U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

Report: 50-298/81-07

Docket: 50-298 License: DPR-46

Licensee: Nebraska Public Power District
P. O. Box 499
Columbus, Nebraska 68601

Facility Name: Cooper Nuclear Station

Inspection at: Cooper Nuclear Station, Nemaha County, Nebraska

Inspection conducted: April 5 - May 2, 1981

Resident Inspector: T. F. Westerman for 5-26-81
D. L. Dubois, Resident Reactor Inspector Date
Project Section 1

Accompanying Personnel: T. F. Westerman for 5-26-81
G. L. Constable, Resident Reactor Inspector Date
Project Section 1

Approved by: T. F. Westerman 5-26-81
T. F. Westerman, Chief Date
Project Section 1

Inspection Summary

Inspection on April 5 - May 2, 1981 (Report 50-298/81-07)

Areas Inspected: Routine, announced inspection of operation safety verification; monthly surveillance observation; semi-annual review of plant operations; refueling preparations and independent inspection effort. This inspection involved 109 inspector-hours on-site by two NRC inspectors.

Results: Within the areas inspected no violations or deviations were identified.

1. Persons Contacted

*L. C. Lessor, Plant Superintendent
P. Borer, Operations Supervisor
R. Noyes, Engineering Supervisor

*Indicates presence at exit meetings.

2. Operational Safety Verification

The inspectors observed control room operations, instrumentation, controls, and reviewed applicable logs and conducted discussions with control room operators. The inspectors verified operability of LPCI (RHR), HPCI and RCIC Systems and reviewed tagout records and verified proper return to service of affected components. They also verified that maintenance requests had been initiated for equipment discovered to be in need of maintenance, that the appropriate priority was assigned and that maintenance was performed in a timely manner commensurate with the priority assigned.

Tours of accessible areas of the facility were conducted to observe plant and equipment conditions including cleanliness, radiological controls, fire suppression systems, emergency equipment, potential fire hazards, fluid leaks, excessive vibration and instrumentation adequacy.

Those reviews and observations were conducted to verify that facility operations were in conformance with the requirements established in the Technical Specifications, 10 CFR and Administrative Procedures.

No violations or deviations were identified in these areas.

3. Monthly Surveillance Observation

The inspectors observed Technical Specification required surveillance testing of the RHR SW Booster Pumps A&C and associated valves to verify that testing was performed in accordance with adequate procedures, that test instrumentation was in calibration, that Limiting Condition for Operations were met, that removal and restoration of the affected components was accomplished, that test results conformed with Technical Specifications and procedure requirements and were reviewed by personnel other than the person directing the test, and that any deficiencies identified during testing were properly reviewed and resolved by appropriate management personnel.

The following tests were selected and observed in part:

S.P. 6.3.20.1 - RHR SW Booster Pumps A&C Flow Test and Valve Operability

S.P. 6.2.1.5.2 - PCIS-Logic Initiation and S.G.T Auto Initiation

S.P. 6.1.2 - IRM Functional Test (Mode Switch Not in Run)

S.P. 6.2.2.3.9 - HPCI Auto Isolation Logic and Steam Line Space Temperature Functional Test.

These reviews and observations were conducted to verify that facility operations were in conformance with the requirements established in the Technical Specifications, 10 CFR and Administrative Procedures.

No violations or deviations were identified in these areas.

4. Review of Plant Operations

The inspector observed eight sampling of environmental media samples including eggs and forage. Environmental monitoring stations were also inspected for correct installation and operation.

No violations or deviations were identified.

5. Preparation for Refueling

The inspector reviewed approved procedures covering the receipt, inspection and storage of new fuel. He observed receipt, inspection and storage of eight new fuel elements by the licensee and verified performance in accordance with procedures.

The following procedures were reviewed and observed:

3.1 - Special Nuclear Materials Control and Accountability Instructions

3.2 - Receiving and Handling Unirradiated Fuel

3.3 - Inspection and Channeling of Unirradiated Fuel

Turbine

The purpose of this inspection effort was to monitor the licensee's inspection of his Westinghouse Low Pressure Turbine. Several days prior to planned shutdown for refueling the licensee began to receive abnormal vibration readings from No. 1 LP Turbine. This resulted in an early decision to shutdown the plant and begin the outage.

Inspection of the turbine revealed that three blades were missing, two in the L-6 row and one in the L-5. In addition, seven percent of the blades appeared to have broken roots. This particular rotor had three of its discs removed during the March 1980, temporary fix of this turbine

as a result of the disc cracking problems. While the current blade problems do not involve disc cracking, the licensee feels this may have occurred as a result of the disc's being removed in March 1980. There is also limited cracking in the steeple area. There were no failures identified during the inspection of No. 2 LP turbine.

The licensee's present plans are to replace the blades in row 5 on the No. 1 LP turbine that experienced failures. These two rows are located on the generator end of the rotor. The licensee also plans to replace the similar blades in the No. 2 LP turbine rows 5 and 6. These two rows are located on the governor end. The rotors and stationary blades are to be replaced in both No. 1 and 2 LP turbines during a planned fall outage.

6. Scram Discharge Volume Level Switches

The purpose of this inspection effort was to review the surveillance of the Scram Discharge Volume Header High Water Level Switches CRD-LS-232A and CRD-LS-232B. This surveillance is a quarterly test and was conducted on November 20, 1980 and February 10, 1981. The inspector reviewed Surveillance Procedure G.1.14 Section VII B for technical adequacy, reviewed the results of tests conducted and inspected the installed equipment.

No items of noncompliance or deviations were noted.

7. Reactor Building Integrity

The purpose of this inspection effort was to verify that Reactor Building interity is maintained during fuel handling. Normally, Reactor Building pressure is maintained at 0.25" water negative pressure by the ventilation system. This pressure is monitored by instrumentation that will provide an alarm if pressure exceeds -0.15" or falls below -0.35" water. In addition, Reactor Building pressure is continously displayed on a chart recorder in the Control Room and is routinely observed by operators in the Control Room while taking readings.

The inspector observed that the chart is readily available to the operator and that any degradation of Reactor Building integrity could be immediately noted.

The inspector toured the Reactor Building and discussed how Reactor Building integrity is controlled and maintained with operators on duty in the Control Room.

No items of noncompliance or deviations were identified.

8. Outage Activities

The purpose of this inspection effort was to review the licensee's plans for overall outage control and to observe portions of these activities to verify proper conduct of safety-related activities.

The inspector discussed the overall plan for fuel handling and core verification with a site nuclear engineer including discussions on how quality control and accountability of fuel movements are accomplished. The inspector learned that the licensee plans to achieve their new core pattern via fuel shuffling as opposed to the spiral unload technique that was used last year. There are no current plans for any fuel sipping this year.

The inspector reviewed overall outage plans and discussed several aspects of planned work with various people. Preliminary results of jet pump and core spray inspection were discussed including the technique used.

No items of noncompliance or deviations were identified.

9. Exit Meetings

Exit meetings were conducted at the conclusion of each portion of this inspection. The Plant Superintendent was informed of the above findings.