



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
612 EAST LAMAR BLVD, SUITE 400  
ARLINGTON, TEXAS 76011-4125

May 12, 2010

David J. Bannister, Vice President  
and Chief Nuclear Officer  
Omaha Public Power District  
Fort Calhoun Station FC-2-4  
P. O. Box 550  
Fort Calhoun, NE 68023-0550

Subject: FORT CALHOUN - NRC INTEGRATED INSPECTION REPORT 05000285/2010002

Dear Mr. Bannister:

On March 31, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Fort Calhoun Station. The enclosed integrated inspection report documents the inspection finding, which was discussed on April 16, 2010, with Mr. Jeffrey Reinhart, Site Vice President, and other members of your staff.

The inspections 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.

This report documents one NRC identified finding (Severity Level IV non-cited violation). This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating this finding as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the violation or the significance of the noncited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Fort Calhoun facility. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Resident Inspector at the Fort Calhoun Station. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

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

OMAHA PUBLIC POWER DISTRICT - 2 -

ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

***/RA/ R.Azua for***

Jeffery A. Clark, P. E.  
Chief Project Branch E  
Division of Reactor Projects

Docket: 50-285  
License: DRP-40

Enclosure:  
NRC Inspection Report 05000285/2010002  
w/Attachment: Supplemental Information

cc w/Enclosure:

Jeffrey A. Reinhart  
Site Vice President  
Omaha Public Power District  
Fort Calhoun Station FC-2-4 Adm.  
P.O. Box 550  
Fort Calhoun, NE 68023-0550

Mr. Thomas C. Matthews  
Manager - Nuclear Licensing  
Omaha Public Power District  
Fort Calhoun Station FC-2-4 Adm.  
P.O. Box 550  
Fort Calhoun, NE 68023-0550

David A. Repka  
Winston & Strawn  
1700 K Street, NW  
Washington, DC 20006-3817

Chairman  
Washington County Board of Supervisors  
P.O. Box 466  
Blair, NE 68008

Ms. Julia Schmitt, Manager  
Radiation Control Program  
Nebraska Health & Human Services R & L  
Public Health Assurance  
P.O. Box 95007  
Lincoln, NE 68509-5026

Ms. Melanie Rasmussen  
Radiation Control Program Officer  
Bureau of Radiological Health  
Iowa Department of Public Health  
Lucas State Office Building, 5th Floor  
321 East 12th Street  
Des Moines, IA 50319

Chief, Technological Hazards Branch  
FEMA, Region VII  
Department of Homeland Security  
9221 Ward Parkway  
Suite 300  
Kansas City, MO 64114-3372

Electronic distribution by RIV:

- Regional Administrator (Elmo.Collins@nrc.gov)
- Deputy Regional Administrator (Chuck.Casto@nrc.gov)
- Acting Deputy Regional Administrator (Art.Howell@nrc.gov)
- DRP Director (Dwight.Chamberlain@nrc.gov)
- DRP Deputy Director (Anton.Vegel@nrc.gov)
- DRS Director (Roy.Caniano@nrc.gov)
- DRS Deputy Director (Troy.Pruett@nrc.gov)
- Senior Resident Inspector (John.Kirkland@nrc.gov)
- Resident Inspector (Jacob.Wingebach@nrc.gov)
- Branch Chief, DRP/E (Jeff.Clark@nrc.gov)
- Senior Project Engineer, DRP/E (Ray.Azua@nrc.gov)
- FCS Administrative Assistant (Berni.Madison@nrc.gov)
- Public Affairs Officer (Victor.Dricks@nrc.gov)
- Public Affairs Officer (Lara.Uselding@nrc.gov)
- Branch Chief, DRS/TSB (Michael.Hay@nrc.gov)
- Project Manager (Lynnea.Wilkins@nrc.gov)
- RITS Coordinator (Marisa.Herrera@nrc.gov)
- Regional Counsel (David.Roth@nrc.gov)
- Congressional Affairs Officer (Jenny.Weil@nrc.gov)
- OEMail Resource
- Regional State Liaison Officer (Bill.Maier@nrc.gov)
- ROPreports
- Only inspection reports to the following:
- DRS/TSB STA (Dale.Powers@nrc.gov)
- OEDO RIV Coordinator (Leigh.Trocine@nrc.gov)

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 05000285  
License: DRP-40  
Report: 05000285/2010002  
Licensee: Omaha Public Power District  
Facility: Fort Calhoun Station  
Location: 9610 Power Lane  
Blair, NE 68008  
Dates: January 1 through March 31, 2010  
Inspectors: J. Kirkland, Senior Resident Inspector  
J. Wingeback, Resident Inspector  
P. Elkmann, Senior Emergency Preparedness Inspector  
Approved By: Jeffrey Clark, P.E., Chief, Project Branch E  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000285/2010002; 01/01/2010 – 03/31/2010; Fort Calhoun Station, Integrated Resident and Regional Report; Identification and Resolution of Problems.

The report covered a 3-month period of inspection by resident inspectors. One Severity Level IV violation was identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process 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 4, dated December 2006.

### **A. NRC-Identified Findings and Self-Revealing Findings**

Cornerstone: Miscellaneous

Severity Level IV. The inspectors identified a Severity Level IV noncited violation of Fort Calhoun Technical Specification 5.8.1 for inadequate corrective action documents. Specifically, the documents do not adequately address assigning reportability evaluations. As a result, the licensee failed to evaluate the reportability of a condition that was determined to be reportable until questioned by the inspectors.

The inspectors determined that the licensee's inadequate corrective action documents were a performance deficiency. The inspectors reviewed this issue in accordance with NRC Inspection Manual Chapter 0612 and the NRC Enforcement Policy. Through this review, the inspectors determined that traditional enforcement was applicable to this issue because the NRC's regulatory ability was potentially affected. Specifically, the NRC relies on the licensees to identify and report conditions or events meeting the criteria specified in regulations in order to perform its regulatory function, and when this is not done the regulatory function is impacted, and is therefore a finding. The inspectors determined that this finding was not suitable for evaluation using the significance determination process, and as such, was evaluated in accordance with the NRC Enforcement Policy. The finding was reviewed by NRC management and due in part to its repetitive nature the violation was determined to be of more than minor significance, however since it was not found to be willful, and was entered into the corrective action program, this violation is being treated as a Severity Level IV noncited violation consistent with the NRC Enforcement Policy. (Section 40A2)

### **B. Licensee-Identified Violations**

None

## REPORT DETAILS

### Summary of Plant Status

The unit operated in Mode 1 at approximately 100 percent power throughout the inspection period.

#### 1. REACTOR SAFETY

##### Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Readiness for Seasonal Extreme Weather Conditions

###### a. Inspection Scope

The inspectors performed a review of the adverse weather procedures for extreme low temperatures. The inspectors verified that weather-related equipment deficiencies identified during the previous year were corrected prior to the onset of seasonal extremes, and evaluated the implementation of the adverse weather preparation procedures and compensatory measures for the affected conditions before the onset of, and during, the adverse weather conditions.

During the inspection, the inspectors focused on plant-specific design features and the procedures used by plant personnel to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Safety Analysis Report and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also reviewed corrective action program items to verify that plant personnel were identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:

- Raw water system
- Component cooling water system
- Turbine plant cooling water system

These activities constitute completion of one (1) readiness for seasonal adverse weather sample as defined in Inspection Procedure 71111.01-05.

###### b. Findings

No findings of significance were identified.

.2 Readiness to Cope with External Flooding

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the Updated Safety Analysis Report for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed an inspection of the protected area to identify any modification to the site that would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also reviewed the abnormal operating procedure for mitigating the design basis flood to ensure it could be implemented as written. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one (1) external flooding sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings of significance were identified.

**1R04 Equipment Alignments (71111.04)**

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- March 4, 2010, Portions of the auxiliary feedwater system while the diesel-driven auxiliary feedwater pump FW-54, was out of service
- March 9, 2010, High pressure safety Injection pump SI-2C while SI-2A was out of service
- March 26, 2010, Portions of the auxiliary feedwater system including the motor-driven auxiliary feedwater pump, FW-6, while diesel generator 2 out of service

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures,

system diagrams, Updated Safety Analysis Report, technical specification requirements, administrative technical specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also inspected accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three (3) partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

On March 24, 2010, the inspectors performed a complete system alignment inspection of the Raw Water System while the "A" Circulating Water Cell was out of service to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one (1) complete system walkdown sample as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings of significance were identified.

## **1R05 Fire Protection (71111.05)**

### **.1 Quarterly Fire Inspection Tours**

#### **a. Inspection Scope**

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- February 28, 2010, Fire Area 6.8, Heat Exchanger and Pump Area, Room 5
- February 28, 2010, Fire Area 10, Charging Pump Area, Room 6
- March 18, 2010, Fire Area 32, Compressor Area, Room 19
- March 18, 2010, Fire Area 34A, Electrical Penetration Area – Basement, Room 20

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were not obstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four (4) quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

#### **b. Findings**

No findings of significance were identified.

## **1R07 Heat Sink Performance (71111.07)**

### a. Inspection Scope

The inspectors reviewed licensee programs, verified performance against industry standards, and reviewed critical operating parameters and maintenance records for the Raw Water / Component Cooling Water Heat Exchange AC-1B. The inspectors verified that performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; the licensee utilized the periodic maintenance method outlined in EPRI Report NP 7552, "Heat Exchanger Performance Monitoring Guidelines;" the licensee properly utilized biofouling controls; the licensee's heat exchanger inspections adequately assessed the state of cleanliness of their tubes; and the heat exchanger was correctly categorized under 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one (1) heat sink inspection sample as defined in Inspection Procedure 71111.07-05.

### b. Findings

No findings of significance were identified.

## **1R11 Licensed Operator Requalification Program (71111.11)**

### Quarterly Review

#### a. Inspection Scope

On March 9, 2010, the inspectors observed a crew of licensed operators in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Crew's ability to take timely actions in the conservative direction
- Crew's prioritization, interpretation, and verification of annunciator alarms
- Crew's correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors

- Crew's ability to identify and implement appropriate technical specification actions and emergency plan actions and notifications

The inspectors compared the crew's performance in these areas to pre-established operator action expectations and successful critical task completion requirements. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one (1) quarterly licensed-operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings of significance were identified.

**1R12 Maintenance Effectiveness (71111.12)**

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- February 3, 2010, Maintenance rule failure of main feedwater pump FW-4C
- March 12, 2010, Maintenance rule status of the safety related inverters, EE-8H and EE-8J

The inspectors reviewed events such as, where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)
- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or (a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance

through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two (2) quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings of significance were identified.

**1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)**

a. Inspection Scope

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- January 4, 2010, Yellow risk and yellow activity risk associated with west raw water header outage and main feedwater pump FW-4C being out of service
- March 4, 2010, Yellow risk associated with diesel-driven auxiliary feedwater pump FW-54 maintenance activities
- March 11, 2010, Yellow risk associated with electric-driven auxiliary feedwater pump maintenance activities
- March 22, 2010, Risk management actions associated with the floor plug removal above room 21

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements

and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four (4) maintenance risk assessments and emergent work control inspection samples as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings of significance were identified.

**1R15 Operability Evaluations (71111.15)**

a. Inspection Scope

The inspectors reviewed the following issues:

- January 8, 2010, Operability of safety injection tank SI-6C leakage header following isolation of the safety injection leakage cooler SI-4C outlet pressure control valve PCV-2949
- January 20, 2010, Operability of letdown heat exchange CH-7 backpressure control valve PCV-210 following discovery of unauthorized packing installation
- January 25, 2010, Operability of power operated relief and pressurizer safety valves tailpipe temperature instruments
- February 17, 2020, Operability of turbine-driven auxiliary feedwater pump FW-10 following the pump tripping on high backpressure
- February 25, 2010, Operability of motor-driven auxiliary feedwater pump FW-6 after discovery of a potential common mode failure

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and Updated Safety Analysis Report to the licensee personnel's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with

operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five (5) operability evaluations inspection samples as defined in Inspection Procedure 71111.15-04

b. Findings

No findings of significance were identified.

**1R19 Postmaintenance Testing (71111.19)**

a. Inspection Scope

The inspectors reviewed the following postmaintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- January 19, 2010, Postmaintenance testing of raw water pump discharge header isolation valve HCV-2874B following filter regulator replacement
- February 28, 2010, Postmaintenance testing following replacement of B-reactor protective system axial power distribution trip calculator power supply
- March 10, 2010, Postmaintenance testing of diesel generator 1 following the replacement of the 1Q transistor
- March 12, 2010, Postmaintenance testing of containment spray pump SI-3A following replacement of the solenoid for the pump discharge valve HCV-2958
- March 24, 2010, Postmaintenance testing of diesel generator 2 following the replacement of the 1Q, 2Q, and 3Q transistors

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following (as applicable):

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the Updated Final Safety Analysis Report, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests

to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five (5) postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings of significance were identified.

**1R22 Surveillance Testing (71111.22)**

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data

- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct
- Reference setting data
- Annunciators and alarms setpoints

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- January 12, 2010, Reactor coolant system leakage calculation in conjunction with investigations into elevated leak rate
- January 21, 2010, Turbine-Driven auxiliary feedwater pump FW-10 operability test, Procedure OP-ST-AFW-3004
- March 11, 2010, Auxiliary feedwater pump FW-6, Recirculation Valve, and Check Valve Tests, Procedure OP-ST-AFW-3009
- March 27, 2010, Channel A safety injection, containment spray and recirculation actuation signal test, Procedure OP-ST-ESF-0009
- March 30, 2010, High pressure safety injection SI-2B in-service test

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of five (5) surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings of significance were identified.

**Cornerstone: Emergency Preparedness**

**1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)**

a. Inspection Scope

The inspectors performed an in-office review of Radiological Emergency Response Plan Appendix A, "Letters of Agreement," Revision 20a, submitted February 11, 2010. This revision updated offsite letters of agreement for calendar year 2010.

This revision was compared to its previous revision, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, and to the standards in 10 CFR 50.47(b) to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q). This review was not documented in a safety evaluation report and

did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection.

These activities constitute completion of one (1) sample as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

**40A1 Performance Indicator Verification (71151)**

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the fourth Quarter 2009 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings of significance were identified.

.2 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity performance indicator for the period from the first quarter 2009 through the fourth quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's reactor coolant system chemistry samples, technical specification requirements, issue reports, event reports, and NRC integrated inspection reports for the period of January 2009 through December 2009 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one (1) reactor coolant system specific activity sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.3 Reactor Coolant System Leakage (BI02)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system leakage performance indicator for the period from the first quarter 2009 through the fourth quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator logs; reactor coolant system leakage tracking data; issue reports; event reports; and NRC integrated inspection reports for the period of January 2009 through December 2009 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one (1) reactor coolant system leakage sample(s) as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

**40A2 Identification and Resolution of Problems (71152)**

**Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection**

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included the complete and accurate

identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

Introduction. The inspectors identified a Severity Level IV noncited violation of Fort Calhoun Technical Specification 5.8.1 for inadequate corrective action documents. Specifically, the documents do not adequately address assigning reportability evaluations. As a result, the licensee failed to evaluate the reportability of a condition that was determined to be reportable until questioned by the inspectors.

Description. On April 13, 2009, the licensee discovered that a noncritical quality element relay was installed in the pump control for RM-050/051. The containment particulate monitor is RM-050 and the containment noble gas monitor is RM-051. The two monitors share a common sample pump and are normally referred to as the containment skid monitor, RM-050/051. Monitor RM-050 is a non-safety-related monitor and replacement parts are Q level 0 (noncritical quality element). Monitor RM-051 is a safety related monitor and all replacement parts are Q level 1 (critical quality element). Since the two monitors share the same sample pump, all components associated with the sample pump should be critical quality element components to satisfy the Q level 1 requirement for RM-051. However, on November 21, 2008, monitor RM-050 K1 relay associated with the sample pump was procured and installed in the circuit. This relay was installed

approximately 143 days before the discrepancy was identified on April 13, 2009. The licensee did not perform an operability evaluation on the relay after discovery of the noncritical quality element relay, and thus determined that RM-051 was inoperable for the entire 143 days.

On March 28, 2009, RM-062, normal range stack gas radiation monitor, was taken out of service and not returned to service until April 12, 2009. With the inoperability of RM-051 over the same period, both radiation monitors were inoperable from March 28 through April 12, 2009.

Technical Specification 2.15, Table 2-4 describes the number of radiation monitors required during plant operation. The radiation monitors required by Table 2-4 are RM-051, RM-052 (containment stack radiation monitor) and RM-062 (normal range stack gas radiation monitor). Two of the three radiation monitors are required by Technical Specification 2.15. In the event that only one monitor is available, Technical Specification 2.15(1) requires placing one inoperable monitor to bypass within one hour. In the next 48 hours, the technical specification can be satisfied by either closing the containment ventilation isolation valves or manually initiating containment radiation high signal. If neither of these actions is performed, the reactor shall be placed in hot shutdown within the following 12 hours.

On May 29, 2009, the inspectors questioned the licensee regarding the operability and reportability requirements associated with the simultaneous inoperability of monitors RM-051 and RM-062, and the licensee determined that a reportability evaluation had not been performed for this condition. A reportability evaluation was completed on June 3, 2009, and determined that the condition was reportable as a condition prohibited by technical specifications. In addition, there have been numerous examples of condition reports questioning the reportability of past conditions. Though most of these conditions did not ultimately result in reportable conditions, it is a further indication of inadequate guidance being given for reportability evaluations.

Standing orders SO-R-1 (Reportability Determinations) and SO-R-2 (Condition Reporting and Corrective Action) and FCSG-24 (Corrective Action Program Guideline) all give responsibility of evaluating conditions relating to reportability to the shift manager. However, the shift manager is not, nor should not be an expert in all aspects of reportability, and none of the above mentioned documents provide adequate guidance on when a formal reportability evaluation should be completed. There are numerous conditions that should always justify an evaluation for Reportability, but the procedures lack adequate guidance. As a result of the lack of guidance, it was not identified on July 28, 2008, that a condition existed that should have been evaluated for reportability, and was in fact reportable in accordance with 10 CFR 50.73(a)(2)(i)(B).

Analysis. The inspectors determined that the licensee's inadequate corrective action documents were a performance deficiency. The inspectors reviewed this issue in accordance with NRC Inspection Manual Chapter 0612 and the NRC Enforcement Manual. Through this review, the inspectors determined that traditional enforcement was applicable to this issue because the NRC's regulatory ability was potentially

affected. Specifically, the NRC relies on the licensees to identify and report conditions or events meeting the criteria specified in regulations in order to perform its regulatory function, and when this is not done the regulatory function is impacted, and is therefore a finding. The inspectors determined that this finding was not suitable for evaluation using the significance determination process, and as such, was evaluated for Traditional Enforcement in accordance with the NRC Enforcement Policy. The finding was reviewed by NRC management and due in part to its repetitive nature the violation was determined to be of more than minor significance, however since it was not found to be willful, and was entered into the corrective action program, this violation is being treated as a Severity Level IV noncited violation consistent with the NRC Enforcement Policy.

Enforcement. Technical Specification 5.8 states, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2. Item 1h of Appendix A to Regulatory Guide 1.33 requires procedures for reviewing records. Contrary to the above, the licensee failed to provide adequate guidance in standing orders SO-R-1 (Reportability Determinations) and SO-R-2 (Condition Reporting and Corrective Action) and FCSG-24 (Corrective Action Program Guideline) for determining when reportability evaluations should be conducted. This finding was determined to be applicable to traditional enforcement because the failure to adequately evaluate conditions or events meeting the criteria specified in regulations for reportability may potentially affect the NRCs regulatory ability. The finding was evaluated in accordance with the NRC's Enforcement Policy. The finding was reviewed by NRC management and determined to be a more than minor violation, however, since it was not considered to be willful, and was entered into the corrective action program, this violation is being treated as a Severity Level IV noncited violation, consistent with the NRC Enforcement Policy: NCV 05000285/2010002-01, "Inadequate Reportability Guidance."

.3 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting a transistor failure in the voltage regulator of diesel generator 2, to verify that the corrective actions are commensurate with the significance of the issue. The inspectors also verified that the Licensee is identifying operator workaround problems at an appropriate threshold, entering them in the corrective action program, and planning or taking appropriate corrective actions

These activities constitute completion of two (2) in-depth problem identification and resolution sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings of significance were identified.

#### **40A3 Event Follow-up (71153)**

- .1 (Opened and Closed) LER 05000285/2009004-00, Containment Integrity Was Unknowingly Violated During Performance Of Leak Test.

Containment integrity was unknowingly violated on October 26, 2003, and November 26, 2006, as a result of opening manual containment isolation valve SI-410 (Safety injection tanks fill/drain valve). This occurred during a surveillance test, when containment integrity was required and administrative controls (dedicated operator) were not implemented. The LER was reviewed by the inspectors, no findings of significance were identified, and no violation of NRC requirements occurred. This LER is closed.

- .2 (Opened) LER 05000285/2009005-00, Inoperable Auxiliary Feedwater Train Due to an Inoperable Injection Valve.

On November 1, 2009, Fort Calhoun Station began a refueling outage. The station entered mode 5 (less than 210 degrees Fahrenheit, refueling) on November 2, 2009. On November 6, 2009, during performance of air operated valve diagnostic testing of HCV-1107A (Steam Generator "A" auxiliary feedwater (inlet valve), the air regulator setting was found to be 23.6 pounds per square inch gauge (psig). The regulator pressure setting of 23.6 psig is contrary to the required nominal setting of 35. psig credited in calculation FC06904, "Category 1 Air-Operated Valve (AOV) Operator Margin Analysis." (HCV-1107A is an air-to-close valve.)

#### **40A5 Other Activities**

- .1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors performed observations of security force personnel and activities to ensure that the activities were consistent with Fort Calhoun Station's security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

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

b. Findings

No findings of significance were identified.

## **40A6 Meetings**

### Exit Meeting Summary

On February 22, 2010, the inspectors conducted a telephonic exit meeting to present the results of the in-office inspection of changes to the licensee's emergency plan to Mr. Simmons, Supervisor, Emergency Preparedness, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On April 16, 2010, the inspectors presented the inspection results to Mr. Jeffrey Reinhart, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

**SUPPLEMENTAL INFORMATION**  
**KEY POINTS OF CONTACT**

Licensee Personnel

R. Acker, Station Licensing  
A. Clark, Manager, Security  
P. Cronin, Manager, Operations OPPD  
H. Faulhaber, Division Manager, Nuclear Engineering  
M. Frans, Manager, System Engineering  
J. Gasper, Manager, Design Engineering  
J. Gooddell, Division Manager, Nuclear Performance Improvement and Support  
D. Guinn, Supervisor Regulatory Compliance  
R. Haug, Training Manager  
J. Herman, Manager, Engineering Programs  
R. Hodgson, Manager, Radiation Protection  
T. Mathews, Manager, Nuclear Licensing  
T. Nellenbach, Plant Manager  
T. Pilmaier, Manager, Performance Improvement  
J. Reinhart, Site Vice President  
T. Uehling, Manager, Chemistry

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened

05000285/2009005-00      LER    Inoperable Auxiliary Feedwater Train Due to an Inoperable Injection Valve

Opened and Closed

05000285/2009004-00      LER    Containment Integrity Was Unknowingly Violated During Performance Of Leak Test

05000285/2010002-01      SL-IV    Inadequate Reportability Guidance

## LIST OF DOCUMENTS REVIEWED

### Section 1RO1: Adverse Weather Protection

#### CONDITION REPORTS

2010-0228

#### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AOP-1	Acts of Nature	23
EPIP-TSC-2	Catastrophic Flooding Preparations	7
GM-RR-AE-1002	Flood Control Preparedness for Sandbagging	9
PE-RR-AE-1001	Floodgate Installation and Removal	3

#### MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
FC07384	River Level Required to Maintain RW/CW Pump Minimum Submergence – Includes Variations With Stop Log Height and Frazil Ice Considerations	0

### Section 1RO4: Equipment Alignment

#### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OI-AFW-1	Auxiliary Feedwater Actuation System Normal Operation	73
OI-RW-1	Raw Water System Normal Operation	92
OI-SI-1	Safety Injection – Normal Operation	118
OP-PM-AFW-004	Third Auxiliary Feedwater Pump Operability Verification	33

#### DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
11405-M-100	Raw Water Flow Diagram P&ID	97
11405-M-253-4	Flow Diagram, Steam Generator Feedwater & Blowdown P&ID	39
11405-M-253-Cov	Composite Flow Diagram, Steam Generator Feedwater & Blowdown P&ID	47

**Section 1RO5: Fire Protection**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EA-FC-97-001	FCS Fire Hazards Analysis Manual	15
SO-G-102	Standing Order, Fire Protection Program Plan	8
SO-G-103	Standing Order, Fire Protection Operability Criteria And Surveillance Requirements	24
SO-G-28	Standing Order, Station Fire Plan	77
SO-G-58	Standing Order, Control of Fire Protection System Impairments	36
SO-G-91	Standing Order, Control and Transportation of Combustible Materials	26
USAR 9.11	Updated Safety Analysis Report Fire Protection Systems	19

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
FC05814	UFHA Combustible Loading Calculation	11

**Section 1RO7: Heat Sink Performance**

WORK ORDERS

0346484

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
PE-RR-CCW-0100	Disassembly, Cleaning, and Repair of CCW Heat Exchanger – Raw Water Side	35

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
11405-M-100	Raw Water Flow Diagram P&ID	97

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	DATE
EL-6817	Component Cooling Heat Exchange Specification Sheet	March 30, 1970

**Section 1R11: Licensed Operator Requalification Program**

MISCELLANEOUS DOCUMENTS

TITLE	DATE
Class Attendance Records for Simulator Evaluations	March 9, 2010
Current operator license list from Fort Calhoun Station	March 9, 2010
Current Simulator Differences List	March 9, 2010
Open Simulator Discrepancy Reports (All)	March 9, 2010

**Section 1R12: Maintenance Effectiveness**

CONDITION REPORTS

2009-0808	2009-5206	2009-6782	2010-0039
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PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
PBD-16	Program Basis Document, Maintenance Rule	8
PED-SEI-34	Maintenance Rule Program	6

MISCELLANEOUS DOCUMENTS

TITLE	REVISION
Maintenance Rule Scoping Data Sheet 125INV	4a
Maintenance Rule Scoping Data Sheet MFWPMP	3a

**Section 1R13: Maintenance Risk Assessment and Emergent Work Controls**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
ANSI N18.7	Administrative Controls for Nuclear Power Plants	1972
SO-M-100	Standing Order, Conduct of Maintenance	52
SO-M-101	Standing Order, Maintenance Work Control	85

MISCELLANEOUS DOCUMENTS

TITLE	DATE
Summary of scheduled activities affecting plant risk	Week of January 4, 2010
Summary of scheduled activities affecting plant risk	Week of February 28, 2010
Summary of scheduled activities affecting plant risk	Week of March 7, 2010
Summary of scheduled activities affecting plant risk	Week of March 21, 2010

**Section 1R15: Operability Evaluations**

CONDITION REPORTS

2010-0278	2010-0280	2010-0293	2010-0304	2010-0385
2010-0455	2010-0813	2010-0813	2010-0081	2010-0387

WORK ORDERS

0314135	0265513	0364827
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PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OP-ST-AFW-0004	Auxiliary Feedwater Pump FW-10 Operability Test	28
OP-ST-RC-0003	PORV/Safety Valve tailpipe Temperature Circuit Check	11
PE-RR-VX-0442S	Inspection and Repair of Copes-Vulcan Control Valves	15

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
E-23866-210-120	Composite Flow Diagram Chemical & Volume Control System P&ID	43
E-23866-210-130-2B	Safety Injection and Containment Spray System Flow Diagram P&ID	13
E-23866-210-130-COV	Composite Flow Diagram Safety Injection and Containment Spray System P&ID	59

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
	FCS Technical Data Book – Attachment 11	44

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
	FCS Technical Data Book – Attachment 2	44
	Assessment of FW-10 troubleshooting and testing following back pressure trip	February 17, 2010
NOD-QP-31.1	Operability Evaluation Form	February 1, 2010

**Section 1R19: Postmaintenance Testing**

CONDITION REPORTS

2010-0977          2010-0446

WORK ORDERS

0311178          0321023          0369243          0362595

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ARP-CB-4/A20	Annunciator Response Procedure A20 Control Room Annunciator A20	42
EM-CP-01-AI-133A-28	Calibration of Diesel Generator DG-1 Voltage Regulator Limit Switches	7
EM-CP-01-AI-133B-28	Calibration of Diesel Generator DG-2 Voltage Regulator Limit Switches	7
EM-RR-VX-0501	Replacement of ASCO Solenoid Valve	19
IC-ST-RPS-0003	Quarterly Functional Test of Power Range Safety Channel B Trip Unit	9
IC-ST-RPS-0027	Quarterly Functional Test of Thermal Margin/Low Pressure Channel B	16
IC-ST-RPS-0035	Quarterly Functional Test of Channel B Axial Power Distribution (APD) Calculator	18
IC-ST-RPS-0039	Calibration of Channel B Axial Power Distribution (APD) Calculator	25

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
IC-ST-RPS-0042	Quarterly Functional Test of RPS Trip Logic	4
OI-EE-4	120 Volt AC System Normal Operation	44
OP-ST-RW-3002B	Raw Water System Category A and B Valve Exercise Test	10
OP-ST-SI-3021	Room 21 Safety Injection/Containment Spray Pumps and Valve Exercise In Service Test	11
OP-ST-VX-3017B	Raw Water System Remote Position Indicator Verification Surveillance Test	3

DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
11405-E-120. Sheet 127	AI-40B Panel Schedule	0
11405-E-44 Sheet 1	Safety Injection Valve Schematic and Wiring Diagram	16
11405-M-100	Raw Water Flow Diagram	97
A-61608	Mounting of the Isolation Box to Panel AI-31B & C	0
B-4174	Mounting Detail for DEVAR, APD Power Supplies	0
E-23866-411-013, Sheet 4	RPS Schematic	22
E-23866-411-064	Axial Power Distribution Trip System Calculator	19

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>REVISION / DATE</u>
SO-G-87 Formalized Plan, RPS Power Supply AI-31B-BW 15-PS1 Replacement	February 27, 2010
System Training Manual Volume 38, Reactor Protective System and Diverse SCRAM System	20

**Section 1R22: Surveillance Testing**

CONDITION REPORTS

2010-1476

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OI-AFW-1	Auxiliary Feedwater Actuation System Normal Operation	73
OP-ST-AFW-004	Auxiliary Feedwater Pump FW-10, Operability Test	28
OP-ST-AFW-3009	Auxiliary Feedwater Pump FW-6, Recirculation Valve, and Check Valve Tests	17
OP-ST-ESF-0009	Channel A Safety Injection, Containment Spray and Recirculation Actuation Signal Test	56
OP-ST-SI-3021	Room 22 Safety Injection/Containment Spray Pumps and Valve Exercise Inservice Test	9

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
FCSG-47	RCS Leak Rate Monitoring Program	0

**Section 40A1: Performance Indicator Verification**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OP-ST-RC-3001	Reactor Coolant System (RCS) Leak Rate Test	32

MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
	Various Operator Logs	January 1, 2009 to December 31, 2009
FCSG-47	RCS Leak Rate Monitoring Program	0
NEI 99-02	Regulatory Assessment Indicator Guideline	6

**Section 40A2: Identification and Resolution of Problems**

CONDITION REPORTS

2009-6893	2009-4972	2010-0475	2010-0470
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MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
	White Paper – Replacement of DG Voltage Regulator Transistors	February 22, 2010
	Failure Analysis of 2N169A Germanium Transistor	November 19, 2010
	Root Cause Analysis – Anomalous Operation of DG-1 Voltage Regulator	December 2, 2009
IN-2008-04	NRC Information Notice – Counterfeit Parts Supplied to Nuclear Power Plants	April 7, 2008
NOD-QP-31	Operability Evaluation Form, CR No: 2010-0470	January 30, 2010