developed a jacket water cooling leak that required repair (NCR 126195)
- Work Week 04W20, for emergent corrective maintenance on 'B' loop main feedwater temperature, SP-5B-TE2, which failed low during restoration of the 'A' loop SASS card for A main feedwater flow, SP-8A-FY3, per work order 557739.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions

a. Inspection Scope

For the two non-routine events described below, the inspectors either observed the activity or reviewed operator logs and computer data to determine that the evolution was conducted safely and in accordance with plant procedures. Specific checks were done to assess operator performance in coping with non-routine events and transients.

- May 1, 2004, Unexpected opening of power operated relief valve (NCR 125825)
- June 1, 2004, Failure of control rod 8-7 to transfer to normal power supply (NCR 128480) coincident with main generator bus duct high temperature alarm (NCR 128510)

b. Findings

A finding related to this area is documented in 4OA3.3. Otherwise, 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 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 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. The following five issues, including the related NCRs, were specifically checked:

- NCR 123537, Service Water Valve SWV-41 Slow Closing Time
- NCR 95581 Raw Water Pump RWP-2B Vibrations in the Alert Range
- NCR 99737, Decay Heat Closed Cycle Cooling Pump, DCP - 1A Oil Sample for Wear Particle Analysis
- NCR 129175 Four Reactor Coolant Pump Runback Annunciator Alarm
- NCR 124618: Emergency Management Procedure, EM-225F Equipment Found Blocked from Access

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 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-340B, DHP-1A, BSP-1A and Valve Surveillance performed on April 1, after performing maintenance on the ECCS Train 'A' per Work Order Number (WO#) 504265-01, 500724-01, 343286-01, and 343285-01
- Surveillance Procedure SP-344C, Containment Cooling System Fan and Valve Surveillance, performed on April 14, 15, and May 4, after trouble shooting and replacing the speed control valve, per WO# 408412-06
- Liquid Penetrant Test and Surveillance Procedure SP-349B, EFP-2 And Valve Surveillance, performed on April 13, and 14, 2004, respectively, after replacement of EFV-21, per WO# 344147-01
- Surveillance Procedure SP-354A, Monthly Functional Test of the Emergency Diesel Generator EGDG-1A following replacement of the Exciter Voltage Adjust Switch on April 25, 2004, per WO# 550555-1
- Work Order 539801, used to replace and test Once-Thru-Steam-Generator Steam Line Temperature Element, SP-4B-TE, after replacement on June 11, 2004
- Surveillance Procedure SP-354A, Monthly Functional Test of the Emergency Diesel Generator EGDG-1A following replacement of the engine fuel filters on June 16, 2004, per WO# 568043-2

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors checked the following six 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 reviewed included containment air lock IST and RCS inventory surveillance.

- SP-332, Monthly Steam Line and Feedwater Isolation Functional Test performed on March 30, 2004
- SP-181, Containment Air Lock Test performed on April 7 and 8, 2004
- SP-190A, Operability Test Of The Auxiliary Building Fire Detection Instrumentation and Reactor Building Purge and Exhaust Fans POC Detector Interlocks, performed on April 6 through April 12, 2004
- SP-169G, Make-Up Tank Instrumentation Calibration, MU-14-LT1, performed on May 17 and 18, 2004
- SP-349C, EFP-3 and Valve Surveillance, performed on May 27, 2004
- SP-317, RC System Water Inventory Balance, performed June 3 through June 4, 2004

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 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.

- Engineering Change 55148R5, Perform Leak Repair on MSV-28 and Install Yoke Support

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness (EP)

EP1 Exercise Evaluation

a. Inspection Scope

The inspectors reviewed the partial participation emergency exercise and scenario for the biennial 2004 emergency response exercise as required by Section IV.F.2.c of Appendix E to 10 CFR Part 50. The review assessed whether the licensee created a scenario suitable to test the major emergency plan elements in accordance with Appendix E to 10 CFR Part 50.

Licensee activities inspected during the exercise included independent observations in the Control Room Simulator, Emergency Operations Facility, Technical Support Center, Emergency News Center, and Operational Support Center. The exercise was conducted on May 12, 2004. The inspectors reviewed a sample of corrective actions, and determined whether performance trends represented a failure to: correct weaknesses, meet planning standards, or meet other regulatory requirements. The inspectors developed a list of performance areas to be observed in this exercise. The inspectors' evaluation focused on the risk-significant activities of event classification, notification of governmental authorities, onsite protective actions, offsite protective action recommendations, and accident mitigation. The inspectors also evaluated command and control, the transfer of emergency responsibilities between facilities, communications, adherence to procedures, and the overall implementation of the emergency plan. The inspectors attended the post-exercise critique to evaluate the licensee's self-assessment process, as well as the presentation of critique results to plant management.

At the conclusion of these evaluations and independent observations, the inspectors assessed whether the exercise was a satisfactory test of the Emergency Plan and whether the licensee's response to the simulated emergency conditions met the requirements of 10 CFR Part 50.47(b).

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The inspectors reviewed all emergency action level changes against the requirements of 10 CFR 50.54(q) to determine whether they had decreased the effectiveness of the Radiological Emergency Response Plan. The licensee had implemented Revision 24 of the Plan. The inspectors conducted a detailed review of all emergency action level basis changes. The inspectors reviewed documentation of the licensee's 10 CFR 50.54(q) screening evaluations for the referenced revision.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation

a. Inspection Scope

On May 24, 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. 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.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access Control To Radiologically Significant Areas

a. Inspection Scope

- .1 Access Controls. Licensee activities for monitoring workers and controlling access to radiologically significant areas were evaluated. The inspectors reviewed procedural guidance and directly observed implementation of administrative and physical control, appraised radiation worker and technician knowledge of, and proficiency in implementing, radiation protection program activities, and assessed worker exposures to radiation and radioactive material.

Radiological postings and material labeling were directly observed during tours of the turbine and auxiliary buildings. The inspectors took independent surveys in the following areas to verify posted radiation levels and to compare with current licensee survey records: makeup valve alley, makeup and purification pump 'B', decant and slurry valve alley, reactor coolant (RC) waste transfer valve alley, RC waste transfer pumps and 95' penetration area. During the plant tours, control of Locked High Radiation Area (LHRA) and Very High Radiation Area (VHRA) keys and the physical statuses of locked doors were examined. In addition, the inspectors observed radiological controls for nonfuel items stored in the spent fuel pools (SFPs). The inspectors reviewed selected parts of ten Health Physics (HP) related procedures, evaluated eight radiation work permits (RWPs), and discussed current access control program implementation with HP supervisors.

During the onsite inspection, radiological controls for work activities in High Radiation Areas (HRAs) were observed and discussed. The inspectors observed radioactive waste ion exchanger resin sluice and refill activities intermittently over the course of two days. Inspectors also observed activities associated with fuel reconstitution efforts. The inspectors observed workers' adherence to RWP guidance, procedural controls and HP Technician (HPT) proficiency in providing job coverage. Controls for monitoring and limiting exposure to airborne radioactive material were reviewed. The inspectors evaluated electronic dosimeter alarm set points for consistency with radiological conditions for several RWPs.

Inspectors reviewed and discussed the procedures for declared pregnant woman dosimetry processing.

HP program activities were evaluated against 10 CFR Part 20; Technical Specification (TS) Section 5, Administrative Controls; Regulatory Guide (RG) 8.38, Control of Access to High and Very High Radiation Areas in Nuclear Power Plants; and approved licensee procedures. The licensee guidance documents, records, and data reviewed are listed in section 2OS1 of the report Attachment.

- .2 Problem Identification and Resolution. Five NCRs and three audits associated with HPT and radworker practices; radiological controls; personnel monitoring; and exposure assessments were reviewed and discussed with HP supervisors. The inspectors assessed the licensee's ability to identify, characterize, prioritize, and resolve selected issues in accordance with licensee procedure CAP-NGGC-0200, Corrective Action Program, Rev. 11. Specific documents reviewed are listed in the report Attachment.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

- .1 Radiation Monitoring Instrumentation: The inspectors reviewed the material condition of the following area radiation monitors (ARMs): RMG-1 (Control Room), RMG-2 (Primary Lab), RMG-3 (Nuclear Sample Room), RMG-4 (95' Auxiliary Building Entrance Hall by the Post Accident Sampling System Room), and RMG-14 (143' Spent Fuel Cooler Hallway). In addition, the inspectors reviewed the material condition of the only continuous air monitor (CAM) in service at the time of the inspection; air sampler 457, located on the Refueling Floor. The inspectors reviewed calibration records from several ARMs for adequacy. Selected handheld survey instruments, such as Eberline RO-2 portable dose rate ion chambers and Johnson 2000 extenders, were examined for material condition, status of functional and calibration checks, battery condition, and calibration due date. The inspectors also reviewed calibration documentation for several types of instruments, including Gamma 60 portal monitors; HF7A Hand and Foot Monitors; RM-14 Portable Friskers; PCM-1B and -1C personnel monitors; SPM-906 personnel monitors; E-120 portable friskers; RO-2 portable dose rate ion chambers; and AMS-2, RAS-1, and H-809V

air sampling monitors. Inspectors reviewed whole body counter (WBC) nuclide libraries and compared them to the 10 CFR 61 waste stream analysis results. Inspectors observed functional testing of a Gamma 60 portal monitor that was used for whole body counting when the whole body counter was unavailable. Inspectors observed trouble shooting of WBC during calibration. Inspectors observed operation of WBC during pre-inspection visit. Inspectors observed instrument selection and usage during resin transfer activities observed as part of section 2OS1.

Licensee procedures and activities related to radiation monitoring instrumentation were evaluated for consistency with Improved Technical Specifications (ITS) and 10 CFR 20.1501(b). The licensee's instrumentation-related procedures, reports and records reviewed during the inspection are listed in the Attachment.

- .2 Self-Contained Breathing Apparatus (SCBA) Maintenance and User Testing: The inspectors reviewed implementation of the licensee's program for maintenance, use, and training in the use of SCBA. The inspectors visually examined selected SCBA kits and spare oxygen cylinders in their designated storage locations, including the Control Room, for physical condition, state of readiness, and operability. The inspectors interviewed licensee personnel responsible for the direct maintenance and repair of SCBA devices and reviewed the maintenance procedure and its implementation for inspection and repair of the units. The inspectors reviewed training provided to SCBA users and evaluated the training via a "hands on" demonstration of the proper use of the equipment and bottle change-out by an SCBA-qualified individual. The inspectors also observed the SCBA charging station and associated equipment and verified the availability of equipment and replacement bottles. Current records associated with supplied air quality and maintenance activities for staged SCBA equipment were reviewed and discussed. The availability of prescription lens inserts for Control Room staff was also verified by the inspectors.

Licensee procedures and activities related to SCBA were evaluated for consistency with TS requirements and 10 CFR 20.1703. The licensee's SCBA-related procedures, reports, and records reviewed during the inspection are listed in the Attachment.

- .3 Problem Identification and Resolution: The inspectors evaluated selected audits, self-assessments, NCR-documented issues, and Action Requests associated with area radiation monitoring equipment, portable radiation detection instrumentation, and respiratory protective program activities. The inspectors assessed the licensee's ability to characterize, prioritize, and resolve the identified issues in accordance with licensee procedure CAP-NGGC-0200, Corrective Action Program, Rev. 11. The licensee's Corrective Action-related records reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety (PS)

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

.1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems The operability, availability, and reliability of selected effluent process sampling and detection equipment used for routine and accident monitoring activities were reviewed and evaluated. Inspection activities included record reviews and direct observation of equipment configuration and operation. The following effluent monitoring equipment was included in the inspection:

- Radiation Monitor (RM)-A1, Reactor Building Exhaust Monitor
- RM-A2, Auxiliary Building Exhaust Monitor
- RM-A5, Control Area Exhaust Monitor
- RM-L2, Main Liquid Release Monitor
- RM-L7, Liquid Radiation Monitor

During the week of June 22, 2004, the inspectors directly observed process effluent sampling and monitoring equipment material condition, installed configurations (where accessible), and operability; evaluated local and control room data regarding flow rates and channel response checks; and reviewed and evaluated established effluent release set-points. In addition, six effluent release permits completed and documented since August 10, 2002, were reviewed, discussed, and evaluated. The inspectors assessed sample representativeness, radionuclide concentration sensitivities, achieved analyses accuracies, pre-release dose calculation completeness, and adequacy of effluent radiation monitor set-point determinations.

Both the licensee and vendor laboratories' quality control (QC) program activities for liquid and airborne sample radionuclide analyses were evaluated. The inspectors discussed and reviewed, as applicable, laboratory QC activities including current gamma spectroscopy and liquid scintillation detection equipment calibrations and daily system performance results; preparation, processing and storage of composite samples; radionuclide lower limit of detection (LLD) capabilities and achieved accuracies; and results of the quarterly cross-check spiked radionuclide samples analyzed during calendar year (CY) 2003.

The inspectors directly observed and evaluated chemistry staff proficiency in conducting weekly plant vent surveillance activities, including particulate filter and charcoal cartridge change-out. Also, technician proficiency in conducting pre-release processing, sampling, and gamma spectroscopy analyses was observed and evaluated. Interviews were conducted with chemistry technicians to evaluate staff proficiency and knowledge of effluent release requirements, equipment capabilities, and procedural details.

Program guidance, equipment configuration and material condition for the effluent sampling and monitoring equipment were reviewed against details documented in ITS § 5.6.1; 10 CFR Part 20, FSAR §11; Offsite Dose Calculation Manual (ODCM), Rev. 26; ANSI-N13.1-1969, Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities; ANSI-N13.10-1974, ANS Specification and Performance of On-Site Instrumentation for

Continuously Monitoring Radioactivity in Effluents, and approved procedures listed in § 2PS1 of the report Attachment.

In-place liquid effluent release equipment, observed task evolutions, and offsite dose results were evaluated against 10 CFR Part 20 requirements, Appendix I to 10 CFR Part 50 design criteria, ITS § 5.6.1, FSAR § 11 details, ODCM specifications, and applicable procedures listed in § 2PS1 of the report Attachment. Laboratory and sample processing QC activities were evaluated against RG 1.21, Measuring, Evaluating and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials In Liquid and Gaseous Effluents from Light-Water Cooled Nuclear Power Plant, June 1974; and RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment, December 1977.

- .2 Problem Identification and Resolution: Licensee NCR issues documented for effluent processing and monitoring activities were reviewed. The inspectors assessed the licensee's ability to characterize, prioritize, and resolve the identified issues in accordance with licensee procedure CAP-NGGC-0200, Corrective Action Program, Rev. 11. Five NCRs documented in § 2PS1 of the report Attachment were reviewed and evaluated in detail.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program

a. Inspection Scope

- .1 REMP Implementation: The licensee's Annual Radiological Environmental Operating Reports for Calendar Years (CY) 2002 and 2003 were reviewed and discussed with cognizant licensee representatives. The inspectors discussed and evaluated the reported data for trends in radionuclide concentrations, anomalous/missing data, and land-use census information. Quality control (QC) activities and data for selected sample types listed in the reports were reviewed and evaluated including inter-laboratory comparison results, semi-annual self-assessments by the vendor laboratory, lower limit of detection (LLD) determinations, and semiannual air sample pump air flow calibration data.

Equipment operational status and staff proficiency for implementing REMP activities were assessed through review of records, observations of equipment material condition and operating characteristics, assessment of selected sample collection activities, and discussion of collection techniques for sample matrices not directly observed. Collection of weekly air particulate filters/charcoal cartridges and air flow rate determinations were observed at sampling station locations C07, C40, C41, and C46. During observations of air sample collection, the inspectors evaluated the proficiency of collection staff and assessed the adequacy and implementation of selected collection techniques. The placement and material condition of thermoluminescent dosimetry (TLD) equipment were assessed at sample station locations C07, C40, C41, C46, C27, C68, C69, C08, C77, C09,

and C78. The location and condition of sampling locations C07 (drinking water), C13 (seawater), C30 (fish/oyster), and C40 (groundwater) were observed. Using Global Positioning System equipment, the inspectors independently assessed the observed TLD and air sampling locations and compared the current location data to ODCM specified locations.

REMP guidance, implementation, and results were reviewed against ODCM, Rev. 26 guidance and applicable procedures listed in section 2PS3 of the report Attachment.

- .2 Meteorological Monitoring Program: Licensee program activities to assure accuracy and availability of meteorological monitoring data were evaluated through review of calibration and surveillance data and direct observation of equipment and readout data at the primary tower, backup tower, and control room. The inspectors verified consistency between meteorological tower local readouts and control room data. Current calibration data were reviewed and equipment performance, reliability, and conduct of routine surveillances were discussed with cognizant licensee personnel. Meteorological availability data were reviewed and discussed with licensee representatives for the period CY 2002 through CY 2003.

Meteorological instrument operation, calibration, and maintenance were reviewed against details listed in the UFSAR, Chapter 2; NRC Safety Guide 23, Onsite Meteorological Programs-1972; ANSI -3.11-2000, Determining Meteorological Information; Regulatory Guide 1.21, Measuring, Evaluating and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials In Liquid and Gaseous Effluents from Light-Water Cooled Nuclear Power Plant, June 1974; Regulatory Guide 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment, December 1977; and applicable licensee procedures. Reviewed documents and data are listed in section 2PS3 of the report Attachment.

- .3 Unrestricted Release of Materials from the Radiologically Controlled Area (RCA): Radiation protection program activities associated with the unconditional release of potentially contaminated materials from the Hot Shop Health Physics (HP) Service Room and the RCA egress point were evaluated. The evaluation included review of calibration records associated with Integral Tool Monitor (ITM) and Small Article Monitor (SAM) equipment located in the Hot Shop HP Service Room and the RCA exit portal. The inspectors also observed response and alarm checks of two SAMs and one ITM. Source activity and radionuclides used for checks and equipment minimum detectable activities were discussed with an instrument technician. In addition, a low level source, approximately 4500 disintegrations per minute, was used to evaluate monitor sensitivity for selected SAM and ITM equipment.

The Inspectors verified that radiation detection sensitivities were consistent with NRC guidance in IE Circular 81-07 Control of Radioactively Contaminated Material, May 14, 1981, and IE Information Notice 85-92. Documents reviewed are listed in section 2PS3 of the report Attachment.

- .4 Problem Identification and Resolution: Selected licensee Corrective Action Program documents including NCR documents associated with meteorological monitoring activities and unrestricted release of materials from the RCA were reviewed and discussed with responsible licensee representatives. In addition, licensee quality assurance audits and vendor self-assessments associated with REMP activities were reviewed and discussed with cognizant licensee and vendor personnel. The inspectors assessed the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with licensee procedure CAP-NGGC-0200, Corrective Action Program, Rev. 11. Specific documents reviewed and evaluated in detail for these program areas are identified in Section 2PS3 of the report Attachment.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Initiating Event and Mitigating Systems Cornerstone

a. Inspection Scope

The inspectors checked licensee submittals for the PIs listed below for the period April 1, 2003 through March 31, 2004 to verify the accuracy of the PI data reported during that period. Performance Indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 2, were used to check the reporting for each data element. The inspectors checked licensee event reports (LERs), operator logs, daily plant status reports, NCRs, and performance indicator data sheets to verify that the licensee had identified the safety system unavailabilities. The inspectors also verified that there were no scrams with loss of normal heat removal during the review period. The inspectors also checked the accuracy of the number of critical hours reported. In addition, the inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution. The inspectors checked that any deficiencies affecting the licensee's performance indicator program were entered into the corrective action program and appropriately resolved.

- Unplanned Scrams Per 7000 Critical Hrs
- Scrams With Loss of Normal Heat Removal
- Unplanned Power Changes per 7000 Critical Hrs
- Safety System Unavailability, Emergency AC Power

b. Findings

No findings of significance were identified.

.2 Emergency Preparedness Cornerstone

a. Inspection Scope

The inspectors sampled licensee submittals relative to the PIs listed below for the period April 1, 2003 through March 31, 2004. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2, were used to confirm the reporting basis for each data element.

Emergency Preparedness Cornerstone

- Emergency Response Organization (ERO) Drill/Exercise Performance
- ERO Drill Participation
- Alert and Notification System Reliability

For the specified review period, the inspectors examined data reported to the NRC, procedural guidance for reporting PI information, and records used by the licensee to identify potential PI occurrences. The inspectors verified the accuracy of the PI for ERO drill and exercise performance (DEP) through review of a sample of drill records. Additionally, through direct observation, the inspectors assessed the accuracy of the licensee's determinations with respect to the eight DEP PI opportunities during the exercise on May 12, 2004 (see Section 1EP1). The inspectors reviewed selected training records to verify the accuracy of the PI for ERO drill participation for personnel assigned to key positions in the ERO. The inspectors verified the accuracy of the PI for alert and notification system reliability through review of a sample of the licensee's records of periodic system tests. The inspectors also interviewed the licensee personnel who were responsible for collecting and evaluating the PI data. Licensee procedures, records, and other documents reviewed within this inspection area are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.3 Radiation Safety

a. Inspection Scope

The inspectors sampled licensee submittals for the PIs indicated below for the period from May 2003 through April 2004. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 2, were used to verify the basis in reporting for each data element.

Occupational Radiation Safety Cornerstone

- TS High Radiation Area (>1 Rem Per Hour) Occurrences
- Very High Radiation Area Occurrences
- Unintended Exposure Occurrences

The inspectors reviewed NCR records for HRAs, LHRAs, VHRAs, and unplanned exposure occurrences for the period of May 2003 through April 2004 to ensure that nonconformances were properly classified as PIs. The inspectors also reviewed procedural guidance for reporting PI information. Reviewed documents are listed in section 4OA1 of the report Attachment.

Public Radiation Safety Cornerstone

- Radiological Environmental Technical Specifications (RETS)/ODCM Radiological Effluent Occurrences

The inspectors reviewed the Radiological Control Effluent Release Occurrences PI results for the Public Radiation Safety Cornerstone from May 2003 through April 2004. For the assessment period, the inspectors reviewed selected radiological liquid and gaseous effluent release data, OOS process radiation monitors and sampling data, any abnormal release results, procedural guidance for reporting PI information, and screened summaries of NCRs for the period. In addition, the inspectors reviewed monthly PI reports from May 2003 through April 2004.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

.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 are reviewed.

b. Findings

No findings of significance were identified.

.2 Annual Sample Review

a. Inspection Scope

The inspectors selected the following NCR for detailed review and discussion with the licensee. This report was examined to verify whether problem identification was timely, complete and accurate; safety concerns were properly classified and prioritized for resolution; technical issues were evaluated and dispositioned to address operability and reportability; root cause or apparent cause determinations were sufficiently thorough; extent of condition, generic implications, common causes, and previous history were adequately considered; and appropriate corrective actions were implemented or planned in a manner consistent with safety and technical specification compliance. The inspectors evaluated the report against the requirements of the licensee's corrective action program in Administrative Procedures CAP-NGGC-0200, "Corrective Action Program" and 10 CFR 50, Appendix B. Progress Energy Letter to the NRC, Crystal River Unit 3 - Special Report 03-01: Once Through Steam Generator Notifications Required to Mode 4, dated October 31, 2003; Nuclear Condition Report 109383, Once Through Steam Generator (OTSG) Conditioning Monitoring Main Steam Line Break Leakage Results, and Crystal River 3 Maintenance Rule goals for the OTSG system memorandum, dated January 5, 2004 were also reviewed. The inspectors reviewed a listing of plant modifications, planned and deferred.

- NCR 111677, Once-Through-Steam-Generator Projected Main Steam Line Break Leakage Exceeded Maintenance Rule Performance Criteria

b. Findings and Observations

There were no significant licensee performance issues or NRC violations identified by the inspectors regarding these condition reports. The inspectors verified that the apparent cause evaluation and corrective actions were appropriate in relation to the safety significance of the problem.

.3 Semi-Annual Trend Review

a. 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 inspector's review was focused on repetitive equipment issues, but also considered the results of inspector corrective action program item screening discussed in section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The review also included issues documented outside the normal corrective action program, such as the degraded equipment list, daily dose reports, chemistry trends, self-evaluation trend reports, the July to December 2003 System Health Report, the predictive maintenance program, nuclear assessment audit

reports, maintenance rule assessments, and those indicators included in the licensee's Site Key Performance Indicator Report (May 2004). Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy. The inspectors also evaluated the report against the requirements of the licensee's corrective action program and 10 CFR 50, Appendix B.

b. Assessment and Observations

No findings of significance were identified.

4OA3 Event Followup

.1 (Closed) Licensee Event Report (LER) 05000302/2001-005-01: Loss of Steam to the Operating Main Feedwater Pump Results in Actuation of the Emergency Feedwater System.

On February 26, 2004, the licensee submitted a supplemental LER after previously specified corrective actions had been revised. The corrective actions involved the availability of systems required to respond to a loss of main feedwater if a Crystal River 3 nuclear plant outage occurred simultaneously with a shutdown of Crystal River Unit 1 and Unit 2 coal fired plants. The supplemental LER was reviewed by the inspectors and no findings of significance were identified. The licensee documented the problem in NCR 119476. This LER is closed.

.2 (Closed) Licensee Event Report (LER) 0500302/2003-002-00: Main Steam Safety Valve Setpoints Below Required Tolerance Longer Than Allowed by Technical Specifications

On September 29, 2003, the licensee identified that three of the six main steam safety valves (MSSVs) that had been tested were found with lift setpoints below their Improved Technical Specification (ITS) limit of +/- 3 percent. The licensee then tested the remaining six MSSVs. Of the twelve MSSVs tested, six had found as-found setpoints below their nominal tolerance. Each MSSV was declared inoperable and restored to an operable status within 4 hours per ITS 3.7.1. The cause for the tested MSSV as found setpoints being below their nominal tolerance was determined to be test method deficiencies that occurred prior to Refueling Outage 13. The first deficiency was use of higher than expected main steam operating pressures (925 psig to 940 psig vice 910 psig) to set the valves. Also, the test gauge used to measure main steam line pressure was not temperature compensated resulting in inaccurate pressure readings. Another deficiency was the practice of not requiring adjustment of the MSSVs if their as found setpoint was within +/- 3 percent tolerance (e.g. could be left at -2.99 percent), unless the valve was rebuilt. Corrective actions were to revise the test procedure to require as-found set points for MSSVs to be within +/- 1 percent of the nominal value. Since none of the tested MSSVs were found with setpoints above their nominal tolerance, the MSSVs were fully capable of providing OTSG overpressure protection.

The inspectors determined that the applicable ITS Action Statement was complied with once the condition was identified. The licensee assumed that the existence of similar discrepancies in multiple relief valves was an indication that the discrepancies may have

developed during the operating cycle and existed prior to the TS surveillance testing. Therefore, a condition outside of ITS was reported. The licensee documented the problem in NCR 105988. No findings of significance were identified. This LER is closed.

.3 Power Operated Relief Valve Opening Incident

a. Inspection Scope

The inspectors reviewed a one-time test conducted by the licensee from April 30 to May 1, 2004. The test was done to determine if the power operated relief valve (PORV) had developed a seat leak.

b. Findings

Introduction: A Green, NRC identified, Non-Cited Violation (NCV) of Technical Specification 5.6.1.1 was identified for failure to fully implement a procedure which required a 10 CFR 50.59 evaluation to be completed for a one-time test of the PORV. Because the required evaluation was not completed, the licensee had not considered if a license amendment was required to conduct the test. A license amendment consideration would have caused a more detailed review by the licensee of the test, including determination of risk associated with the test. As a result of the oversight, the PORV unexpectedly opened for a very short period while the plant was operating and caused a small pressure transient that challenged the operators.

Description: The inspectors found that from April 30 to May 1, 2004, the licensee conducted a one-time test procedure, CP-140, Operation Evolutions Orders, to determine if the Power Operated Relief Valve (PORV, RCV-10) had developed a seat leak. The test isolated the PORV by closing the upstream block valve, RCV-11, and monitored downstream temperatures; a declining temperature indicated that any existing leak was isolated. After about 30 hours, the block valve was opened and unexpectedly, PORV flow was indicated by acoustic monitoring for about 6 seconds; pressurizer pressure dropped by approximately 5 psi, and reactor coolant drain tank (RCDT) pressure and level increased. The reactor operators checked plant parameters, verified that the transient had stopped and that pressurizer pressure returned to normal, then documented the occurrence in both the operating logs and a Nuclear Condition Report (NCR 125824). The operators concluded that flow existed through the PORV for the few seconds it was open, but the exact amount was indeterminate because of the short duration and inexact change in plant parameters. The operators correctly allowed the block valve to go to full open and did not immediately attempt to shut the valve during the open stroke. When the block valve reached full open, the PORV flow had stopped.

In preparing the CP-140 test, the licensee completed a screen for applicability of a 10 CFR 50.59 review. The licensee determined that the evolution did not create a condition that may exceed operating limits or that could potentially lead to an event that impacts safe operation. The inspectors found that because the PORV would be open with the plant in operation, the test may have resulted in exceeding various operating limits. Also, given that the nature of the valve defect was unknown, the PORV may have failed to re-shut, causing a more serious transient.

Analysis: The performance deficiency in the Initiating Events Cornerstone area was identified for failure to follow procedure in developing a test which unexpectedly resulted in the opening of the PORV with the plant at full power. The finding was greater than minor because it had an actual impact of an open relief valve which is a precursor to a significant event, that being a stuck open relief valve. The occurrence resulted in an increase in the likelihood of a loss of RCS integrity with a stuck open PORV. Using the SDP Phase 1 Screening Worksheet, the Primary system LOCA initiator contributor attribute of the Initiating Events Cornerstone was identified and a Phase 2 SDP was appropriate. The Stuck Open PORV (SORV) Phase II notebook worksheet was analyzed by setting the initiating event frequency to 2 with all mitigating systems set at their nominal value. The value of 2 was used since it most closely reflected the probability of a PORV failing to close following two demands. The worksheet results indicated Green with the dominant accident sequences involving the failure of the PORV block valve to close and the failure of both Emergency Core Cooling System trains. However, an SRA external events review was required. A regional SRA reviewed the performance deficiency and concluded that an external events contribution was not applicable. Therefore, the performance deficiency is categorized as a finding of very low safety of significant (Green).

Enforcement: Technical Specification 5.6.1.1 requires that written procedures covering the activities of Regulatory Guide 1.33, Revision 2, Appendix A, February 1978 be established and implemented. Section 1 of Appendix A requires administrative procedures to ensure procedure adherence. The licensee implements this requirement with procedure PRO-NGGC-0200, Procedure Use and Adherence, which states, in part, that Adherence to Procedures is required. Operating Procedure CP-140, Operations Evolution Orders, required that any evolution that may exceed operating limits or potentially lead to an event that impacts safe operations, include a 10 CFR 50.59 evaluation prior to performing the evolution. Contrary to the above, the CP-140, implemented on April 30, 2004, that could have resulted in exceeding operating limits, failed to include a 10 CFR 50.59 evaluation. As a consequence, the licensee failed to recognize that implementation of CP-140 would result in the PORV opening. As a result the PORV opened for a short period of time and challenged the operating limits for reactor coolant leakage and caused a small pressurizer pressure transient. The violation was the result of human error in screening the CP-140 test without recognizing the potential consequence of cycling the PORV with the plant at full power. The violation existed for the two days that the CP-140 test was implemented, although the plant was vulnerable to an event until June 15, 2004, when the block valve was tagged to prevent inadvertent operation. Because the failure to adequately screen the proposed activity was of very low safety significance and had been entered into the licensee's corrective action program as NCR 130907 this violation is being treated as a Non-Cited Violation, consistent with Section VI.A of the NRC Enforcement Policy, NCV 05000302/2004004-01, Failure to Follow Procedures in 10 CFR 50.59 Screening. This violation was the result of human performance deficiencies in following procedures and in controlling plant configuration.

40A4 Cross Cutting Issues

Section 40A3.3 describes a human performance error where the licensee failed to implement their procedures for design control during a one-time test. As a result, on May 1, 2004, an unexpected small pressure transient occurred when the Power Operated Relief Valve opened with the plant at power. The vulnerability recurred on June 15, 2004, when the block valve was cycled without evaluation, after which the PORV block valve was tagged to prevent inadvertent operation.

40A5 Other Activities

(Discussed) NRC Temporary Instruction (TI) 2515/156, "Offsite Power System Operational Readiness"

a. Scope

The inspectors collected data from licensee maintenance records, event reports, corrective action documents and procedures and through interviews of station engineering, maintenance, and operations staff, as required by the Temporary Instruction (TI) 2515/156. The data was gathered to assess the operational readiness of the offsite power systems in accordance with NRC requirements such as Appendix A to 10 CFR Part 50, General Design Criterion (GDC) 17; Criterion XVI of Appendix B to 10 CFR Part 50, Plant Technical Specifications (TS) for offsite power systems; 10 CFR 50.63; 10 CFR 50.65 (a)(4), and licensee procedures. Documents reviewed for this TI are listed in the attachment.

b. Findings

No findings of significance were identified. Based on the inspection, no immediate operability issues were identified. In accordance with TI 2515/156 reporting requirements, the inspectors provided the required data to the headquarters staff for further analysis.

40A6 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 July 1, 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.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

J. Huegel, 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:

V. McCree, Director, Division of Reactor Projects, NRC Region II
J. Munday, Chief, Reactor Projects Branch 3, NRC Region II

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000302/2004004-01	NCV	Failure to Follow Procedures in 10 CFR 50.59 Screening (Section 40A3)
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Closed

05000302/2001-005-01	LER	Loss of Steam to the Operating Main Feedwater Pump Results in Actuation of the Emergency Feedwater System (Section 40A3)
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05000302/2003-002-00	LER	Main Steam Safety Valve Setpoints Below Required Tolerance Longer Than Allowed by Technical Specifications (section 40A3)
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Discussed

NRC Temporary Instruction (TI) 2515/156, "Offsite Power System Operational Readiness" (Section 40A5)

LIST OF DOCUMENTS REVIEWED

List of Documents Reviewed

Sections 1EP1, 1EP4: Radiological Emergency Plan and Implementing Procedures

EM-102, Operation of the Technical Support Center, Rev. 46
EM-104, Operation of the Operational Support Center, Rev. 9
EM-202, Duties of the Emergency Coordinator, Rev. 72
Radiological Emergency Response Plan, Rev. 24
Lesson Number NUCST-2030, Severe Accident Management at CR-3, Rev. 1
Lesson Number ST-2004, TSC/OSC Emergency Response and Communications Training,
Rev. 0

Section 40A1: Performance Indicator Verification

Documentation (scenario, time line, event notification forms) for ERO drills on 03/09/2004 and
03/23/2004
Documentation (scenario, event notification forms, evaluator critiques) for Licensed Operator
simulator evaluations on 04/14/2003, 04/21/2003, 06/09/2003, 01/16/2004, 02/12/2004
Documentation (Weekly Tests Siren System Availability Test Records: Second Quarter 2003,
Third Quarter 2003, Fourth Quarter 2003, and First Quarter 2004)

Section 40A5: Other Activities

Progress Energy Interorganizational Agreement NGGM-IA-0031, dated February 3, 2003
Progress Energy Procedure, SORMF-TD-08, Crystal River 230 KV and 500 KV Loss of Coolant
Accident Voltage Criteria
Crystal River Design Calculation E-90-0077, Revision 3