



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

August 3, 2009

EA-09-174

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 STATION NRC INTEGRATED INSPECTION  
REPORT 05000285/2009003 AND NOTICE OF VIOLATION

Dear Mr. Bannister:

On June 30, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Fort Calhoun Station. The enclosed integrated inspection report documents the inspection findings, which were discussed on July 7, 2009, with Jeff 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.

The NRC identified an issue that was evaluated under the risk significance determination process as having very low safety significance (Green). The NRC determined that a violation was associated with this issue. The violation was evaluated in accordance with the NRC Enforcement Policy included in the NRC's Web site at [www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html](http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html).

The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the subject inspection report. The violation involved Omaha Public Power District's (OPPD's) failure to classify raw water strainer components as safety-related. The violation is being cited in the Notice because one of the criteria specified in Section VI.A.1 of the NRC Enforcement Policy for a noncited violation was not satisfied. Specifically, OPPD failed to restore compliance for an existing noncited violation within a reasonable time after the noncited violation was documented in NRC Inspection Report 05000285/2007007, dated September 7, 2007. Please note that you are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements. In addition, if you disagree with other aspects of the finding, 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 Fort Calhoun. 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). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Jeffrey A. Clark  
Project Branch E  
Division of Reactor Projects

Docket: 50-285  
License: DPR-40

Enclosure:  
NRC Inspection Report 05000285/200903  
w/Attachment: Supplemental Information

cc w/Enclosure:  
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Omaha Public Power District

- 3 -

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File located: R:\ REACTORS\ FCS\2009\FC2009-03RP-JCK.doc

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SUNSI Rev Compl.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ADAMS	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Reviewer Initials	JAC
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RIV:RI:DRP/E	SPE/DRP/E	C:DRS/EB1	C:DDRS/EB2	C:DRS/OB	C:DRS/PSB1
JCKirkland	GDReplogle	TRFarnholtz	NFO'Keefe	RELantz	MPShannon
<b>E - JAClark for</b>	<b>/RA/</b>	<b>/RA/</b>	<b>/RA/</b>	<b>/RA/</b>	<b>/RA/</b>
07/30/09	07/22/09	07/27/09	07/23/09	07/28/09	07/28/09
C:DRS/PSB2	C:ACES	D:DRP	C:DRP/E		
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07/30/09	07/30/09	08/2/09	08/3/09		

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## NOTICE OF VIOLATION

Omaha Public Power District  
Fort Calhoun Station

Docket 50-285  
License DPR-40  
EA-09-174

During an NRC inspection conducted from April 1, 2009, through June 30, 2009, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Part 50 of 10 CFR, Appendix B, Criterion III, "Design Control," requires, in part, that "measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

Part 50.2 of 10 CFR defines safety-related structures, systems and components as those structures, systems and components that are relied upon to remain functional during and following design basis events to assure: . . ., in part,

- The capability to shut down the reactor and maintain it in a safe shutdown condition; or
- The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the applicable guideline exposures set forth in . . . § 100.11 of this chapter, as applicable. . ."

Contrary to the above, between 1992 and 2009, the licensee failed to assure that the design basis is correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to correctly translate the design basis of the raw water system strainers into Design Basis Document SDBD-AC-RW-101, Attachment 20, "Requirements and Design of Raw Water Pump Discharge Strainers and Motors (AC-12A and 12B)," in that the document stipulated that the strainers were not safety related but the raw water strainers had a safety function. Specifically, the raw water strainers are relied upon to remain functional during and following design basis events to maintain the reactor in a safe shutdown condition and to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the applicable guideline exposures set forth in § 100.11 of Title 10 of the Code of Federal Regulations.

This violation is associated with a Green significance determination process (SDP) finding.

Pursuant to the provisions of 10 CFR 2.201, Omaha Public Power District is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 East Lamar Blvd, Suite 400, Arlington, Texas 76011, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice of Violation (Notice), within 30 days of the date of the letter transmitting this Notice. This

reply should be clearly marked as a "Reply to a Notice of Violation; EA-09-174" and should include: (1) the reason for the violation or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an Order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other actions that may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Dated this 3rd day of August 2009

**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION IV**

Docket: 50-285

License: DPR-40

Report: 05000285/2009003

Licensee: Omaha Public Power District

Facility: Fort Calhoun Station

Location: Fort Calhoun Station FC-2-4 Adm.  
P.O. Box 399, Highway 75 - North of Fort Calhoun  
Fort Calhoun, Nebraska

Dates: April 1 through June 30, 2009

Inspectors: J. Hanna, Senior Resident Inspector  
J. Kirkland, Senior Resident Inspector  
P. Elkmann, Senior Emergency Preparedness Inspector  
W. Schaup, Project Engineer

Approved By: Jeff A. Clark, Chief, Project Branch E  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000285/2009003; 04/01//2009 – 06/30/2009; Fort Calhoun Station, Integrated Resident and Regional Report; Problem Identification and Resolution.

The report covered a 3-month period of inspections by resident inspectors and announced baseline inspections by regional based inspectors. One Green cited 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: Mitigating Systems

- Green. The inspectors identified a cited violation of 10 CFR Part 50, Appendix B, Criterion III, for the failure to correctly translate the Fort Calhoun Station raw water strainer component's design basis into specifications, procedures, and instructions. The raw water strainers were incorrectly translated as nonsafety-related in design documents for their function of filtering small debris from the raw water system although the equipment is relied upon for design basis accident mitigation. This violation was identified by the NRC in 2007 and was a continuing violation that was not corrected in a reasonable time.

This finding was more than minor because it affected the Mitigating System Cornerstone objective of the design control attribute to ensure the reliability and availability of the raw water system to mitigate initiating events. Using the NRC Manual Chapter 0609, Phase 1 screening worksheet, the issue screened as having very low safety significance because it was a design or qualification deficiency confirmed not to result in a loss of operability per Part 9900, "Technical Guidance, Operability Determination Process for Operability and Functional Assessment." The finding had a problem identification and resolution crosscutting aspect (corrective action component) because the licensee failed to take appropriate corrective actions to address the safety issue in a timely manner [P.1(d)] (Section 40A2).

### B. Licensee-Identified Violations

None

## REPORT DETAILS

### Summary of Plant Status

The unit began this inspection period in Mode 1 at full rated thermal power. On April 19, 2009, reactor power was reduced to approximately 80 percent to support main condenser cleaning. Reactor power was incrementally increased beginning on April 21, 2009, until it reached 100 percent power on April 25, 2009, where the plant remained until the end of 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 Impending Adverse Weather Conditions

##### a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility for the weekend of June 6, 2009, the inspectors reviewed the licensee's overall preparations and protection for the expected weather conditions. On June 5, 2009, the inspectors walked down the switchyard and areas around the main transformer because their risk important functions could be affected or required because of high winds, tornado-generated missiles, or the loss of offsite power. The inspectors evaluated the licensee's preparations against the site's procedures and determined that the licensee's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. 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. The inspectors also reviewed a sample of corrective action program items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with the station's corrective action procedures. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one readiness for impending adverse weather condition 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 a walkdown 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 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:

- June 5, 2009, portions of the raw water system with the Heat Exchanger AC-1D out of service for maintenance
- June 15, 2009, portions of the auxiliary feedwater system while motor driven auxiliary feedwater Pump FW-6 was being protected during Diesel Generator 2 diesel surveillance
- June 25, 2009, portions of the component cooling water system while the Heat Exchanger AC-1B was out of service for maintenance

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 walked down 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 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 June 11, 2009, the inspectors performed a complete system alignment inspection of the auxiliary feedwater system 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 walked down 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 complete system walkdown sample as defined in Inspection Procedure 71111.04-05. This walkdown was performed in conjunction with Operating Experience Smart Sample FY 2009-02 "Negative Trend and Recurring Events Involving Feedwater Systems."

b. Findings

No findings of significance were identified.

**1R05 Quarterly Fire Protection Tours (71111.05)**

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:

- April 30, 2009, Fire Area 6.5, shutdown heat exchanger, Area I, Room 15
- April 30, 2009, Fire Area 6.6, shutdown heat exchanger, Area II, Room 14
- June 4, 2009, Fire Area 33, component cooling heat exchanger area, Room 18
- June 17, 2009, Fire Area 36A, east switchgear area, Room 56E

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 unobstructed, 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 quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings of significance were identified.

**1R06 Flood Protection Measures (71111.06)**

a. Inspection Scope

The inspectors reviewed the Updated Safety Analysis Report, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; reviewed the

corrective action program to determine if licensee identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; and verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also walked down the two areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- April 30, 2009, shutdown cooling heat exchanger Rooms 14 and 15

These activities constitute completion of one flood protection measures inspection sample as defined in Inspection Procedure 71111.06-05.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

On June 16, 2009, the inspectors observed Crew D licensed operators in the plant's simulator to verify that operator performance was adequate, evaluators were identifying, and documenting crew performance, problems, and training were 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
- Supervisor's oversight and direction
- 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 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:

- Review of a(4) status of Diesel Generator 2 because the availability goal was exceeded
- Review of a(4) status of the turbine driven auxiliary feedwater Pump FW-10 following two recent failures

The inspectors reviewed events such as, where ineffective equipment maintenance had 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 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 the licensee'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:

- Emergent issue when the turbine-driven auxiliary feedwater Pump FW-10 tripped and became inoperable while already in a yellow risk condition due to containment spray Pump SI-3A being out of service for maintenance on April 6, 2009
- Evaluation of risk management actions during the Diesel Generator 1 inspection, which is a yellow core damage frequency maintenance item and an orange core damage probability maintenance activity on May 4, 2009
- Impact on plant risk with Diesel Generator 2 out of service for longer than scheduled and maintenance on Valve HCV-480 (component cooling water inlet valve for shutdown cooling Heat Exchange 4A) was ongoing on June 17, 2009
- Evaluation of risk management actions during the monthly run of the diesel driven auxiliary feedwater Pump FW-54 while Air Compressor CA-1B was out of service for maintenance

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 the licensee performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When the licensee performed emergent work, the inspectors verified that the licensee 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 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:

- Operability of turbine-driven auxiliary feedwater Pump FW-10 following a failure to run on April 6, 2009
- Operability of hydrogen analyzer due to Isolation Valve HCV-820B being declared inoperable on April 6, 2009
- Operability of Radiation Monitor RM050/51 after discovery of a noncritical quality element relay in the pump circuitry on April 13, 2009
- Operability of raw water Heat Exchanger AC-1D following Valve HCV-492A being declared inoperable on April 16, 2009
- Operability of auxiliary feedwater Pumps FW-6 (motor driven) and FW-10 (turbine driven) relating to meeting the required delivery time to the steam generators on May 8, 2009
- Operability of Channel B reactor protection system Trip Units 6 and 7 following failure of split loop calibration on June 10, 2009
- Operability of Valve MS-291 following discovery of solenoid exceeding qualified lifetime on June 11, 2009
- Operability of Inverters A and B following inverters transferring to backup power on June 16, 2009

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'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 eight operability evaluations inspection sample(s) as defined in Inspection Procedure 71111.15-04

b. Findings

No findings of significance were identified.

**1R18 Plant Modifications (71111.18)**

a. Inspection Scope

The inspectors reviewed the following modifications to verify that the safety functions of important safety systems were not degraded:

- Temporary modification to remove the hot leg temperature resistance temperature detector from the reactor protection system, Channel D safety channel and replace it with a temperature detector from the control channel

The inspectors reviewed the temporary modification and the associated safety evaluation screening against the system design bases documentation, including the Updated Safety Analysis Report and the technical specifications, and verified that the modification did not adversely affect the system operability and availability. The inspectors also verified that the installation and restoration were consistent with the modification documents and that configuration control was adequate. Additionally, the inspectors verified that the temporary modification was identified on control room drawings, appropriate tags were placed on the affected equipment, and the licensee evaluated the combined effects on mitigating systems and the integrity of radiological barriers.

- Permanent modification to upgrade the auxiliary building crane to 106 tons

The inspectors reviewed key affected parameters associated with energy needs, materials and replacement components, timing, heat removal, control signals, equipment protection from hazards, operations, flow paths, pressure boundary, ventilation boundary, structural, process medium properties, licensing basis, and failure modes for

the modification listed above. The inspectors verified that modification preparation, staging, and implementation did not impair emergency or abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; postmodification testing will maintain the plant in a safe configuration during testing by verifying that unintended system interactions will not occur, systems, structures and components performance characteristics still meet the design basis, the appropriateness of modification design assumptions, and the modification test acceptance criteria will be met; and licensee personnel identified and implemented appropriate corrective actions associated with permanent plant modifications. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two samples for plant modifications as defined in Inspection Procedure 71111.18-05

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:

- Postmaintenance testing of turbine driven auxiliary feedwater Pump FW-10 following replacement of relay 62/1045 on May 13, 2009
- Postmaintenance testing of Valve HCV-2880A (AC-1A raw water inlet valve) following valve rebuild on June 5, 2009
- Postmaintenance testing of Valve HCV-2851 (AC-10B discharge valve) following an actuator rebuild on June 10, 2009
- Postmaintenance testing of Valve HCV-492A (component cooling water Heat Exchanger AC-1D component cooling water inlet valve) following valve shaft maintenance
- Postmaintenance testing of Air Compressor CA-1B following maintenance on June 29, 2009

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 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 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 Safety Analysis Report, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and 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.

- April 15, 2009, quarterly surveillance test of turbine driven auxiliary feedwater Pump FW-10
- June 3, 2009, fuel handling machine interlock test
- June 4, 2009, raw water system Category C valve inservice test
- June 11, 2009, emergency diesel generator surveillance test. Included information from NRC Operating Experience Smart Sample "Negative Trend and Recurring Events Involving Emergency Diesel Generators" when inspecting this surveillance
- June 22, 2009, Review of the reactor coolant system leak rate test

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

These activities constitute completion of five 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 Revision 12 to Section P, "Responsibility for the Planning Effort, Development, Periodic Review and Distribution," of the Fort Calhoun Radiological Emergency Response Plan. This revision changed the requirement for an annual Quality Department audit of the emergency planning program to a requirement to conduct an audit at periods not to exceed 24 months in accordance with the requirements of 10 CFR 50.54(t)(1)(ii), and updated the titles and duties of station personnel responsible for overseeing the emergency planning program.

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 sample as defined in Inspection Procedure 71114.04-05.

#### b. Findings

No findings of significance were identified.

### **1EP6 Drill Evaluation (71114.06)**

#### .1 Emergency Preparedness Drill Observation

#### a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on May 19, 2009, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Technical Support Center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee in order to evaluate the critique and to verify whether the licensee was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings of significance were identified.

**4OA2 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 Reviews 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

No findings of significance were identified.

.3 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors identified a corrective action item, that appeared to have insufficient actions taken by the licensee, documenting corrective actions associated with the raw water strainers design basis as outlined in Inspection Report 05000285/2007007.

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

b. Findings

Introduction. The inspectors identified a Green, cited violation of 10 CFR Part 50, Appendix B, Criterion III (Design Control), for the failure to correctly translate the Fort Calhoun Station raw water strainer component design basis into specifications, procedures, and instructions. The raw water strainers were incorrectly translated as nonsafety-related in design documents for their function of filtering small debris from the raw water system, although the equipment is relied upon for design basis accident mitigation. This violation was identified by the NRC in 2007 and was a continuing violation that was not corrected in a reasonable time. The licensee documented this issue in Condition Report 2009-1597.

Description. Upon reviewing Condition Report 2007-3046 on April 5, 2009, the inspectors discovered that no corrective actions for a prior design control violation had been taken, nor had any hardware improvements been completed that might have improved the ability of the raw water system to cope with debris clogging. The licensee documented this issue in Condition Report 2009-1597.

As background, in 2005, the NRC opened Unresolved Item 05000285/2005009-01 because the licensee had classified the raw water strainers as nonsafety related in design documents but it appeared that the raw water strainers should have been classified as safety related. Specifically, the raw water strainers were relied upon during design basis accidents to (1) pass sufficient flow to allow the raw water system to perform its heat removal safety function; and (2) filter sufficient debris to prevent blockage of safety related components, including the raw water/component cooling water heat exchangers. The licensee had not demonstrated that the raw water system could perform its safety function for its 30 day mission time if the strainers failed as-is (stopped) or if they developed holes (or gaps) that would allow debris into the system.

The unresolved item was opened until the NRC could perform additional followup concerning the safety classification.

In 2007, during a component design basis inspection, the NRC concluded that the licensee had misclassified the raw water strainers. The NRC issued a noncited violation to the licensee (see NCV 05000285/2007007-03). The licensee entered the concern into their corrective action program as Condition Report 2007-3046. The cover letter to NRC Inspection Report 05000285/2007007 asked the licensee to respond on the docket if they disagreed with the noncited violation. The licensee did not provide a response.

There have been several events over the last few years where changing river conditions have shown that a strainer can become clogged to such a degree that raw water flow is blocked in one header. River debris has clogged a raw water strainer resulting in the strainer motor tripping on current overload. The operators in the control room have no indication of a raw water strainer motor trip and rely on strainer differential pressure alarms or roving equipment operators to alert them of a tripped strainer motor. Because this issue continues to be a concern at the Fort Calhoun Station, licensee management has placed the raw water strainer function under maintenance rule monitoring status in accordance with 10 CFR 50.65(a)(1).

Analysis. The failure to take corrective action to address a prior NRC noncited violation was a performance deficiency. This finding was more than minor because it affected the Mitigating System Cornerstone objective of the design control attribute to ensure the reliability and availability of the raw water system to mitigate initiating events. Using the NRC Manual Chapter 0609, Phase 1 screening worksheet, the issue screened as having very low safety significance because it was a design or qualification deficiency confirmed not to result in a loss of operability per Part 9900, "Technical Guidance, Operability Determination Process for Operability and Functional Assessment." The finding had a problem identification and resolution crosscutting aspect (corrective action component) because the licensee failed to take appropriate corrective actions to address the safety issue in a timely manner [P.1(d)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that "measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions." Title 10 CFR 50.2 defines "safety related," in part, as: "Safety-related structures, systems and components means those structures, systems and components that are relied upon to remain functional during and following design basis events to assure : . . . The capability to shut down the reactor and maintain it in a safe shutdown condition; or the capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the applicable guideline exposures set forth in . . . § 100.11 of this chapter, as applicable." Contrary to the above, between 1992 and 2009, the licensee failed to correctly translate the design basis of the raw water system strainers into Design Basis Document SDBD-AC-RW-101, Attachment 20, "Requirements and Design of Raw Water Pump Discharge Strainers and Motors (AC-12A and 12B)," in that the document stipulated that the strainers were not safety-related but the raw water strainers had a safety function. Specifically, raw water strainers were relied upon to remain functional during and following design basis events

to maintain the reactor in a safety shutdown condition and to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the applicable guideline exposures set forth in § 100.11 of Title 10 of the Code of Federal Regulations. Since the licensee failed to restore compliance within a reasonable time after the violation was identified in NRC Inspection Report 05000285/2007-007, this violation is being cited consistent with Section VI.A.1 of the NRC Enforcement Policy: NOV 05000285/2009003-01 (EA-09-174), "Failure to Properly Translate Raw Water System Design Basis Requirements."

#### **40A3 Event Follow-Up**

(Closed) Licensee Event Report (LER) 05000285/2008003-01, "Loss of Containment Integrity due to a Leaking Isolation Valve"

On November 11, 2008, the licensee confirmed that on March 21, 2008, the plant was in a configuration without satisfying the requirements of a technical specification action statement. While the steam driven auxiliary feedwater Pump FW-10 was declared inoperable for maintenance, the Train A emergency diesel generator was subsequently declared inoperable. This condition rendered the motor-driven auxiliary feedwater Pump FW-6 inoperable since the conditions of Technical Specification 2.0.1(2) could not be satisfied. Revision 0 of this LER was closed in NRC Inspection Report 05000285/2009002. The current revision of this LER was reviewed by the inspectors and no findings of significance were identified, and no additional violations of NRC requirements occurred. One finding of significance was identified in Revision 0 of this LER for failure to comply with Technical Specification 2.0.1(2). This finding was dispositioned in NRC Inspection Report 05000285/2008-005 as NCV 05000285/2008005-01. This LER is closed.

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

##### **.1 Quarterly Resident Inspectors 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'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 May 7, 2009, 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. C. Simmons, Supervisor, Emergency Planning. The licensee acknowledged the issues presented.

On July 7, 2009, the inspectors presented the inspection results to Mr. J. Reinhart, Site Vice President, and other members of the licensee 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.

### **40A7 Licensee-Identified Violations**

None.

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee Personnel

A. Clark, Manager, Security  
R. Clemens, Division Manager, Nuclear Engineering  
P. Cronin, Manager, Operations  
M. Frans, Manager, System Engineering  
J. Gasper, Design Engineering  
D. Guinn, Supervisor, Regulatory Compliance  
B. Hansher, Supervisor, Nuclear Licensing  
J. Herman, Manager, Engineering Program  
R. Hodgson, Manager, Radiation Protection  
R. Johansen, Maintenance Manager  
T. Nellenbach, Division Manager, Nuclear Operations/Plant Manager  
T. Pilmaier, Manager, Performance  
J. Reinhart, Vice President  
C. Simmons, Supervisor, Emergency Planning  
M. Tesar, Division Manager, Nuclear Support  
T. Uehling, Manager, Chemistry

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

Opened

05000285/2009003-01	NOV	Failure to Properly Translate Raw Water System Design Basis Requirements
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Opened and Closed

none

Closed

05000285/2008003-01	LER	Loss of Containment Integrity due to a Leaking Isolation Valve
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**LIST OF DOCUMENTS REVIEWED**

**Section 1RO1: Adverse Weather Protection**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AOP-1	Acts of Nature	23
FCSG-1	Duty Assignments	7
FCSG-15-24	Housekeeping	6

## Section 1RO4: Equipment Alignment

### DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
11405-M-100	Raw Water Flow Diagram Piping and Instrument Drawing	97
11405-M-252	Flow Diagram Steam Piping and Instrument Drawing, Sheets COV – 3	40, 100, 13, 22
11405-M-253	Flow Diagram Steam Generator Feedwater and Blowdown Piping and Instrument Drawing, Sheets COV – 4	46, 92, 24, 16, 39
11405-M-254	Flow Diagram Condensate Piping and Instrument Drawing, Sheets COV - 4	51, 93, 36, 16, 28
11405-M-259	Flow Diagram Potable Water & Service Water Piping and Instrument Drawing	129, 29
11405-M-260	Flow Diagram Auxiliary Steam and Condensate Return Piping and Instrument Drawing, Sheets COV - 5	40, 61, 68, 55, 56, 33
11405-M-262	Fuel Oil and Turbine Lube Oil P& I D, Sheet 1	14
11405-M-40	Auxiliary Coolant, Component Cooling Water System Piping and Instrument Drawing	9, 36, 34, 23
B120F0301	Diesel Generator Lube Oil System Flow Diagram for Diesel Generator 2, Sheet 2	25
B120F04002	Jacket Water Schematic for Diesel Generator 2 Piping and Instrument Drawing, Sheet 2	21
B120F07001	Starting Air System Schematic Diesel Generator 2 Piping and Instrument Drawing, Sheet 2	25
B120F15502	Diesel Generator 2, Emergency Generator 480 VAC 125 and 120 VAC Distribution Panel, Sheet 2	13
B120F15503	Schematic 480 VAC Auxiliary Systems, Sheet 1	15
B120F15503	Emergency Generator 480 VAC Auxiliary Systems Schematic Diagram, Sheet 2	17
D-4666	Diesel Generator 2, Diesel Generator One Line Diagram P&I D	6
IN 2007-27	Recurring Events Involving Emergency Diesel Generator Operability	N/A

## Section 1RO4: Equipment Alignment

### DRAWINGS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
IN 2007-36	Emergency Diesel Generator Voltage Regulator Problems	N/A
IN 89-07	Failures of Small-Diameter Tubing in Control Air, Fuel Oil, and Lube Oil Systems Which Render Emergency Diesel Generators Inoperable	N/A
IN 98-43	Leaks in the Emergency Diesel Generator Lubricating Oil and Jacket Water Piping	N/A
OI-AFW-1	Operating Instruction: Auxiliary Feedwater Actuation System Normal Operation	72
OI-DG-2	Operating Instruction: Diesel Generator #2	52
OI-RW-1	Operating Instruction: Raw Water System Normal Operation	89
OpE Briefing 2007-03	Emergency Diesel Generators: Analysis & Trends	N/A
NRC Regulatory Guide 1.9	Application and Testing of Safety-Related Diesel Generators in Nuclear Power Plants	4
USAR-9.4	Auxiliary Feedwater System	17

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OI-AFW-1	Operating Instruction: Auxiliary Feedwater Actuation System Normal Operation	72
OI-DG-2	Operating Instruction: Diesel Generator #2	52
OI-RW-1	Operating Instruction: Raw Water System Normal Operation	89

### MISCELLANEOUS DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
Information Notice 2008-13	Main Feedwater System Issues and Related 2007 Reactor Trip Data	
Operating Experience Brief 2008-03	Review of Feedwater Related Events: Analysis and Trends	January 30, 2008

**Section 1R05: Fire Protection**

DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
AOP-6	Fire Emergency	21
EA-FC-97-001	Fire Hazards Analysis Manual	14
SO-G-28	Station Fire Plan	75
SO-G-58	Control of Fire Protection System Impairments	36
SO-G-91	Control and Transportation of Combustible Materials	25
SO-G-102	Fire Protection Program Plan	8
SO-G-103	Fire Protection Operability Criteria And Surveillance Requirements	22
USAR 9.11	Updated Safety Analysis Report Fire Protection Systems	19

**Section 1R06: Flood Protection Measures**

DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>
NRC Circular 78-06	Potential Common Mode Flooding of ECCS Equipment Rooms at BWR Facilities
NRC Information Notice 2003-08	Potential Flooding Through Unsealed Concrete Floor Cracks
NRC Information Notice 2005-11	Internal Flooding/Spray-Down of Safety-Related Equipment due to Unsealed Equipment Hatch Floor Plugs and/or Blocked Floor Drains
NRC Information Notice 2005-30	Safe Shutdown Potentially Challenged by Unanalyzed Internal Flooding Events and Inadequate Design
NRC Information Notice 2007-01	Recent Operating Experience Concerning Hydrostatic Barriers
NRC Information Notice 83-44	Potential Damage to Redundant Safety Equipment as a Result of Backflow Through the Equipment and Floor Drain System
NRC Information Notice 87-49	Deficiencies in Outside Containment Flooding Protection

### **Section 1R06: Flood Protection Measures**

#### DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>
NRC Information Notice 94-27	Facility Operating Concerns Resulting from Local Area Flooding
NRC Information Notice 98-31	Fire Protection System Design Deficiencies and Common Mode Flooding of Emergency Core Cooling System Rooms at Washington Nuclear Power Unit 2

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

#### DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
82111a-1	Simulator Scenario Guide, Off-normal Operations: Control Room Crew in Self Contained Breathing Apparatus	3
AOP-39	Toxic Gas	2
EOP-00	Standard Post Trip Actions	24
EOP-01	Reactor Trip Recovery	13

### **Section 1R12: Maintenance Effectiveness**

#### CONDITION REPORTS

2009-1760      2009-2601

#### DOCUMENTS

<u>TITLE</u>	<u>DATE</u>
Fort Calhoun Station Maintenance Rule Functional Scoping Data Sheet Collection	
Functional Scoping Data Sheet for Auxiliary Feedwater Pumps	August 23, 2005
Functional Scoping Data Sheet for Auxiliary Feedwater Pumps	August 23, 2005
Apparent Cause Analysis Summary Report: Diesel Generator 2 Exceeded Three Year Maintenance Rule Unavailability Time	

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

DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
SO-M-100	Conduct of Maintenance	49
ANSI N18.7	Administrative Controls for Nuclear Power Plants	1972
	Control room operating logs dated April 6, 2009	
	Risk evaluation and risk management actions for April 6, 2009	
	Summary of Activities Affecting Plant Risk During the Week of April 5, 2009	
	Control room operating logs dated May 4, 2009	
	Risk evaluation and risk management actions for May 4, 2009	
	Summary of Activities Affecting Plant Risk During the Week of May 4, 2009	
	Control room operating logs dated June 17, 2009	
	Risk evaluation and risk management actions for June 17, 2009	
	Summary of Activities Affecting Plant Risk During the Week of June 15, 2009	
	Risk evaluation and risk management actions for June 17, 2009	
	Summary of Activities Affecting Plant Risk During the Week of June 15, 2009	

**Section 1R15: Operability Evaluations**

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
	Apparent Cause Analysis Summary Report – Non Safety Related Relay Installed in Control Circuit for Pump for Radiation Monitor RM-050/051	May 6, 2009
	Apparent Cause Analysis Summary Report – Valve HCV-492A, Heat Exchanger AC-1D Component Cooling Water Inlet Valve Failed to Fully Close	May 15, 2009

**Section 1R15: Operability Evaluations**

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
11405-E-137	Schematic, Wiring Diagram & Switch Developments for Control Valve YCV-1045 to Steam Driven Auxiliary Feedwater Pump FW-10	26
CEOG STS	Combustion Engineering owners Group Standard Technical Specifications, Section 1.1, Definitions	3.0
IC-ST-IA-3009	Operability Test of IA-YCV-1045-C and Close Stroke Test of Valve YCV-1045	16
IC-ST-MS-0027	Channel Calibration of Steam Generator RC-2A Channel B Pressure Loop B/P-902	17
NOD-QP-31.1	Operability evaluation form for condition report 2009-1611	April 7, 2009
NRC Regulatory Guide 1.118	Periodic Testing of Electric Power and Protection Systems	November 1977
TDB-VIII	Technical Data Book – Equipment Operability Guidance	39
USAR-14.10	Updated Safety Analysis Report, Section 14.10, “Malfunctions of the Feedwater System”	20

**CONDITION REPORTS**

2009-1611	2009-1620	2009-1649	2009-1692	2009-1821
2009-2219	2009-2703	2007-2725	2009-2745	2007-2763
2009-2772	2009-1770	2009-2537		

**WORK ORDERS**

00312701	00337754	891345
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**Section 1R18: Plant Modifications**

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
Engineering Change 46177	Temporary Modification to Remove Temperature Element D/TE-112H Input from Reactor Protection System Channel D	
Project Number PR-08-5040, Procedure Number 70587543,	Site Acceptance Test, Omaha Public Power District, Fort Calhoun Auxiliary Building 106 Ton X-Sam Crane	

**Section 1R18: Plant Modifications**

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
Purchase Order Number 116712	Upgrade, PaR Nuclear	
ANSI/ASMEB30.2	Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)",	1988

CONDITION REPORTS

2009-2070          2009-2096

WORK REQUEST

135699

**Section 1R19: Postmaintenance Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OP-ST-VX-3017A	Raw Water System Remote Position Indicator Verification Surveillance Test	4
PE-RR-VX-0421S	Inspection and Repair of Safety Related Masoneilan Minitork 37000 Series Butterfly Valves	9
OP-ST-RW-3002A	Raw Water System Category A and B Valve Exercise Test	12
OP-ST-AFW-0004	Auxiliary Feedwater Pump FW-10 Operability Test	26

WORK ORDERS

00318857          00341360          00340761          00339293          00338587

**Section 1R22: Surveillance Testing**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
IC-ST-RW-3001	Raw Water System Category C Valve Inservice Test	9
OP-ST-AFW-3001	Steam Driven Auxiliary Feedwater Pump FW-10, Steam Isolation Valve, and Check Valve Tests	5

## Section 1R22: Surveillance Testing

### PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
OP-ST-DG-0001	Diesel Generator 1 Check	64
OP-ST-FH-0007	Refueling System Spent Fuel Handling Machine Interlocks Test for Spent Fuel Shuffle	25
OP-ST-RC-3001	Reactor Coolant System Leak Rate Test	32

### DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
Information Notice 2007-27	Recurring Events Involving Emergency Diesel Generator Operability	
Information Notice 2007-36	Emergency Diesel Generator Voltage Regulator Problems	
Information Notice 89-07	Failures of Small-Diameter Tubing in Control Air, Fuel Oil, and Lube Oil Systems Which Render Emergency Diesel Generators Inoperable	
Information Notice 98-43	Leaks in the Emergency Diesel Generator Lubricating Oil and Jacket Water Piping	
OpE Briefing 2007-03	Emergency Diesel Generators: Analysis & Trends	
NRC Regulatory Guide 1.9	Application and Testing of Safety-Related Diesel Generators in Nuclear Power Plants	Revision 4
USAR-9.4	Auxiliary Feedwater System	Revision 17

### WORK ORDERS

00330998      00332812      00332826

**Section 1EP6: Drill Evaluation**

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EPIP-OSC-1	Emergency Classification	46
EPIP-TSC-1	Activation of the Technical Support Center	31

**Section 4OA2: Identification and Resolution of Problems**

CONDITION REPORTS

2007-3046	2007-3461	2007-4753	2007-4790	2008-0645
2009-1319	2009-1320	2009-1597	2009-1887	