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

November 3, 2008

D. J. Bannister
Vice President and CNO
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, NE 68023-0550

Subject: FORT CALHOUN STATION NRC INTEGRATED INSPECTION REPORT 05000285/2008004

Dear Mr. Bannister:

On September 30, 2008, 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 October 6, 2008, with yourself 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 self-revealing finding of very low safety significance (Green). This finding was determined to involve violations of NRC requirements. Additionally, one licensee-identified violation, which was determined to be of very low safety significance, is listed in this report. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating this finding as a non-cited violation NCV), consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the violation or the significance of the NCV, 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 East 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 Inspectors at the Fort Calhoun Station facility.

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/

Charles J. Paulk, Chief
Project Branch E
Division of Reactor Projects

Docket: 50-285
License: DPR-40

Enclosure:
NRC Inspection Report 05000285/200804
w/attachment: Supplemental Information

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SUNSI Review Completed _CJP__ ADAMS: √ Yes □ No Initials: _CJP_
√ Publicly Available □ Non-Publicly Available □ Sensitive √ Non-Sensitive

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RIV:RI:DRP/E	SRI:DRP/E	C:DRS/EB1	C:DRS/OB	C:DRS/PSB
JCKirkland	JDHanna	RLBywater	RELantz	MPShannon
/RA CJP for/	***/RA – E/***	***/RA/***	***/RA COsterholtz for/***	***/RA LRicketson for/***
10/31/2008	10/30/2008	10/28/2008	10/28/2008	10/30/2008

C:DRS/EB2	C:DRS/PSB2	C:DRP/E	
NFO'Keefe	GEWerner	CJPaulk	
/RA/	***/RA LRicketson for/***	***/RA/***	
10/29/2008	10/29/2008	10/31/2008	

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	50-285
License:	DPR-40
Report:	05000285/2008004
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:	July 1 through September 30, 2008
Inspectors:	J. Hanna, Senior Resident Inspector J. Kirkland, Resident Inspector P. Goldberg, Reactor Inspector M. Young, Reactor Inspector P. Elkman, Senior Emergency Preparedness Inspector
Approved By:	Charles J. Paulk, Acting Chief, Project Branch E Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000285/2008004; 07/01/2008 – 09/30/2008; Fort Calhoun Station, Integrated Resident and Regional Report; Event Follow-up.

The report covered a 3-month period of inspection by resident inspectors and announced inspection by regional based reactor inspectors. One Green non-cited violation of significance 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: Initiating Events

- Green. A Green self-revealing noncited violation of Technical Specification 5.8.1.a (Procedures) was identified for an inadequate maintenance procedure. Specifically, the licensee's maintenance procedures did not provide adequate instructions for the craft to re-pack Pressurizer Spray Valve PCV-103-1 that resulted in a 2-3 gpm reactor coolant leak.

  This finding was greater than minor because it was similar to non-minor example 4.b in Inspection Manual Chapter 0612, Appendix E, "Examples of Minor Issues," in that a procedural error caused a reactor trip or other transient. The inspectors evaluated this finding using Manual Chapter 0609, Attachment 4. The inspectors determined that it was of very low safety significance (Green) because, assuming worst case degradation, the finding would not result in exceeding the technical specification limit for any reactor coolant system leakage, nor would it have likely affected other mitigation systems resulting in a total loss of their safety function. This finding had a crosscutting aspect in Human Performance, specifically the Decision Making aspect [H.1.(b)] because licensee personnel failed to use conservative assumptions in decision-making. Specifically, the relevant procedure left the detail of repacking the valves to skill of the craft and licensee personnel failed to challenge or question whether that was appropriate (Section 4OA3.6).

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

The unit began this inspection period in Mode 1 at full rated thermal power and operated at 100 percent until August 21 when power was decreased on the unit to 10 percent. The unit remained at approximately 10 percent power for the next 2 days while repairs were performed to an iso-phase bus duct on the main electrical transformer. On August 23, reactor power was increased to 100 percent, where the plant remained until the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Seasonal Susceptibilities

a. Inspection Scope

The inspectors completed a review of licensee personnel's readiness of seasonal susceptibilities involving potential flooding from the Missouri River. The inspectors: (1) reviewed plant procedures, the Updated Safety Analysis Report and the Technical Specifications to ensure that operator actions defined in adverse weather procedures maintained the readiness of essential systems; (2) walked down portions of the structure listed below to ensure that adverse weather protection features were sufficient to support operability, including the ability to perform safe shutdown functions; (3) evaluated operator staffing levels to ensure the licensee could maintain the readiness of essential systems required by plant procedures; and (4) reviewed the corrective action program to determine if the licensee identified and corrected problems related to adverse weather conditions.

- July 28, 2008: Intake structure and the raw water vaults contained within

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

.2 Readiness for Impending Adverse Weather Conditions

On August 5, 2008, the inspectors completed a review of licensee personnel's readiness for impending adverse weather involving severe thunderstorms. The inspectors: (1) reviewed plant procedures, the Updated Safety Analysis Report and the Technical Specifications, to ensure that operator actions defined in adverse weather procedures maintained the readiness of essential systems; (2) walked down portions of the systems listed below to ensure that adverse weather protection features were sufficient to support operability, including the ability to perform safe shutdown functions; (3) reviewed maintenance records to determine that applicable surveillance requirements were current before the anticipated severe thunderstorms developed; and (4) reviewed plant

modifications, procedure revisions, and operator work-arounds to determine if recent facility changes challenged plant operation.

- August 5, 2008, review of preparations for severe thunderstorms and the ability of storm and roof drains to accommodate water runoff

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

.1 Partial Equipment Walk-downs

a. Inspection Scope

The inspectors: (1) walked down portions of the three risk-important systems listed below and reviewed plant procedures and documents to verify that critical portions of the selected systems were correctly aligned; and (2) compared deficiencies identified during the walk down to the Updated Safety Analysis Report and corrective action program to ensure problems were being identified and corrected.

- August 19, 2008, Review of control room ventilation opposite train equipment (VA-46A and VA-64A) while the 'B' train unit (VA-46B) was out of service for preventive maintenance

- August 19, 2008, Review of opposite train high pressure safety injection pump (SI 2C) while the 'B' train component (SI-2B) was out of service for routine preventative and corrective maintenance

- September 29, 2008, Main feed system while Main Feedwater Pump FW-4A was out of service for maintenance

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

.2 Complete Equipment Walkdown (71111.04S)

The inspectors: (1) reviewed plant procedures, drawings, the Updated Safety Analysis Report, the Technical Specifications, and vendor manuals to determine the correct alignment of the entire emergency core cooling system; (2) reviewed outstanding design

issues, operator workarounds, and Updated Safety Analysis Report documents to determine if open issues affected the functionality of the emergency core cooling system; and (3) verified that the licensee was identifying and resolving equipment alignment problems. Particular emphasis was placed in understanding the licensing/design basis of the system and what requirements applied to maintaining the system in a filled and vented condition.

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors walked down the four plant areas listed below to assess the material condition of active and passive fire protection features and their operational lineup and readiness. The inspectors: (1) verified that transient combustibles and hot work activities were controlled in accordance with plant procedures; (2) observed the condition of fire detection devices to verify they remained functional; (3) observed fire suppression systems to verify they remained functional and that access to manual actuators were unobstructed; (4) verified that fire extinguishers and hose stations were provided at their designated locations and that they were in a satisfactory condition; (5) verified that passive fire protection features (electrical raceway barriers, fire doors, fire dampers, steel fire proofing, penetration seals, and oil collection systems) were in a satisfactory material condition; (6) verified that adequate compensatory measures were established for degraded or inoperable fire protection features and that the compensatory measures were commensurate with the significance of the deficiency; and (7) reviewed the Updated Safety Analysis Report to determine if the licensee identified and corrected fire protection problems.

- July 30, 2008, Fire Area 32 compressor area including Rooms 50, 51, 52, and 53
- August 5 - August 8, 2008, Fire Area 20.7, auxiliary building roof, in the vicinity of where both VA-46 condenser units are located
- August 6, 2008, Fire Area 43, auxiliary building fan room, Room 81
- August 14, 2008, Fire Areas 31 and 31A, intake structure

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

.1 Semi-Annual Internal Flooding

a. Inspection Scope

The inspectors: (1) reviewed the Updated Safety Analysis Report, the flooding analysis, and plant procedures to assess seasonal susceptibilities involving internal flooding; (2) reviewed the Updated Safety Analysis Report and corrective action program to determine if the licensee identified and corrected flooding problems; (3) inspected underground bunkers/manholes to verify the adequacy of (a) sump pumps, (b) level alarm circuits, (c) cable splices subject to submergence, and (d) drainage for bunkers/manholes; (4) verified that operator actions for coping with flooding can reasonably achieve the desired outcomes; and (5) walked down the one area listed below to verify the adequacy of: (a) equipment seals located below the floodline, (b) floor and wall penetration seals, (c) watertight door seals, (d) common drain lines and sumps, (e) sump pumps, level alarms, and control circuits, and (f) temporary or removable flood barriers.

- July 28, 2008, various areas in the non-radiologically controlled portion of the auxiliary building, including the emergency diesel generator rooms and the upper mechanical piping penetration room

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07T)

a. Inspection Scope

Inspection Module 71111.07, “Heat Sink Performance,” requires that two to three safety-related heat exchangers, either directly or indirectly connected to the safety-related service water system, be reviewed to ensure they are either tested or inspected and cleaned. The inspectors selected the following two heat removal sources, which ranked high in the plant-specific risk assessment and are connected to the safety-related service water system:

- Component cooling water heat exchangers

- Raw water system (Missouri River), which performs the function of the ultimate heat sink

For the heat exchangers directly connected to the safety-related service water system, the inspectors reviewed whether testing, cleaning, maintenance, and the fouling monitoring program provided sufficient controls to ensure proper heat transfer. The inspectors noted that the component cooling water heat exchangers were the only heat exchangers in the plant cooled by the raw water system. The inspectors reviewed chemistry controls used to avoid fouling, heat exchanger testing results, and inspection and cleaning results. The inspectors walked down the two chosen samples.

For the component cooling water heat exchangers, which were tested every 6 months and cleaned every 18 months, the inspectors verified the proper extrapolation of test conditions to design conditions, appropriate use of test instrumentation, and appropriate accounting for instrument inaccuracies. The inspectors reviewed the methods and results of heat exchanger inspection and cleaning, verified that the methods used to inspect and clean were consistent with industry standards, and ensured that the as-found results were appropriately dispositioned such that the final conditions were acceptable. The inspectors verified that the licensee appropriately trended these inspections and cleaning results, assessed the causes of the trends, and took necessary actions for changes in these trends.

The inspectors reviewed the ultimate heat sink, which includes the raw water supply from the Missouri River with screens and strainers used to keep debris away from the component cooling water heat exchanger tubes. The inspectors reviewed the most recent in-service testing results of the raw water pumps. The inspectors reviewed condition reports that discussed past problems concerning the raw water system plugging the tube side of the component cooling water system. The inspectors discussed the improvements the licensee was planning to improve the raw water system. The improvements included adding a weir wall in front of the pump suction to avoid sand and other debris from entering the pumps and suction. In addition, the licensee's improvement plan consists of replacing screens and strainers with better designs.

For the selected heat exchangers and ultimate heat sink, the inspectors verified that licensee personnel established heat sink and heat exchanger conditions that were consistent with the design assumptions. Specifically, the inspectors reviewed the applicable calculations to ensure that the thermal-performance test acceptance criteria for the heat exchangers and heat sink were being applied consistently throughout the calculations. In addition, the inspectors reviewed test data for the heat exchangers and design and vendor-supplied information to ensure that the heat exchangers were maintained within their design bases. The inspectors reviewed the raw water ultimate heat sink to ensure sufficient water would reach the component cooling water heat exchanger and not cause excessive fouling. In addition, the inspectors walked down the component cooling water heat exchangers and the raw water system, which included raw water pumps, screens and strainers.

The inspectors verified that licensee personnel had identified and entered heat exchanger/heat sink performance problems into the corrective action program. The inspectors reviewed 16 condition reports, which are listed in the attachment.

The inspectors completed two inspection samples.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

The inspectors observed testing and training of senior reactor operators and reactor operators to identify deficiencies and discrepancies in the training, to assess operator performance, and to assess the evaluator's critique. The training scenario involved a main steam line break inside containment including several electrical failures.

Documents reviewed by the inspectors are listed in the attachment

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the three maintenance activities listed below to: (1) verify the appropriate handling of structure, system, and component performance or condition problems; (2) verify the appropriate handling of degraded structure, system and component functional performance; (3) evaluate the role of work practices and common cause problems; and (4) evaluate the handling of structure, system and component issues reviewed under the requirements of the maintenance rule, 10 CFR Part 50 Appendix B, and the Technical Specifications.

- May 2008, Safety injection water recirculation tank suction Valves LCV-383-1/2, specifically the functional failure determination
- October 2007, Raw water Pump AC-10D failure, specifically the maintenance rule a(1) goal setting
- September 2008, Review of the actions taken while instrument air Compressor CA 1B has been in the maintenance rule a(1) category

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

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

.1 Risk Assessments and Management of Risk

a. Inspection Scope

The inspectors reviewed the two assessment activities listed below to verify: (1) performance of risk assessments when required by 10 CFR 50.65 (a)(4) and licensee procedures prior to changes in plant configuration for maintenance activities and plant operations; (2) the accuracy, adequacy, and completeness of the information considered in the risk assessment; (3) that the licensee recognizes, and/or enters as applicable, the appropriate licensee established risk category according to the risk assessment results and licensee procedures; and (4) the licensee identified and corrected problems related to maintenance risk assessments.

- July 30, 2008, Review of yellow risk color configuration and the associated risk management actions taken while high pressure safety injection Pump SI-2A, containment spray Pump SI-3A, and the motor-driven auxiliary feedwater Pump FW-6 were out of service

- August 19, 2008, Review of the assessment resulting in a yellow risk color and the associated risk management actions while high pressure safety injection Pump SI-2B was out of service

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

.2 Emergent Work Control

a. Inspection Scope

The inspectors: (1) verified that licensee personnel performed actions to minimize the probability of initiating events and maintained the functional capability of mitigating systems and barrier integrity systems; (2) verified that emergent work-related activities such as troubleshooting, work planning/scheduling, establishing plant conditions, aligning equipment, tagging, temporary modifications, and equipment restoration did not place the plant in an unacceptable configuration; and (3) reviewed the Updated Safety Analysis Report to determine if licensee personnel identified and corrected risk assessment and emergent work control problems.

- August 21 – August 22, 2008, Emergent elevated risk condition due to placing both T1A1 and T1A2 transformers out of service during repairs to an iso-phase bus duct boot

- August 27 – August 28, 2008, Risk management actions associated with a small leak on the east raw water header piping

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed two samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors: (1) reviewed plants status documents such as operator shift logs, emergent work documentation, deferred modifications, and standing orders to determine if an operability evaluation was warranted for degraded components; (2) referred to the Updated Safety Analysis Report and design basis documents to review the technical adequacy of licensee operability evaluations; (3) evaluated compensatory measures associated with operability evaluations; (4) determined degraded component impact on any Technical Specifications; (5) used the Significance Determination Process to evaluate the risk significance of degraded or inoperable equipment; and (6) verified that the licensee has identified and implemented appropriate corrective actions associated with degraded components.

- August 13, 2008, Operability evaluation on jacket water temperature control Valve JW-116 associated with degraded O-rings on diesel Generator-2

- August 18, 2008, Review of multiple condition reports written on the technical support center/security emergency diesel generator, and their potential cumulative effect on the operability of the component

- August 20, 2008, Review of the immediate operability issue associated with the failure of the licensee to fill and vent emergency core cooling system Train A suction piping

- August 21, 2008, Operability evaluation on the fire protection piping located within the control room envelope and the potential effect of spray on electrical cabinets

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed four samples.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

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

- August 15, 2008, Installation of a temporary jumper to remove a fire detector from service on the reactor vessel head

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/availability. The inspectors also verified that the installation and restoration was 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 licensee personnel evaluated the combined effects on mitigating systems and the integrity of radiological barriers.

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors selected the five post-maintenance test activities listed below of risk-significant systems or components. For each item, the inspectors: (1) reviewed the applicable licensing basis and/or design-basis documents to determine the safety functions; (2) evaluated the safety functions that may have been affected by the maintenance activity; and (3) reviewed the test procedure to ensure it adequately tested the safety function that may have been affected. The inspectors either witnessed or reviewed test data to verify that acceptance criteria were met, plant impacts were evaluated, test equipment was calibrated, procedures were followed, jumpers were properly controlled, the test data results were complete and accurate, the test equipment was removed, the system was properly re-aligned, and deficiencies during testing were documented. The inspectors also reviewed the Updated Safety Analysis Report to determine if licensee personnel identified and corrected problems related to post-maintenance testing.

- August 8, 2008, In-office review of containment spray pump test conducted on August 6, 2008

- August 21, 2008, In-office review of postmaintenance test conducted on control room air conditioning Unit VA-46B following regularly scheduled preventative maintenance

- September 10, 2008, Observation of the monthly surveillance run of emergency diesel generator DG-2 following maintenance

- September 18, 2008, Observation of the testing of diesel-driven auxiliary feedwater Pump FW-54 following annual inspection and preventive maintenance

- September 18, 2008, Postmaintenance testing of containment cooling Unit VA-8B CCW outlet Valve HCV-403C

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed five samples.

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 the Technical Specifications to ensure that the six surveillance activities listed below demonstrated that the structure, system and components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the following significant surveillance test attributes were adequate:

- 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 structure, system and component's not meeting the test acceptance criteria were correct
- Reference setting data
- Annunciators and alarms setpoints

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

- August 4, 2008, Field observation of quarterly full-flow test of fire Pump FP-1A
- September 2, 2008, Field observation of monthly surveillance test on station Batteries EE-8A/B
- September 4, 2008, Field observation of operability run of steam driven auxiliary feedwater Pump FW-10
- September 10, 2008, In-office review of the failed surveillance test on the power operated relief valve/safety valve tailpipe temperatures which had been performed on September 7, 2008
- September 12, 2008, In-office review of the performance of the daily reactor coolant leak detection procedure (reactor coolant leakage testing)
- September 15, 2008, Field observation of quarterly in-service test of raw water Pump AC-10A (inservice testing)

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed six samples.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert Notification System Testing (71114.02)

a. Inspection Scope

The inspectors discussed with licensee staff the operability of offsite siren and tone alert radio systems to determine the adequacy of licensee methods for testing the alert and notification system in accordance with 10 CFR Part 50 Appendix E. The licensee's alert and notification system testing program was compared with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, Federal Emergency

Management Agency (FEMA) Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants," and the licensee's current FEMA-approved alert and notification system design report, "Public Alert and Notification Siren System," Revision 1, approved December 9, 2004. The inspectors also reviewed the following procedures:

- Emergency Preparedness Department Manual, EPDM-02, "Emergency Preparedness Test Program," Revision 16
- Emergency Preparedness Test, EPT-01, "Alert Notification System Silent Test," Revisions 14 and 15
- Emergency Preparedness Test, EPT-02, "Alert Notification System Growl Test," Revision 18

The inspectors completed one sample during the inspection

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspectors discussed with licensee staff the operability of primary and backup systems for augmenting the on-shift emergency response staff to determine the adequacy of licensee methods for staffing emergency response facilities. The inspectors reviewed the following licensee procedures, and the references listed in the Attachment to this report related to licensee's emergency response organization augmentation system, to evaluate the licensee's ability to staff the emergency response facilities in accordance with the licensee's emergency plan and the requirements of 10 CFR Part 50, Appendix E:

- Emergency Preparedness Test, EPT-34, "Perform Augmentation or Notification Drills," Revisions 26, 27, and 28
- Emergency response organization activation checklist, dated March 11, 1999
- Emergency response organization activation – short form checklist, dated July 22, 2008

The inspectors completed one sample during the inspection.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program requirements in Procedure SO-R-2, "Condition Reporting and Corrective Action," Revision 40, and FSCG-24, "Corrective Action Program Expectations," Revision 11. The inspectors reviewed summaries of 193 corrective action requests (condition reports) assigned to the emergency preparedness department between July 2006, and September 2008, and selected twelve for a detailed review against program requirements. The inspectors evaluated the response to the corrective action requests to determine the licensee's ability to identify, evaluate, and correct problems in accordance with the licensee program requirements and 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E. The inspectors also reviewed other documents as listed in the Attachment to this report.

The inspectors completed one sample during the inspection.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

Below is listed one drill and simulator-based training evolution contributing to drill/exercise performance and emergency response organization performance indicators. The inspectors: (1) observed the training evolution to identify any weaknesses and deficiencies in classification, notification, and protective action requirements (PAR) development activities; (2) compared the identified weaknesses and deficiencies against licensee identified findings to determine whether the licensee is properly identifying failures; and (3) determined whether licensee performance is in accordance with the guidance of the Nuclear Energy Institute 99-02, "Voluntary Submission of Performance Indicator Data," Revision 5 acceptance criteria.

- August 26, 2008, Full scale drill with participation by state and local authorities; the scenario included a loss of offsite power, a subsequent reactor trip, and a reactor coolant pump seal loss of coolant accident, with a loss of containment integrity

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

Cornerstone: Mitigating Systems

The inspector's sampled submittals for the performance indicators listed below for the period July 1, 2007, through June 30, 2008. The definitions and guidance of Nuclear Energy Institute 99-02, "Regulatory Assessment Indicator Guideline," Revision 5, were used to verify the licensee's basis for reporting each data element in order to verify the accuracy of performance indicator data reported during the assessment period.

- MS05, Safety system functional failures
- MS07, Mitigating system performance index, high pressure injection systems
- MS09, Mitigating system performance index, residual heat removal systems

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed three samples.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

a. Inspection Scope

The inspectors reviewed licensee evaluations for the three emergency preparedness cornerstone performance indicators of drill and exercise performance, emergency response organization participation, and alert and notification system reliability, for the period October 2007, through June 2008. The definitions and guidance of Nuclear Energy Institute Report 99-02, "Regulatory Assessment Indicator Guideline," Revisions 4 and 5, and the licensee's performance indicator procedures emergency planning department Manual, EPDM-14, "Emergency Preparedness Performance Indicator Program," Revisions 9 and 10, and Form EP-47, "NRC Performance Indicator Verification Checklist," Revision 4, were used to verify the accuracy of the licensee's evaluations for each performance indicator reported during the assessment period. The inspectors also performed Temporary Instruction 2515\175, "Emergency Response Organization, Drill/Exercise Performance Indicator, and Program Review."

The inspectors reviewed a 100 percent sample of drill and exercise scenarios and licensed operator simulator training sessions, notification forms, and attendance and critique records associated with training sessions, drills, and exercises conducted during the verification period. The inspectors reviewed selected emergency responder qualification, training, and drill participation records. The inspectors reviewed alert and notification system testing procedures, maintenance records, and a 100 percent sample of siren test records. The inspectors also reviewed other documents as listed in the Attachment to this report.

The inspectors completed three samples during the inspection.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution

.1 Annual Sample Review

a. Inspection Scope

The emergency preparedness inspectors selected twelve condition reports generated between July 2006, and September 2008 for detailed review. The condition reports were reviewed to ensure the full extent of issues was identified, an appropriate evaluation was performed, and appropriate corrective actions was specified and prioritized. The inspectors evaluated the condition reports against the requirements of Procedures SOR-2, "Condition Reporting and Corrective Action," Revision 40, and FSCG-24, "Corrective Action Program Expectations, Revision 11. The inspectors also reviewed one condition report generated during the inspection to ensure the full extent of issues was identified.

b. Findings and Observations

No findings of significance were identified.

4OA3 Event Follow-up (71153)

.1 (Closed) Licensee Event Repport (LER) 05000285/2006002-01; Inadequate Design Control Results in Potentially Insufficient Auxiliary Feedwater Flow

The licensee revised this LER to reflect a more accurate understanding of the root cause to the event. This issue was initially documented in NRC Inspection Report 05000285/2006-04, Section 4OA7. The revised LER was reviewed by the inspectors, no new findings of significance were identified, and no additional violations of NRC requirements occurred. The licensee documented this issue in Condition Report 2006002855. This LER is closed.

.2 (Closed) LER 05000285/2007003-01, Inoperability of a Diesel Generator with an Inoperable Containment Cooling Fan from the Opposite Bus

The licensee revised this LER to reflect a more accurate understanding of the root cause to the event. This issue was initially documented in NRC Inspection Report 05000285/2007-05, Section 4OA3.3. The revised LER was reviewed by the inspectors, no new findings of significance were identified, and no additional violations of NRC requirements occurred. The licensee documented this issue in Condition Reports 200700725 and 200700756. This LER is closed.

.3 (Closed) LER 05000285/2006008-01, Loss of Shutdown Cooling Due to Repressurizing Reactor Coolant System

The licensee revised this LER to reflect a more accurate understanding of the root cause to the event. This issue was initially documented in NRC Inspection Report 05000285/2007-02, Section 4OA3.2. The revised LER was reviewed by the inspectors, no new findings of significance were identified, and no additional violations of NRC requirements occurred. The licensee documented this issue in Condition Report 2006005629. This LER is closed.

.4 (Closed) LER 05000285/2007-002-00, Common Mode Failure of Medium Voltage (4160) Circuit Breaker

On January 25, 2007, the 4160 volt circuit breaker for raw water Pump AC-10B closed on demand, but the auxiliary contacts failed to actuate. A visual inspection of the other three raw water pumps circuit breakers did not identify an extent of condition problem. On February 8, 2007, an identical failure of the circuit breaker for raw water Pump AC-10C occurred. Both failures were due to a mechanical linkage rod that broke due to cyclical fatigue. On April 9, 2007, a special inspection into the circumstances of this event was concluded and was documented in NRC Inspection Report 05000285/2007-06. No findings or violations of significance were determined at that time. This LER was reviewed by the inspectors and no findings or violations were identified by the inspectors. The licensee documented the failed equipment in Condition Report 20070618. This LER is closed.

.5 (Closed) LER 05000285/2007004-00, Inadvertent Isolation of All Containment Spray Due to an Inadequate Test Procedure

On April 12, 2007, the licensee discovered that during certain testing, performed using Procedure OP-ST-ESF-0090/10, “Channel A/B Safety Injection, Containment Spray and Recirculation Actuation Signal Test,” that both trains of containment spray had been inadvertently rendered inoperable. Further investigation revealed that the licensee had introduced this condition repeatedly over the recent past (since 1996 when one train was tested, and since 2006 for the other). Making both trains inoperable simultaneously would require the licensee to enter Technical Specification 2.0.1, “General Requirements.” Technical Specification 2.0.1 required that the plant be shutdown in 6 hours or less. The enforcement aspects of the violation are discussed in Section 4OA7 of this report. This LER is closed.

.6 Reactor Coolant System Leak During Plant Heatup Due to Inadequate Valve Packing

a. Inspection Scope

The inspectors reviewed the circumstances surrounding and licensee response to a reactor coolant system (RCS) leak during plant heat up on June 9, 2008. The inspectors reviewed the licensee’s condition reports, logs, and graphs of key plant parameters, related operating experience, and associated procedures. The documents reviewed during this inspection are listed in the attachment.

The inspectors completed one sample during the inspection.

b. Findings

Introduction. The inspectors identified a Green noncited violation of Technical Specification 5.8.1.a (procedures) for an inadequate maintenance procedure. Specifically, the licensee's maintenance procedures did not provide adequate instructions for the craft to re-pack Pressurizer Spray Valve PCV-103-1, which resulted in a 2-3 gpm reactor coolant leak.

Description. During the Spring 2008 refueling outage, licensee maintenance personnel refurbished Pressurizer Spray Valve PCV-103-1 using Procedure PE-RR-VX-0410, "Inspection and Repair of Fisher 'ES' Control Valves," Revision 9. On June 9-10, 2008, during heat up of the plant, a 2-3 gpm leak of reactor coolant occurred. The inspectors reported to the control room and evaluated licensee operators' response to the event. The operators entered Procedure AOP-22, "Reactor Coolant Leak," Revision 29, and determined the location of the leak to be the Pressurizer Spray Valve PCV-103-1. The operators cooled the plant down in order to affect repairs. (Please refer to NRC Inspection Report 05000285/2008003 for a description of a related violation involving voiding of the reactor vessel head and steam generator U-tubes during the cool down.) Licensee personnel entered containment and discovered that the leakage was from the packing leakoff line of Valve PCV-103-1.

Further investigation revealed that the valve had not been adequately repacked during the outage when maintenance was performed on May 20, 2008. The procedure did not prescribe a specific sequence to consolidate a dual set of packing. The packing sequence used on May 20 was to install the packing in the stuffing box, place the gland follower on top and finger tighten the gland nuts. Monitoring equipment was then used to monitor stem friction while tightening the gland nuts to a calculated torque value. The inspectors also noted that the industry standard for valve packing replacement, as described in EPRI Report 1000923, "Valve Packing Performance Improvement Sealing Technology & Plant Leakage Reduction," is to consolidate the packing individually and then assemble them together. Accordingly, the root cause of the inadequate packing was determined to be an "inappropriate sequence to consolidate a dual packing set."

Analysis. The inspectors determined that the failure to have an adequate procedure for repacking of valves was a performance deficiency. This finding was greater than minor because it was similar to non-minor Example 4.b in Inspection Manual Chapter 0612, Appendix E, "Examples of Minor Issues," in that a procedural error caused a reactor trip or other transient. The inspectors evaluated this finding using Manual Chapter 0609, Attachment 4, and determined that it was of very low safety significance (Green) because, assuming worst case degradation, the finding would not result in exceeding the Technical Specification limit for any RCS leakage nor would it have likely affected other mitigation systems resulting in a total loss of their safety function. This finding had a crosscutting aspect in human performance, specifically the decision making aspect [H.1.(b)] because licensee personnel failed to use conservative assumptions in decision-making. Specifically, the relevant procedure left the detail of repacking the valves to skill of the craft and licensee personnel failed to challenge or question whether that was appropriate.

Enforcement. Technical Specification 5.8.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, 1978. Regulatory

Guide 1.33, Appendix A, requires, in part, “Written Procedures for Performing Maintenance.” Specifically, Item 9.a requires “Maintenance that can affect the performance of safety-related equipment should be properly … performed in accordance with written procedures … appropriate to the circumstances.” Contrary to the above, the maintenance of Valve PCV-103-1 (a safety-related component) was done with a procedure (PE-RR-VX-0410) that had insufficient detail regarding repacking which resulted in a significant RCS leak. This violation of Technical Specification 5.8.1.a is being treated as a noncited violation, consistent with Section VI.A of the Enforcement Policy: NCV 05000285/2008004-01, "Reactor Coolant System Leak During Plant Heat up Due to Inadequate Valve Packing." This violation was entered into the licensee’s corrective action program as Condition Report 2008-4059.

4OA5 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 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 and Observations

No findings of significance were identified.

.2 (Discussed) URI 05000285/2005011-05, Intake Structure Design

From August 11-22, 2008, Division of Reactor Safety Inspectors reviewed the open unresolved item involving intake structure design. The inspectors reviewed condition reports and met with the licensee in order to understand the status of the technical issue. Currently, licensee personnel are re-performing the calculation for the intake structure design and are projected to be finished by 2008 calendar year end.

.3 (Closed) Deviation 05000285/2007007-06, Failure to Install Temperature Monitoring of the Safety Injection Pump Rooms

During an NRC inspection conducted from May 21 through July 25, 2007, the team identified a Notice of Deviation for failure to install temperature monitoring of the safety injection pump room as committed to in a letter to the NRC, dated September 6, 1979. The commitment was submitted to support the licensee’s application for License Amendment 52. During the inspector’s review of other issues related with the safety injection pump room temperature, it was identified on June 6, 2007, that the temperature monitoring instrumentation was never installed, as committed in the 1979 letter. Since the proposed modification was never completed, the inspectors concluded that the

licensee failed to satisfy a written commitment, as documented in the September 6, 1979, letter. In addition, on November 1, 1999, after modifying operating procedures to restore ventilation to the safety injection pump rooms after an accident, the licensee missed an opportunity to notify the NRC that the commitment had not been implemented. This issue was entered into the licensee's corrective action program as Condition Report 2007-2448.

The inspectors reviewed the licensee's "Reply to a Notice of Deviation" letter and analysis. The Licensee has addressed the causes of the Deviation by actions taken place in procedural changes and enhancements in the tracking and resolution of NRC commitments. The licensee will address this issue in the next 10 CFR 50.59 Report, Updated Safety Analysis Report Revision, and Technical Specification Basis Change letter submitted for Fort Calhoun Station. The inspectors did not identify any finding of significance. Therefore, Deviation 05000285/2007007-06 is closed.

4OA6 Meetings

Exit Meeting Summary

On July 11, 2008, the inspectors presented the results of the heat exchanger inspection to Mr. R. Clemens, Manager, Nuclear Engineering Division, and other members of the licensee staff who acknowledged the findings. The inspectors did not review any proprietary information.

On September 25, 2008, the inspectors presented the results of the onsite and in-office inspection of the licensee's emergency preparedness program to Mr. T. Nellenbach, Division Manager, Nuclear Operations/Plant Manager, and other members of his staff, who acknowledged the findings. The inspectors confirmed that proprietary, sensitive, or personal information examined during the inspection had been returned to their identified custodian(s).

On October 6, 2008, the resident inspectors presented the inspection results to Mr. J. Reinhart, Site Vice President, and other members of licensee management, who acknowledged the inspection findings. The inspectors confirmed that no proprietary information had been provided.

4OA7 Licensee-Identified Violations

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

- Technical Specification 2.0.1, "General Requirements," states in part, "In the event a Limiting Condition for Operation and/or associated action requirements cannot be satisfied because of circumstances in excess of those addressed in the specification, the unit shall be placed in at least HOT SHUTDOWN within 6 hours…" Contrary to the above, the licensee repeatedly rendered both trains of Containment Spray inoperable during testing conducted per OP-ST-ESF-0090/10, "Channel A/B Safety Injection, Containment Spray and Recirculation Actuation Signal Test," and failed to commence a shutdown of the plant. This finding only had very low safety significance because the containment cooling safety function could have been

provided, if called upon, by the redundant containment coolers. The duration of this condition was approximately 2.5 hours per occurrence. Further, the licensee had the ability to promptly restore the containment spray system during a hypothetical event. This finding was identified in the licensee's corrective action program as Condition Report 2007-1647 and was reported as LER 05000285/2007-04.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

R. Acker, Station Licensing Engineer
A. Clark, Manager Nuclear Security
O. Clayton, Manager, Nuclear Procurement Services
R. Clemens, Manager, Nuclear Engineering Division
P. Cronin, Manager Operations
M. Frans, Manager, System Engineering
J. Gasper, Manager, Design Engineering
S. Gebers, Manager, Emergency Preparedness and Health Physics
D. Guinn, Supervisor, Regulatory Compliance
J. Herman, Manager, Program Engineering
R. Hodgson, Acting Manager, Integrated Work Management
T. Maine, Acting Manager, Radiation Protection
T. Matthews, Manager Nuclear Licensing
E. Matzke, Regulatory Compliance Engineer
T. Nellenbach, Division Manager, Nuclear Operations/Plant Manager
T. Pilmaier, Manager, Performance
J. Reinhart, Site Vice President
G. Roets, Manager Major Projects
L. Schnetofer, Quality Specialist
C. Simmons, Supervisor, Emergency Planning
M. Tesar, Division Manager, Nuclear Support
D. Trausch, Assistant Plant Manager
R. Westcott, Manager, Quality

NRC

T. Pruett, Deputy Director, Division of Reactor Safety

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000285/2008004-01	NCV	Reactor Coolant System Leak During Plant Heat up Due to Inadequate Valve Packing (Section 4OA3.6)

Closed

05000285/2006002-01	LER	Inadequate Design Control Results in Potentially Insufficient Auxiliary Feedwater Flow (Section 4OA3.1)

05000285/2007-003-01	LER	Inoperability of a Diesel generator with an Inoperable Containment Cooling Fan from the Opposite Bus (Section 4OA3.2)
05000285/2006-008-01	LER	Loss of Shutdown Cooling Due to Repressurizing Reactor Coolant System (Section 4OA3.3)
05000285/2007-002-00	LER	Common Mode Failure of Medium Voltage (4160) Circuit Breaker (Section 4OA3.4)
05000285/2007-004-00	LER	Inadvertent Isolation of All Containment Spray Due to an Inadequate Test Procedure (Section 4OA3.5)
05000285/2007007-06	NOD	Failure to Install Temperature Monitoring of the Safety Injection Pump Rooms (Section 4OA5.3)
Discussed		
05000285/2005011-05	URI	Intake Structure Design (Section 4OA3.1)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Abnormal Operating Procedure AOP-1, "Acts of Nature," Revision 23
Control Room Log Entries for third Quarter 2008, describing Missouri River levels

Section 1RO4: Equipment Alignment

USAR, Section 6.1, "General," Revision 8

USAR, Section 6.2, "Safety Injection System," Revision 31

USAR, Section 6.3, "Containment Spray System," Revision 15

USAR, Section 8.3, "Station Distribution," Revision 9

SDBD-SI-CS-131, "Containment Spray," Revision 27

SDBD-SI-HP-132, "High Pressure Safety Injection," Revision 21

SDBD-SI-LP-133, "Low Pressure Safety Injection System," Revision 26

Technical Basis Document TBD-III.42, “Requirements for ECCS and Containment Cooling Equipment Operation in Mode 3, Transition between Modes 3 and 4 and Mode 4 and 5,” Revision 2

Operating Procedure OI-SI-1, “Safety Injection – Normal Operation,” Revision 109

Operating Instruction OI-CS-1, “Containment Spray – Normal Operation,” Revision 32

Standing Order SO-O-44, “Administrative Controls for the Locking of Components,” Revision 93

Calculation FC06652, “Determination of Nitrogen Voiding due to Safety Injection Tank Leakage,” Revision 4

Calculation FC06689, “Susceptibility of HPSI/LPSI System to Water Hammer,” Revision 8

Calculation FC07487, “Response to the Fort Calhoun HPSI Piping High Points to Gas-Water Hammer,” Revision 8

Modification Request FC97-028, “Potential Nitrogen Voiding in Safety Injection System,” Revision 10

Drawing USAR-Figure 8.1-1, “Simplified One Line Diagram Plant Electrical System,” Revision 14

Drawing E-23866-210-130, Sheet COV and 1, 2, 2a, 2b, 3, “Composite Flow Diagram Safety Injection and Containment Spray System P&ID,” Revision 48, 96, 64, 19, 12, and 17 respectively

System Training Manual, “Emergency Core Cooling System,” Volume 15, Revision 27

Licensee Event Report LER 91-027-01, “Violation of Containment Integrity by Opening WD-1060 during Sampling,” January 31, 1992

NRC Generic Letter 2008-01, “Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems,” January 11, 2008

Licensee Event Report LIC-77-0016, January 31, 1977

Safety Analysis for Operability SAO 2005-003, “LPSI System Steam Induced Water Hammer Prevention,” Revision 27

Control Room Operating Logs dated September 18, 2008

Condition Reports:

199500202	199600438	199600509	199600656	199600673
199600917	199601109	199700448	199700570	199701166
199701532	199701680	199802335	200505030	

Section 1RO5: Fire Protection

Standing Order SO-G-28, "Station Fire Plan," Revision 72
Standing Order SO-G-102, "Fire Protection Program," Revision 7
Abnormal Operating Procedure AOP-6, "Fire Emergency," Revision 17
Abnormal Operating Procedure AOP-13, "Loss of Control Room Air Conditioning," Revision 9
USAR, Section 9.11, "Fire Protection Systems"
Fire Protection Impairment 2008069 for Room 81 Emergency Lighting

Section 1RO6: Flood Protection Measures

Zurn Specification Sheet for valve model Z511-F-V, dated December 12, 2003

Zurn Specification Sheet for valve model Z1090, dated November 30, 2003

EM-PM-EX-0604, "Room 81 Conduit Cover Gasket Periodic Inspection," Revision 1

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 2003-08, "Potential Flooding Through Unsealed Concrete Floor Cracks"

NRC Circular 78-06, "Potential Common Mode Flooding of ECCS Equipment Rooms at BWR Facilities"

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"

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"

NRC Information Notice 2007-01, "Recent Operating Experience Concerning Hydrostatic Barriers"

Work Order 00286405-01, "Check of Potentially Contaminated Floor Drains/Hubs" completed on February 8, 2008

Updated Safety Analysis Report, Appendix M, "Postulated High Energy Line Rupture Outside the Containment," Revision 7

EA-FC-97-001, "Fire Hazards Analysis (FHA) Manual," Revision 12

Condition Reports: 199500090, 199600282, 199600931, 199601003, 199601469, 199700816, 199800625, 2008-5329, 2008-5055,

Section 1RO7: Heat Sink Performance

Procedures and Calculations

FC06747, "SI Pump Room (Room 21 & 22) Heat-up during Pump Operation," Revision 4

OP-ST-RW-3003, "Raw Water System Category A and B Interface Valve Exercise Test," dated October 11, 2006

OP-ST-RW-3001, "AC-10A Raw Water Pump Quarterly Inservice Test," dated May 9, 2007

OP-ST-RW-3001, "AC-10A Raw Water Pump Quarterly Inservice Test," dated August 6, 2007

OP-ST-CCW-3022, "AC-3C Component Cooling Water Pump Inservice Test," dated May 7, 2007

FCS FC0679, "CCW Heat Exchanger Benchmark Cases," Revision 0

PED-SEI-16, "Evaluation of Heat Exchanger Performance," dated May 15

OI-RW-1, "Operating Instructions Raw Water System Normal Operation," Revision 84

FC08236, "FCS RW/CCW Analysis," dated September 7, 2007

CH-AD-0003. "Plant System Chemical Limits and Corrective Actions," Revision 0

ST-PFT-CCW-0001, "Component Cooling Water Heat Exchanger Performance Testing," dated February 7, 2008

OP-ST-CCW-3002, "Component Cooling Water Pump Inservice Test," Revision 4

PE-RR-CCW-3002, "Disassembly, Cleaning, and Repair of CCW Heat Exchanger Raw Water Side," dated December 11, 2007

Drawings

11405-A-281, "Intake Structure Building Sections and Panel Details," Revision 11
11405-A-278, "Intake Structure Floor Plans," Revision 1
11405-M-257, "Flow Diagram Circulating Water System," Sheet 1, Revision 86
11405-M-10, "Auxiliary Coolant Component System Flow Diagram," Sheet 4, Revision 10

Work Orders:

00220995 01	00240472 01	00240472 01	00248454 02	00259956 01
00288658 01	00290132 01	00240472 01		

Cause Determinations:

01130508R2

Condition Reports:

2005-3922	2005-4382	2006-2175	2007-1035	2007-1068
2007-1068	2007-1074	2007-1235	2007-2319	2007-3046
2007-3273	2008-1029	2008-1956	2008-2080	2008-3700
2008-4323				

Section 1R11: Licensed Operator Requalification Program

Open Simulator Discrepancy Reports (All)
Current Simulator Differences List
Simulator Modification Procedures
Verification and Validation Procedures
Current operator license list from Fort Calhoun Station
Licensed Operator Requalification Schedule for the week of August 11, 2008
Simulator Scenario Guide 82107e, "MSLB Inside Containment," Revision 1
Crew Rotational Action Plan for Rotation 2008-04, Crew 3, dated August 27, 2008
Condition Report 2008-5651

Section 1R12: Maintenance Effectiveness

Functional Scoping Data Sheet for High Pressure Injection Pumps, dated August 27, 2008
Maintenance Rule Cause Determination 08200806 for Emergency Core Cooling failure
Maintenance Rule Cause Determination 01120803 for Raw Water Pump failure
Condition Report 2008-3691

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

Standing Order SO-O-21, "Shutdown Operations Protection Plan," Revision 31
Standing Order SO-M-100, "Conduct of Maintenance," Revision 48
ANSI N18.7, "Administrative Controls for Nuclear Power Plants," dated 1972
Control Room Operating Logs, dated August 21, 2008
Risk evaluation and risk management actions from July 30 – August 1, 2008

Section 1R15: Operability Evaluations

Control Room Operating Logs, dated August 19, 2008 and September 7, 2008

OI-SI-1, "Safety Injection – Normal Operation," Revision 109

Plot of Pressurizer Safety Valve tailpipe temperatures vs. time from August 12, 2008 until September 9, 2008

Engineering Change 42586, "OP-ST-RC-3003/PORV/Safety Valve Tailpipe Temperature Circuit Check" dated August 4, 2008

Operability Evaluation for Unanalyzed Potential Flooding in the Control Room, dated August 11, 2008

Work Order 00294874-01, "Warehouse Security Diesel Run Test," dated July 3, 2008

Condition Reports:

2008-5309	2008-3165	2008-0459	2008-4308	2008-4136
2008-5381	2008-5505	2008-5706		

Section 1R18:

Temporary Modification Package for EC 43949 - Containment Fire Zone 19 Being Disabled
Condition Reports 2008-4999 and 2008-1679

Section 1R19: Postmaintenance Testing

OP-ST-SI-3021, "Room 21 Safety Injection/Containment Spray Pumps and Valve Exercise In Service Test," Revision 8

OP-ST-DG-0002, “Diesel Generator 2 Check,” Revision 58

Work Order 00299342-01, “VA-46B Inspect, Leak Test, Sample Oil, Lubricate Bearings” dated August 18, 2008

Work Order 00299342-04, “VA-46B Inspect Motor Starter/Megger Fan and Compressor Motor,” dated August 18, 2008

Work Order 00312588-01, “VA-46B Clean Condenser,” dated August 18, 2008

Section 1R22: Surveillance Testing

SE-ST-FP-0002, “Fire Protection System Motor Driven Fire Pump Full Flow Test,” Revision 19
EM-ST-EE-0001, “Monthly Surveillance Test for Station Battery No. 1 (EE-8A),” Revision 14
EM-ST-EE-0002, “Monthly Surveillance Test for Station Battery No. 2 (EE-8B),” Revision 13
OP-ST-AFW-0004, “Auxiliary Feedwater Pump FW-10 Operability Test,” Revision 24
OP-ST-RC-0003, "PORV/Safety Valve Tailpipe Temperature Circuit Check," Revision 8
OP-ST-RC-3001, “Reactor Coolant System (RCS) Leak Rate Test,” Revision 32
OP-ST-RW-3001, “AC-10A Raw Water Pump Quarterly Inservice Test,” Revision 34

Section 1EP3: Emergency Response Organization Augmentation Testing

Emergency Response Organization Pager Surveillances conducted:
2006 – August 8, and December 15
2007 – March 13, June 25, and September 18
2008 – March 10, and June 23

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

FCSG-4, “Performance of Self Assessments,” Revision 14, August 2008

NOD-QP-19, “Cause Analysis Program,” Revision 32

Emergency Preparedness Department Manual 4, “Conduct of Drills,” Revision 11

Emergency Preparedness Department Manual 15, “Generation of Condition Reports for EP Issues and Equipment Problems,” Revisions 2 and 3

Master Audit Plan – QA Audit 4, “Emergency Preparedness,” Revision August 26, 2008

Desk Guide Quality-DG-002, “Quality Department Performance Expectations,” Revision 15

Desk Guide Quality-DG-010, “Ongoing Surveillance Observation Process, QA Surveillances /NSRG Reports,” Revision 11

07-QUA-024, “Emergency Response Plan and Implementing Procedures,” April 10, 2007

08-QUA-019, “Emergency Response Plan and Implementing Procedures,” April 8, 2008

Self Assessment Report SA-06-035, “Exercise Evaluation Self Assessment”

Self Assessment Report SA-07-022, “Emergency Planning Department Assessment”

Self Assessment Report SA-07-044, “On Shift Staffing”

Self Assessment Report SA-07-045, “Dose Assessment”

Self Assessment Report SA-08-Emergent-EP01

Self Assessment Report SA-08-001, “Emergency Preparedness Procedure Quality”

Self Assessment Report SA-08-002, “EP Training”

Self Assessment Report, “Comparison with INPO EP Best Practices”

Event Summary Report: Notice of Unusual Event, September 13, 2007

Drill Evaluation Reports for Drills Conducted:

2007 – February 27, April 17, June 19, August 21, October 16
2008 – February 5, June 24, August 26

Condition Reports:

2006 - 3523, 4724
2007 - 0610, 4096
2008 - 0589, 1057, 1422, 2177, 2633, 3276, 4438, 4458, 5945

Section 1EP6: Drill Evaluation

Scenario Manual, Volume 1, “Fort Calhoun Emergency Preparedness Drill” August 26, 2008

Section 4OA1: Performance Indicator Verification

MSPIBD, "Mitigating Systems Performance Index Basis Document for Fort Calhoun Station", Revision 1

NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 5

Various Operator logs dated July 1, 2007 through June 30, 2008

EPIP EOF-7, "Protective Action Guidelines," Revision 19

EPIP OSC-1, "Emergency Classification," Revision 44

EPIP OSC-2, "Command and Control Position Actions/Notifications," Revision 48

Emergency Preparedness Department Manual, EPDM-02, "Emergency Preparedness Test Program," Revision 16

Emergency Preparedness Test, EPT-01, "Alert Notification System Silent Test," Revisions 14 and 15

Emergency Preparedness Test, EPT-02, "Alert Notification System Growl Test," Revision 18

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2008-0135	2008-0195	2008-0907	2008-1407	2008-1434
2008-1523	2008-1666	2008-1682	2008-1802	2008-2596
2008-2617	2008-2919	2008-2920	2008-3024	2008-3034
2008-3114	2008-3139	2008-3152	2008-3225	2008-3229
2008-3310	2008-3319	2008-3330	2008-3333	2008-3389
2008-3426	2008-3562	2008-3576	2008-3579	2008-3625
2008-3674	2008-3675	2008-3691	2008-3855	2008-3857
2008-3863	2008-3915	2008-4019	2008-4026	

Miscellaneous Documents

Fort Calhoun Radiological Emergency Response Plan

Section 4OA3: Event Follow-Up

PE-RR-VX-0410, "Inspections and Repair of Fisher 'ES' Control Valves," Revision 10

Technical Specification 2.1.4 "Reactor Coolant System Leakage Limits"

System Training Manual, Volume 37, "Reactor Coolant System," Revision 35

Root Cause Analysis Report "Excessive Leakage from Pressurizer RC-4 Spray Valve PCV 103 1 Packing Leakoff Line," dated July 23, 2008

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Section 4OA5: Other Activities

LIC-07-0089, NRC Inspection Report 05000285/2007-007, Reply to a Deviation, October 5, 2007

NEI 99-04, Guidelines for Managing NRC Commitment Changes, Revision 0

NOD-QP-9, Processing of Regulatory Correspondence and Other Pertinent Licensing Documents, Revision 22

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