

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

Report No. 50-298/80-13

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. September 8 - 11, 1980

Principal
Inspector:

Robert G. Spangler
R. G. Spangler, Reactor Inspector
Reactor Projects Section No. 1

9/23/80
Date

Accompanying
Personnel:

Robert G. Spangler for
M. Aneshanslev, Reactor Inspector
Nuclear Support Section

9/23/80
Date

Lawrence A. Yandell
L. Yandell, Reactor Inspector
Reactor Projects Section No. 2

9/23/80
Date

Approved by:

T. F. Westerman
T. F. Westerman, Chief
Reactor Projects Section No. 1

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Date

Reviewed by:

J. E. Gagliardo
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9/24/80
Date

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Inspection Summary:

Inspection on September 8-11, 1980 (Report No. 50-298/80-13)

Areas Inspected: Routine, unannounced inspection of review of plant operations, requalification training, followup on LER's and followup on IE Bulletins and Circulars. This inspection involved 78 manhours on-site by three (3) NRC inspectors.

Results: Within the four areas inspected no items of noncompliance or deviations were identified in three of the areas. Within the area of requalification training one item of noncompliance (infraction - failure to fully implement the requirements of Appendix A to 10 CFR 55, paragraph 3) and one deviation (failure to fully meet a commitment made in the operator requalification program, paragraph 3), were identified.

DETAILS

1. Persons Contacted - NPPD

P. Borer, Operations Supervisor
 G. Bray, Station Operator
 B. Creason, Shift Supervisor
 R. Gardner, Unit Operator I
 B. Gilbert, Training Coordinator
 B. Jansky, Training SRO
 M. Sandau, Station Operator
 *L. Lessor, Station Superintendent

*Indicates presence at the exit meeting.

2. Review of Plant Operations

The purpose of this inspection effort was to verify that routine facility operations were being conducted in accordance with license conditions and procedural requirements.

The inspectors made plant tours, discussed plant operations with management and shift personnel, and reviewed various logs, records and reports as listed below:

Shift Supervisor's Log	June 24 - July 3, 1980 August 26 - September 4, 1980
Control Room Log	June 24 - July 3, 1980 August 26 - September 4, 1980
Night Order Book	June 24 - July 3, 1980 August 26 - September 4, 1980
Special Orders Log	All outstanding entries
Special Work Permit Log	All outstanding entries
Red Arrow Log	Selected entries
Clearance Order Book	All outstanding entries
Jumper Log	All outstanding entries
Scram Reports	80-02, 80-06 and 80-07
Valve Seals Log	Selected RHR and SLC entries
Shift Turnover Log	August and September, 1980

Nonconformance Reports

NCR 2098, 2099, 2101, 2119, 2123

Daily Log Sheets

Selected entries (July - September 80)

No apparent items of noncompliance or deviation were noted in the above areas.

3. Licensed Operator Requalification Training

The inspector reviewed licensed operator requalification training, related documentation and procedures, and interviewed the training coordinator and his assistant to verify that required licensed operator requalification training had been completed.

A. Lectures

The 1980 operator requalification examination had been administered during the period February - April, 1980. The requalification lecture schedule, based upon the results of this examination, had not been prepared. Further, no lectures had been given to emphasize weak areas identified in the annual examination.

10 CFR 55, Appendix A, Section 2, Lectures, requires that the requalification program include pre-planned lectures on a regular and continuing basis throughout the license period in those areas where annual examinations indicated a need. The licensee's approved requalification program (letter from P. F. Collins, USNRC, DOL to Mr. L. C. Lessor, NPPD, dated August 18, 1976) states "With the exception of special activity periods, such as refueling outages, the lecture series will be spread reasonably evenly throughout each year."

The licensee's failure to provide a requalification lecture series on a regular and continuing basis is an apparent item of noncompliance at the infraction level (298/80-13-01).

The inspector discussed with the training coordinator the method used to evaluate the results of the annual examination and develop a planned lecture series to upgrade licensed operator's and senior operator's knowledge in areas identified as weak. The training coordinator indicated that lesson plans were generally not developed directly as a result of the examination evaluation. Since no requalification lecture schedule had been developed, no requalification lesson plans were available for review. These lesson plans will be reviewed at a subsequent inspection. This item will remain open pending further review (Open item 298/80-13-02).

B. On-the-Job-Training (OJT)

The inspector reviewed records to verify that each licensed operator manipulated plant controls and that each licensed senior operator

either manipulated the controls or directed the activities of others who manipulated the controls. No deficiencies were noted in this area; however, the inspector did note that the majority of the control manipulations were simple power changes with recirculation flow changes. It was further noted that Cooper Nuclear Station does not utilize a simulator to obtain a variation in the control manipulations.

The inspector reviewed the method that was in use to ensure that each licensed operator was familiar with facility design changes, procedure changes, and license changes. Cooper Nuclear Station attaches the applicable document to a route sheet and requires each licensed operator to read the change and initial the route sheet. With the exception of Minor Design Change 80-78, all route sheets were properly completed.

Another element of OJT required each licensed operator and senior operator to review the contents of the station abnormal and emergency procedures at least annually. The documentation of this requirement to date in the current training cycle does not clearly indicate that all operators have reviewed all the required procedures. This was discussed with the training coordinator and he indicated that he would review the documentation. This item will remain open pending completion of the action taken by the Training Coordinator (Open item (298/80-13-03)).

C. Operator Evaluations

10 CFR 55, Appendix A, Section 4, Evaluation, requires the requalification program to include an annual written examination to determine the scope and depth of retraining in a number of specific areas. The licensee's approved requalification program lists ten (10) categories that are to be covered on the annual exam; however, the annual exam administered in February - April, 1980, did not address all the categories. Specifically, the approved program states "A planned lecture series . . . indicate a need for additional training in the following subjects: 1) Theory and principles of operation . . . 10) Station QA Program as related to station operations." The annual examination did not cover "Station QA Program as related to station operations." This is an apparent deviation from the licensee's commitments (298/80-13-04).

Further review of the annual evaluation revealed that the examination was given in a single version to all licensed operators. The examination given in 1980 required two months to administer to all individuals required to take the examination; however, the inspector found that the licensee had taken no special measures to prevent it from becoming compromised. This item is open pending the licensee's review and resolution of this potential problem (Open item 298/80-13-05).

10 CFR 55, Appendix A, Section 4, Evaluations, requires that written examinations be administered to determine licensed operator's and senior operator's knowledge of subjects covered in the requalification lecture series. The licensee's approved requalification program states "Written examination shall be given covering material presented in the requalification program lecture series." The requalification quiz No. 22, given in November 1979, had not been graded to determine licensed operator's and senior operator's knowledge of subjects covered in the requalification lecture series. This is a second example of the apparent item of noncompliance at the infraction level (Paragraph 3.A) with respect to requalification program requirements (298/80-13-01).

10 CFR 55, Appendix A, Section 4, Evaluations, requires that the requalification program include systematic observation and evaluation of the performance of licensed operators. The licensee's approved requalification program states "The performance of licensed operators and senior operators shall be evaluated at least annually by supervisors and/or training staff members." The licensee had developed an excellent method to document these systematic evaluations; however, approximately fifty percent of the cases reviewed for the current training cycle were incomplete in that the supervisor's evaluation of the operator's performance was missing. This item was discussed with the station Training Coordinator and Operations Supervisor. This item remains open pending review and corrective action by the licensee (Open Item 298/80-13-06)

4. Followup on LER's

The inspector reviewed the licensee's actions and analysis for the following LER's:

80-08; 80-08-01 During the first scheduled five year inspection of the RCIC turbine, it was discovered that a piece was missing from a bucket on the turbine wheel and that an adjacent bucket was bent. (Closed)

The vendor's examination and report indicates that the fracture was not caused by impact or by a progressive fracture mode such as fatigue, but rather by a ductile overload process that could have occurred during the initial installation of the RCIC turbine. Specifically, a foreign object could have been wedged between the turbine bucket and the outside diameter surface and caused the deformation as the turbine was rotated by hand for alignment. No degradation of the steam supply system is indicated.

80-07 Failure of the "B" Standby Liquid Control Pump to achieve rated flow. (Closed)

Disassembly of the "B" pump revealed worn and pitted cylinder suction and discharge valves and seats. The "A" pump was subsequently disassembled

and inspected. Repairs were made according to vendor instructions. The licensee is considering adding an inspection requirement to the PM program for these pumps.

80-27 Failure of the #8 left cylinder on Diesel Generator
Number 2. (Closed)

The vendor's report for this failure found that one of the piston pin bolts had failed due to rapid fatigue and that the remaining bolt indicated a slow fatigue failure for the first one-fourth of the bolt shank area and then failure by tensile load as indicated by a necked bolt shank. The articulating rod pin bolts showed fretting at the bolt head indicating that these bolts were not tight. However, the locking tabs on both the piston pin bolts and the articulating rod pin bolts were tight making it appear unlikely that the bolts had unthreaded in service. The vendor's report concluded that due to length of service to failure and factory QC, the above bolts were properly installed. The report further concluded that the piston and articulating rod pin bolts were stretched when the piston started to seize during recent successive starts. Repeated starts without allowing the engine to come to operating temperature can lead to uneven expansion between the iron piston and the cylinder linear. Subsequently, the chrome cylinder linear apparently healed but the loss of prestress on the above bolts resulted in their fatigue failure. The vendor's metal analysis indicated no material problems. The licensee replaced all piston and articulating rod pin bolts on this diesel. NDT examinations of these bolts revealed no negative indications. The problem does not appear to be generic. Operations and maintenance personnel are now aware of the possible problem with repeated diesel starts.

LER's 80-24 and 80-25 are closed based on the inspector's in-office review.

5. Followup on IE Bulletins and Circulars

The inspector verified the licensee's review of the following circulars: 79-18, 79-25, 80-01, 80-02, 80-03, 80-05, 80-08, 80-09, 80-11, 80-14 and 80-15. The licensee's actions appeared to be appropriate for each circular. In addition, the inspector reviewed the licensee's actions taken in response to the following bulletin.

80-10 Contamination of Nonradioactive Systems and Resulting
Potential for Unmonitored, Uncontrolled Release of
Radioactivity to the Environment. (Closed)

The review requested by this bulletin was conducted in response to IE Circular 77-14. Several system changes were made at that time and the systems have remained unchanged since then. The licensee has added non-radioactive systems to their weekly and monthly sample surveillance program. Systems whose gross gamma activity is in excess of three standard deviations of background will be further evaluated.

6. Exit interview

An exit interview was conducted at the conclusion of this inspection. The above findings were identified and discussed with the Station Superintendent.