APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Report: 50-298/82-31

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: October 1-31, 1982

Inspectors: D. L. DuBois, Senior Resident Reactor Inspector, Reactor Project Section A — 11/17/82 Date

S. L. McCrory, Reactor Inspector, Reactor Project Section A — 11/23/82 Date

Approved: T. F. Westerman, Chief, Reactor Project Section A — 11/23/82 Date

Inspection Summary

Inspection Conducted October 1-31, 1982 (Report 50-298/82-31)

Areas Inspected: Routine, announced inspection of operational safety verifications, monthly surveillance and maintenance observations, plant trips - safety system challenges, licensee event followup, followup of previously identified items, and review of licensee's cold weather protective measures. This inspection involved 72 inspector-hours onsite by two NRC inspectors.

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

DETAILS

1. Persons Contacted

*L. Lessor, Plant Superintendent
P. Thomason, Ass't. Plant Superintendent
K. Wire, Operations Supervisor
V. Wolstenholm, QA Supervisor
P. Borer, Engineering Supervisor
L. Lawrence, Maintenance Supervisor
R. Brungardt, Surveillance Planner
D. Majeres, Maintenance Planner

*Indicates presence at exit meetings.

2. Operational Safety Verification

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

'A & B' Core Spray Systems
Automatic Depressurization System
Standby Liquid Control System
'A' Low Pressure Coolant Injection System
No's. 1 & 2 Diesel Generators

The NRC inspectors 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 inspectors also verified that maintenance requests had been initiated for equipment discovered to require repair or routine preventive 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 normal security practices, plant and equipment conditions, 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.

No violations or deviations were identified in these areas.

3. Monthly Surveillance Observations

The NRC inspectors 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:

6.3.4.1 - Core Spray Test Mode Surveillance Operation
6.3.4.2 - Core Spray Motor Operated Valve Operability Test
6.3.5.2 - RHR Motor Operated Valve Operability Test
6.3.5.5 - RHR Pump Operability Test
6.3.20.1 - RHR SW Booster Pump Flow Test

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 inspectors observed portions of the following maintenance activities:

MWR 82-1905 Service Water MOV-89B
MWR 82-2003 Number 2 Diesel Generator Cylinder Expansion Seal

*MWR - Maintenance Work Request

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

82-669, Number 2 Diesel Generator
82-703, Service Water MOV-89B
82-713, 'C' Service Water Pump

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. Plant Trips - Safety System Challenges

The NRC inspectors reviewed records and interviewed plant personnel concerning an unscheduled reactor scram which occurred on October 5, 1982, at 7:08 p.m., (Scram Report #82-06).

The plant was at full power, normal operating conditions prior to the scram. The control room operators were introduced to the incident by witnessing an automatic reactor scram resulting from main turbine control valve (TCV) fast closure. The cause of TCV closure was a momentary reduction of electro-hydraulic (EH) control fluid pressure. The EH fluid pressure reduction resulted from a momentary energization of the EH fluid emergency trip solenoid valve 20/ET due to a short to ground of its power supply cable T16. The resultant increase in reactor pressure caused by TCV fast closure was initially controlled by automatic activation of all three main steam bypass valves and six of eight main steam safety relief valves.

The short to ground of cable T16 caused an immediate trip of its power supply breaker, thus deenergizing 20/ET, allowing EH fluid pressure to increase to its normal operating value and enabling the turbine control and stop valves to reopen and regain control of reactor pressure. Failure of cable T16 also prevented manual pushbutton tripping of the main turbine from the console in the control room. The main turbine was subsequently tripped locally at the main turbine standard. The NRC resident inspector observed the unit startup which was performed on October 7, 1982, following the replacement of power cable T16. The NRC inspector concluded that the licensee performed appropriate immediate and followup corrective actions. No unreviewed safety questions were discovered.

6. Licensee Event Followup

The following LER's are closed on the basis of the NRC inspectors' inoffice review, review of licensee documentation, and discussions with licensee personnel:

LER 82-06 Failure to Meet Primary Containment Oxygen Limit
LER 82-07 Failure to Maintain Drywell/Suppression Chamber Differential Pressure
LER 82-12 Improper Detensioning of the Reactor Vessel Head Studs
LER 82-18 High Torus Water Temperature

7. Followup of Previously Identified Items

a. Unresolved Item 8125-02 (Closed) Low Pressure Coolant Injection (LPCI) System Testing Technical Specification Revision Requirement

Technical Specification, Section 4.5.A, "Core Spray and LPCI Subsystems", Subsection 3.d, was revised to indicate that LPCI pump flow requirements are based upon a reactor vessel pressure of 20 psid above drywell pressure.

b. Open Item 8125-03 (Closed) Revision of LPCI Curves

Surveillance Procedure 6.3.5.1, "RHR Test Mode Operation", Revision 17, incorporates the revised pump curve graph as Attachment "B", Figure 1.

c. Unresolved Item 8125-04 (Closed) LPCI System Surveillance Testing Affects on the Drywell-Suppression Chamber Differential Pressure

The licensee completed a portion of Minor Design Change (MDC) 82-024, as it affected the LPCI System test return lines located within the

suppression chamber, during the 1982 refueling outage. The modification prevents a reduction of drywell-suppression chamber differential pressure during the performance of LPCI pump flow surveillance testing. As a result, the licensee has determined that a change to the Technical Specification is not necessary.

8. Cold Weather Preparation

IE Bulletin 79-24, "Frozen Lines", requested the licensee to verify that adequate protective measures had been taken to prevent safety-related process, instrument, and sampling lines from freezing during extremely cold weather. The NRC inspectors reviewed logs, performed applicable systems walkdowns, and conducted discussions with licensee personnel to verify adequacy and continuing implementation of the licensee's protective measures.

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 766 (11-81) IE MC 0535

U.S. NUCLEAR REGULATORY COMMISSION

INSPECTOR'S REPORT

Office of Inspection and Enforcement

PRINCIPAL INSPECTOR (Name, last, first, and middle initial)

REVIEWER

INSPECTORS

LICENSEE/VENDOR	TRANSACTION TYPE	DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)	REPORT NO.	REPORT SEQ.	NEXT INSPEC. DATE MO.	NEXT INSPEC. DATE YR.
Nebraska Public Power Dist.	I – INSERT M – MODIFY D – DELETE R – REPLACE	0500029 8	8231	A B C D		
	1	2 – 14	15 – 18			

PERIOD OF INVESTIGATION/INSPECTION FROM MO.	DAY	YR.	TO MO.	DAY	YR.	INSPECTION PERFORMED BY	ORGANIZATION CODE OF REGION/HQ CONDUCTING ACTIVITY (See IEMC 0530 "Manpower Reporting—Weekly Manpower Reporting" for code.) REGION	DIVISION	BRANCH
						1 – REGIONAL OFFICE STAFF 2 – RESIDENT INSPECTOR 3 – PERFORMANCE APPRAISAL TEAM OTHER			
20 – 25			26 – 31			32	33	34	35

REGIONAL ACTION (Check one box only)
1 – NRC FORM 591
2 – REGIONAL OFFICE LETTER
36

TYPE OF ACTIVITY CONDUCTED (Check one box only)
02 – SAFETY; 03 – INCIDENT; 04 – ENFORCEMENT; 05 – MGMT. AUDIT; 06 – MGMT. VISIT; 07 – SPECIAL; 08 – VENDOR; 09 – MAT. ACCT.; 10 – PLANT SEC.; 11 – INVENT. VER.; 12 – SHIPMENT/EXPORT; 13 – IMPORT; 14 – INQUIRY; 15 – INVESTIGATION
37-38

INSPECTION/INVESTIGATION FINDINGS (Check one box only)
A | B | C | D
1 – CLEAR
2 – VIOLATION
3 – DEVIATION
4 – VIOLATION & DEVIATION
39

TOTAL NUMBER OF VIOLATIONS AND DEVIATIONS A	B	C	D	ENFORCEMENT CONFERENCE HELD A	B	C	D (1 – YES)	REPORT CONTAIN 2.790 INFORMATION A	B	C	D (1 – YES)	LETTER OR REPORT TRANSMITTAL DATE: NRC FORM 591 OR REG. LETTER IS ISSUED MO.	DAY	YR.	REPORT SENT TO HQ. FOR ACTION MO.	DAY	YR.
40-41				42				43				44 – 49			50 – 55		

MODULE INFORMATION

REC ORD TYPE	MODULE NUMBER INSP. NUMBER	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	SEQ.*	PRIORITY	DIRECT INSPECTION EFFORT IN STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED TO DATE	STATUS	MODULE REQ. FOLLOWUP PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL
B	04	5	9 3	7 0 2		A		0 0 3						
						B								
						C								
						D								
B						A								
						B								
						C								
						D								
B						A								
						B								
						C								
						D								
B						A								
						B								
						C								
						D								

MODULE INFORMATION

REC ORD TYPE	MODULE NUMBER INSP. NUMBER	PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL	SEQ.*	PRIORITY	DIRECT INSPECTION EFFORT IN STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED TO DATE	STATUS	MODULE REQ. FOLLOWUP PHASE	MANUAL CHAPTER	PROCEDURE NUMBER	LEVEL
B						A								
						B								
						C								
						D								
B						A								
						B								
						C								
						D								
B						A								
						B								
						C								
						D								
B						A								
						B								
						C								
						D								

* CIRCLE SEQUENCE IF VIOLATION OR DEVIATION