



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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July 14, 2003

R. T. Ridenoure
Division Manager - Nuclear Operations
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, Nebraska 68023-0550

**SUBJECT: FORT CALHOUN STATION - NRC INTEGRATED INSPECTION
REPORT 05000285/2003004**

Dear Mr. Ridenoure:

On June 21, 2003, 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 June 23, 2003, with Mr. Gary Gates, Vice President, Nuclear, 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.

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

Since the terrorist attacks on September 11, 2001, NRC has issued five Orders and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance controls over access authorization. In addition to applicable baseline inspections, the NRC issued Temporary Instruction 2515/148, "Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures," and its subsequent revision, to audit and inspect licensee implementation of the interim compensatory measures required by order. TI 2515/148 was completed at the Fort Calhoun Station during Calendar Year 2002. The NRC will continue to monitor overall safeguards and security controls at the Fort Calhoun Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, and its enclosure, will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of 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).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Kriss M. Kennedy, Chief
Project Branch C
Division of Reactor Projects

Docket: 50-298
License: DPR-46

Enclosure:
Inspection Report 05000285/2003004
w/attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket No.: 50-285
License No.: DPR-40
Report No.: 05000285/2003004
Licensee: Omaha Public Power District
Facility: Fort Calhoun Station
Location: Fort Calhoun Station FC-2-4 Adm.
P.O. Box 399, Hwy. 75 - North of Fort Calhoun
Fort Calhoun, Nebraska
Dates: March 23, 2003, through June 21, 2003
Inspectors: J. Kramer, Senior Resident Inspector
L. Willoughby, Resident Inspector
R. Azua, Project Engineer
G. Pick, Senior Physical Security Inspector
Approved By: Kriss M. Kennedy, Chief, Project Branch C
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000285/2003004; 03/23/2003 - 06/21/2003; Fort Calhoun Station, Integrated Resident and Regional Report

The report covered a 3-month period of inspection by resident and regional office inspectors. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG 1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified Findings and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Violations

None

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REPORT DETAILS

Summary of Plant Status

The unit began this inspection period at 50 percent power for main condenser inspection and cleaning. On March 30, 2003, the unit commenced a power increase and achieved 100 percent power the following day. On April 25 power was reduced to 55 percent power for main condenser repairs. The unit returned to 100 percent power on April 27 and operated at that level throughout the remainder of this inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

During June 2003 the inspectors reviewed Procedure OI-EW-1, "Extreme Weather," Revision 8, for responding to extreme weather, specifically hot weather preparations. The inspectors verified that design features and implementation of the procedure were adequate to protect West Switchgear Room 56W and East Switchgear Room 56E from the effects of adverse weather.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors performed four partial walkdowns of the following trains of equipment during outages, operation, or testing of redundant trains. The inspectors verified that the following systems were properly aligned in accordance with system piping and instrumentation drawings and plant procedures:

- Diesel Generator 2 during a monthly surveillance and outage of Diesel Generator 1 on April 16, 2003
- Auxiliary Feedwater Pump FW-10 during an outage of Auxiliary Feedwater Pump FW-6 on April 17, 2003
- Raw Water System during an outage of the East Raw Water Header, Raw Water Pump AC-10D, and Component Cooling Water Heat Exchanger AC-1D on May 19, 2003

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- Control Room Air Conditioner VA-46B during an outage of Control Room Air Conditioner VA-46A on June 3, 2003

b. Findings

No findings of significance were identified.

.2 Complete System Walkdowns

a. Inspection Scope

The inspectors conducted a detailed review of the alignment and condition of the auxiliary feedwater system. The inspectors reviewed open work orders and condition reports associated with the system. The inspectors performed a walkdown of accessible portions of the system. During the walkdown, inspectors verified that the system was properly aligned in accordance with piping and instrumentation Drawings 11405-M-253 and 11405-M-254 and Procedure OI-AFW-1, "Auxiliary Feedwater Actuation System Normal Operation," Revision 53.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors performed eight routine fire inspection tours and reviewed relevant records for the following plant areas important to reactor safety:

- Fire Area 3 - Spent Regenerant Tank and Pump Area, Room 23
- Fire Area 13 - Mechanical Penetration Area, Room 13
- Fire Area 31/31A - Intake Structure
- Fire Area 33 - Component Cooling Heat Exchanger Area, Room 18
- Fire Area 34A - Electrical Penetration Area - Basement
- Fire Area 35A - Diesel Generator 1 Area, Room 63
- Fire Area 43 - Service and Condensate Tank Area
- Fire Area 46.3 - Start-up Feedwater Pump FW-54 Enclosure

The inspectors observed the material condition of plant fire protection equipment, the control of transient combustibles, and the operational status of barriers. The inspectors compared in-plant observations with commitments in the licensee's Updated Fire Hazards Analysis Report.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

.1 Internal Flooding Protection Measures

a. Inspection Scope

The inspectors reviewed the Probabilistic Risk Assessment Summary Notebook for internal flooding events and Procedure ARP-AI-100/A50, "Annunciator Response Procedure A50 Local Annunciator A50 Waste Disposal," Revision 7. The inspectors discussed the assumptions used in the risk analysis for raw water system breaks in the auxiliary building with the Probabilistic Risk Assessment Group. The inspectors performed walkdowns of the basement and personnel corridor area, the component cooling heat exchanger area, the safety injection and containment spray pump area, and the spent regenerant tank and pump area (Rooms 4, 18, 22, and 23, respectively).

b. Findings

No findings of significance were identified.

.2 External Flooding Protection Measures

a. Inspection Scope

The inspectors reviewed the Updated Safety Analysis Report; Probability Risk Assessment Summary Notebook; Procedure PE-RR-AE-1000, "Floodgate Inspection and Repair," Revision 5; Procedure PE-RR-AE-1001, "Floodgate Installation and Removal," Revision 0; Work Order 00106295-01, "Inspect Flood Control Devices," completed July 7, 2002; and Condition Reports 200301780 and 200301800. The inspectors conducted walkdowns of areas susceptible to external flooding to verify that risk-significant equipment was adequately protected by flood mitigation equipment. The inspectors verified that the licensee's flood mitigation plans and equipment were consistent with design requirements.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

The inspectors reviewed licensed operator requalification training activities, including the licensed operators' performance and the evaluators' critique. The inspectors compared performance in the simulator on May 12, 2003, with performance observed in the control room during this inspection period.

The focus of the inspection was on high-risk licensed operator actions, operator activities associated with the emergency plan, and previous lessons-learned items. These items were evaluated to ensure that operator performance was consistent with protection of the reactor core during postulated accidents.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the requirements of the Maintenance Rule (10 CFR 50.65) to verify that they had conducted appropriate evaluations of equipment functional failures, maintenance preventable functional failures, the unplanned capacity loss factor, and system unavailability. The inspectors reviewed the maintenance rule functional scoping data sheets for the instrument air system and electrical distribution system and Condition Reports 200000077 and 200202260. The inspectors discussed the evaluations with the licensee personnel. The following components were reviewed:

- Electrical Distribution/Service Power Transformer T1B-3B
- Safety Injection Refueling Water Tank Recirculation Isolation Valve Air Accumulator Check Valves HCV-385/386

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's risk assessments for equipment outages as a result of planned and emergent maintenance to evaluate the licensee's effectiveness in

assessing risk for these activities. The inspectors compared the licensee's risk assessment and risk management activities against requirements of 10 CFR 50.65 (a)(4). The inspectors discussed the planned and emergent work activities with planning and maintenance personnel. The inspectors verified that plant personnel were aware of the appropriate licensee-established risk category, according to the risk assessment results and licensee program procedures. The inspectors reviewed the effectiveness of risk assessment and risk management for the following activities:

- Diesel Generator 2 three-year maintenance outage inspections during the week of March 31, 2003
- Outage of Auxiliary Feedwater Pump FW-6, Component Cooling Water Inlet Valve HCV-492A, and Component Cooling Water Outlet Valve HCV-492B on April 17, 2003
- Diesel Generator 1 outage with the possibility of severe weather on May 13, 2003
- Outage of the East Raw Water Header, Raw Water Pump AC-10D, and Component Cooling Water Heat Exchanger AC-1D on May 19, 2003
- Outage of the Diesel Auxiliary Feedwater Pump FW-54, Control Room Air Conditioning Unit VA-46A, and Plant Air Compressor CA-1A on June 5, 2003

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

.1 Flow-Streaming Event

a. Inspection Scope

On May 21, 2003, the inspectors observed the control room operators' response to a flow-streaming event. A flow streaming event involves slow variations in the reactor coolant system hot leg temperature that ultimately affects the primary calorimetric power. The operators entered Procedure AOP-15, "Loss of Flux Indication or Flow Streaming," Revision 5, Section III, "Flow Streaming Event." The licensee initiated Condition Report 200301867 to document the event.

b. Findings

No findings of significance were identified.

.2 Predicted Post-Trip 161 kV Grid Voltage Low

a. Inspection Scope

On May 29, 2003, operators declared the 161 kV offsite power source inoperable and entered Procedure AOP-31, "161 kV Grid Malfunctions," Revision 5, when the predicted 161 kV grid voltage (following a postulated plant trip) was calculated to be less than 160.7 kV (160.6 kV). The licensee reported the condition to the NRC as required by Technical Specification 2.7(2)c. The inspectors discussed the performance of Procedure AOP-31 with the control room supervisor. The inspectors reviewed Technical Specification 2.7(2)c, the licensee's notification to the NRC (Event Number 39891), and Condition Report 200302010.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed seven operability evaluations to verify that the evaluations provided adequate justification that the affected equipment could still meet its Technical Specification, Updated Safety Analysis Report, and design bases requirements. The inspectors also discussed the evaluations with cognizant licensee personnel. The inspectors reviewed the operability evaluations and cause assessments for the following:

- Water in the Charging Pump CH-1C gear box oil (Condition Report 200301352)
- Scaffolding in close proximity (approximately 1 inch) to low pressure safety injection suction line (Condition Report 200301291)
- Cable tray and conduit installation did not use conductive thread lubricant as specified in the original design basis documents (Condition Report 200301440)
- Steam Generator RC-2B Auxiliary Feedwater Inlet Valve HCV-1108A re-injection with leak sealant (Condition Report 200301391)
- Steam Generator RC-2B Feed Regulating Bypass Valve HCV-1106 air switch not functioning properly (Condition Report 200301344)
- Neutron Detector Well high temperature alarm from Detector TIC733B (Condition Report 200302269)

- Diesel Generator 2 Lube Oil Cooler Outlet Temperature Alarm actuating below setpoint (Condition Report 200301967)

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors performed a review of the operator workaround and the control room deficiency lists. The inspectors focused on the cumulative effects of the workarounds on the reliability and availability of mitigating systems. The inspectors reviewed Procedure OPD-4-17, "Control Room Deficiencies and Operator Work Arouns," Revision 8, that described the programs for handling workarounds and deficiencies. The inspectors reviewed the licensee's fourth quarter of 2002 and first quarter of 2003 quarterly assessments of the cumulative effects of the operator workarounds and control room deficiencies. The inspectors discussed the programs and planned corrective actions for the deficiencies with Operations Department supervision.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors observed and/or reviewed seven postmaintenance tests to verify that the test procedures adequately demonstrated system operability. The inspectors also verified that the tests were adequate for the scope of the maintenance work performed and that the acceptance criteria were clear and consistent with design and licensing basis documents. The following activities were included in the scope of this inspection:

- Work Order Package 00087314-03, for troubleshooting Auxiliary Feedwater Pump FW-10 accumulator system, Procedure IC-ST-IA-3009, "Operability Test of IA-YCV-1045-C and Close Stroke Test of YCV-1045," Revision 12, and Condition Report 200301084 on March 25, 2003
- Work Order Package 00130285-01, for the rerouting of the piping from the bottom to the side of an automatic oiler for Containment Spray Pump SI-3A on April 14, 2003
- Work Order Package 00143031-01, for troubleshooting Component Cooling Heat Exchanger AC-1D Raw Water Inlet Valve HCV-2883A,

Procedure OP-ST-RW-3002A, Attachments 5, 6, 7, and 8, "Raw Water System Category A and B Valve Exercise Test," Revision 8, on April 8, 2003

- Work Order 00137409-01, for lubricating Motor-Driven Auxiliary Feedwater Pump FW-6 coupling accomplished on April 17, 2003
- Work Order Package 00143589-01, for repacking Charging Pump CH-1A, cleaning the associated packing cooling tank, and changing the Charging Pump CH-1A oil on April 23, 2003
- Work Order Package 00113902-01, for replacement of Steam Generator RC-2A inlet flow Transmitter FT-1395 on April 30, 2003
- Work Order Package 00133928-01 for Raw Water Strainer AC-12A clean, inspection, and clearance measurement, and Condition Report 200301844 on May 19, 2003

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed and/or reviewed the performance and documentation for the following four surveillance tests to verify that the structures, systems, and components were capable of performing their intended safety functions and to assess operational readiness:

- Procedure OP-ST-AFW-3009, "Auxiliary Feedwater Pump FW-6, Recirculation Valve, and Check Valve Tests," on April 17, 2003
- Procedure OP-ST-ESF-0009, "Channel A Safety Injection, Containment Spray and Recirculation Actuation Signal Test," Revision 40 on May 1, 2003
- Procedure OP-ST-AFW-0004, "Auxiliary Feedwater Pump FW-10 Operability Test," Revision 21 on May 21, 2003
- Procedure OP-ST-DG-0002 Attachment 4A, "Diesel Generator 2 Check," Revision 38 on May 30, 2003

b. Findings

No findings of significance were identified.

Enclosure

Cornerstone: Emergency Preparedness

1EP6 Drill Observation (71114.06)

a. Inspection Scope

On April 29, 2003, the inspectors observed aspects of the emergency preparedness drill from the simulator and the technical support center. The purpose of the observations was to evaluate operator performance, licensee event classification, notification of state and local authorities, and the adequacy of protective action recommendations. The inspectors attended the licensee's post-drill critiques and discussed observations with licensee management.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection

3PP4 Security Plan Changes (71130.04)

a. Inspection Scope

The inspector performed an in-office review of Fort Calhoun Station Physical Security Plan, Revision 19, to determine if the changes decreased the effectiveness of the Physical Security Plan and to determine if the requirements of 10 CFR 50.54 (p) were met. The changes involved minor revisions to drawings, descriptions of new door devices, and deletion of redundant information.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed the licensee's performance indicator data to verify its accuracy and completeness. The inspectors verified the following indicators:

- MS2 High Pressure Safety Injection System Unavailability
- MS4 Residual Heat Removal System Unavailability

The inspectors reviewed the performance indicator data for the last three quarters of 2002 and the first quarter of 2003. The inspectors reviewed NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," and licensee operating logs. The inspectors discussed the status of the performance indicators and compilation of data with licensee personnel.

b. Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meeting Summary

The results of the review of the security plan changes were presented to Mr. G. Cavanaugh, Supervisor, Station Licensing, on April 28, 2003.

The results of the resident inspector activities were presented to Mr. G. Gates, Vice President, Nuclear, and other members of licensee management on June 23, 2003.

During all meetings, licensee management acknowledged the inspection findings and stated that none of the material examined during the inspection was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

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M. Frans, Assistant Plant Manager
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