

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

NRC Inspection Report: 50-298/85-33

License: DPR-46

Docket: 50-298

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

Facility Name: Cooper Nuclear Station (CNS)

Inspection At: Cooper Nuclear Station, Nemaha County, Nebraska

Inspection Conducted: December 1-31, 1985

Inspector: D L DuBois 1/14/86  
D. L. DuBois, Senior Resident Inspector, (SRI) Date

Approved: J. P. Jaudon 1/22/86  
J. P. Jaudon, Chief, Project Section A, Date  
Reactor Project Branch

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Inspection Summary

Inspection Conducted December 1-31, 1985 (Report 50-298/85-33)

Areas Inspected: Routine, unannounced inspection of notification of an unusual event, operational safety verification, and monthly surveillance and maintenance observations. An enforcement conference was held with the licensee during this period. The inspection involved 32 inspector-hours onsite by one NRC inspector.

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

DETAILS

1. Persons Contacted

Principal Licensee Personnel

- \*D. E. Schaufelberger, General Manager
- \*L. G. Kunc1, Assistant General Manager, Nuclear
- +P. V. Thomason, Division Manager Nuclear Operations
- +\*G. R. Horn, Outage and Modifications Manager
- \*J. M. Meacham, Technical Manager
- +\*R. Brungardt, Operations Manager
- +D. M. Norvell, Maintenance Manager
- +J. V. Sayer, Acting Technical Staff Manager
- +R. D. Black, Operations Supervisor
- +E. M. Mace, Acting Technical Manager
- \*M. D. Hamm, Security Supervisor
- +Garrett Smith, Senior QA Specialist

The NRC inspector also interviewed other licensee operations, maintenance, and administrative personnel.

NRC Personnel

- \*E. H. Johnson, Acting Director, Division of Reactor Safety and Projects
- \*R. L. Bangart, Director, Division of Radiation Safety and Safeguards
- \*R. E. Hall, Chief, Radiological and Safeguards Programs Branch
- \*J. P. Jaudon, Chief, Reactor Project Section A
- \*L. A. Yandell, Chief, Emergency Preparedness & Safeguards Programs Section
- \*J. A. Kelly, Senior Physical Security Specialist
- \*W. M. McNeill, Project Inspector
- +\*D. L. DuBois, Senior Resident Inspector
- \*D. A. Powers, Enforcement Officer

\*Indicates presence at enforcement conference held December 17, 1985.

+Indicates presence at exit meeting held December 20, 1985.

2. Enforcement Conference

On December 17, 1985, Mr. E. H. Johnson, Acting Director of the Division of Reactor Safety and Projects, and members of the NRC Region IV staff held an Enforcement Conference with Mr. D. E. Schaufelberger, General Manager (NPPD), and senior members of the NPPD general office and CNS site staffs. The Enforcement Conference was conducted at the NRC Region IV office for the purpose of discussing the facts and circumstances

surrounding apparent violations of the CNS Technical Specification requirements in the area of safety-related surveillance test performance. The violations were discussed in NRC Report 50-298/85-31.

### 3. Notification of Unusual Event

On December 23, 1985, the following sequence of operational events occurred at CNS:

- . At 2:50 a.m. the "D" Residual Heat Removal (RHR) Service Water Booster Pump packing failed during the performance of Surveillance Procedure (SP) 6.3.20.1, "RHR Service Water Booster Pump Flow Test and Valve Operability." The resultant excessive packing gland leakage required the pump to be isolated, thus rendering it inoperable. An inoperable Service Water Booster Pump places the plant in a Technical Specification Limiting Condition for Operation (LCO). This pump is a subsystem component of the Containment Cooling System.
- . At 4:30 a.m. the RHR Loop "A" Inboard Injection Valve, RHR-MO-25A, failed to open during the performance of SP 6.3.5.2, "RHR Motor Operated Valve Operability Test." This failure rendered the valve inoperable. An inoperable RHR injection valve places the plant in a Technical Specification LCO. This valve is a subsystem component of the Loop "A" Low Pressure Coolant Injection (LPCI) system.

The CNS Technical Specification Section 3.5.A.8 states that if one LPCI subsystem and an active component of the Containment Cooling subsystem are found to be inoperable simultaneously, the reactor shall be placed in the cold shutdown condition within 24 hours.

The CNS Emergency Plan Implementation Procedure (EPIP) 5.7.1, Attachment "B," "Classification Guide," Section 6.1, states that if any Technical Specification LCO results in immediate shutdown, the licensee shall declare a Notification of Unusual Event (NOUE).

Based upon the preceding events and the Technical Specification and EPIP requirements noted above, the shift supervisor assumed the position of Emergency Director and declared a NOUE at 4:30 a.m. Following completion of emergency notifications required by EPIP 5.7.6, "Notification," the shift supervisor began a power reduction in preparation for eventual reactor shutdown and cooldown.

At 8:36 a.m. post-maintenance surveillance testing was completed satisfactorily on RHR-MO-25A thus rendering the valve as operable. That testing removed the plant from the LCO condition of Technical Specification Section 3.5.A.8 and, therefore, the requirement of EPIP 5.7.1.

The NOUE was terminated at that time and the power reduction terminated. The plant was subsequently returned to full power.

The SRI interviewed shift personnel and the CNS Emergency planning Coordinator concerning this event. Also, he performed a review of the following licensee logs, procedures, and reports:

- . Control room logs for complete and timely entry of significant information pertaining to the event.
- . Procedures and checklists applicable to the declaration and termination of the event.
- . Licensee followup report to the NRC in a letter from Mr. P. V. Thomason (NPPD) to Mr. R. D. Martin (NRC-RIV) dated December 23, 1985.
- . 5.7.1, Revision 5, "Emergency Classification"
- . 5.7.2, Revision 4, "Notification of Unusual Event"
- . 5.7.6, Revision 6, "Notification"
- . 5.7.22, Revision 6, "Communications"
- . 5.7.28, Revision 2, "Emergency Director"

The reviews and discussions were conducted to ensure that licensee personnel performed all actions required by the CNS emergency procedures, Technical Specification, and Emergency Plan.

No violations or deviations were identified in this area.

#### 4. Operational Safety Verification

The SRI observed control room operations, instrumentation, controls, reviewed plant logs and records, conducted discussions with control room personnel, and performed system walk-downs to verify that:

- . Minimum shift manning requirements were met.
- . Technical Specification requirements were observed.
- . Plant operations were conducted using approved procedures.
- . Plant logs and records were complete, accurate, and indicative of actual system conditions and configurations.

- . System pumps, valves, control switches, and power supply breakers were properly aligned.
- . Licensee systems lineup procedures/checklists, plant drawings, and as-built configurations were in agreement.
- . Instrumentation was accurately displaying process variables and protection system status to be within permissible operational limits for operation.
- . Plant equipment that was discovered to be inoperable or was removed from service for maintenance was properly identified, redundant equipment was verified to be operable, and applicable limiting conditions for operation were identified and maintained.
- . Equipment safety clearance records were complete and indicated that affected components were removed from and returned to service in a correct and approved manner.
- . Maintenance work requests were initiated for equipment discovered to require repair or routine preventive upkeep, appropriate priority was assigned, and work commenced in a timely manner.
- . Plant equipment conditions such as cleanliness, leakage, lubrication, and cooling water were controlled and adequately maintained.
- . Areas of the plant were clean, unobstructed, and free of fire hazards. Fire suppression systems and emergency equipment were maintained in a condition of readiness.
- . Security measures and radiological controls were adequate.

The SRI performed a lineup verification of the following systems:

- . Core Spray
- . Standby Liquid Control

During routine daily walk-downs of the control room panels, the SRI identified the following discrepancies:

- . On December 12, 1985, the Reactor Vessel Pressure Recorder, NBI-PR-2B, was oscillating  $\pm$  50 psig about the point of 750 psig. Actual vessel pressure was stable at 1000 psig. This condition had existed for approximately 2 hours.

. On December 12, 1985, the Off-Gas Vent Pipe Monitors, RMP-RM-50 Channels "A" and "B" were indicating 400 cps and 20 cps respectively. Normal off-gas activity was 10 cps. It was subsequently determined that the test source had not fully retracted from the area of the "A" detector.

. On December 16, 1985, the High Pressure Coolant Injection Turbine and Pump Bearing Temperature Recorder, point 7, "Thrust Bearing Oil," was pegged high (greater than 300 degrees F). Actual temperature was stable at approximately 115 degrees F. This condition had existed for approximately 5 days.

Although there were no apparent Technical Specification requirements for the above instrumentation to be operable at the time of discovery, the SRI held discussions with the responsible shift supervisory personnel concerning the importance of monitoring equipment status and its readiness for service. These observations were also addressed to plant management during a subsequent exit meeting.

The tours, reviews, and observations were conducted to verify that facility operations were performed in accordance with the requirements established in the CNS Operating License and Technical Specification.

No violations or deviations were identified in this area.

#### 5. Monthly Surveillance Observations

The SRI observed Technical Specification required surveillance tests. These observations verified that:

- . Tests were accomplished by qualified personnel in accordance with approved procedures.
- . Procedures conformed to Technical Specification requirements.
- . Test prerequisites were completed including conformance with applicable limiting conditions for operation, required administrative approval, and availability of calibrated test equipment.
- . Test data was reviewed for completeness, accuracy, and conformance with established criteria and Technical Specification requirements.
- . Deficiencies were corrected in a timely manner.
- . The system was returned to service.

The following surveillance tests were selected and observed:

- . 6.1.4, "Main Steam Line Process Radiation Monitor Calibration and Functional Test"
- . 6.2.4.1, "Daily Surveillance (Technical Specifications)"
- . 6.3.17.1, "Control Room Ventilation"

The reviews and observations were conducted to verify that facility surveillance operations were performed in accordance with the requirements established in the CNS Operating License and Technical Specification.

No violations or deviations were identified in this area.

#### 6. Monthly Maintenance Observation

The SRI observed preventive and corrective maintenance activities on portions of the following system component:

- . Service Water Booster Pumps

The observations were conducted to verify that:

- . Limiting conditions for operation were met.
- . Redundant equipment was operable.
- . Equipment was adequately isolated and safety tagged.
- . Appropriate administrative approvals were obtained prior to commencement of work activities.
- . Work was performed by qualified personnel in accordance with approved procedures.
- . Radiological controls, cleanliness practices, and appropriate fire prevention precautions were implemented and maintained.
- . Quality control checks and postmaintenance surveillance testing were performed as required.
- . Equipment was properly returned to service.

These reviews and observations were conducted to verify that facility maintenance operations were performed in accordance with the requirements established in the CNS Operating License and Technical Specification.

No violations or deviations were identified in this area.



7. Exit Meetings

Exit meetings were conducted at the conclusion of each portion of the inspection. The NRC inspector summarized the scope and findings of each inspection segment at those meetings.