

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-298/88-25

Operating License: DPR-46

Docket: 50-298

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

Facility Name: Cooper Nuclear Station (CNS)

Inspection At: CNS, Nemaha County, Nebraska

Inspection Conducted: August 1-31, 1988

Inspectors: WR Bennett 9/2/88
W. R. Bennett, Senior Resident Inspector, Project Date
Section C, Division of Reactor Projects

G. L. Madsen 9/9/88
G. L. Madsen, Project Engineer, Project Date
Section C, Division of Reactor Projects

Approved: G. L. Constable 9/12/88
G. L. Constable, Chief, Project Section C, Date
Division of Reactor Projects

Inspection SummaryInspection Conducted August 1-31, 1989 (Report 50-298/88-25)

Areas Inspected: Routine, unannounced inspection of Information Notice followup, operational safety verification, monthly surveillance and maintenance observations, ESF walkdown, radiological protection, and security.

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

DETAILS1. Persons ContactedPrincipal Licensee Employees

- *G. R. Horn, Division Manager of Nuclear Operations
- *J. M. Meacham, Senior Manager of Technical Support
- *E. M. Mace, Engineering Manager
- *G. E. Smith, Quality Assurance Manager
- *R. L. Gardner, Acting Operations Manager
- *L. E. Bray, Regulatory Compliance Specialist
- *G. R. Smith, Licensing Supervisor

The NRC inspectors also interviewed other licensee employees during the inspection period.

*Denotes those present during the exit interview conducted on September 2, 1988.

2. Plant Status

The reactor operated at essentially full power throughout the inspection period except for the period August 25-27, 1988. A reactor scram from 100 percent power occurred at 12:40 a.m. (CDT) on August 25. The cause of the scram was determined to be noise which caused a spurious main steam line high radiation signal; however, no other indications of high radiation were present. The plant was started up and declared critical at 2:12 a.m. on August 27, and was synchronized to the grid at 2:59 p.m. on August 27.

3. Licensee Action on Previous Inspection Findings (92701)

(Closed) Unresolved 298/8630-003: Tension/Shear Interaction
This item concerned the use of an elliptical tension shear interaction curve in determining adequacy of Phillips Red Head anchor bolts.

The licensee, in Letter NLS8700012 dated January 8, 1987, stated that the use of the elliptical tension shear interaction curve had been addressed and accepted in its response to IE Bulletin 79-02. The SRI verified that the bulletin response letter addressed the issue, and concluded that the curve can be applied to Phillips Red Head anchor bolts.

This item is closed.

4. Allegation Followup (99014)

Allegation 4-88-A-0020 concerned a contractor utilized by CNS. The allegation concerned: unsecured background investigation files; unmonitored MMPI psychological tests compromised by collaboration;

unmonitored urinalysis procedures, and heavy drug users cleared for work at the site; one named employee who had his urinalysis sample switched; one named employee with an undocumented felony; and falsified experience levels of supervisors.

This allegation was formally referred to the licensee by the NRC on May 20, 1988. The SRI was provided documentation associated with the licensee's investigation on June 1, 1988. The SRI reviewed the licensee's investigation of the allegation to determine whether the licensee's actions were adequate.

A licensee quality assurance specialist conducted an audit of the contractor's security screening program on January 22, 1988, and verified that the contractor's screening program complied with the CNS Physical Security Plan.

The contractor's procedures require that all psychological tests be monitored. In addition, no talking or discussion of the test among applicants is allowed. A sample of background checks revealed that followup conversations between an employee and a psychologist had occurred in two of four instances. This would tend to demonstrate that the tests had not been compromised.

The contractor's procedures require that all drug screening be monitored. Approximately 90 percent of the contractor's badged employees were originally screened under the licensee's program. In addition, the contract employees are subject to random drug screening. The named employee was tested by the licensee subsequent to the allegation. The screening results were negative, showing no use of illegal drugs.

The resumes of four contractors were reviewed and verified for accuracy. The background evaluation of the named employee was reviewed, as well as the history of his badging at a previous site. No problems were identified.

This allegation was not substantiated.

5. Information Notice Followup (92701)

The NRC inspector reviewed Information Notices (INs) 87-48 through 87-67. The INs appear to have been appropriately routed and reviewed. The inspector noted that Attachment C closeout sheets had not been utilized for final signoffs in all cases. The inspector was informed that the Attachment C form was a relatively new addition. INs 87-47 through 87-67 and 88-01 through 88-44 are considered closed based on the program in place for distributing and reviewing INs.

6. Operational Safety Verification (71707)

The SRI observed operational activities throughout the inspection period. Proper control room staffing was maintained, and control room activities

and conduct were observed to be well controlled and well coordinated. Activities were conducted in a professional manner. Discussions with operators revealed that they were cognizant of plant status and understood the importance of, and reason for, each lit annunciator. The SRI observed selected shift turnover meetings and verified that information concerning plant status was communicated to the oncoming operators. Tours of accessible areas at the facility were conducted to confirm operability of plant equipment. The SRI performed a walkdown of DC electrical systems. Results of this walkdown are documented in paragraph 9 of this report. Overall plant cleanliness was observed to be good throughout the inspection period.

On August 25, 1988, at 12:40 a.m., a reactor trip from 100 percent power occurred. All systems operated as per design during the transient. The SRI responded to the reactor trip and monitored licensee actions subsequent to the scram. In addition to the maintenance action documented in paragraph 8, the licensee tested hand-held radios to verify that they could not generate the signal that caused the plant trip. The trip was determined to have been caused by noise from an unknown source. This noise generated a high main steam line radiation signal which caused the reactor trip. The SRI reviewed the completed Conduct of Operations Procedure 2.0.6, "Reactor Post-Trip Review and Restart Authorization Procedure," Revision 4, dated April 14, 1988, for the reactor trip.

On August 27, 1988, the SRI witnessed the reactor startup following the reactor trip on August 25. The startup was performed in a controlled, cautious manner in accordance with General Operating Procedure 2.1.1 "Cold Startup Procedure," Revision 52, dated June 2, 1988. The reactor was declared critical at 2:12 a.m. on August 27, and synchronized to the grid at 2:59 p.m. on August 27.

No violations or deviations were identified in this area.

7. Monthly Surveillance Observations (61726)

The SRI observed and/or reviewed the performance of the following Surveillance Procedures (SPs):

- SP 6.3.4.1, "CS Test Mode Surveillance Operation," Revision 23, dated June 16, 1988; and SP 6.3.4.2, "CS Motor Operated Valve Operability Test," Revision 16, dated March 3, 1988: These surveillances were performed to verify Core Spray (CS) system operability to meet Technical Specification (TS) requirements after the High Pressure Coolant Injection (HPCI) system was declared inoperable after failing a surveillance test. The SRI observed the performance of these surveillances on August 10, 1988. The tests were performed by qualified operators who were cognizant of all precautions and limitations in the procedures. Prerequisites were properly verified and the surveillances were performed in accordance with written instructions. Test results met acceptance criteria of the procedures and TS.

- . SP 6.3.3.1, "HPCI Test Mode Surveillance Operation," Revision 29, dated July 14, 1988: The SRI observed the performance of this surveillance twice during the inspection period. On August 11, 1988, the surveillance was performed to verify operability after maintenance on Valve HPCI-21. On August 27, 1988, the surveillance was performed as part of the reactor startup and to verify proper operation of the HPCI controller which had been noted to be controlling sluggishly. The surveillance, in each instance, was performed by qualified operators in accordance with the procedure.
- . The SRI reviewed SP 6.2.8.1, "RR/ATWS Reactor Vessel High Pressure Calibration and Functional/Pump Trip Logic Test," Revision 16, dated September 11, 1987; SP 6.2.8.2, "RR/ATWS Reactor Low Water Level Calibration and Function/Logic Trip Test," Revision 16, dated January 14, 1988; and SP 6.2.8.3, "ART and ATWS/RPT Reactor Vessel High Pressure Calibration and Functional Test," Revision 13, dated June 7, 1988. This review demonstrated that the surveillances were adequate to verify recirculation pump trip per TS and the ATWS rule. Multi-Plant Action Item C-02 and Temporary Instruction 2515/95 are closed.

No violations or deviations were identified in this area.

8. Monthly Maintenance Observation (62703)

On August 10, 1988, a ground was discovered in Valve HPCI-21. The ground was caused by a broken agastat relay retaining clip falling across a terminal. Maintenance personnel discovered the problem and replaced the agastat. Engineering personnel informed the SRI that they had contacted the manufacturer and that they were unaware of any similar occurrences with this type valve. The problem was attributed to isolated equipment failure.

On August 25, 1988, a reactor scram occurred due to a high main steam line radiation signal. Maintenance and vendor personnel inspected the main steam line radiation instruments, but could not find a cause for the scram signal. Electrical noise was present in the instrument but not enough to cause a scram signal. Internal ground straps were installed in each instrument cabinet to reduce the amount of electrical noise present in the instruments.

On August 28, 1988, after performance of a surveillance test, the HPCI turbine failed to trip when a trip signal was applied from the control room. The turbine was tripped locally and subsequently declared inoperable. Troubleshooting determined the problem to be a failed trip solenoid. A new trip solenoid was installed per Maintenance Work Request (MWR) 88-3878 on August 31. The solenoid was properly tested and the HPCI system declared operable on August 31.

No violations or deviations were identified in this area.

9. Engineered Safety Feature Walkdown (71710)

The SRI performed an independent walkdown of the DC electrical systems. The inspection was performed to verify operability, to confirm that licensee system lineup procedures match plant drawings and the as-built configuration, and to identify equipment conditions or items that might degrade system performance.

The SRI utilized System Operating Procedure (SOP) 2.2.24, "250 V DC Electrical System," Revision 15, dated May 17, 1988; SOP 2.2.25, "125 V DC Electrical System," Revision 17, dated January 14, 1988; and SOP 2.2.26, "24 V DC Electrical System," Revision 8, dated January 14, 1988, in performing the system walkdown. During the procedure review and system walkdown, the SRI noted some minor inconsistencies. The licensee is reviewing these inconsistencies for possible procedure revision.

The SRI compared the breaker and fuse indices to As-built Drawing, Burns & Roe 2058, "DC One Line Diagram." No discrepancies were noted.

No violations or deviations were identified in this area.

10. Radiological Protection Observations (71709)

The SRI verified that selected activities of the licensee's radiological protection program were implemented in conformance with facility policies, procedures, and regulatory requirements. Radiation work permits contained appropriate information to ensure that work could be performed in a safe and controlled manner. Radiation and/or contaminated areas were properly posted and controlled. Radiation monitors were properly utilized to check for contamination.

No violations or deviations were identified in this area.

11. Security (71881)

The SRI observed security personnel perform their duties of vehicle, personnel, and package search. Vehicles were properly authorized and controlled or escorted in the protected area (PA). The licensee continued implementation of the security equipment upgrade during this inspection period. The SRI conducted site tours to ensure that compensatory measures were properly implemented as required because of equipment failure or the security upgrade. Interviews with security personnel demonstrated that they were cognizant of their responsibilities. The PA barrier had adequate illumination and the isolation zones were free of transient material.

No violations or deviations were identified in this area.

12. Exit Interview (30703)

An exit interview was conducted on September 2, 1988, with licensee representatives (identified in paragraph 1). During this interview, the SRI reviewed the scope and findings of the inspection. Other meetings between the SRI and licensee management were held periodically during the inspection period to discuss identified concerns.