



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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

January 25, 2007

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
05000302/2006005

Dear Mr. Young:

On December 31, 2006, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Crystal River Unit 3. The enclosed integrated inspection report documents the inspection findings, which were discussed on January 8, 2007, 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, the inspectors identified 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. Also, two licensee identified violations which were of very low safety significance are listed in Section 4OA7 of this report. If you contest the non-cited violation, 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 20555-0001; with copies to the Regional Administrator, NRC Region II; The Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at the Crystal River Unit 3 site.

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

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Sincerely,

/RA/

Michael E. Ernstes, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket No.: 50-302

License No.: DPR-72

Enclosure: Inspection Report 05000302/2006005
w/Attachment: Supplemental Information

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cc w/encl:

Daniel L. Roderick
Director Site Operations
Crystal River Nuclear Plant (NA2C)
Electronic Mail Distribution

Jon A. Franke
Plant General Manager
Crystal River Nuclear Plant (NA2C)
Electronic Mail Distribution

Terry D. Hobbs
Manager Nuclear Assessment
Crystal River Nuclear Plant (NA2C)
Electronic Mail Distribution

Michael J. Annacone
Engineering Manager
Crystal River Nuclear Plant (NA2C)
Electronic Mail Distribution

R. Alexander Glenn
Associate General Counsel (MAC - BT15A)
Florida Power Corporation
Electronic Mail Distribution

Steven R. Carr
Associate General Counsel - Legal Dept.
Progress Energy Service Company, LLC
Electronic Mail Distribution

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

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

Craig Fugate, Director
Division of Emergency Preparedness
Department of Community Affairs
Electronic Mail Distribution

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

Jim Mallay
Framatome Technologies
Electronic Mail Distribution

Distribution w/encl: (See page 4)

Report to Dale E. Young from Michael E. Ernstes dated January 25, 2007.

Distribution w/encl:

B. Mozafari, NRR

S. Bailey, NRR

C. Evans (Part 72 Only)

L. Slack, RII EICS

RIDSNRRDIRS

OE Mail (email address if applicable)

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 50-302

License No.: DPR-72

Report No: 05000302/2006005

Licensee: Progress Energy Florida (Florida Power Corporation)

Facility Crystal River Unit 3

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

Dates: October 1, 2006 - December 31, 2006

Inspectors: T. Morrissey, Senior Resident Inspector
R. Reyes, Resident Inspector
E. Crowe, Senior Resident Inspector, Farley
H. Gepford, Senior Health Physicist (Section 2OS3)
G. Kuzo, Senior Health Physicist (Section 2PS1, 4OA1)
N. Griffis, Health Physicist (Section 2PS3)
A. Nielsen, Health Physicist (Section 2OS1, 4OA1)
R. Chou, Reactor Inspector (Sections 1R02 and 1R17)
D. Mas-Penaranda, Reactor Inspector (Sections 1R02 and 1R17)
M. Scott, Senior Reactor Inspector (Sections 1R02 and 1R17)
R. Aiello, Senior Operations Engineer (Section 1R11.2)

Approved by: Michael E. Ernstes, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000302/2006-005; 10/01/2006 - 12/31/2006; Crystal River Unit 3; Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Equipment

The report covered a three-month period of inspection by the resident inspectors and announced inspections by region based reactor inspectors and radiation protection specialists. One Green finding of very low safety significance was identified during this inspection. 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. NRC-Identified and Self-Revealing Findings

Cornerstone: Public Radiation Safety

Green. The inspectors identified a non-cited violation (NCV) of 10 CFR 20.1501(a) for failure to perform accurate surveys to demonstrate compliance with Technical Specification (TS) 5.6.2.3 Offsite Dose Calculation Manual (ODCM) controls used to maintain doses to members of the public from radioactive effluents as low as reasonably achievable (ALARA) in accordance with Appendix I to 10 CFR 50 design criteria as specified in 10 CFR 50.36a. Specifically, as of December 4, 2006, the licensee failed to conduct adequate dose evaluations to demonstrate compliance with TS 5.6.2.3 for radioactive liquid effluent releases made from the station discharge tank SDT-1 to a percolation pond located within the owner controlled area. The failure to conduct accurate dose evaluations for this liquid release pathway impaired the licensee's ability to demonstrate compliance with ODCM ALARA limits for the liquid radioactive waste processing equipment and operations. The issue was entered into the licensee's corrective action program for resolution.

The violation is more than minor because it adversely affects the program and process attribute of the Public Radiation Safety cornerstone, in that it involved an occurrence in the licensee's radioactive effluent release program that is contrary to NRC regulations. The finding was determined to be of very low safety significance because preliminary calculations based on recently determined dilution factors for the settling pond demonstrated that resultant offsite dose values were small fractions of the ODCM limits (Appendix I to 10 CFR Part 50 design criteria). Further, evaluations of radionuclide concentrations in the effluent were conducted in accordance with 10 CFR 20.1302(b) (2)(i) to demonstrate compliance with 10 CFR 20.1301 limits. (Section 2PS1)

B. Licensee-Identified Violations

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

Enclosure

REPORT DETAILS

Summary of Plant Status:

The unit began the inspection period at 68 percent power. On October 2, the unit was returned to full power. On November 29, control room operators initiated a rapid power decrease to 80 percent due to exceeding normal operating temperature limits on the main condenser due to reduced circulating water flow. Later that day, after repairs to the circulating water traveling screens and recovery of the circulating water flow, reactor power was returned to 100 percent.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors evaluated the licensee's readiness for mitigating cold weather to assure that vital systems and components were protected from freezing in accordance with the licensee's Administrative Instruction AI-513, Seasonal Weather Preparations, Section 4.1, Cold Weather Preparations. The inspectors walked down portions of the systems listed below to check for any unidentified susceptibilities. Operability of heat trace circuits for boric acid storage tank piping was verified. Nuclear condition reports (NCRs) were reviewed to check that the licensee was identifying and correcting cold weather protection issues.

- Feedwater pump FWP-7
- Emergency Feedwater Pump EFP-3
- Boric Acid pumps and storage tanks

There were no sustained periods of freezing weather during the inspection period.

b. Findings

No findings of significance were identified.

1R02 Evaluations of Changes, Tests, or Experiments

The inspectors reviewed selected samples of evaluations to confirm that the licensee had appropriately considered the conditions under which changes to the facility, Final Safety Analysis Report (FSAR), or procedures may be made, and tests conducted, without prior NRC approval. The inspectors reviewed evaluations for five changes and additional information, such as calculations, supporting analyses, the FSAR, and drawings to confirm that the licensee had appropriately concluded that the changes could be accomplished without obtaining a license amendment. The five evaluations reviewed are listed in the attachment.

Enclosure

The inspectors also reviewed samples of changes for which the licensee had determined that evaluations were not required, to confirm that the licensee's conclusions to "screen out" these changes were correct and consistent with 10 CFR 50.59. The thirty-one "screened out" changes reviewed are listed in the attachment.

The inspector also reviewed NCRs to confirm that problems were identified at an appropriate threshold, were entered into the corrective action process, and appropriate corrective actions had been initiated.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

Partial System 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:

- October 18 and 19, feedwater pump FWP-7, raw water pump RWP-2A, and service water pump SWP-1A, using OP-605, Feedwater System, and OP-408, Nuclear Services Cooling System, during the time emergency diesel generator (EGDG)-1B was out of service for maintenance
- November 30 and December 1, emergency feedwater pumps EFP-2 and EFP-3, using OP-450, Emergency Feedwater System, after performing maintenance on feedwater pump FWP-7
- December 27, decay heat closed cycle cooling pump DCP-1B and raw water pump RWP-3B trains, using OP-408, Nuclear Services Cooling System and OP-404, Decay Heat Removal System, while makeup pump MUP-1A was unavailable due to planned maintenance

b. Findings

No findings of significance were identified.

1R05 Fire Protection

Fire Protection 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 seven areas important to reactor safety:

- A and B train boric acid storage tank area
- A and B EGDG engine rooms and starting air tank rooms
- A, B, and C train make-up pump rooms and make-up valve alley
- Emergency feedwater pump EFP-3 building
- Control complex 145' elevation
- Control complex main control room
- Cable Spreading Room

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures - Internal Flooding

a. Inspection Scope

The inspectors reviewed the Crystal River Unit 3, FSAR, Chapter 2.4.2.4, Facilities Required for Flood Protection, Design Basis Documents, and System Descriptions, that depicted protection for areas containing safety-related equipment to identify areas that may be affected by internal flooding. A walkdown of the following areas was conducted: raw water pumps; DC pumps; nuclear service water (SW) pumps; service water heat exchangers; and DC heat exchangers, to ensure that flood protection measures were in accordance with design specifications. Specific plant attributes that were checked included structural integrity, sealing of penetrations, operability of drain and sump systems, and adequacy of watertight doors between flood areas.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On October 25th, the inspectors observed licensed operators' response and actions for the Crystal River Unit 3 licensed operator requalification simulator scenario OPS-9-3056, Main Steam Line Break Outside RB with Stuck Open MSSV on the other OTSG to verify that operator performance was adequate and evaluators were identifying and documenting crew performance problems. The inspectors specifically evaluated the following attributes related to operating crew performance:

- Clarity and formality of communication including crew briefings
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Implementation of emergency operating procedures (EOPs)
- Control board operation and manipulation, including operator actions
- Assessment of emergency classifications
- Oversight and direction provided by supervision, including ability to identify and notification of state authorities within the 15 minute requirement

b. Findings

No findings of significance were identified.

.2 Annual Review of Licensee Requalification Examination Results

a. Inspection Scope

On February 13, 2006, the licensee completed the requalification annual operating tests, required to be given to all licensed operators by 10 CFR 55.59(a)(2). The inspectors performed an in-office review of the overall pass/fail results of the individual operating tests and the crew simulator operating tests. These results were compared to the thresholds established in Manual Chapter 609 Appendix I, Operator Requalification Human Performance Significance Determination Process.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the licensee's effectiveness in performing routine maintenance activities. This review included an assessment of the licensee's practices pertaining to 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 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 inspectors verified that the licensee was appropriately identifying and documenting maintenance rule issues in the corrective action program. Documents reviewed are listed in the report attachment. The licensee's maintenance effectiveness was evaluated for the following two degraded equipment conditions:

- NCR 208370, RPS Channel "A" Bistable found Inoperable
- NCR 216949, Surveillance failures of raw water valves RWV-58, 59, 60, and 61

b. Findings

No findings of significance were identified.

1R13 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. 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 five work week assessments.

- Work Week 06W39 risk assessment for emergent maintenance due to loss of Motor Control Center 3B and the subsequent reduction of reactor power to 55 percent, and for unavailability of the 'B' vital battery for investigation of a ground
- Work Week 06W43, risk assessment for operations with the control complex chiller CHHE-1A and emergency diesel generator EGDG-1A unavailable due to maintenance
- Work Week 06W44, risk assessment for operations with vital battery inverter A and EGDG-1A unavailable due to maintenance activities
- Work Week 06W45, risk assessment for operations with raw water pump RWP-2A and EGDG-1A unavailable due to maintenance
- Work Week 06W46, Risk assessment for operations with raw water pump RWP-2B unavailable due to emergent maintenance

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following six NCRs to verify that the 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 technical specifications, 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 determine if operability issues were being identified at an appropriate threshold and documented in the corrective action program, consistent with 10 CFR 50, Appendix B requirements, and licensee procedure NGGC-CAP-200, corrective action program.

- NCR 209783, ES Status Lamp for B 4Kv Bus Undervoltage Lockout Illuminated
- NCR 210023, Flow Blockage Condition Exists with Raw Water Strainer RWSP-1B
- NCR 210726, RCS Pressure Instrument Outside Calibration Tolerance
- NCR 214771, Correction to EQ Calculation Error Results in Decreased Hot leg RTD Qualified Life
- NCR 216308, RWP-3B Flow Is Low During Surveillance SP-340D
- NCR 213853, RWP-2B Motor Bearing Noise

b. Findings

No findings of significance were identified. An Unresolved Item (URI) associated with RWSP-1B flow blockage is documented in Section 4OA3.3.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors evaluated design change packages for eight modifications, in the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstone areas, to evaluate the modifications for adverse effects on system availability, reliability, and functional capability. The modifications and the associated attributes reviewed are as follows: (Engineering Change (EC) or Modification)

ECs 50656 & 51801, Snubber Reduction (Initiating Event and Mitigating Systems)

- Materials/ Replacement Components
- Seismic Qualification

EC 49507, Technical Specification Changes for Mark B12 Fuel

- Materials/Replacement Components
- Update of Licensee Documents
- Functional Testing Adequacy and Results

EC 63288, Replace EDG-1B 480VAC Contactors (Initiating Event and Mitigating Systems)

- Materials/ Replacement Components
- Energy Needs
- Control Signals
- Post-Installation Testing
- Update of Licensee Documents
- Environmental Qualification
- Seismic Qualification

EC 63287, Replace EDG-A 480VAC Contactors (Initiating Event and Mitigating Systems)

- Materials/ Replacement Components
- Energy Needs
- Control Signals
- Post-Installation Testing
- Update of Licensee Documents
- Environmental Qualification
- Seismic Qualification

EC 56298, Alternate AC Diesel Generator (Initiating Event and Mitigating Systems)

- Energy Needs
- Environmental Qualification
- Post-Installation Testing

EC 51754, Pipe Support Modification for SW Supply and Outlet Piping (Mitigating Systems)

- Materials/ Replacement Components
- Seismic Qualification

EC 51801, Repair of Pressurizer Level Tap and Sampling Nozzles (Mitigating System)

- Materials/ Replacement Components
- Seismic Qualification
- Post-Installation Testing

ECs 59913, 59914, 59916, & 59925, Pipe Support Modifications Outside Containment (Mitigating Systems)

- Materials/ Replacement Components
- Seismic Qualification

For selected modification packages, the inspectors observed the as-built configuration. Documents reviewed included procedures, engineering calculations, modification design and implementation packages, work orders, site drawings, corrective action documents, applicable sections of the living FSAR, supporting analyses, Technical Specifications, and design basis information.

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

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors witnessed and/or reviewed post-maintenance test procedures and/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 five post-maintenance tests reviewed are listed below:

- SP340B, DHP-1A, BSP-1A and Valve Surveillance, performed on October 12, after performing maintenance on building spray pump BSP-1A per work order (WO) 697076
- SP-349B, EFP-2 and Valve Surveillance, performed on October 26, after performing maintenance on emergency feedwater pump EFP-2 trip and throttle valve and governor per WO 893040
- SP 375A, CHP-1A and Valve Surveillance, after performing maintenance on the control complex chiller train A per WO 789661
- SP344B, RWP-2B, SWP-1B and Valve Surveillance (RWP-2B section only), after performing corrective maintenance on RWP-2B per WO 981600
- SP-349C, EFP-3 and Valve Surveillance, performed on December 7, after performing maintenance on EFP-3 engine lube oil pumps, left side air-start motor, and temperature sensors, per WO 954394

b. Findings

No findings of significance were identified.

1R22 Surveillance Testinga. Inspection Scope

The inspectors observed and/or reviewed the surveillance tests listed below to verify that technical specification 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. The following three activities were observed/reviewed:

In-Service Test:

- SP-340C, MUP-1A, MUP-1B, and Valve Surveillance

Surveillance Tests:

- SP-320, Availability Of Boron Injection Sources And Pumps
- SP-300, Operating Daily Surveillance Log (control complex and auxiliary building areas only)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modificationsa. Inspection Scope

The inspectors evaluated one temporary modification 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-0005, Engineering Change, to assess if the modification was properly developed and implemented.

- Temporary plant modification EC 64917R2, Diesel Driven Instrument Air Compressor IAP-4 Replacement.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Controls to Radiologically Significant Areas

a. Inspection Scope

Access Controls The inspectors evaluated licensee guidance and its implementation for controlling worker access to radiologically significant areas and monitoring jobs in-progress. The inspectors directly observed implementation of administrative and physical radiological controls; evaluated radiation worker (radworker) and health physics technician (HPT) knowledge of and proficiency in implementing radiation protection requirements; and assessed worker exposures to radiation and radioactive material.

During facility tours, the inspectors directly observed postings and physical controls for radiation areas and high radiation areas (HRAs) established within the radiologically controlled area (RCA) of the auxiliary building and radioactive waste (radwaste) processing and storage locations. The inspectors independently measured radiation dose rates and contamination levels or directly observed conduct of licensee radiation surveys for selected RCA areas. Results were compared to current licensee surveys and assessed against established postings and Radiation Work Permit (RWP) controls. Licensee key control and access barrier effectiveness were observed and evaluated for selected Locked High Radiation Area (LHRA) locations. Changes to procedural guidance for LHRA and Very High Radiation Area controls were discussed in detail with health physics (HP) supervisors. Physical controls for storage of irradiated material within the spent fuel pool were observed. In addition, licensee controls for areas where dose rates could change significantly as a result of refueling operations or radwaste activities were reviewed and discussed.

For repair work on the 'B' makeup pump, the inspectors attended the pre-job briefing and reviewed RWP details, including engineering controls for potential airborne radioactivity, to assess communication of radiological control requirements. Radworkers' adherence to RWP guidelines and HPT proficiency in providing job coverage, including use of contamination controls and airborne surveys, were evaluated through observation of the job in-progress. Electronic dosimeter (ED) alarm set points were evaluated against area radiation survey results and ED alarm response actions were discussed with radworkers and HP supervisors.

The inspectors evaluated the effectiveness of radiation exposure controls, including air sampling, barrier integrity, engineering controls, and postings through a review of both internal and external exposure results. Licensee evaluations of skin dose resulting from discrete radioactive particle or dispersed skin contamination events during the last refueling outage were reviewed and assessed. For HRA tasks involving significant dose rate gradients, the inspectors evaluated procedural guidance for the use and placement of whole body and extremity dosimetry to monitor worker exposure. The inspectors also reviewed and discussed selected whole-body count analyses conducted during the last refueling outage.

Radiation protection activities were evaluated against the requirements of FSAR Chapter 11; Technical Specifications (TS) Section 5.8; 10 CFR 20; and approved licensee procedures. Records reviewed are listed in the attachment.

Problem Identification and Resolution Licensee Corrective Action Program (CAP) documents associated with access control to radiologically significant areas were reviewed and assessed. This included the review of a licensee self-assessment and selected NCRs related to radworker and HPT performance. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with CAP-NGGC-0200, Corrective Action Program, Rev. 18. Licensee CAP documents reviewed are listed the Attachment.

The inspectors completed 21 of the specified line-item samples detailed in Inspection Procedure (IP) 71121.01.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

Radiation Monitors The operability, availability, and reliability of selected area radiation monitor (ARM) and continuous air monitor equipment used for routine and accident monitoring activities were reviewed and evaluated. The inspectors directly observed ARM equipment material condition and installed configurations where accessible. Current calibration data for the Containment High Range Monitors (RM-G29 and RM-G30), the Spent Resin Tank Storage Area Monitor (RM-G12), the Fuel Storage Pool Area Monitor (RM-G14), and the Reactor Building Incore Instrument Removal Area Monitor (RM-G18) were reviewed and discussed with responsible personnel. The most recent system health report for the radiation monitoring system was reviewed.

Program guidance, monitor performance, and equipment material condition were reviewed against details documented in 10 CFR Parts 20 and 50; FSAR Section 11.4, Radiation Monitoring System; TS Section 3.3.17; and approved licensee procedures. Reviewed documents are listed in the attachment.

Portable Survey Instrumentation Current program guidance and implementation to maintain operability and accuracy of selected portable survey instruments were reviewed and evaluated. Procedures for calibration and operation of instruments were reviewed for appropriateness. Instrument selection and operability determinations conducted by health physics technician staff prior to performing selected radiological surveys and monitoring were reviewed and discussed. Conduct of daily source checks and response checks for friskers and ion chamber survey meters were observed, and the results were compared to specified tolerances. Responsible staff's knowledge and proficiency regarding on-site instrumentation calibration activities were evaluated through interviews, record reviews, and direct observation of the electronic calibration of

an LMC-177 instrument. The inspectors reviewed current calibration data for selected portable survey instruments and assessed operability of various portable survey instruments staged or in use by the health physics staff.

Operability and analysis capabilities of the licensee's whole-body counter (WBC), personnel contamination monitor (PCM), and Portal Monitor (PM) equipment were reviewed and evaluated. Reviewed PCM and PM detectors included equipment staged at the RCA exit. For selected WBC, PCM, and PM equipment, current calibration and recent operational/performance test surveillance data, as applicable, were evaluated. The inspectors observed and discussed the conduct and results of a daily WBC source check with the responsible dosimetry technician.

Licensee activities associated with personnel radiation monitoring instrumentation were reviewed against FSAR Section 11.5, Health Physics; TS Section 5.6; 10 CFR 20.1204 and 20.1501; and applicable licensee procedures listed in Section 2OS3 of the attachment.

Respiratory Protection - Self-Contained Breathing Apparatus (SCBA) The licensee's respiratory protection program guidance and implementation for SCBA use were evaluated and discussed with plant personnel. The number of available SCBA units and their general material and operating condition were observed during tours of the Control Room, Technical Support Center, and other SCBA storage locations. The inspectors observed health physics technicians perform monthly inspections of staged SCBA units, verifying technician proficiency and knowledge against procedure HPP-502, Respiratory Equipment Inspection and Maintenance. SCBA maintenance records, including bottle hydrostatic testing results, were reviewed for select SCBA units. Records documenting testing of breathing air quality for SCBA bottle filling equipment and sources of breathing air for supplied-air respirators were evaluated. Training records for select individuals in Operations, Maintenance, and Health Physics were reviewed.

Program guidance, performance activities, and equipment material condition were reviewed against details documented in 10 CFR Part 20; Regulatory Guide (RG) 8.15, Acceptable Programs for Respiratory Protection, Rev. 1; and applicable licensee procedures. Reviewed guidance documents and applicable records are listed in the Attachment.

Problem Identification and Resolution The inspectors reviewed selected NCRs and self-assessments associated with ARM equipment, portable radiation detection instrumentation, and respiratory protective program activities were reviewed and assessed. The inspectors assessed the licensee's ability to characterize, prioritize, and resolve the identified issues in accordance with CAP-NGGC-0200, Corrective Action Program, Rev. 18. CAP documents reviewed and evaluated during inspection of this program area are identified in Sections 2OS3 of the Attachment.

The inspectors completed nine of the specified line-item samples detailed in IP 71121.03.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

Effluent Monitoring and Radwaste Equipment During inspector walk-downs, accessible sections of the liquid and gaseous radwaste processing and effluent systems were evaluated for material condition and conformance with system design diagrams. The evaluated systems included selected liquid waste system processing tanks, pumps, valves, and piping; liquid and gaseous waste processing and effluent radiation monitor (RM) equipment and sample lines for the auxiliary building liquid radwaste effluent monitor RM-L2, secondary drain tank liquid monitor RM-L7, reactor building purge exhaust monitor RM-A1, and the auxiliary building and fuel handling building area exhaust duct monitor RM-A2; and the auxiliary building ventilation exhaust system and air cleaning units (AHFL-2A/2B/2C/2D). The inspectors interviewed chemistry supervision and engineering personnel regarding radwaste equipment configuration and effluent monitor operation.

The inspectors reviewed performance records and calibration results for selected radiation monitors, flowmeters, and auxiliary building normal ventilation exhaust systems. For the reviewed monitoring systems the inspectors reviewed the most recent calibration records, including the functional/flow checks, as appropriate. The inspectors reviewed the out-of-service monitors from July 2004 to September 2006, and verified that required compensatory sampling was performed for selected systems. The most recent surveillances on the auxiliary building exhaust ventilation systems (AHFL-2A/2B/2C/2D) were reviewed. Performance and operations of the systems were reviewed and discussed with cognizant licensee personnel.

Installed configuration, material condition, operability, and reliability of selected effluent sampling and monitoring equipment were reviewed against details documented in the following: 10 CFR Part 20; American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME) N509-1976, Nuclear Power Plant Air Cleaning Units and Components, and ANSI N510-1975, Testing of Nuclear Air-Cleaning Systems; 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 Plants and RG 1.143 Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light Water Cooled Reactors; TS Section 5.6.2.3, Offsite Dose Calculation Manual (ODCM), Rev. 28; and UFSAR Chapters 9 and 11. Procedures and records reviewed during the inspection are listed in the report Attachment.

Effluent Release Processing and Quality Control (QC) Activities The inspectors directly observed and evaluated chemistry staff proficiency in conducting weekly plant vent

surveillance activities, including the particulate filter and charcoal cartridge change-out and noble gas/tritium collection from the auxiliary building and fuel handling area exhaust duct at RM-A2. In addition, the inspectors discussed the process for performing liquid and gaseous releases with chemistry personnel. Chemistry technician proficiency in processing and counting effluent samples was evaluated.

QC activities associated with gamma spectroscopy were discussed with count room technicians and chemistry supervision. The inspectors reviewed QC charts for November 2006 High Purity Germanium (HPGe) detector number (No.) 1 and No. 2, and reviewed licensee procedural guidance for count room QC activities. The inspectors reviewed the most recent calibration records for HPGe detector No. 1 (select counting geometries). In addition, results of the radiochemistry cross-check program analyses for both the licensee's onsite counting room and their vendor laboratory were reviewed and discussed with cognizant licensee individuals.

Selected portions of procedures for effluent sampling, processing, and release were observed and evaluated for consistency with chemistry technician activities. Both gaseous and liquid release permits were reviewed against ODCM specifications for pre-release sampling and effluent monitor setpoints. The inspectors discussed performance of pre-release sampling and analysis and release permit generation with chemistry technicians. The inspectors reviewed the 2004 and 2005 Annual Radiological Effluent Release Reports to evaluate reported doses to the public and ODCM changes. The inspectors reviewed a selection of monthly, quarterly, and annual dose assessments from liquid and gaseous releases for calendar year (CY) 2005 and year-to-date for CY 2006. Dose calculations to members of the public were evaluated and discussed with cognizant licensee personnel.

Current licensee programs for monitoring, tracking, and documenting the results of both routine and abnormal liquid releases to the onsite and offsite surface and ground water environs were reviewed and discussed in detail. The inspectors reviewed selected 10 CFR 50.75(g) reports associated with abnormal liquid releases and corrective actions initiated. Licensee actions to evaluate ground water hydrology and to detect any potential onsite/offsite environmental impact of significant leakage/spills from onsite systems, structures, and components were reviewed and discussed. Groundwater monitoring initiatives and radionuclide concentration results for approximately 14 recently established onsite groundwater monitoring wells surrounding the power block and a percolation pond receiving contaminated liquid effluents were reviewed in detail. Initial results of samples collected from the wells associated with the power block did not identify tritium concentrations above environmental detection limits.

Observed task evolutions, count room activities, and offsite dose results were evaluated against details and guidance documented in the following: 10 CFR Part 20 and Appendix I to 10 CFR Part 50; ODCM; RG 1.21; RG 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I; RG 1.33, Quality Assurance Program Requirements; and TS Section 5.6. Procedures and records reviewed during the inspection are listed in the attachment.

Problem Identification and Resolution A selection of NCRs and an audit associated with effluent release activities were reviewed and assessed. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve selected issues in accordance with licensee procedure CAP-NGGC-0200, Corrective Action Program, Rev. 18. Reviewed documents are listed in the attachment.

The inspectors completed eleven of the specified line-item samples detailed in IP 71122.01.

b. Findings

Introduction. The inspectors identified a Green non-cited violation (NCV) of 10 CFR 20.1501(a) for failure to perform accurate surveys to demonstrate compliance with Technical Specification (TS) 5.6.2.3 Offsite Dose Calculation Manual (ODCM) controls used to maintain doses to members of the public from radioactive effluents as low as reasonably achievable (ALARA) in accordance with Appendix I to 10 CFR 50 design criteria as specified in 10 CFR 50.36a.

Description. From review and discussion of liquid effluent release pathways with responsible licensee representatives, the inspectors identified that the licensee was conducting numerous discharges of liquid effluents containing low concentrations of radionuclides from the station discharge tank SDT-1 to a percolation pond adjacent to the Unit 1 (U1) and Unit 2 (U2) fossil generating facilities located within the owner controlled area. Examples of liquid batch releases made from the SDT-1 tank to the percolation pond included 16 batch releases made in calendar year (CY) 2004 totaling 1.2 E+6 gallons, 15 batch releases in CY 2005 totaling 1.1 E+6 gallons, and 17 batch releases totaling 1.1 E+6 gallons for CY 2006. Licensee data indicated liquids released from the SDT-1 to the percolation ponds contained mainly tritium (H-3) at concentrations ranging from 1 E-5 to 1 E-4 microcuries per milliliter ($\mu\text{Ci/ml}$) and, on occasion, cobalt-60 and cesium-137 radionuclides at concentrations of approximately 1 E-8 $\mu\text{Ci/ml}$.

At the time of the inspection, the only licensee dose evaluations for the subject effluent pathway releases were being conducted in accordance with 10 CFR 20.1302(b)(2)(i) and demonstrated compliance with 10 CFR 20.1301 limits, i.e., 100 millirem annual dose to a member of the public. Specifically, the licensee analyses demonstrated compliance based on maintaining the radionuclide concentrations in each batch release below the effluent concentration limit (ECL) values specified in 10 CFR Part 20, Appendix B Table 2, Column 2, and did not assume any further dilution as a result of U1 and U2 fossil plant non-radiological releases routinely made to the percolation pond. The inspectors noted that offsite dose calculations were not conducted to demonstrate compliance with the much lower design criteria dose limits specified in TS 5.6.2.3 to demonstrate liquid effluent releases were ALARA. Based on staff discussions, the inspectors determined that this had been a long term practice. The inspectors noted that based on the actual maximum radionuclide ECL data, a lack of administrative limits on the number of releases, and without determining actual dilution factors for the percolation pond operations, preliminary calculations of offsite doses approached approximately 50 percent of the total body dose limits (3 millirem) specified in TS 5.6.2.3. The inspectors noted that the licensee's current evaluations (calculations)

were inadequate to demonstrate compliance with TS 5.6.2.3 for maintaining doses to members of the public from liquid radioactive effluents ALARA in accordance with Appendix I to 10 CFR Part 50 design criteria, as specified in 10 CFR 50.36a.

Subsequently, licensee representatives determined that dilution input to the percolation ponds from the U1 and U2 fossil facilities' operations averaged 347,000 gallons per day. Using the subject dilution factors, licensee calculations estimated offsite doses to members of the public to be extremely small fractions of the TS 5.6.2.3 ODCM limits.

Analysis. The violation was determined to be more than minor because it adversely affects the program and process attribute of the Public Radiation Safety cornerstone, in that it involved an occurrence in the licensee's radioactive effluent release program that is contrary to NRC regulations. The violation was evaluated using the Public Radiation Safety Significance Determination Process and was determined to be of very low safety significance (Green) because calculations based on dilution flow from the U1 and U2 fossil generating facilities to the subject percolation pond demonstrated that offsite doses to members of the public were small fractions of the TS 5.6.2.3 ODCM limits used to demonstrate compliance with Appendix I to 10 CFR Part 50 design criteria. Further, for this liquid release pathway, all radionuclide quantities were included in the licensee's Annual Effluent Monitoring Reports and evaluations of radionuclide concentrations for each liquid release effluent were conducted in accordance with 10 CFR 20.1302(b)(2)(i) thereby demonstrating compliance with 10 CFR 20.1301 limits for offsite individuals.

Enforcement. 10 CFR 20.1501(a) requires licensee to make or cause to be made surveys that may be necessary to comply with regulations in this part. Pursuant to 10 CFR 20.1003, survey means an evaluation of the radiological conditions and potential hazards incident to the production use, transfer, release, disposal or presence of radioactive material.

TS 5.6.2.3(3)(d) and (e) state, in part, that the ODCM shall contain controls for maintaining doses to members of the public from radioactive effluents ALARA in accordance with 10 CFR 50.36a limitations on the annual and quarterly dose commitment from radioactive materials in liquid effluents released to unrestricted areas conforming to 10 CFR 50 Appendix I and for determining cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year at least every 31 days. Further, TS 5.6.2.3(3)(f) establishes limits on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of 31 days would exceed two percent of the guidelines for annual dose or dose commitment conforming to 10 CFR 50, Appendix I. Section II of Appendix I to 10 CFR 50 specifies that calculated annual total quantities of all radioactive material above background to be released to unrestricted areas will not result in an estimated annual dose commitment from liquid effluents for any individual in an unrestricted area from all pathways of exposure in excess of 3 mrem to the total body or 10 mrem to any organ.

Contrary to the above, as of December 4, 2006, the licensee failed to conduct adequate dose analyses for radioactive liquid effluent releases made from the station discharge

Enclosure

tank SDT-1 to the percolation pond located within the owner controlled area to demonstrate compliance with TS 5.6.2.3 (Appendix I to 10 CFR Part 50 design criteria dose limits). Because this issue was determined to be of very low safety significance and was entered into the corrective action program as Nuclear Condition Report 215863, this violation is being treated as a non-cited violation (NCV), consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000302/2006005-001, Failure to conduct adequate surveys for liquid effluent releases.

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

a. Inspection Scope

REMP Implementation The inspectors observed routine sample collection and surveillance activities performed in accordance with the licensee's Offsite Dose Calculation Manual (ODCM). The inspectors noted the material condition and operability of airborne particulate and iodine sampling stations at monitoring locations C07, C18, C40, C41, and C46. Environmental thermoluminescent dosimeter (TLD) equipment at locations C14G, C18, C41, C65, C66, and C67 were checked for material condition. Collection of broadleaf vegetation was observed at sample locations C48A and C48B. In addition, collection of surface water samples was observed at locations C14H, C14G, and C13 (control location). The inspectors verified the current location of selected air samplers, TLDs, broadleaf vegetation sample points, and surface water sample points using NRC global positioning system instrumentation. Land use census results, changes to the ODCM, and sample collection/processing activities were discussed with environmental technicians.

The inspectors reviewed the last two calibration records for selected environmental air sampler gas meters. The inspectors also reviewed the 2004 and 2005 Radiological Environmental Operating Reports and discussed any missed samples and anomalous measurements within licensee staff. In addition, results of CY 2004 and CY 2005 interlaboratory cross-check program and applicable procedures for environmental sample collection and processing were reviewed. Selected environmental measurements were reviewed for consistency with licensee effluent data, evaluated for radionuclide concentration trends, and compared with detection level sensitivity requirements.

Procedural guidance, program implementation, and environmental monitoring results were reviewed against: 10 CFR Parts 20 and 50; TS Section 5; ODCM; RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment; and RG 4.8, Environmental Technical Specifications for Nuclear Power Plants. Documents reviewed are listed in the report Attachment.

Meteorological Monitoring Program Inspectors directly observed the physical condition of the primary and secondary meteorological towers and discussed equipment operability and maintenance history with maintenance and engineering staff. The inspectors compared locally generated meteorological data with information available to control room operators. For the meteorological measurements of wind speed, wind

direction, and temperature, the inspectors reviewed calibration records for applicable tower instrumentation, and evaluated measurement data recovery for 2004 and 2005.

Licensee procedures and activities related to meteorological monitoring were evaluated against the ODCM; FSAR Section 2.3; ANSI/ANS-2.5-1984, Standard for Determining Meteorological Information at Nuclear Power Sites; and Safety Guide 23, Onsite Meteorological Programs. Documents reviewed are listed in the report Attachment.

Unrestricted Release of Materials from the Radiologically Controlled Area The inspectors observed surveys of material and personnel being released from the RCA using small article monitor, PCM, and PM instruments. The inspectors also observed source checks of these instruments and discussed equipment sensitivity and release program guidance with licensee staff. To evaluate the appropriateness and accuracy of release survey instrumentation, radionuclides identified within recent waste stream analyses were compared with radionuclides used in current calibration sources and performance check sources.

Licensee programs for monitoring materials and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, Control of Radioactively Contaminated Material. Reviewed documents are listed in the attachment.

Problem Identification and Resolution The inspectors reviewed selected NCRs and self-assessments in the areas of environmental monitoring, meteorological monitoring, and release of materials. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve identified issues in accordance with procedure CAP-NGGC-0200, Rev. 18. Documents reviewed are listed in the attachment.

The inspectors completed ten of the specified line-item samples detailed in IP 71122.03.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Mitigating Systems Cornerstone

a. Inspection Scope

The inspectors checked the accuracy of the performance indicator listed below. Performance indicator data submitted from October 2004 through September 2006, was compared for consistency to data obtained through the review of engineering department records, control room logs, and licensee event reports.

- Safety System Functional Failures

b. Findings

No findings of significance were identified.

.2 Radiation Safety

a. Inspection Scope

The inspectors sampled licensee records to verify the accuracy of reported performance indicator data for the periods listed below. To verify the accuracy of the reported PI elements, the reviewed data were assessed against guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline," Rev. 4 and the NEI Frequently Asked Questions (FAQ) list.

Occupational Radiation Safety Cornerstone The inspectors reviewed the Occupational Exposure Control Effectiveness PI results for the Occupational Radiation Safety Cornerstone from October 1, 2005 through September 30, 2006. For the assessment period, the inspectors reviewed electronic dosimeter alarm logs, monthly PI reports, and selected NCRs related to controls for exposure significant areas. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the attachment.

Public Radiation Safety Cornerstone The inspectors reviewed the Radiological Control Effluent Release Occurrences PI results for the period of July 1, 2005 through September 30, 2006. For the assessment period, the inspectors reviewed monthly and quarterly dose calculations to the public, out-of-service effluent radiation monitors, selected compensatory sampling data, and selected NCRs related to Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual issues. The inspectors completed the two specified radiation protection line-item samples detailed in IP 71151.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

.1 Daily Screening of Items Entered Into the Corrective Action Program

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 daily screening of items entered into the licensee's corrective action program (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 June 2006 through December 2006. The review also included issues documented in the Equipment Performance Priority List dated December 20, 2006; the System Health Report dated August 2006; various nuclear assessment section reports and maintenance rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's 3rd Quarter 2006, Site CAP Rollup & Trend Analysis report. Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy.

b. Assessment and Observations

No findings of significance were identified. The inspectors in reviewing licensee performance over the last six months, noted one negative trend that was also independently identified by the licensee.

A negative trend in the number of issues associated with the raw water system was noted over the last six months. These include degraded seal water flow to raw water pump RWP-2B, a cracked seal water strainer basket and blocked cyclone separator associated with B RW train, as-found RW relief valve surveillance failures (set point drift) and failure of the upper motor bearing on raw water pump RWP-2B. Several of these issues were inspected under sections 1R12, 1R15 and 4OA3.3 of this report. The licensee recognized this trend and has documented it in the corrective action program as NCR 216465.

4OA3 Followup of Events and Notices of Enforcement Discretion

.1 Operator performance during non-routine events

a. Inspection Scope

For the 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 the associated plant procedures.

- November 29, reactor power increase from 80 to 100 percent in accordance with OP-204, Power Operations, after repairs were made to the intake traveling screen system.

b. Findings

No findings of significance were identified.

.2 (Closed) Licensee Event Report (LER) 05000302/2006-002-00: Emergency Diesel Generator in a Condition Prohibited by Technical Specifications Due to Mispositioning

The report summarized an event that occurred on November 1, 2006, when the output breaker for emergency diesel generator EGDG-1A failed to close during a surveillance test. The breaker closing spring was found not charged with the charging motor control power switch in the "OFF" position. The switch was taken to the "ON" position, the closing spring charged and the breaker closed. The licensee's root cause investigation determined that following breaker maintenance on October 4, 2006, the charging motor control power switch was not verified to be in the "ON" position.

The inspectors reviewed the licensee event report and NCR 211171 documenting the event. The inspectors also discussed aspects of the event with plant personnel. The inspectors checked the accuracy and completeness of the LER and the appropriateness of the licensee's review and corrective actions. The inspectors determined that this issue was a performance deficiency for failure to restore the output breaker of EGDG-1A to an operable condition following maintenance activities which resulted in the EGDG being inoperable for a period exceeding the allowed 72 hour Improved Technical Specification (ITS) allowed outage time.

The finding is greater than minor because it directly affected the mitigating system cornerstone and affected the objective of ensuring that EGDG equipment is available and capable to respond to an event. Using NRC Manual Chapter 0609, "Significance Determination Process" (SDP), Appendix A, Phase 1, the inspectors determined that a Phase 2 evaluation was required since the finding represented an actual loss of safety function of a single train for greater than the Improved Technical Specification allowed outage time. The Phase 2 evaluation utilizing the plant specific risk-informed notebook, determined that the finding was of very low safety significance (Green). The finding was documented in the licensee's corrective action program as NCR 211171. Corrective actions planned include revision of the post-maintenance testing procedure to verify closing spring condition following maintenance activities and requiring maintenance personnel to use procedural guidance during breaker racking operations. Since this violation of ITS 3.8.1 requirements was identified during a surveillance test; was of very low safety significance; and was entered into the corrective action program, the finding will be treated as a licensee identified violation as documented in Section 40A7. This LER is closed.

.3 (Discussed) LER 05000302/2006-001-00: Train B Raw Water System in a Condition Prohibited by Technical Specifications Due to Equipment Failure

This LER described the event on October 20, 2006, when B train of the raw water system was found to be inoperable due to clogging of the train's bearing flush water cyclone separator underflow port (waste line) piping. As a result, during a postulated loss of off-site power event, the cyclone separator would not have provided adequately filtered flush water to raw water pumps RWP-2B and RWP-3B bearings. The licensee determined that this condition existed since July 6, 2006. Licensee interim corrective actions included: removing the debris from the cyclone separator piping and performing a flush of the system; daily inspections to verify adequate flow through the strainer; and increasing the frequency of strainer basket inspection/replacement. The inspectors verified interim corrective actions had been completed, observed replacement of a basket strainer, and verified adequate flow was available when the B train was returned to service. However, at the end of the inspection period, additional inspection was needed to resolve this issue. Therefore, pending additional inspection, this item will remain open as unresolved item URI 05000302/2006005-002, Raw Water System in a Condition Prohibited by ITS .

40A5 Other Activities

.1 Institute of Nuclear Power Operations (INPO) Assessment Report Review

Inspection Scope

The inspectors reviewed the final report of the INPO assessment of site activities conducted in May 2006. The report did not identify any significant licensee performance issues that had not been previously addressed and/or reviewed by the NRC.

.2 (Closed) NRC Temporary Instruction (TI) 2515/169, Mitigating Systems Performance Index (MSPI) Verification

a. Inspection Scope

During this inspection period, the inspectors completed a review of the licensee's implementation of the Mitigating Systems Performance Index (MSPI) guidance for reporting unavailability and unreliability of monitored safety systems in accordance with Temporary Instruction 2515/169.

The inspectors examined surveillances that the licensee determined would not render the train unavailable for greater than 15 minutes or during which the system could be promptly restored through operator action and therefore, are not included in unavailability calculations. As part of this review, the recovery actions were verified to be uncomplicated and contained in written procedures.

On a sample basis, the inspectors reviewed operating logs, work history information, maintenance rule information, corrective action program documents, and surveillance procedures to determine the actual time periods the MSPI systems were not available

due to planned and unplanned activities. The results were then compared to the baseline planned unavailability and actual planned and unplanned unavailability determined by the licensee to ensure the data's accuracy and completeness. Likewise, these documents were reviewed to ensure MSPI component unreliability data determined by the licensee identified and properly characterized all failures of monitored components. The unavailability and unreliability data were then compared with performance indicator data submitted to the NRC to ensure it accurately reflected the performance history of these systems.

b. Findings and Observations

No findings of significance were identified.

With only minor exceptions, the licensee accurately documented the baseline planned unavailability hours, the actual unavailability hours and the actual unreliability information for the MSPI systems. No significant errors in the reported data were identified, which resulted in a change to the indicated index color. No significant discrepancies were identified in the MSPI basis document which resulted in: (1) a change to the system boundary, (2) an addition of a monitored component, or (3) a change in the reported index color.

40A6 Meetings

Exit Meeting Summary

On January 8, 2007, the resident inspectors presented the inspection results to Mr. D. Young, Site Vice President and other members of licensee management, who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

40A7 Licensee Identified Violations

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

ITS 3.8.1 requires that two emergency diesel generators be operable. Further, with one emergency diesel generator inoperable, the ITS required restoration of the emergency diesel to operable status within 72 hours or be in Mode 3 within 12 hours. Contrary to the above, as of November 1, 2006, emergency diesel generator EGDG-1A was not operable for a period longer than 72 hours due to an inoperable output breaker and the plant was not placed in Mode 3 as required. When identified, the licensee took immediate action to restore operability of the output breaker. The issue was documented in the licensee's corrective action program (NCR 211171) and a root cause investigation was completed. The licensee determined that the output breaker for 1A EGDG was not properly restored on October 4, 2006 following maintenance activities. The issue was determined to be of very low safety significance (Green) by a Phase 2 evaluation in accordance with NRC Manual Chapter 0609. The closure of the associated

LER is discussed in Section 4OA3.2.

ITS 5.6.1 requires that written procedures shall be established, implemented, and maintained covering fire protection program activities. Section 6.5 of the Fire Protection Plan procedure requires that fire doors remain operable (i.e., maintain the ability to close and seal the opening in the event of a fire). Contrary to the above, from January 23 to August 17, 2006, fire doors C-502, C-503, and H-202 were inoperable and fire protection plan compensatory measures were not established as required. The finding was more than minor because the issue involved degradation of fire barriers. The issue screened as a low safety significance (Green) in accordance with Manual Chapter 0609, Appendix F, Phase 1 SDP worksheet. Through plant walkdowns, the inspectors determined that minimal combustible material/fire sources were found in the areas and degraded barriers would provide a minimum of 20 minutes of fire endurance protection. CR-3 initiated a corrective action plan to address these three nonconforming fire doors and reestablished Fire Protection Plan compensatory measures.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Annacone, Manager, Engineering
W. Brewer, Manager, Maintenance
R. Hons, Manager, Training
J. Franke, Plant General Manager
J. Hays, Manager, Outage and Scheduling
J. Holt, Manager, Operations
P. Infanger, Supervisor, Licensing
M. Rigsby, Superintendent, Radiation Protection
D. Roderick, Director Site Operations
J. Stephenson, Supervisor, Emergency Preparedness
T. Hobbs, Manager, Nuclear Assessment
D. Young, Vice President, Crystal River Nuclear Plant

NRC personnel:

M. Ernstes, Chief, Reactor Projects Branch 3, NRC Region II

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

| | | |
|----------------------|-----|--|
| 05000302/2006005-001 | NCV | Failure to Conduct Adequate Surveys for Liquid Effluent Releases. (Section 2PS1) |
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Opened

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| 05000302/2006005-002 | URI | Raw Water System in a Condition Prohibited by ITS (Section 4OA3.3) |
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Closed

| | | |
|----------------------|-----|---|
| 05000302/2006-002-00 | LER | Emergency Diesel Generator in a Condition Prohibited by Technical Specifications Due to Mispositioning (Section 4OA3.2) |
| 2515/169 | TI | Mitigating Systems Performance Index Verification (Section 4OA5.2) |

Discussed

| | | |
|----------------------|-----|--|
| 05000302/2006-001-00 | LER | Train B Raw Water System in a Condition Prohibited by Technical Specifications Due to Equipment Failure (Section 4OA3.3) |
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LIST OF DOCUMENTS REVIEWED

Section 1R02: Evaluation of Changes, Tests, or Experiments

Full 10 CFR 50.59 Evaluations :

04-0016, SP-317 Software Validation, Rev. 0
EC 56298, Alternate AC Diesel Generator (R14 Best Tie -IN)
04-0250, EC 55315, Installation of Non-Safety Diesel Generator
200069, EC 64551, Temporary Change to Disconnect MUV-39 Local and RSP Indication
04-0190, CP-140, Operation Order 04-03-06, Auxiliary Fan Maintenance

Screened Out Items :

EC (Engineering Change) 50656, Snubber Reduction , Rev. 0
EC 51754, Pipe Support Modification for SW Supply and Outlet Piping, Rev. 6
EC 51801, Repair of Pressurizer Level Tap and Sampling Nozzles, Rev. 3
EC 54240, Install Surge Suppressions Devices on Relays That are Controlled By Modules in the NNI Cabinets (Child # 1), Rev. 2
EC 54252, Install Surge Suppressions Devices on Relays That are Controlled By Modules in the NNI Cabinets (Child # 8), Rev. 0
EC 59913, Pipe Support Modifications Outside Containment (Child: MUH - 761), Rev. 0
EC 59914, Pipe Support Modifications Outside Containment (Child: MUH - 768), Rev. 3
EC 59915, Pipe Support Modifications Outside Containment (Children: RWH - 27 & RWH - 70A), Rev. 1
EC 59916, Pipe Support Modifications Outside Containment (Child: SWH - 150A), Rev. 0
EC 59925, Pipe Support Modifications Inside Containment (Children: FWH - 126, -127, -129), Rev. 1
Action Request (AR) 198088, 50.59 Screen for EC 56246 for DLP - 14 Motor
EC 49412, Evaluation of RWP - 1 Discharge Piping for Proposed Maintenance Activity to Realign the Piping
EC 49507, Technical Specification Changes for Mark B12 Fuel
EC 64551, Temporary change to Disconnect MUV-19 Local and RSP
EC 62858, Equivalent Motor for DHV-004
EC 63288(EC63287), Replace EDG-1B(EDG-A) 480VAC Contactors
EC 62050, Temporary Power for RMP-A1 During R14
EC 62212, Battery/Inverter Power to EFIC OTSG Recall Points

Material Evaluation

ME 07011R01, Allen-Bradley Type W Alloy Heater Elements
ME 06946R00, QL-1 Safety Related
ME-07088, 3 way air valve for EDG

Engineering Disposition

ED 49680, Determine Max Expected Temperature for Piping Analysis Purposes

Corrective Action Documents

199491, 06W26;DJP-3 Tripping; WOT 877911
199585, Fan Installed on DJP-3 Starter Without TMOD
200090, EGDG-1B-MST Motor Starter Extent of Condition
178230, CP-140 for Cycling High Point Vents
183217, 50.59 review for AP-770, EDG Actuation, Rev. 35
171865, Complete Re-write of SP-178, IL.RT Procedure
183221, 50.59 Screen for EOP-14, Rev. 14
183218, 50.59 Screen for EOP-12, Rev 8
179876, RW Pump Flush Water Pressure/Flow Change

Procedures

AP-770, Emergency Diesel Generator Actuation, 05/24/06

Audits, Self-assessments

See below

Miscellaneous Documents

Stress Calculation M-75-0016, Rev. 2, Decay Heat (DH) Inside Reactor Building from Penetration #344
Calculation S98-0056, Rev. 2, Qualification of Pipe Support MUH - 768
EC 52000, Master: Pipe Support Modifications Inside Containment
EC 52001, Master: Pipe Support Modifications Outside Containment
EC 53118, Master: Install Surge Suppressions Devices on Relays That are Controlled By Modules in the NNI Cabinets
Evolution Order # 2004-01-01
CFC, 00168743, Schulz Electric Company Motor
CFC, 11906110, Fairbanks Morse Engine
AR 171865, SP-178, Rev. 28, Conducting Containment Leakage Test Type "A" Using Temporary Equipment
AR 200069, EC 64551, Temporary Change to Disconnect MUV-39 at Local and RSP Indications

Drawings

Dwg. No. MUH - 761
Dwg. No. MUH - 768
B-208-081, Prelube PP. 3A DLP-1 & Standby Circ. PP. 3A DLP-5 & Lube Oil Heater 3A DLHE-3, Rev. 18
B-208-027, Emergency Diesel Gen. 3B, EGDG-1B Jacket Coolant System, Rev. 14
11866077, Electric Schematic A.C. & D.C. Auxiliaries Generator, 06/09/97
EC-207-015, Three Line Diagram 230-4.16KV Backup Engineered Safeguards Transformer, Rev.4

EC-207-014, Three Line Diagram 4160V SWGR. E.S. Bus 3A, Rev.34

EC-206-011, One Line Diagram Composite, Rev.64

EC-206-088, One Line Diagram 4160V Alternate Ac Diesel Generator Auxiliary Bus 3, Rev.2

Section 1R05: Fire Protection

Procedures

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 1R12: Maintenance Effectiveness

Nuclear Condition Reports

NCR 182027, During SP-110C module found out of tolerance

NCR 091994, RWV-61 As found setpoint failed high

NCR 162292, RWV-59 Failed lift test, lifted high 120 psi

NCR 187714, RWV-58 Failed high during SP-602

NCR 194499, RWV-60 As found lift point high out of specification

NCR 195963, RWV-59 Failed setpoint test OOS high

Section 1R17: Permanent Plant Modifications

Procedures

MCP-NGGC-0401, Material Acquisition, Rev. 20

AP-770, Emergency Diesel Generator Actuation, 05/24/06

Modification or Engineering Change (EC) Packages

See list of documents reviewed under Section 1R02

Work Orders (WOs)

WO 453701-01, Snubber Removal Pipe Support MUH - 52

WO 508752-01, UT on Lug Removal at Support SWH - 515

WO 428233-08, Modification for Support SWH - 507

WO 428233-12, Modification for Support SWH - 514

WO 428233-13, Modification for Support SWH - 515

WO 428233-17, Modification for Support SWH - 519

WO 508438-01, QC Performed SP-208, Hanger Inspection for Support SWH - 519

WO 454026-01, Performed As-Found Visual Inspection SP-201 for Snubber Removal of
DHH-21

WO 00776132, VBDP-5, Install EC 62640

WO 00386034, Replace CHP-1A Motor Bearings

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WO 00754309, EL, MW, T-PWR for RMP-A1 During R14 VI
WO 00673980, Alternate AC Diesel 14R Tie In
WO 00612001, EL, MW, EGDG-1C, Test, Perform TP-3 Functional Testing
WO 00814639, EL, MW, Replace Contactors Per EC63287
WO 00814641, EL, MW, Replace Contactors Per EC63288

Audits, Self-assessments

AR 00162368
AR 00155143
AR 00152239
AR 00147174
AR 00195759
AR 00182486

Corrective Action Documents

00199491, 06W26;DJP-3 Tripping; WET 877911
00199585, Fan Installed on DJP-3 Starter Without TMOD
00200090, EGDG-1B-MST Motor Starter Extent of Condition

Section 20S1: Access Controls to Radiologically Significant Areas

Procedures, Manuals, and Guidance Documents

HPP-221, High Radiation Area, Locked High Radiation Area, and Very High Radiation Area Controls, Rev. 8
DOS-NGGC-0002, Dosimetry Issuance, Rev. 23
HPS-NGGC-0003, Radiological Posting, Labeling, and Surveys, Rev. 10
HPS-NGGC-0013, Personnel Contamination Monitoring, Decontamination, and Reporting, Rev. 6
HPS-NGGC-0014, Radiation Work Permits, Rev. 3
CAP-NGGC-0200, Corrective Action Program, Rev. 18

Records and Data

RWP No. 00002935, Rad Waste Activities
RWP No. 00002949, Moderate Risk Activities
RWP No. 00002955, Filter Changes
RWP No. 00003090, Insulation Activities
Radiological Survey No. 05-11-0180, Incore Trench, 11/5/05
Radiological Survey No. 05-11-0574, 'A' D-ring Under 'B' RCP, 11/14/05
Radiological Survey No. 06-05-0052, Cation Demin Valve Alley, 5/6/06
Radiological Survey No. 06-12-0003, "Yellow Room" Radwaste Processing Area, 12/1/06
Radiological Survey No. 06-12-0040, Smears Taken in Selected RCA Clean Areas, 12/5/06
Radiological Survey No. 06-12-0049, "B" Makeup Pump Bay, 12/6/06
Personnel Contamination Event Log, 10/31/05 - 11/25/05
Selected Whole Body Count Records, 10/31/05 - 11/25/05
Inventory of Non-fuel Items Stored in Spent Fuel Pool, 11/9/06

Audits and Self-Assessments

C-RP-06-01, Radiation Protection Assessment, 5/16/06

Nuclear Condition Reports

215862, Evaluate LHRA key control for personnel hatch, 12/7/06
193656, Stanchion for HRA posting found out of position, 5/6/06
184135, NAS assessment reveals need for improvement in LHRA controls, 2/14/06
174773, Radiation Area posting partially covered by earmuffs, 11/1/05
175041, Negative trend identified for multiple clean area contaminations, 11/3/05
175202, Poor radworker practices noted during supervisor observations, 11/5/05
178340, Security has possession of LHRA key, 12/9/05

Section 20S3: Personnel Radiation Monitoring Instrumentation and Protective Equipment

Procedures, Instructions, and Guidance Documents

HPP-502, Respiratory Equipment Inspection and Maintenance, Rev. 17
HPS-NGGC-0015, Managing Respirators, Rev. 5
HPS-NGGC-0005, Calibration of Portable Radiation/Contamination Survey Instruments, Rev. 7
HPS-NGGC-0009, Operation of Radiation/Contamination Survey Instruments/Equipment, Rev. 2
HPP-322, Whole Body Counter Calibration, Rev. 9
HPP-320, Whole Body Counting System Operation, Rev. 18
CH-601, Breathing Air Sampling, Rev. 6
HPS-NGGC-0011, Cs-137 Calibration Source Standardization, Rev. 4
CAP-NGGC-0200, Corrective Action Program, Rev. 18

Records and Data

WO 720966-01, RM-G12 Calibration, 6/30/06
WO 570368-01, RM-G12 Calibration, 8/10/05
WO 567941-01, RM-G14 Calibration, 4/19/05
WO 706983-01, RM-G14 Calibration, 4/25/06
WO 237896-02, RM-G18 Ratemeter Calibration, 7/24/03
WO 237896-03, RM-G18 Detector Installation/Calibration, 10/9/03
WO 520318-01, RM-G18 Ratemeter Calibration, 9/1/05
WO 520318-02, RM-G18 Detector Installation/Calibration, 11/7/05
WO 242211-02, RM-G29/RM-G30 Electronic Calibration, 8/7/03
WO 242211-01, RM-G29/RM-G30 Source Check, 10/24/03
WO 516945-02, RM-G29/RM-G30 Electronic Calibration, 8/9/05
WO 516945-01, RM-G29/RM-G30 Source Check, 11/15/05
Whole Body Counter Calibration, 5/5/06
Whole Body Counter Libraries, printed 7/7/04
LMC-177 Calibration Record, s/n 210936, 5/17/06

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RO-2A Calibration Record (s/n 1777, 5/11/06; s/n 4070, 5/11/06; s/n 4071, 5/11/06)
2000W Calibration Record (s/n 2328, 9/6/06; s/n 2668, 9/7/06; s/n 2755, 9/7/06)
LMC-19 Calibration Record (s/n 214333, 5/10/06; s/n 214427, 5/10/06)
Sheperd Calibrator Verification Worksheet, 12/7/05
Radiation Monitoring System Health Report, January - June 2006
MSA MMR Certified C.A.R.E. Technician training record, 8/26/04
Hydrostatic testing report (s/n 5656, 9/5/06; s/n 5714, 1/28/05; s/n 5618, 7/3/06)
SCBA flow test results (s/n 5447: 1/8/03, 12/4/04, 3/16/06; s/n 5444: 12/2/04, 3/15/06; s/n 5430:
12/3/04, 3/20/06)
Grade D Air Test Report, MAKO compressor (IAP-2): 6/16/04, 9/23/04, 12/17/04, 3/30/05,
7/12/05, 10/7/05, 3/3/06, 6/5/06, 9/29/06
Grade D Air Test Report, Station Air Header (SAV-464): 6/16/04, 12/17/04, 3/30/05, 7/12/05,
10/7/05, 3/3/06, 6/5/06, 9/26/06

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Self-Assessment 113789, Respiratory Protection Program, 10/30/04
C-RP-06-01, Radiation Protection Assessment, 5/16/06

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215789, Grade D breathing air samples missed in 2005, 12/7/06
197034, RM-G6 warning and high setpoints found lower than recorded, 6/10/06
181360, Delayed SCBA flow testing, 1/17/06
207909, RM-G6 failed low, 9/30/06
148971, RM-G27 failure to maintenance mode, 1/21/05
149585, Incorrect as found setpoints found for RM-G26 and RM-G27, 1/29/05
176112, RM-G30 exhibits spiking and increasing noise, 11/15/05
132173, Warning setpoint for RM-G15 found incorrect during calibration, 7/15/04
155886, Four SCBA units were missed during monthly inspection, 4/7/05
132857, RM-G27 failed low, 7/23/04
150049, Maintenance requirements were not met on SCBA facepieces, 2/2/05

Section 2PS1: Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

Procedures, Instructions, and Guidance Documents

Offsite Dose Calculation Manual, Rev. 29
2004 Crystal River 3 Annual Radioactive Effluent Release Report
2005 Crystal River 3, Annual Radioactive Effluent Release Report
CH-230A, Gamma spectroscopy system operating instructions, Rev. 3
CH-230B, Gamma spectroscopy calibration and maintenance, Rev. 1
CH-280, Radiation monitoring system operating parameters, Rev. 14
CH-451T, Beckman LS6500 scintillation system, Rev. 0
CH-616, RM-A2 Sampling, Rev. 5
CP-148, Ventilation filter testing program, Rev. 8
PM-139, HVAC Equipment check and service, Rev. 14

SP-187, AHFL-2A /2B/2C/2D auxiliary building in-place filter test, Rev. 26
 SP-731A, Auxiliary Building Ventilation Continuous Release, Rev. 8
 SP-736F, SDT-1/Turbine building sump release to the settling ponds, Rev. 7
 Temporary Change Form for SP-187, AHFL-2A /2B/2C/2D auxiliary building in-place filter test,
 Rev. 26, 11/10/06
 Air Monitor Instruction Manual No. 570 for equipment No. 924 through 928

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Crystal River Unit 3, Discharge of Waste Water to On-site Percolation Ponds, Letter from W.S. Wilgus, Vice Present Nuclear Operations, Florida Power Corporation to J. P. O'Rielly, Regional Administrator, Region II, dated March 19, 1984.
 Auxiliary building AHFL-2A Air capacity data, 12/16/76; velocity profile, 12/17/76; aerosol uniformity, 12/18/76; air capacity for freon test, 12/21/76
 Optimum upstream sample locations for in-place leak tests as determined during system acceptance tests, 11/24/76
 Iodine-131 removal efficiency determination for adsorbent sample numbers (No.) AHFL TC 2-A11, 08/07/06; No. AHFL TC 2-B5, 08/07/06; No. AHFL TC 2-C1, 08/09/06; AHFL TC 2-D11, 08/09/06
 WO 705995-01, SP-187, Auxiliary building in-place filter test results: AHFLA-2A 11/10/06, and 11/13/06; AHFLA-2B, 11/13/06; AHFLA-2C, 11/13/06; and AHFLA-D, 11/13/06
 Health Physics Survey Record No. 04-19-0151, Evaluate spill from high radiation seal-land container, 11/19/04
 Health Physics Survey Record No. 04/12-0144, Smear survey of liquid leaking for high radiation shipment sea-land, 12/16/04
 Liquid waste release permit 60132.002.451.L for Waste Decay Tank (WDT)-10B released to discharge canal, 10/09/06
 Liquid waste release permit 60115.002.458.L for Waste Decay Tank (WDT)-10B released to discharge canal, 12/06/06
 Liquid waste release permit 60131.001.464.L for Waste Decay Tank (WDT)-10A released to discharge canal, 10/09/06
 Liquid waste release permit 60154.001.471.L for WDT-10A released to discharge canal, 12/06/06
 Liquid waste release permit 60111.007.022.L for condensate release to the discharge canal, 08/18/06
 Gaseous WDT-1B, release permit 60066.022.051.G completed 09/26/06
 Gaseous waste release permit 60068.020.362.G for RM-A2, Auxiliary building ventilation/continuous release data, 10/12/06
 Gaseous waste release permit 60069.020.364.G for RM-A2, Auxiliary building ventilation/continuous release data, 10/19/06
 Settling Pond Liquid Release Permit data for Calendar Year (CY) 2004 completed: 03/24/04, 03/25/04, 04/27/04, 06/30/04, 07/15/04, 08/19/04, 09/02/04, 09/10/04, 09/14/04, 10/01/04, 10/04/04/ 10/07/04, 10/24/04, 11/03/04, and 11/06/04
 Settling Pond Liquid Release Permit data for CY 2005 completed: 03/24/05, 03/27/05, 03/30/05, 05/28/05, 06/01/05, 06/27/05, 11/09/05, 11/12/05/, 11/17/05, 11/27/05, 12/08/05, 12/10/05, 12/27/05, 12/23/05, 12/31/05
 Settling Pond Liquid Release Permit data for CY 2006 completed: 01/03/06, 01/04/06, 01/08/06, 03/07/06, 03/09/06, 03/14/06, 03/18/06, 03/23/06, 05/23/06, 07/28/06,

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08/26/06, 08/18/06, 08/31/06, 08/23/06, 10/02/06, 10/25/06
WO 00651527 01, PT 0168B, Calibration and channel check of RM-A11, 01/03/06
WO 00332892 01, PT 0168, Calibration of RM-L2 and RM L-7 SD-21-FE, 10/24/05
WO 00433045 02, PT 0168A, Calibrate RM-A1 & RM-A2, 04/12/05
RM-L2 , Calibration results, 03/29/06
RM-L7, Calibration results, 3/15/06
RM-A1 Iodine Channel Calibration, 07/19/06
RM-A1 Gas Calibration, 08/17/05
RM-A1 Particulate Channel Calibration, 01/11/06
RM-A2 Gas Calibration Low Range, 04/06/06
RM-A2 Particulate Channel Calibration, 06/28/06
RM-A2 Iodine Channel Calibration, 09/28/05
RM-L2, Calibration, 03/30/06
Crystal River Unit 3 Radiochemistry cross check program results: 1st through 4th Quarter, 2005;
1st and 2nd Quarter, 2006
Harris E & E Center cross check program results: 2nd and 4th Quarter CY 2005; 1st Quarter
CY 2006
Counting Room Quality Control Charts for HPGe Detector Nos. 1 and 2 including: background,
full-width half max, peak centroid channel and radioactive source response data for Co-
57, Co-60 and Cs-137, November 2006
HPGe Detector No. 1 Efficiency calibration data for 42 millimeter (mm) particulate filter/glass
Petri dish geometry on shelf 1 (06/30/04), and shelves 2 and 3 (06/39/04); 1 liter sand
beaker on the detector surface (06/28/04); point source on shelf 1 (06/23/04) and shelf 2
(06/25/04); 20 milliliter (ml) vial on shelf 1 (10/06/04); 250 ml bottle on shelf 1
(06/25/04); Liter gas beaker on detector surface (06/22/04); and 35 mm particulate filter
(06/22/04)

Self-Assessments and Audits

CNAS-2005-0047, Environmental and Chemistry Assessment, 08/17/05

Nuclear Condition Reports

215535, Settling ponds not included in decommissioning file, 12/6/06
215820, Samples of settling pond sediment not collected as required, 12/7/06
215861, Incorrect RM background data entered in AI-500 form, 12/7/06
215863, Dose calculations are needed to make SDT-1 releases to ponds, 12/7/06
181377, Failed SP-185 filter test for AHFL-1A/B, 01/17/06
212552, Add note to up-stream sample location in SP-187, Rev. 25, 11/13/06
212553, AHFL-2A failed the initial SP-187 filter test, 11/13/06
213329, Revision to SP-187, Auxiliary building exhaust filter AHFL, 11/16/06
136058, RM-A6 Gas channel set-point change, 08/30/04
138830, Minor contained chemical spill occurred as lime dissolved, 09/30/04
144218, Water in HRA/CA sea-land drained out, 11/19/04
146358, Liquid leaking from shipping container, 12/17/04
152875, Leaking water onto berm and into storm drain, 03/06/05
159592, SWHE tube leak environmental reporting evaluation concern, 05/24/05
160013, Pin hole leak in SDT-1 transfer hose to the settling pond, 05/27/05

165798, MSV has steam leak, 08/08/05
166232, Gas contamination during MUT-1 venting evolution, 08/10/05
167551, WDT-10B release secured early due to low flow, 08/24/05
184397, MSV-26 leaking by seat to atmosphere, evaluate for offsite dose, 02/15/06
192666, Gas leak in WG valve alley, 04/27/06
195284, Small SDT-1 to pond hose leak, 05/22/06
196922, Three GPM CDT-1 leak into TB sump, 06/08/06
215535, Settling ponds not included in decommissioning file, 12/06/06
215820, Sampling of settling pond sediment not collected as required, 12/07/06
215861, Incorrect RM background data entered in AI-500 form, 12/07/06
215863, Dose calculations are needed to make SDT-1 releases to pond, 12/07/06

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

Procedures, Manuals, and Guidance Documents

Crystal River Unit 3 Off-Site Dose Calculation Manual, Rev. 29
Florida Department of Health (FL DOH) Environmental Radiation Control (ERC) Calibration Procedure
CP-7, Calibration of Gas Meters and Flowrators, Rev. 6
FL DOH ERC, Quality Procedure A, Radiological Environmental Monitoring Program, Rev. 1
FL DOH ERC, Quality Procedure C, Intralaboratory Quality Control, Rev. 0
FL DOH ERC, Quality Procedure D, Interlaboratory Quality Control, Rev. 0
FL DOH ERC Sampling Procedure 1, Collection of Air Particulates and Radioiodines, Rev. 7
FL DOH ERC Sampling Procedure 4, Collection of Surface Water, Rev. 4
FL DOH ERC Sampling Procedure 5, Collection of Broadleaf Vegetation, Rev. 2
FL DOH ERC Sampling Procedure 6, Collection of Food Crops, Rev. 3
FL DOH ERC Sampling Procedure 12, Annual Land Use Census, Rev. 2
HPP-202A, Supplemental Instructions to HPS-NGGC-0003: Radiological Surveys and Inspections, Rev. 27
SP-153, Primary System Meteorological Monitoring Instrumentation Calibration, Rev. 14
SP-157A, Meteorological System Surveillance, Rev. 23
PM-158, Back-Up System Meteorological Monitoring Instrumentation Calibration, Rev. 24

Records, Data, and Annual Reports

Crystal River Unit 3 - 2004 Annual Radiological Environmental Operating Report, 5/12/05
Crystal River Unit 3 - 2005 Annual Radiological Environmental Operating Report, 5/08/06
Meteorological Data, System Engineer's Notebook, 2004 and 2005
Review of Meteorological Data (OSI-PI) for 2004-2005
Mixed-Analyte Performance Evaluation Program (MAPEP) Intralaboratory Crosscheck Results, Session 13, 10/4/05
MAPEP Intralaboratory Crosscheck Results, Session 14, 12/05/05
WO 718338-01, Monthly Functional Checks of Primary Meteorological Monitoring System Instrumentation, 8/16/05
WO 746418-01, Semiannual Calibration of Primary Meteorological Monitoring System Instrumentation, 1/05/06

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WO 775420-01, Semiannual Calibration of Backup Meteorological Monitoring System Instrumentation, 1/20/06
WO 812070-01, Semiannual Calibration of Primary Meteorological Monitoring System Instrumentation, 6/22/06
WO 775420-01, Semiannual Calibration of Backup Meteorological Monitoring System Instrumentation, 7/06/06
WO 437118-01, Meteorological Monitoring Panel found out-of-service during SP-157A, 10/26/06 Calibration Data, Air Station Gas Meters, (11/30/05, 12/01/05, 5/26/06, and 5/31/06)

Audits and Self-Assessments

Informal Self-Assessment of RCA Exit Controls on Tools, SAIF187243, 10/17/06
Self Assessment No. 173607, CR-3 REMP, conducted 2/20/06 - 2/24/06
FL DOH ERC Nuclear Power Plant Surveillance Program, Semi- Annual Self Assessments (September 2004, March 2005, September 2005, March 2006, and September 2006)132601, Loss of power reported by state at REMP sample station C07, 7/21/04
136283, Vegetation sampling impacted by security upgrades, 9/01/04
137977, Primary met tower delta temp readout not accurate, 9/22/04
145983, Invalid seawater sample (REMP), 12/14/04
154738, Backup met tower wind direction instruments faulty, 3/27/05
164046, REMP sample station discrepancies, 7/19/05
166239, Primary met tower 33' wind direction (MM-14-MI) failed, 8/11/05
167806, Primary met tower recorders intermittently losing time, 8/26/05
174026, SAM-11 count time error, 10/25/05
177655, Contaminated fittings found in a clean tool box, 12/01/05
184156, REMP sampler found not running, 2/14/06
185822, SAST 173607 weakness #1 on rad environmental monitoring program, 2/28/06
202655, MMP-1 found out-of-service during the performance of daily SP-157A, 8/09/06
204234, Radioactive material discovered outside the RCA, 8/24/06
215860, Lack of procedures on met tower data review and reporting, 12/7/06

Section 40A1: Performance Indicator Verification

Procedures

CP-217, NRC Performance Indicator (PI) Program, Rev. 8

Records and Data

Electronic Dosimeter Alarm Logs, November 2005 - October 2006
Occupational PI Monthly Reports, November 2005 - September 2006
Gaseous waste release permit 50093.020.321.G for RM-A2, Auxiliary building ventilation/continuous release data, 12/31/05
Gaseous waste release permit 60068.020.362.G for RM-A2, Auxiliary building ventilation/continuous release data, 10/12/06
Liquid waste release permit 50215.002.416.L for Waste Decay Tank (WDT)-10B released to discharge canal, 12/30/05

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Archived Operator Logs, Out-of-service Effluent Monitors, 07/01/04 - 11/09/06
Crystal River Chemistry report: Sample Points RM-A4, 11/10/05-11/14/05 and RM-A4 09/23-24,
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Nuclear Condition Reports

175740, Incore detectors excessively withdrawn, 11/10/05
175992, Insulation worker received dose rate alarm, 11/14/05
198254, Security officer received dose rate alarm during drill, 6/23/06

Section 4OA5.2: Mitigating Systems Performance Index (MSPI) Verification

Procedures, Manuals, and Guidance Documents

Calculation P06-0002, CR3 MSPI Basis Document, Revisions 0, 1 and 2
Calculation E-91-0026, EGDG-1A Scenario Based Loading, Voltage Dip and Transient Motor
Starting Analysis
Calculation E-91-0027, EGDG-1B Scenario Based Loading, Voltage Dip and Transient Motor
Starting Analysis
Calculation E-97-0002, Emergency Diesel Generator Voltage Regulator Setpoints and
Uncertainties
Enhanced DBD Emergency Diesel Generator System 6/15
SP-349B, EFP-2 and Valve Surveillance
OP-450, Emergency Feedwater System
SP-311, Diesel Fuel Transfer Pump Surveillance (DFP-1A, DFP-1B)

Records and Data

Selected Control Room Logs, January 2002 through October 2006
Emergency Diesel Generator System Health Report
SSU NRC Performance Indicator data, 2002-2004
System Health Reports, January-June 2006,2005, July-December 2005

Corrective Action Program Documents

NCR 204386, EGDG-1B AF Voltage Low per SP-354B