



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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July 17, 2009

Mr. Jon A. Franke, Vice President
Crystal River Nuclear Plant (NA1B)
Supervisor, Licensing &
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15760 West Power Line Street
Crystal River, FL 34428-6708

SUBJECT: CRYSTAL RIVER UNIT 3 – NRC INTEGRATED INSPECTION REPORT
05000302/2009003 and 05000302/2009501

Dear Mr. Franke:

On June 30, 2009, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Crystal River Unit 3. The enclosed inspection report documents the inspection findings, which were discussed on July 6, 2009, with Mr. J. Holt and other members of your staff.

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

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the 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/

Marvin D. Sykes, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

cc w/encl.: (See page 2)

Enclosure: Inspection Report 05000302/2009003 and 05000302/2009501
w/Attachment: Supplemental Information

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Letter to Jon A. Franke from Marvin D. Sykes dated July 17, 2009

SUBJECT: CRYSTAL RIVER UNIT 3 – NRC INTEGRATED INSPECTION REPORT
05000302/2009003 and 05000302/2009501

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RIDSNRRDIRS

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RidsNrrPMCrystal River Resource

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No: 50-302

License No: DPR-72

Report Nos.: 05000302/2009003 and 05000302/2009501

Licensee: Progress Energy (Florida Power Corporation)

Facility: Crystal River Unit 3

Location: Crystal River, FL

Dates: April 1, 2009 – June 30, 2009
May 4, 2009 – May 09, 2009

Inspectors: T. Morrissey, Senior Resident Inspector
R. Reyes, Resident Inspector
J. Heath, Project Engineer
L. Miller, Senior Emergency Preparedness Inspector (Sections 1EP2,
1EP3, 1EP4, 4OA1.2 and 4OA5.2)

Approved by: M. Sykes, Chief,
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000302/2009003; 04/01/2009-06/30/2009; IR 05000302/2009501; 05/04/2009-05/08/2009; Crystal River Unit 3; Routine Integrated Report.

The report covered a three month period of inspection by resident inspectors, a region based project engineer, and a region based senior emergency preparedness inspector. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process", Revision 4, dated December 2006.

A. NRC Identified & Self-Revealing Findings

No findings of significance were identified.

B. Licensee Identified Violations

None

REPORT DETAILS

Summary of Plant Status:

Crystal River 3 began the inspection period at 100 percent rated thermal power (RTP). On April 21 the unit was reduced to approximately 90 percent RTP for planned secondary system work. The unit was returned to 100 percent RTP on April 23. On May 20 the unit was reduced to approximately 87 percent RTP to support planned surveillance testing. The unit was restored to 100 percent RTP on May 21. The unit remained at essentially 100 percent for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

R01 Adverse Weather Protection

.1 Adverse Weather Protection: Hurricane Season Preparation

a. Inspection Scope

The inspectors reviewed the licensee's hurricane season preparations using the licensee's Emergency Management Procedure EM-220, Violent Weather. 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 five plant areas listed below to check for any vulnerabilities, such as inadequate sealing of water tight penetrations, 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. Documents reviewed are listed in the attachment. Nuclear condition reports (NCRs) were reviewed to verify that the licensee was identifying and correcting adverse weather protection issues.

- Emergency diesel generator rooms
- Control complex flood walls and doors
- South berm area and intake canal area
- Turbine building flood walls and doors
- Auxiliary building sea water room

b. Findings

No findings of significance were identified.

.2 Adverse Weather Protection: External Flooding

a. Inspection Scope

The inspectors performed an inspection of the external flood protection features for Crystal River, Unit 3. The inspectors reviewed the Final Safety Analysis Report

(FSAR), Chapter 2.4.2.4 Facilities Required for Flood Protection that depicted the design flood levels and protection areas containing safety-related equipment to identify areas that may be affected by external flooding. The inspectors conducted a general site walkdown of all external areas of the plant including the turbine building, auxiliary building, and berm to ensure that flood protection measures were erected in accordance with design specifications. Procedure EM-220, Violent Weather, was checked to verify that adequate measures were planned or 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. The documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.3 Adverse Weather Protection: Offsite and Alternate AC Power System Readiness

a. Inspection Scope

The inspectors evaluated the summer readiness of both the off-site and on-site alternate AC power systems. The inspectors walked down the safety-related emergency diesel generators (EGDG-1A, 1B), non-safety-related emergency diesel generator (EGDG-1C), and the safety-related diesel driven emergency feedwater pump (EFP-3) to verify they would be available during a loss of off-site power event. The inspectors performed a walkdown of the switchyard with plant personnel to verify material condition of the offsite power sources was adequate. Open work orders (WO) for the offsite and onsite AC power systems were reviewed to ensure degraded conditions were properly addressed. The inspectors verified that licensee and transmission system operator procedures contained communication protocols addressing the exchange of appropriate information when issues arise that could impact the offsite power system. The inspectors verified that no equipment or operating procedure changes have occurred since the last performance of this inspection that would potentially affect operation or reliability of the offsite or onsite AC power systems. The documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.4 Adverse Weather Protection: Tornado Watch

a. Inspection Scope

On April 14, 2009, the inspectors evaluated the licensee's preparations when the site was informed of being in a tornado watch. The licensee implemented procedure EM-220, Violent Weather, for the tornado watch. The inspectors walked down the outside protective area to ensure actions required by EM-220 were implemented.

b. Findings

No findings of significance were identified. The tornado watch expired with no violent weather or tornado formation.

R04 Equipment Alignment

Partial Equipment Walkdowns

a. Inspection Scope

The inspectors performed walkdowns of the critical portions of the selected trains to verify correct system alignment. The inspectors reviewed plant documents to determine the correct system and power alignments, and the required positions of select valves and breakers. The inspectors verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact mitigating system availability. The inspectors verified the following three partial system alignments in system walkdowns using the listed documents:

- Makeup pumps MUP-1A and MUP-1C using operating procedure OP-402, Makeup and Purification System, while makeup pump MUP-1B was out of service for planned maintenance
- Decay heat closed cycle (DC) system and feedwater pump FWP-7 using OP-404, Decay Heat Removal System, and OP-605, Feedwater System, while MUP-1C was out of service during planned maintenance
- Raw water pump RWP-2A and service water pump SWP-1A, using OP-408, Nuclear Services Cooling System, while emergency diesel generator EGDG-1B was out of service for planned maintenance

b. Findings

No findings of significance were identified.

R05 Fire Protection

Fire Area Walkdowns

a. Inspection Scope

The inspectors walked down accessible portions of the plant to assess the licensee's implementation of the fire protection program. The inspectors checked that the areas were free of transient combustible material and other ignition sources. Also, fire detection and suppression capabilities, fire barriers, and compensatory measures for fire protection problems were verified. The inspectors checked fire suppression and detection equipment to determine whether conditions or deficiencies existed which could impair the function of the equipment. The inspectors selected the areas based on a review of the licensee's probabilistic risk assessment. The inspectors also reviewed the licensee's fire protection program to verify the requirements of FSAR Section 9.8, Plant Fire Protection Program, were met. Documents reviewed are listed in the attachment. The inspectors toured the following five areas important to reactor safety:

- Emergency diesel generator EGDG-1C building
- Cable spreading room
- Feedwater pump FWP-7 area
- Control rod drive room
- A and B train vital battery rooms

b. Findings

No findings of significance were identified.

R06 Flood Protection Measures

Internal Flood Protection

a. Inspection Scope

The Inspectors reviewed the Crystal River Unit 3, FSAR, Chapter 2.4.2.4, Facilities Required for Flood Protection, and the Crystal River Unit 3 Design Basis Documents that depicted protection for areas containing safety-related equipment to identify areas that may be affected by internal flooding. A walkdown of the makeup pump area was conducted to ensure that flood protection measures were in accordance with design specifications. Specific plant attributes that were checked included structural integrity, sealing of penetrations, and operability of sump systems.

b. Findings

No findings of significance were identified.

R07 Heat Sink Performance

Annual Review

a. Inspection Scope

The inspectors observed maintenance personnel perform heat exchanger inspections and cleaning for the two listed heat exchangers. The inspector observed as-found conditions when the heat exchangers were opened for inspection and tube cleaning to verify the heat exchangers were in an acceptable condition to perform their design function. The documents reviewed are listed in the attachment.

- Service water heat exchanger SWHE-1A
- Service water heat exchanger SWHE-1B

b. Findings

No findings of significance were identified.

R11 Licensed Operator Regualification Program

Resident Inspector Quarterly Review

a. Inspection Scope

On April 28, the inspectors observed and assessed licensed operator crew response and actions for the Crystal River Unit 3 licensed operator simulator evaluated session SES-11. Session SES-11 involved a plant runback, a plant trip, and a steam line break outside containment. The inspectors observed the operator's use of abnormal procedures; AP-545, Plant Runback; and emergency operating procedures; EOP-02, Vital System Status Verification; and EOP-05, Excessive Heat Transfer. The operator's actions were verified to be in accordance with the above procedures. Event classification and notifications were verified to be in accordance with emergency management procedure EM-202, Duties of the Emergency Coordinator. The simulator instrumentation and controls were verified to closely parallel those in the actual control room. The inspectors evaluated the following attributes related to crew performance:

- Clarity and formality of communication
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Correct use and implementation of abnormal and emergency operation procedures; and emergency plan implementing procedures
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by supervision, including ability to identify and implement appropriate Technical Specification (TS) actions, regulatory reporting requirements, and emergency plan classification and notification
- Crew overall performance and interactions

b. Findings

No findings of significance were identified.

R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the licensee's effectiveness in performing routine maintenance activities. The review included an assessment of the licensee's practices associated with the identification, scope, and handling of degraded equipment conditions, as well as common cause failure evaluations and the resolution of historical equipment problems. For those systems, structures, and components within the scope of the Maintenance Rule (MR) per 10 CFR 50.65, the inspectors verified that reliability and unavailability were properly monitored and that 10 CFR 50.65 (a)(1) and (a)(2) classifications were justified in light of the reviewed degraded equipment condition. The documents reviewed are listed in the attachment. The inspectors conducted this inspection for the following two equipment issues:

- NCR 308393, SWP-1A South pump inboard bearing vibration in alert
- NCR 286943, EFV-11 closed without operator action

b. Findings

No findings of significance were identified.

R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the risk impact associated with those activities listed below and verified the licensee's associated risk management actions were adequate. This review primarily focused on equipment determined to be risk significant within the maintenance rule. The inspectors also assessed the adequacy of the licensee's identification and resolution of problems associated with risk management including emergent work activities. The licensee's implementation of compliance procedure CP-253, Power Operation Risk Assessment, was verified in each of the following six work week assessments.

- Work Week 09W13, Operations with decay heat valve DHV-12 unavailable due to planned maintenance, and separately with emergency diesel generator EGDG-1B unavailable due to surveillance testing
- Work Week 09W17, Operations with yellow risk condition with makeup pump MUP-1C out of service for planned maintenance and separately a yellow risk condition during an unplanned loss and recovery of an engineered safeguards 480 volt motor control center (3B1)
- Work Week 09W19, Operations with individually out of service for planned maintenance EGDG-1A and SWP-1A
- Work Week 09W20, Operations with raw water pump RWP-3A out of service for planned maintenance and Appendix R chiller CHHE-2 out of service for emergent maintenance
- Work Week 09W21, Operations with EGDG-1B out of service for planned maintenance and emergent work on one channel of the reactor coolant pump power monitor
- Work Week 09W22, Operations with feedwater pump FWP-7, SWP-1B and the alternate AC emergency diesel generator EGDG-1C individually out of service for planned maintenance

b. Findings

No findings of significance were identified.

R15 Operability Evaluations

The inspectors reviewed the following five NCRs to verify operability of systems important to safety was properly established, that the affected components or systems remained capable of performing their intended safety function, and that no unrecognized increase in plant or public risk occurred. The inspectors determined if operability of systems or components important to safety was consistent with TS, the

FSAR, 10 CFR Part 50 requirements, and when applicable, NRC Inspection Manual, part 9900, Technical Guidance, Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety. The inspectors reviewed licensee NCRs, work schedules, and engineering documents to check if operability issues were being identified at an appropriate threshold and documented in the corrective action program, consistent with 10 CFR 50, Appendix B requirements; and licensee procedure CAP-NGGC-200, Corrective Action Program.

- NCR 330057, During engineered safeguards testing, waste disposal system valve WSV-5 closed rendering RM-A6 inoperable
- NCR 328886, RWP-3B low differential pressure margin
- NCR 322371, Raw water piping unqualified coatings
- NCR 335745, Service water leakage exceeded MR limit
- NCR 339361, Two pieces of urethane coating found in service water heat exchangers

R18 Plant Modifications

Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed one temporary modification listed below and the associated 10 CFR 50.59 screening against the system design basis documentation and FSAR to verify the modification did not adversely affect the safety functions of important safety systems. Additionally, the inspectors reviewed licensee procedure EGR-NGGC-00005, Engineering Change, to assess if the modification was properly developed and implemented.

- NCR 335794, Temporary repair of vital bus transformer VBTR– 4D capacitor connection.

b. Findings

No findings of significance were identified.

R19 Post Maintenance Testing

a. Inspection Scope

The inspectors witnessed and/or reviewed post-maintenance test procedures an/or test activities, as appropriate, for selected risk significant systems to verify whether: (1) testing was adequate for the maintenance performed; (2) acceptance criteria were clear, and adequately demonstrated operational readiness consistent with design and licensing basis documents; (3) test instrumentation had current calibrations, range, and accuracy consistent with the application; (4) tests were performed as written with applicable prerequisites satisfied, and (5) equipment was returned to the status required to perform its safety function. The seven post-maintenance tests reviewed are listed below:

- SP- 340C, MUP-1A, MUP-1B and Valve Surveillance, after performing maintenance on makeup pump MUP-1B per WO 1357282
- SP-340F, MUP-1C and Valve Surveillance, after performing planned maintenance on MUP-1C and associated valves per WOs 817870 , 1360409, and 1327512
- SP-354A, Monthly Functional Test of the Emergency Diesel Generator EGDG-1A, and OP-707, Operation of the ES Emergency Diesel Generators, after performing maintenance on EGDG-1A per WOs 1350162, 1064423 and 1382571
- SP-344A, RWP-2A, SWP-1A and Valve Surveillance, after performing maintenance on SWP-1A per WOs 1140146, 1179643, and 1466316
- SP-332, Monthly Steam Line and Feedwater isolation Functional Test, after performing planned maintenance on main steam solenoid valves MSV-411-SV4 and MSV-414-SV4 per WO 1035984
- SP-354B, Monthly Functional Test of the Emergency Diesel Generator EGDG-1B, and OP-707, Operation of the ES Emergency Diesel Generators after performing maintenance on EGDG-1B per WOs 1064422, 1312569 and 1348361
- SP-112P, Reactor Protection System Reactor Coolant Pump Power Monitor Calibration (Partial) after performing emergent maintenance on the reactor coolant pump power monitor per WO 1556566

b. Findings

No findings of significance were identified.

R22 Surveillance Testing

a. Inspection Scope

The inspectors observed and/or reviewed six surveillance tests listed below to verify that TS surveillance requirements were followed and that test acceptance criteria were properly specified. The inspectors verified that proper test conditions were established as specified in the procedures, that no equipment preconditioning activities occurred, and that acceptance criteria had been met. Additionally, the inspectors also verified that equipment was properly returned to service and that proper testing was specified and conducted to ensure that the equipment could perform its intended safety function following maintenance or as part of surveillance testing.

In-Service Test:

- SP-340B, DHP-1A, BSP-1A and Valve Surveillance

Surveillance Test:

- SP-354A, Monthly Functional Test Of The Emergency Diesel Generator EGDG-1A
- SP-340D, RWP-3B, DCP-1B and Valve Surveillance (RWP-3B only, increase frequency surveillance)
- SP-146A, Emergency Feedwater Initiation and Control (EFIC) Monthly Functional Test
- SP-130, Engineered Safeguards Monthly Functional Test
- SP-101, Moderator Temperature Coefficient Determination at 300 PPM Boron

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

EP2 Alert and Notification System Testinga. Inspection Scope

The inspector evaluated the adequacy of licensee's methods for testing the alert and notification system in accordance with NRC Inspection Procedure 71114, Attachment 02, "Alert and Notification System Evaluation." The applicable planning standard 10 CFR Part 50.47(b)(5) and its related 10 CFR Part 50, Appendix E, Section IV.D requirements were used as reference criteria. The criteria contained in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, also were used as a reference.

The inspector reviewed various documents which are listed in the Attachment to this report. This inspection activity satisfied one inspection sample for the alert and notification system on a biennial basis.

b. Findings

No findings of significance were identified.

EP3 Emergency Response Organization (ERO) Augmentationa. Inspection Scope

The inspector reviewed the licensee's Emergency Response Organization (ERO) augmentation staffing requirements and process for notifying the ERO to ensure the readiness of key staff for event response and timely facility activation. The qualification records of key position ERO personnel were reviewed to ensure all ERO qualifications were current. A sample of problems identified from augmentation drills or system tests performed since the last inspection were reviewed to assess the effectiveness of corrective actions.

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The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, "Emergency Response Organization Staffing and Augmentation System." The applicable planning standard, 10 CFR 50.47(b)(2) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspector reviewed various documents which are listed in the Attachment to this report. This inspection activity satisfied one inspection sample for the ERO staffing and augmentation system on a biennial basis.

b. Findings

No findings of significance were identified.

EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope

Since the last NRC inspection of this program area, Revision 28 of the Radiological Emergency Response Plan was implemented based on the licensee's determination, in accordance with 10 CFR 50.54(q), that the changes resulted in no decrease in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The inspector conducted a sampling review of the Plan changes and implementing procedure changes made between May 1, 2008, and April 30, 2009, to evaluate for potential decreases in effectiveness of the Plan. However, this review was not documented in a Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, "Emergency Action Level and Emergency Plan Changes." The applicable planning standard (PS), 10 CFR 50.47(b)(4) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspector reviewed various documents which are listed in the Attachment to this report. This inspection activity satisfied one inspection sample for the emergency action level and emergency plan changes on an annual basis.

b. Findings

No findings of significance were identified.

EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspector reviewed the corrective actions identified through the Emergency Preparedness program to determine the significance of the issues and to determine if repeat problems were occurring. The facility's self-assessments and audits were reviewed to assess the licensee's ability to be self-critical, thus avoiding complacency and degradation of their emergency preparedness program. In addition, the inspector

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reviewed licensee's self-assessments and audits to assess the completeness and effectiveness of all emergency preparedness related corrective actions.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 05, "Correction of Emergency Preparedness Weaknesses." The applicable planning standard, 10 CFR 50.47(b)(14) and its related 10 CFR 50, Appendix E requirements were used as reference criteria. The inspector reviewed various documents which are listed in the Attachment to this report. This inspection activity satisfied one inspection sample for the correction of emergency preparedness weaknesses on a biennial basis.

Findings

No findings of significance were identified.

EP6 Drill Evaluation

Emergency Preparedness Drill

a. Inspection Scope

The inspectors observed and reviewed two emergency response activities to verify the licensee was properly classifying emergency events, making the required notifications, and appropriate protective action recommendations. 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 50.72. Emergency activities were verified 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. Additionally, the inspectors verified that adequate licensee critiques were conducted in order to identify performance weaknesses and necessary improvements.

- April 28, licensed operator simulator evaluated session SES-11, involving a plant runback, unit trip, and a main steam leak outside containment
- June 30, licensee emergency response drill involving a fuel handling accident, a steam generator tube rupture, a steam line break and other complicating events

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

OA1 Performance Indicator (PI) Verification

.1 Initiating Events and Mitigating Systems Cornerstones

a. Inspection Scope

The inspectors checked the accuracy of the two performance indicators listed below. Performance indicator data submitted from April 2008 through March 2009 was compared for consistency to data obtained through the review of chemistry department records, monthly operating reports, and control room records. Performance indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 5, were used to check the reporting for each data element. Surveillance procedures SP-317, Reactor Coolant System Water Inventory Balance, and SP-702A, Reactor Coolant Dose Equivalent I-131 were reviewed.

- Reactor coolant system activity
- Reactor coolant system leakage

b. Findings

No findings of significance were identified.

.2 Emergency Preparedness Cornerstone

a. Inspection Scope

The inspector sampled licensee submittals relative to the PIs listed below for the period April 2008 through December 2008. 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 5, were used to confirm the reporting basis for each data element.

Emergency Preparedness Cornerstone

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

For the specified review period, the inspector examined data reported to the NRC, procedural guidance for reporting PI information, and records used by the licensee to identify potential PI occurrences. The inspector verified the accuracy of the PI for ERO drill and exercise performance through review of a sample of drill and event records. The inspector 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 inspector 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 inspector 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.

OA2 Identification and Resolution of Problems

.1 Daily Review

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished by attending daily plant status meetings, interviewing plant operators and applicable system engineers, and accessing the licensee's computerized database.

b. Findings

No findings of significance were identified.

.2 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 CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in section 4OA2.1 above, plant status reviews, plant tours, and licensee trending efforts. The inspectors' review nominally considered the six month period of January 2009 through June 2009. The review also included issues documented in the licensee's Equipment Performance Priority List dated June 29, 2009; 1st quarter 2009 departmental CAP Rollup & Trend Analysis reports, various nuclear assessment section reports and maintenance rule (MR) reports. Corrective actions associated with a sample of the issues identified in the licensee's corrective action program were reviewed for adequacy.

b. Assessment and Observations

No findings of significance were identified. The inspectors evaluated the licensee's trend methodology and observed that the licensee had performed a detailed review. The inspector's review of licensee performance over the last six months noted one negative trend as discussed below.

The inspectors identified a negative trend associated with implementation of the licensee's on-line 10 CFR 50.65 a(4) risk assessment. Over the last 6 months, the

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inspectors identified four discrepancies associated with on-line risk assessment. Two discrepancies resulted in an inaccurate risk assessment. An Equipment out of Service (EOOS) software modeling issue resulted in a lower indicated risk for a tagged out emergency diesel generator compared to the same diesel later undergoing surveillance testing. The inspectors also identified that EOOS was not updated for a decay heat closed cycling cooling pump (DCP) breaker replacement. This observation resulted in the identification of a vulnerability associated with maintenance that does not require a clearance (tagout). The impact on the risk assessment was minimal since the DCP's supported system which was also out of service was adequately reflected in EOOS. The inspectors identified a third risk assessment that was changed without going through the formal review process. The risk profile was changed without issuing a new revision number. The inspectors identified a fourth risk assessment that had not been posted, as required, to the internal on-line scheduling Web site. The licensee documented the above issues in the corrective action program. Documents reviewed are listed in the attachment.

.3 Annual Sample Review

a. Inspection Scope

The inspectors reviewed priority one NCR 333515 that addressed an arc flash incident (short to ground) during test equipment installation that resulted in a loss of a 480 volt engineered safeguards motor control center (MCC) and its associated loads. The inspectors checked that the issue had been completely and accurately identified in the licensee's corrective action program, safety concerns were properly classified and prioritized for resolution, root cause determination was sufficiently thorough, and appropriate corrective actions were initiated. The inspectors also evaluated the NCR using the requirements of the licensee's CAP as delineated in corrective action procedure CAP-NGGC-200, Corrective Action Program.

b. Findings and Observations

The inspectors found that the licensee's investigation of the loss of the MCC and associated corrective actions were both comprehensive and thorough. The regulatory aspects of the event will be reviewed during the closure of the event's licensee event report (LER 50-302/2009-002-00) during a subsequent NRC inspection.

.4 Annual Sample Review

a. Inspection Scope

The inspectors reviewed NCR 317302 which was a priority one NCR that addressed a failure to open of a main feedwater isolation valve during reactor power ascension. The inspectors checked that the issues had been completely and accurately identified in the licensee's corrective action and maintenance rule programs, and that safety concerns were properly classified and prioritized for resolution, apparent cause determination was sufficiently thorough and appropriate corrective actions assignments and maintenance rule (MR) a(1) goals were implemented in a manner consistent with the licensee's program procedures.

b. Findings and Observations

No findings of significance were identified. The inspectors found that the investigation of the valve failure, including the root cause and review of operating experience, was thorough and complete, and the assigned corrective actions were comprehensive. The inspector found that prior to this failure, the main feedwater system had been entered into MR a(1) and goals had been established and were being monitored. As a result of this failure however, those a(1) goals had been exceeded. In reviewing the MR a(1) aspects of this failure, the inspector found that the NCR did not include an evaluation describing the main feedwater system having exceeded the MR a(1) goals. Corrective action procedure, CAP-NGGC-200, requires that a priority 2A NCR be initiated when maintenance rule a(1) goals are not met. The inspectors attended the maintenance rule expert panel meeting held on April 21, in which the panel discussed the feedwater system having exceeded the MR a(1) goals, but as described above, this information had not been captured in the CAP. The licensee initiated NCR 335315 to document exceeding the main feedwater system MR a (1) goals and the maintenance rule expert panel results.

OA3 Event Follow-up

Operator Performance During Non-Routine Event

a. Inspection Scope

For the one non-routine plant evolution described below, the inspectors reviewed the operating crew's performance, operator logs, control board indications, and the plant computer data to verify that operator response was in accordance with plant procedures.

- April 30, Loss of engineered safeguards motor control center (MCC) 3B1 due to a short to ground (arc) when installing test equipment

b. Findings

No findings of significance were identified.

OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

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b. Findings

No findings of significance were identified.

.2 (Closed) NRC Temporary Instruction (TI) 2525/175, Emergency Response Organization, Drill/Exercise Performance Indicator, Program Review

The inspector completed Temporary Instruction TI 2515/175, Emergency Response Organization, Drill/Exercise Performance Indicator, Program Review. Appropriate documentation of the results was provided to NRC, HQ, as required by the TI.

OA6 Meetings, Including Exit

Exit Meeting Summary

On July 6, 2009, the resident inspectors presented the inspection results to Mr. J. Holt, Plant General Manager, and other members of licensee management. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

J. Holt, Plant General Manager
J. Dufner, Manager, Maintenance
S. Cahill, Manager, Engineering
J. Huegel, Manager, Nuclear Oversight
R. Hons, Manager Training
C. Morris, Manager, Operations
D. Westcott, Supervisor, Licensing
B. Akins, Superintendent, Radiation Protection
C. Poliseo, Supervisor, Emergency Preparedness
J. Stephenson, Manager, Fleet Emergency Preparedness
I. Wilson, Manager Outage and Scheduling
J. Franke, Vice President, Crystal River Nuclear Plant

NRC personnel:

M. Sykes, Chief, Branch 3, Division of Reactor Projects

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Closed

05000302/2525/175 TI Emergency Response Organization, Drill/Exercise
Performance Indicator, Program Review

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

AP-730, Grid Instability
AI-513, Seasonal Weather Preparations
NGGM-IA-0003, Transmission Interface Agreement for Operation, Maintenance, and
Engineering Activities at Nuclear Plants
AP-1040, Aux Building Flooding
AP-1050, Turbine Building Flooding

Work Orders

1325426, Inspect water tight doors and flood gates
1538523, Repair flood door 5

Section 1R05: Fire ProtectionProcedures

AI-2205A, Pre Fire Plan – Control Complex
 AI-2205B, Pre Fire Plan – Turbine Building
 AI-2205C, Pre Fire Plan – Auxiliary Building
 AI -2205F, Pre Fire Plan – Miscellaneous buildings and Components
 SP-804, Surveillance of Plant Fire Brigade Equipment

Section 1R07: Heat Sink PerformanceProcedures

PM-275, General Preventative Maintenance

Work orders

WO 1417620 SWHE-1A, Shoot and clean with scrapers
 WO 1395612 SWHE-1B, Shoot and clean with scrapers

Section 1R12: Maintenance EffectivenessNuclear Condition Reports

NCR 185525, SWP-1A south shaft sleeve leakage, rework
 NCR 290305, SWP-1A shaft sleeve defect
 SE09-0022, “A” Train SW System Unavailability Adjustment
 SE09-0019, FW system exceeded (a)(1) goal for lost generation

Maintenance Work Orders

WO 1382773, Troubleshoot/repair EFV-11

Section 1EP2: Alert and Notification System TestingProcedures

Citrus County Radiological Emergency Response Procedure REP SOP-11, Operation of the
 Emergency Sirens, Rev. February 2009
 EPSG [Emergency Preparedness Staff Guidance]-020, Alert and Notification System, Rev. 0

Records and Data

Crystal River Unit 3 Siren log 10/01/07 - 05/04/09
 Documentation of weekly full-volume ANS tests,
 Selected ANS repair and annual preventive maintenance records, 06/05/2007 - 03/17/2009

Section 1EP3: Emergency Response Organization (ERO) Augmentation

Procedures

EM-206, Emergency Plan Roster Notification, Rev. 105
 AI-4000, Conduct of Emergency Preparedness and Schedule for Radiological Emergency Response Plan Maintenance, Rev. 9
 AI-4001, Conduct of Drills and Exercises Supporting the Radiological Emergency Response Plan, Rev. 2

Records and Data

Radiological Emergency Response Plan 11/11/2008 and 11/18/2008 Training Drills Report
 Radiological Emergency Response Plan 3/30/2009 Unannounced Staffing Drill Report
 2008 Annual Radiological Emergency Response Plan Training Drill and Exercise 04/23/2008 and 05/21/2008
 2008 4th Qtr ERO Pager test
 2009 1st Qtr Augmentation Drill
 2008 2nd, 3rd, and 4th Qtr Augmentation Drill
 Review of ERO position qualifications for selected individuals

Section 1EP4: Emergency Action Level (EAL) and Emergency Plan Changes

Change packages for Plans and Procedures

Radiological Emergency Response Plan, Rev. 28
 EM-202, Duties of the Emergency Coordinator, Rev. 85
 EM-402, Emergency Operations Facility Technical Support Team, Rev. 3
 ENG-NGGC-002, Off-site Dose Assessment, Rev. 0

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

Audits and Self-Assessments

C-EP-09-01, Emergency Preparedness Assessment, February 27, 2009
 C-EP-08-01, Emergency Preparedness Program Mid-Cycle Review, January 28, 2008
 321968, Quick Hit Self-Assessment Report, 03/06-06/2009
 260672, Formal Self-Assessment Report, 12/02-04/2008
 222461, Formal Self-Assessment Report, 08/13-21/2007
 260588, Bench Mark Report, Dose Assessment, 08/25-28/2008

NCR Action Request Documents

00280393, Individual entered unauthorized security area during drill
 00285849, PQD qualification groups incorrectly inactivated
 00285983, T-1 failure at CR3 EOF
 00286400, RM-L2 failure
 00310772, Development of siren preventive maintenance program
 00316897, Some filling EOF functions may challenge the required activation time
 00318461, Missed emergency classification opportunity

00332650, Primary MET tower readings step changed after SP-157A Weekly

Section 4OA1: Performance Indicator (PI) Verification

Procedures

CP-217, NRC Performance Indicator (PI) Program, Rev. 9
Uncontrolled Reference and Assistance Document NRC Reactor Oversight Process (ROP)
Performance Indicator (PI) Program, Rev. 0

Records and Data

Documentation of DEP opportunities: 2nd, 3rd, and 4th Quarters 2008
Drill and exercise participation records of ERO personnel, 2nd, 3rd, and 4th Quarters 2008
Siren testing data 2nd, 3rd, and 4th Quarters 2008

Section: 4OA2 Problem Identification and Resolution

CAP-NGGC-200, Corrective Action Program
ADM-NGGC-0101, Maintenance Rule Program

Nuclear Condition Reports

NCR 320133, NRC identified: risk assessment was changed without issuing a formal revision
NCR 323196, NRC identified: risk assessment did not include DCP-1B which was out of service due to breaker replacement
NCR 325819, NRC identified: revised risk assessment was not posted to the Web page
NCR 335180, NRC identified: risk assessment showed less risk with EGDG-1A tagged out compared to the same EGDG undergoing surveillance testing