UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

September 7, 1999

S. K. Gambhir, Division Manager
Nuclear Operations
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 399
Hwy. 75 - North of Fort Calhoun
Fort Calhoun, Nebraska 68023-0399

SUBJECT: NRC INSPECTION REPORT NO. 50-285/99-08

Dear Mr. Gambhir:

This refers to the inspection conducted on July 11 through August 21, 1999, at the Fort Calhoun Station facility. The results were discussed with Mr. Solymossy and other members of your staff. The enclosed report presents the results of this inspection.

The inspection was an examination of activities conducted under your license as they relate to safety and to compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel. Specifically, this inspection focused on reactor safety.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room (PDR).

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

Sincerely,

/s/

Charles S . Marschall, Chief
Project Branch C
Division of Reactor Projects

Docket No.: 50-285
License No.: DPR-40

Enclosure:
NRC Inspection Report No.
50-285/99-08

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cc w/enclosure:
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E-Mail report to D. Lange (DJL)
E-Mail report to NRR Event Tracking System (IPAS)
E-Mail report to Document Control Desk (DOCDESK)
E-Mail report to Richard Correia (RPC)
E-Mail report to Frank Talbot (FXT)
E-Mail all documents to Jim Isom for Pilot Plant Program (JAI)
E-Mail all documents to Sampath Malur for Pilot Plant Program (SKM)

bcc to DCD (IE01)

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-285
License No.:	DPR-40
Report No.:	50-285/99-08
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:	July 11 through August 21, 1999
Inspectors:	W. Walker, Senior Resident Inspector V. Gaddy, Resident Inspector
Approved By:	Charles S. Marschall, Chief, Project Branch C

ATTACHMENT: Supplemental Information

SUMMARY OF FINDINGS

Fort Calhoun Station
NRC Inspection Report 50-298/99-08 (DRP)

The report covers a 6-week period of resident inspection.

Cornerstone: Initiating Events

- No findings.

Cornerstone: Mitigating Systems

- No findings.

Cornerstone: Barrier Integrity

- No findings.

Report Details

Summary of Plant Status

The Fort Calhoun Station began this inspection period at 100 percent power and maintained that level throughout the inspection period.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R03 Emergent Work

.1 Diesel Generator

a. Inspection Scope

Inspectors observed emergent work associated with Diesel Generator 1.

b. Observations and Findings

On August 11, 1999, Diesel Generator 1 was removed from service for monthly surveillance testing. Prior to testing, a risk assessment was performed. This risk assessment calculated the change in risk during diesel generator testing. During the performance of the surveillance test, a metal temperature probe and its attached cable were inadvertently inserted into the air intake fan that provided cooling to the electrical generator windings portion of the diesel generator. The diesel generator was immediately shut down and no abnormal indications were observed locally or in the control room. The cable was found wrapped around the generator windings cooling fan blades. The probe was destroyed and pieces were found at the bottom of the generator windings. Maintenance personnel disassembled the housing around the generator windings, performed a thorough inspection, and removed any loose parts from the destruction of the metal temperature probe. Quality assurance personnel were present during the inspection activities and verified that loose parts had been removed. A surveillance test was performed on the diesel generator with no abnormal indications observed and the diesel generator was declared operable.

The inspectors verified that the licensee had performed an additional risk assessment associated with the repair activities and for other plant conditions. There were no findings identified and documented during this inspection.

.2 Electrohydraulic Control Pump Failure

a. Inspection Scope

Inspectors assessed the licensee control of risk associated with failure of Electrohydraulic Control Pump EHC-3B.

b. Observations and Findings

On August 12, 1999, Electrohydraulic Control Pump EHC-3B failed. Pump EHC-3A auto-started as designed. The failed pump was removed from service and sent offsite for repairs. The pump was returned to service on August 15, 1999. The licensee performed maintenance on the failed pump as an emergent work activity. If the second electrohydraulic control pump had failed, a turbine trip and a reactor trip would have occurred. The inspectors asked if a risk assessment had been performed to evaluate the new plant configuration. Licensee personnel indicated that their risk model did not model turbine generator and auxiliaries because a turbine trip would not contribute significantly to an increase in core damage frequency when considered in isolation.

The inspectors also noted, however, that, during the time the electrohydraulic control pump was out of service, plant staff also took other components out of service for planned testing. Specifically, on August 13, 1999, quarterly inservice testing was conducted on one train of emergency core cooling. The testing required that plant staff individually render the low pressure spray injection, the high pressure spray injection, and the containment spray pumps inoperable. These systems can be important, from a risk perspective, in mitigating reactor transients. For example, in the event auxiliary feedwater was lost during a transient, the emergency core cooling system would be necessary to provide feed and bleed capability and high pressure recirculation to mitigate a transient. By not performing a risk assessment for the planned activities and taking into consideration the increased likelihood of a reactor transient as a result of the degraded electrohydraulic control system, the totality of risk was not considered.

When failure of the remaining electrohydraulic control pump would have initiated a transient (turbine/reactor trip), the licensee did not perform a risk assessment to consider the total risk prior to removing from service emergency core cooling systems credited for mitigating a transient. The NRC considered the increased risk from a postulated failure of the second electrohydraulic pump to be low, but noted that the lack of a risk assessment that considered both planned and emergent activities by the licensee was a weakness.

1R04 Equipment Alignments

a. Inspection Scope

During this inspection period, the inspectors performed a partial walkdown to verify containment integrity using Operating Instruction OI-CO-5, "Containment Integrity."

b. Observations and Findings

All containment isolation valves and electrical and mechanical penetrations were in the position required by the procedure. The administrative procedure indicated that the nitrogen pressure in certain penetrations should be greater than 15 psig. The inspector noted three penetrations that were below this value. Two of the three had maintenance requests written. The inspector informed the licensee of the remaining penetration and a maintenance request was written. During discussions with the system engineer, the

inspectors learned that the purpose of the nitrogen pressure was to keep air out of the penetration, preventing the formation of corrosion. The nitrogen pressure was not needed for operability. The inspector learned that all penetrations would be tested and repaired during the upcoming outage. There were no findings identified and documented during this inspection.

1R05 Fire Protection

a. Inspection Scope

The inspectors verified contingencies and compensatory measures during maintenance on fire protection equipment.

b. Observations and Findings

Throughout this inspection period, the licensee performed preventive and corrective maintenance on fire protection deluge valves throughout the plant. The required various parts of the fire protection system were to be removed from service. The inspectors verified that proper contingencies were in place and that fire watches had been established. Additionally, combustibles were adequately controlled and fire protection system testing was performed as required. There were no findings identified and documented during this inspection.

1R09 Inservice Testing

a. Inspection Scope

On July 20, 1999, the inspectors observed portions of Surveillance Test IC-ST-IA-3009, "Operability Test of IA-YCV-1045-C and Close Stroke Test of YCV-1045."

b. Observations and Findings

Testing was adequate to verify compliance with code requirements. All components met the acceptance criteria. There were no findings identified and documented during this inspection.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors verified proper implementation of the maintenance rule for diesel generator maintenance.

b. Observations and Findings

On August 12, 1999, prior to completion of the monthly diesel generator testing, Diesel Generator 1 was shut down when a temperature probe was inserted in the generator cooling fan. Diesel Generator 1 remained inoperable. The inspectors used the

maintenance rule field flow chart and determined that the licensee properly dispositioned the failures. There were no findings identified and documented during this inspection.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the operability evaluations associated with the following condition reports:

- CR 19901103, "Ventilation Requirements for Safety Injection Pump Rooms not in Compliance with Current Basis for Safety Injection Room Heating Ventilation and Air Conditioning Flow Rates and Heat Load," and

- CR 199901340, "PORV/Safety Valve Tailpipe Temperature Circuitry Check."

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R19 Postmaintenance Testing

a. Inspection Scope

The inspectors observed postmaintenance testing on Diesel Generator 1 and Raw Water Pump AC-10C.

b. Observations and Findings

The tests were performed correctly and demonstrated that the equipment was functional and operable. There were no findings identified and documented during this inspection.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed performance of the following surveillance tests:

- Surveillance Test Procedure IC-ST-VA-0028, "Verification of Safety Injection Pump Room Filter Unit Flow," Revision 2,

- Surveillance Test Procedure IC-ST-IA-3009, "Operability Test of IA-YCV-1045C and Close Stroke Test of YCV-1045," and

- OP-ST-DG-0002, "Diesel Generator 2 Check."

b. Observations and Findings

The inspectors noted that surveillance tests ensured equipment operability and demonstrated compliance with Technical Specification requirements. Operations, engineering, and maintenance personnel were all involved in prejob briefs and testing. Equipment used was properly calibrated and testing components were returned to their required position to maintain operability. There were no findings identified and documented during this inspection.

4. OTHER ACTIVITIES

4OA5 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection of August 20, 1999. The licensee acknowledged the findings presented. The licensee did not consider any material examined during the inspection proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Clemens, Maintenance Manager
M. Core, Manager, System Engineering
S. Gambhir, Division Manager, Nuclear Operations
J. Gasper, Manager, Nuclear Projects
B. Hansher, Supervisor, Station Licensing
R. Short, Assistant Plant Manager
J. Solymossy, Manager, Fort Calhoun Station
J. Spilker, Manager, Corrective Action Group
D. Spires, Manager, Quality Assurance, Quality Control

LIST OF BASELINE INSPECTIONS PERFORMED

The following inspectable-area procedures were used to perform inspections during the report period. Documented findings are contained in the body of the report.

Inspection Procedure		
Number	Title	Report Section
71111-03	Emergency Work	1R03
71111-04	Equipment Alignment	1R04
71111-05	Fire Protection	1R05
71111-09	Inservice Testing of Pumps and Valves	1R09
71111-12	Maintenance Rule Implementation	1R12
71111-15	Operability Evaluations	1R15
71111-22	Surveillance Testing	1R22
(none)	Management Meetings	4OA5