

Appendix B

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Report: 50-298/82-16

License: DPR-46

Docket: 50-298

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 1-30, 1982

Inspector:

D. L. DuBois

D. L. DuBois, Resident Reactor
Inspector, Reactor Project Section A

7/30/82
Date

Approved:

T. F. Westerman
T. F. Westerman, Chief
Reactor Project Section A

8/9/82
Date

Inspection Summary

Inspection Conducted June 1-30, 1982 (Report 50-298/82-16)

Areas Inspected: Routine, announced inspection of operational safety verification during long-term shutdown, monthly equipment surveillance and maintenance observations, refueling outage surveillance observations, refueling outage maintenance activities, refueling activities, and spent fuel pool activities. This inspection involved 76 inspector-hours onsite by one NRC inspector.

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Results: Within five of the seven areas inspected, no violations or deviations were identified. A violation was identified in each of the two remaining areas:

Violation (1) - failure to follow procedure for posting a radiography area - paragraph 2

Violation (2) - failure to follow procedure for reactor vessel head detensioning - paragraph 6

DETAILS1. Persons Contacted

*L. Lessor, Plant Superintendent
P. Thomason, Acting Operations Supervisor
L. Lawrence, Maintenance Supervisor
P. Borer, Engineering Supervisor
R. McDonald, Acting C & HP Supervisor
V. Wolstenholm, QA Supervisor
D. Majeres, Maintenance Planner
R. Brungardt, Surveillance Planner
W. Gilbert, Educational Specialist
F. Schaaf, Mechanical Engineer
R. Peterson, Reactor Engineer
L. Bednar, Electrical Engineer

*Indicates presence at exit meetings.

2. Operational Safety Verification - During Long-Term Shutdown

The NRC inspector observed control room operations, instrumentation, controls, reviewed applicable logs, and conducted discussions with control room operators. The NRC inspector verified operability of:

'A' and 'B' RHR Systems*
'A' and 'B' Core Spray Systems*
Reactor Feedwater System*
Standby Liquid Control System*
4160 VAC Vital Electrical Distribution System
Numbers 1 and 2 Diesel Generators

*Inside Primary Containment Only

The NRC inspector reviewed safety clearance records, including verification that affected components were removed from and returned to service in a correct and approved manner, that redundant equipment was verified operable, and that limiting conditions for operation were adequately identified and maintained. The NRC inspector also verified that maintenance requests had been initiated for equipment discovered to require repair or routine preventative upkeep, appropriate priority was assigned, and maintenance commenced in a timely manner commensurate with assigned priorities.

Tours of accessible areas of the facility were conducted to observe radioactive waste systems activities, maintenance of containment integrity, security practices, plant conditions and equipment status, including cleanliness, radiological controls, fire suppression systems, emergency equipment, potential fire hazards, fluid leaks, excessive vibration and instrumentation adequacy.

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

During a tour of the facility by the resident inspector on June 4, 1982, the NRC inspector discovered that inadequate posting of an area being subjected to radiography existed. A stairway leading from the 903-foot level to the 931-foot level of the reactor building was not posted, barred, or otherwise observable by radiography personnel during radiography activities. This condition was found immediately following the completion of radiography activities in the affected area of the 903-foot level of the reactor building. The radiographers and attending CNS health physics technician were informed of the error by the NRC inspector.

Plant Health Physics Procedure 9.1.1.5, Revision 3, titled "Radiography," requires that areas affected by radiography activities be adequately posted, barred, or directly observable by radiography personnel, and that a plant health physics technician inspect the area for compliance prior to commencing radiography activities. The failure to follow the requirements of Procedure 9.1.1.5, as described above, constitutes a violation (8216-01). No additional violations or deviations were identified.

3. Monthly Surveillance Observation

The NRC inspector observed portions of Technical Specification required surveillance tests to verify that testing was performed in accordance with adequate procedures, test instrumentation was in calibration, limiting conditions for operations were met, removal and subsequent restoration of affected components was accomplished, test results conformed with Technical Specification and procedure requirements, tests were reviewed by personnel other than the person directing the test, and deficiencies identified during testing were properly reviewed and resolved by appropriate management personnel.

The following Surveillance Tests were selected and observed:

- 6.1.2 - IRM Functional Test (Mode Switch Not In Run)
- 6.1.22 - APRM System 15% High Flux and Inop Trip Functional Test
- 6.3.2.2 - ADS Logic and Safety/Relief Valve Solenoid Continuity Test
- 6.3.12.1 - Number 1 Diesel Generator Operability Test
- 6.3.12.1 - Number 2 Diesel Generator Operability Test
- 6.3.14.1 - SRM and IRM Detector Travel Measurement

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

No violations or deviations were identified in these areas.

4. Monthly Maintenance Observations

The NRC inspector observed portions of the following maintenance activities:

MWR 81-1631, Scram Discharge Volume Modification
 MWR 81-2106, Reactor Protection System Motor Generator Modification

*MWR - Maintenance Work Request

The following Clearance Orders were independently verified for proper placement/restoration of affected components:

82-352, Number 1 Diesel Generator
 82-354, Reactor Water Cleanup System MOV-15
 82-379, 'B' Reactor Recirculation Pump
 82-395, Number 2 Diesel Generator
 82-424, Number 2 Diesel Generator Service Air
 82-434, High Pressure Coolant Injection Pump
 82-446, Main Condenser Circulating Water Pumps

Included with the above were checks for availability of redundant equipment, adequate safety isolation and clearance, accomplishment of work in accordance with approved procedures and Technical Specification requirements, verification that QC checks were performed as required, cleanliness controls and health physics coverages were adequate.

No violations or deviations were identified in the above area.

5. Refueling Outage Surveillance Observations

The NRC inspector reviewed the following completed refueling outage surveillance tests:

2.1.14 - Reactor Vessel In-Service Leak Test
 6.3.4.3 - CS, RHR, And Diesel Auto Start And Loading
 6.3.10.3 - CRD Housing Support Inspection
 10.9 - Control Rod Scram Time Evaluation

These reviews were conducted to verify that the procedures were consistent with Technical Specification requirements, licensee commitments, and administrative controls; that test prerequisites were completed, the tests were conducted using approved procedures, required test equipment was in calibration, qualified personnel performed the tests, data was recorded as required, and that test results were reviewed by appropriate plant personnel.

The following refueling related procedures were reviewed for technical adequacy:

2.1.20 - Reactor Pressure Vessel Refueling Preparation
 2.2.31 - Fuel Handling - Refueling Platform
 5.3.5 - Refuel Floor High Radiation
 6.1.27 - Refuel Platform Interlocks And System Functional Test
 6.1.28 - Service Platform Interlocks Functional Test
 7.2.31 - Refueling Platform And Grapple Inspection
 7.6.4 - Operation of CRD Equipment Handling Platform

6. Refueling Outage Maintenance Activities

The NRC inspector observed portions of the following refueling outage maintenance activities:

- Number 1 Diesel Generator Annual Inspection
- Number 2 Diesel Generator Annual Inspection
- Safety/Relief Valves Removal and Installation
- Reactor Water Cleanup System Inlet Line Replacement
- 'A' Reactor Recirculation Pump Seal Replacement
- 'B' Reactor Recirculation Pump Seal Replacement

Included with the above were checks for administrative review and approval prior to commencing work, limiting conditions for operation were met while the components/systems were removed from service, approved procedures were used as requested, QA/QC inspection hold points and signoffs were accomplished in accordance with licensee requirements, activities were performed by qualified personnel, functional testing was completed prior to declaring the components/systems operable, records were complete, and all affected documentation was assembled and stored as a part of the plant maintenance history file.

The following completed Maintenance Work Requests (MWRs) and Special Procedures (SPs) were reviewed to verify that they were properly reviewed, adequate corrective action was performed, and that records were complete:

- MWR 82-0355, Vital 480 V Transformer
- MWR 82-0470, 'B' Reactor Recirculation Pump Seal Replacement
- MWR 82-0889, High Pressure Coolant Injection Pump
- MWR 82-0975, 'A' Reactor Recirculation Pump Seal Replacement
- SP 81-6, Reactor Vessel Jet Pumps Beams Inspection
- SP 81-7, Core Spray Sparger Inspection

The following maintenance related procedures were examined for technical adequacy:

- 7.2.32, Crane Hoist, Sling and Cable Inspection
- 7.3.11, Refueling Platform and Jib Crane Hoists Load Cells Calibration And Setpoint Checks
- 7.3.22, Inspection And Calibration Check of Refueling Platform xx/yy Position Indication System

During this inspection period, the licensee informed the NRC inspector that on May 22, 1982, they had failed to follow procedure for reactor vessel head stud detensioning. Maintenance Procedure 7.4.4, Revision 12, dated May 20, 1982, titled "Reactor Vessel Head Removal and Installation," requires the head studs to be detensioned using a two-pass program. When nearing completion of the detensioning process, the licensee realized that 48 of the 52 reactor head closure studs had been detensioned in one pass. The failure to follow the requirements of Procedure 7.4.4 constitutes a violation (8216-02).

Subsequent stress analysis and evaluation was initiated and completed by the licensee. NRC review of the licensee's actions is documented in NRC report 50-298/82-17. The licensee reported the occurrence in LER 50-298-82-12.

No additional violations or deviations were identified.

7. Refueling Activities

The NRC inspector reviewed the refueling activities that were performed during this period, as well as documentation associated with preparation, performance, and verifications required for refueling operations. The NRC inspector verified that:

- a. Surveillance testing had been performed prior to and periodically during fuel handling operations.
- b. Containment integrity was maintained.
- c. Precautions had been taken to prevent foreign objects from falling into the reactor vessel.
- d. Shift manning requirements and responsibilities were met.
- e. Communications were maintained between the refueling bridge, refueling area, and the control room.
- f. Radiological precautions were observed.
- g. Fuel accountability status boards were maintained during refueling operations.

These reviews were conducted to verify that refueling operations were performed in accordance with the Technical Specification and approved procedures.

No violations or deviations were identified.

8. Spent Fuel Pool Activities

The NRC inspector verified that procedures relating to fuel handling operations included provisions for limiting the number of fuel assemblies that can be out of safe geometry locations at the same time; verifying correct fuel handling equipment operations, verifying proper ventilation operation; secondary containment isolation on high radiation signal; maintenance of adequate fuel storage pool level, temperature, and recirculation; verifying operability of spent fuel storage pool and refueling area radiation monitors.

The following procedures were reviewed for technical adequacy:

- 1.4.14 - Refueling Floor Access While Vessel Is Open
- 2.2.32 - Fuel Pool Cooling And Demineralizer System
- 2.2.47 - HVAC Reactor Building
- 3.5 - Refueling
- 3.6 - Requirements For Working Over Or In the Reactor Vessel
- 6.3.7.5 - Reactor Building Ventilation Radiation Monitor Calibration and Functional Test

9. Exit Meetings

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

NRC FORM 765 A
 (11-87)
 (E MC 0535)

DOCKET NO. (8 digits) OR LICENSE
 NO. (BY PRODUCT) (13 digits)

REPORT

MODULE NUMBER

INSPECTOR'S REPORT
 (Continuation)
 Office of Inspection and Enforcement

0 5 0 0 0 2 9 8

NO. 8 2 1 6

SEQ

5 7 1 7 0 8

A
 B
 C
 D

VIOLATION SEVERITY OR DEVIATION

1	2	3	4	5	6
				X	

SITE RELATED

A	C
B	D

VIOLATION OR DEVIATION (Enter up to 2400 characters for each item. If the text exceeds this number, it will be necessary to paraphrase. Limit lines to 50 characters each.)

2 Contrary to 10 CFR Part 50, Appendix B, Criterion V, the Licensee failed to accomplish
 3 activities affecting quality in accordance with documented procedures.

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NRC FORM 796 A (11-81) (E MC 0535) INSPECTOR'S REPORT (Continuation) Office of Inspection and Enforcement	DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)						REPORT		MODULE NUMBER							
	05000298						8216		5627011							
							A		VIOLATION SEVERITY OR DEVIATION						SITE RELATED	
							B		1 2 3 4 5 6						A C	
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VIOLATION OR DEVIATION (Enter up to 2400 characters for each item. If the text exceeds this number, it will be necessary to paraphrase. Limit lines to 50 characters each.)

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