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

Report No. 50-298/80-09

Docket No. 50-298 License No. 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: June 3-6, 23-26, 1980

Principal Inspector: Robert G. Spangler 7/9/80
R. G. Spangler, Reactor Inspector Date
Reactor Projects Section

Approved by: 7/9/80
T. F. Westerman, Chief Date
Reactor Projects Section #1

Inspection Summary

Inspection on June 3-6, 23-26, 1980, (Report No. 50-298/80-09)

Areas Inspected: Routine, unannounced inspection of follow-up to previously identified items, review of plant operations-refueling, determination of reactor shutdown margin, calibration of instrumentation, follow-up on IEB's, and independent inspection effort. This inspection involved 56 man-hours on site by one NRC inspector.

Results: Within the six (6) areas inspected, no items of noncompliance were identified in five (5) of the areas. Within the area of independent inspection effort one item of noncompliance was identified (infraction - failure to control combustible materials in accordance with procedures, paragraph 7).

DETAILS SECTION

1. Persons Contacted

G. K. Adkins, Shift Supervisor
L. B. Bednar, Electrical Engineer
P. J. Borer, Operations Supervisor
L. F. Dunton, Mechanical Engineer
M. F. Edgerton, Shift Supervisor
H. A. Jantzen, I&C Supervisor
L. I. Lawrence, Maintenance Supervisor
*L. C. Lessor, Station Superintendent
C. R. Noyes, Engineering Supervisor
R. O. Peterson, Reactor Engineer
D. L. Phillips, I&C Engineer
V. L. Wolstenholm, QA Supervisor

*Indicates presence at exit meetings.

2. Followup on Previously Identified Items

(Closed) Open Item 8006-01 (Inspection Report 80-06, Paragraph 4): Setpoint Change for RWCU Isolation.

The inspector reviewed the calculations made to support the setpoint change for instruments DPIS 170A and B from 6 to 14.7 inches of water. No problems were identified.

3. Review of Plant Operations - Refueling

The inspector reviewed selected facility records and observed plant startup and heatup activities to verify that systems were returned to normal operating status prior to plant startup and that the startup and heatup activities were conducted in accordance with the license and approved procedures. The records review included the following:

- Procedure 2.1.1, Cold Startup Procedure
- Procedure 2.1.1.2, Technical Specification Pre-Startup Checks
- Station Clearance Log
- Station Jumper and Bypass Log
- Valve lineup attachments to procedures 2.2.9, Core Spray and 2.2.33, High Pressure Safety Injection

. Procedure 10.13, Control Rod Movement and Sequence Control.

In addition, the inspector physically verified the position of valves in the major flow paths of the High Pressure Core Injection System (HPCI) and the A Core Spray System (CSS). Also, the position of valves in the instrumentation loops of the A-CSS were verified. The serial numbers of the securing devices on locked valves were in agrument with the current station valve lineups. The inspector's observations conducted throughout the week of June 2, 1980 included the following activities:

. Steps within procedure 2.1.1 covering escalation from below 212°F to approximately 30% of full power.

. The performance of surveillance procedure, 6.3.3.1, HPCI Test Mode Surveillance Operation.

. The performance of portions of procedure 10.9, Control Rod Scram Time Evaluation.

These activities were conducted in accordance with the license and approved procedures and operator actions and demeanor were competent and professional. No items of noncompliance or deviations were identified in this area.

4. Startup Test Refueling - Determination of Reactor Shutdown Margin

The inspector reviewed procedure 10.16, Shutdown Margin Check, and determined that it is in agreement with the technical specifications and the General Electric Cycle 6 calculations supplied by letter to the licensee. The specified control rod sequence was withdrawn on May 30, 1980; criticality was achieved and the Shutdown Margin was determined to be 1.23% Δk/k. The license limit is a minimum of .38% Δk/k and GE's calculated value for the reconstituted core is 1.3% Δk/k. During CRD testing and control rod pulls for this startup, several CRD's were declared inoperable. In each case the rods were left fully inserted to ensure adequate shutdown margin. The Reactor Engineer indicated that shutdown margin calculations necessitated by inoperable control rods during power operations are handled on a case-by-case basis in conjunction with GE. No adverse items were identified by the inspector during this review.

5. Calibration of Instrumentation

The inspector confirmed that the licensee had in place a program establishing requirements for the calibration of instrumentation associated with safety-related systems but with no license required calibration interval. In addition, a sample of independently selected instruments were verified for inclusion in the program and conformance to the program's calibration requirements. The instrumentation sampled included:

Core Spray Flow Loop (FI-50A, FT-40A)
Low Pressure Core Injection Flow Loop 1A
Standby Liquid Control Flow Loop 2
Sodium Pentaborate Solution Temperature Indicating Controller TIC-48
RHR Service Water Booster Pump Flow Loop 3
High Pressure Core Injection Flow Loop 5
High Pressure Core Injection Unit Coolers
Primary System Conductivity
High Pressure Core Injection Pressure Loop 8
High Pressure Core Injection Pump Speed and Automatic Controller

The licensee handles most of the above class of instruments as part of the Preventative Maintenance (PM) Program. Instruments required to verify safety system operability or utilized in logging plant parameters are identified as critical instruments in Appendix A to Maintenance Procedure (MP) 7.5.9.1, Critical Instrument Calibration. This instrumentation is scheduled for annual calibration under the PM program which identifies each instrument as critical and specifies that the provisions of MP 7.5.9.1 be followed. Procedure 7.5.9.1 implements the requirements of the QA Program for Operations. The inspector noted that Appendix A to MP 7.5.9.1 did not list HPCI Pressure Loop 8 (last calibrated 1/22/79) and the Standby Liquid Control Temperature Indicating Controller TIC-48 (last calibrated 3/20/80) as critical instruments. Furthermore, the temperature switches that control the ESF area coolers are not routinely calibrated although they are functionally tested monthly.

Considering that HPCI Loop 8 instruments are utilized during HPCI functional testing and that TIC-48 maintains the Sodium Pentaborate Solution above the LCO limit of the Technical Specifications, it appears that they should be calibrated in accordance with MP 7.5.9.1. In addition, the temperature switches noted above should be included in the calibration program. These items will remain as an open item (8009-01). Some of the selected instruments listed above are handled as part of other programs as discussed below.

The Core Spray Flow Loop and the High Pressure Core Injection Pump Speed and Automatic Controller are calibrated under surveillance procedures (6.2.2.4.1 and 6.2.2.3.17, respectively). Procedure 6.2.2.4.1 is scheduled as an annual surveillance procedure. However, procedure 6.2.2.3.17 is conducted only when requested, and was last done on May 5, 1979. During discussions with the Station Superintendent the inspector indicated that, since HPCI pump speed is utilized to determine the functional operability of the HPCI system, procedure 6.2.2.3.17 should be scheduled on a repetitive interval similar to other critical instrumentation. This item is an open item (8009-02).

The conductivity meters are electronically calibrated as part of the PM Program. The plant chemistry section generates a correction factor

to be applied to the control room recorder conductivity indication on a weekly basis by comparison to a secondary calibration source (Procedure 8.5.3.4).

No items of noncompliance or deviation were identified in this area.

6. Followup on IEB's

79-04 Incorrect Weights for Swing Check Valves Manufactured by Velan Engineering Corporation (Closed).

The licensee has addressed each required action of this bulletin. New support load calculations were made utilizing correct valve weights and were submitted for NRC review. IE Headquarters, Technical Programs is conducting this review. Region IV's review of this response is complete.

79-07 Seismic Stress Analysis of Safety-Related Piping (Closed)

NRR/DOR is generating an SER for each licensee's response. Region IV's review in this area is complete.

79-12 Short Period Scrams at BWR Facilities (Closed)

The licensee has instituted notch withdrawal of rod groups 3 and 4 during plant startup. Critical rod patterns are estimated at the startup of each cycle; however, the licensee indicates that criticality estimates are not possible for scram recovery operations. IE Headquarters is continuing to review this issue. Region IV's review is complete.

79-26 Boron Loss from BWR Control Blades (Closed)

The licensee has complied with each bulletin requirement except item number 4 requesting a destructive examination of a control blade. Apparently, GE has offered to handle this on a generic basis. IE Headquarters is continuing to review this matter. Region IV's review is complete.

80-01 Operability of ADS Valve Pneumatic Supply (Closed)

The licensee has implemented surveillance procedure 6.2.2.2.6 to annually verify the acceptability of the air accumulator check valves. This test was performed satisfactorily on 4/24/80. Region IV's review is complete.

80-03 Loss of Charcoal from Standard Type II, 2 Inch Tray Absorber CCLLS (Closed)

The licensee conducted a visual inspection in conjunction with refueling outage maintenance and surveillance conducted on the standby Gas Treatment System. The results of this inspection indicated no problems.

80-07 BWR Jet Pump Assembly Failure (Closed)

The licensee visually inspected the Jet Pump Assembly Holddowns and identified no problems. Procedures have been modified to meet the required action of the bulletin for verification of jet pump operability. The licensee has adopted the guidance of a GE letter, dated April 22, 1980, to the Station Manager rather than constructing a flow characteristic for each jet pump as requested by the Bulletin. IE Headquarters is continuing to review this issue. Region IV's review is complete.

7. Independent Inspection Effort

a. Preventative Maintenance Program

During the calibration review documented above, the inspector noted that the Preventative Maintenance Program as described in maintenance procedure 7.1.1 could be strengthen by adding the requirement that the Maintenance Supervisor review the monthly listing of the PM overdue work items. This was discussed with the Station Superintendent and will remain as an open item (8009-03).

b. Stop Guides

The inspector noted that the instrument and controls (I&C) section utilizes Shop Guides to assist in the performance of routine maintenance activities. These guides are generated by the I&C Shop Supervisor. This is not necessarily an unacceptable practice; however, the station administrative procedures do not address this mechanism. The inspector expressed the concern that insufficient guidance exists concerning the use of a shop guide versus the use of an approved maintenance procedure. This item was discussed with the Station Superintendent and will remain as an unresolved item (8009-04).

c. Plant Tour

During a plant tour conducted on June 25, 1980, at approximately 1730 hours, the inspector found two open pails of lubrication oil just inside the door of the HPCI pump room and what appeared to be a plastic gallon jug of a light weight oil next to the HPCI turbine. As required by Technical Specification 6.3.2.E the licensee has implemented procedure 1.6, Personnel and Equipment Safety. Paragraph 1.6.8, Hazardous Material Control, of revision 17 to this procedure includes the following:

1.6.8.17 Wood or Other Combustible Materials.

Wood or other combustible materials will not be left in areas where fire is a hazard. These materials will be stored in designated areas.

Wood or other combustible material will not be brought into a safety-related area unless it is to be used immediately. These materials will be removed from the area as soon as practical after the work is completed. This does not apply to wood stored in safety-related areas which has been coated with fire-retardant paint.

1.6.8.18 Thinners, Solvents, and Other Flammable or Combustible Liquids Not Listed.

Thinners, solvents, and other flammable or combustible liquids not listed shall be stored in the Paint Storage Room or storage cabinet approved for flammable liquids. If to be used outside these or other designated areas, these liquids shall be carried and dispensed from metal safety cans. Approved one gallons containers or less may be used outside of storage areas. Liquids of a high purity which must be maintained may be stored and used only in designated areas.

The failure to remove this material from the HPCI pump room and the use of unapproved containers for storage is contrary to the above procedure and as such constitutes an item of noncompliance at the infraction level.

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance or deviations. An unresolved item is discussed in paragraph 7 of this report.

9. Exit Meeting

Exit meetings with the Station Superintendent were conducted at the conclusion of each portion of this inspection. Areas inspected and the findings noted above were identified by the inspector and acknowledged by the Station Superintendent.