### APPENDIX B

### U.S. NUCLEAR REGULATORY COMMISSION REGION IV

NRC Inspection Report: 50-298/89-05

Operating License: DPR-46

Docket: 50-298

Licensee: Nebraska Public Power District (NPPD) P.O. Box 499 Columbus. NE 68602-0499

Facility Name: Cooper Nuclear Station (CNS)

Inspection At: CNS, Brownville, Nebraska

Inspection Conducted: January 23-27 and February 6-10, 1989

Inspector:

Barnes / for

9903160237 890302 PDR ADOCK 05000298

W. M. McNeill, Reactor Inspector, Materials and Quality Programs Section, Division of Reactor Safety

3/1/89 Date

Approved:

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3/1/89

I. Barnes, Chief, Materials and Quality Programs Section, Division of Reactor Safety

Inspection Summary

Inspection Conducted January 23-27 and February 6-10, 1989 (Report 50-298/89-05)

Areas Inspected: Routine, unannounced inspection of action on previously identified inspection findings and licensee self-assessment capability.

<u>Results</u>: This is the first time that the inspection procedure on self-assessment was addressed at CNS. The licensee has established programs and procedures in regard to onsite and offsite review committees. The comments noted within the report raise questions on the effectiveness of the committees in certain cases to address issues in a timely manner and to perform a thorough review of root causes and corrective actions. Within the two areas inspected, one violation was identified (failure to conduct training, paragraph 2).

# DETAILS

#### 1. Persons Contacted

NPPD

P. L. Ballinger, Operations Engineering Supervisor \*L. A. Bray, Regulatory Compliance Specialist M. A. Dean, Operations Engineer J. D. Dykstra, Instrument and Control (I&C) Systems Engineer \*R. L. Gibson, Quality Assurance (QA) Supervisor \*M. D. Hamm, Security Supervisor \*H. T. Hitch, Plant Services Manager \*G. R. Horn, Division Manager, Nuclear Operations C. W. Jorgensen, 1&C Electrical Engineer \*R. W. Koeppel, Security Operations Supervisor R. W. Krause, Technical Engineer E. M. Mace, Manager, Technical Support \*J. M. Meacham, Senior Manager, Technical Support \*C. R. Moeller, Technical Staff Supervisor D. L. Reeves, Staff Engineer F. J. Schaaf, Project Engineer \*G. R. Smith, Nuclear Licensing & Safety Supervisor V. W. Stairs, Operations Training Supervisor P. V. Thomason, Overview Manager G. A. Trevors, Division Manager, Nuclear Support V. L. Wolstenholm, Division Manager, OA

\*Denotes those persons that attended the exit meeting on February 10, 1989.

The NRC inspector also contacted other personnel including administrative and clerical personnel.

# 2. Action on Previously Identified Inspection Findings

(Closed) Violation (298/8712-02): Failure to maintain records of the Safety Review and Audit Board (SRAB) members that would demonstrate that they had received the required annual training.

The licensee's response to this violation stated that the records were misplaced because of a recent audit of the records. Nevertheless, corrective action was taken to establish new requirements for documentation of training of members and any exemptions. A new form for training and computerized summaries were implemented to prevent the problem in the future. The SRAB guidelines would be changed to require the use of the form and computerized summaries.

The NRC inspector requested the training records of current SRAB members and found that the documentation reflected that one of the eight members

had not completed his 20 hours of training in 1988. The member in question had only 14.5 hours of training documented. The failure to conduct required training as required by CNS procedures is indicative that prior corrective actions were not effective. This failure has been identified as an apparent violation of Criterion V of Appendix B to 10 CFR Part 50 (298/8905-01). This violation parallels violations 298/8802-01 and 298/8827-01 previously identified in regard to training and is in the same area, namely training, as violation 298/8831-01.

#### Licensee Self-Assessment Capability

The objective of this inspection was to evaluate the effectiveness of the licensee's self-assessment programs. In this regard, the NRC inspector reviewed the activities of the offsite review committee or SRAB, the onsite review committee or Station Operations Review Committee (SORC) and the activities of the technical staff that approached the activities of an Independent Safety Engineering Group (ISEG). It should be noted that CNS is not required by Technical Specifications (TS) to have an ISEG. A inspection of SRAB and SORC had been previously addressed in NRC Inspection Report 50-298/88-24 in September 1988. The previous inspection addressed procedures, training, meeting frequency, and other programmatic elements. The objective of this inspection was to measure how effective these groups were in the identification and followup of concerns to resolution.

## a. SRAB

The SRAB meeting minutes of December 1988, meeting No. 134, were reviewed. Approximately 27 technical issues (or agenda items) and 4 administrative issues were addressed. Other meeting minutes were reviewed as necessary to establish the history behind an issue. Two issues, which follow, appeared to be controversial and were of particular note.

#### Design Change 87-017

Design Change 87-017 permanently installed what had been a temporary radwaste dewatering system. The design change had first been addressed by SRAB at meeting No. 130 in July 1988, and at each meeting since with no resolution of SRAB concerns. The design change was installed in December 1988, and is presently ready to go operational. The SRAB concerns were about the potential for backflow, the potential for spilling, and whether the appropriate design bases should be either American Society of Mechanical Engineers (ASME) Code Section III or American National Standards Institute (ANSI) B-31.1. To date, engineering has not resolved the SRAB concerns but has established April 1, 1989, as the date for resolution.

The NRC inspector found that the concern of backflow appeared moot because there were no flow paths changed by the design change. Spilling appeared to the NRC inspector to be a reasonable question in that not all of the design change was installed in a truck bay pit which had a drain. In regard to the design bases concern, the NRC inspector did not find a requirement to meet ASME Code but nevertheless, the concern appears valid. Regulatory Guide 1.143 does establish a comixture of ASME and ANSI codes that would be difficult to reconcile with each other.

#### Special Test Procedure 88-293

This procedure addressed special quarterly primary containment purge and vent valve leak rate testing. The procedure was first addressed by SRAB in November 1988, meeting No. 133, and subsequently in meeting No. 134 in December 1988 with no resolution of a SRAB concern. The SRAB concern was that one step in performance of this procedure could result in the standby gas treatment system (SBGT) being inoperable. If an isolation valve leaked, a procedure step was provided for the installation of a spool piece in order to determine which valve and the amount of leakage associated with the valve. Under these conditions, the suction line of the SBGT draws a suction on the secondary containment, a different zone from the primary containment for which it is designed to draw a suction. This could result in the SBGT not exhausting the drywell and torus to the negative .25 inches of water required under accident conditions. The procedure had as an attachment to it a probabilistic risk assessment. The assessment was based on certain assumptions which SRAB questioned. The assessment did not dispute the scenario but assigned it a very low probability; i.e., 1.0E-7. In the procedure, the step in question does require the permission of the Division Manager of Nuclear Operations. The testing had been performed December 20-21. 1988, and the step in question was not necessary during that testing. The special testing will be performed at least once more.

The NRC inspector found in review that the SRAB concern appeared to be valid and that there was no documentation that the SRAB concern would be resolved before permission could be given to perform the step in question.

#### Summary

Based on the above review, it appears that SRAB concerns are not always effectively resolved in a timely manner. The design change was installed and the special test procedure implemented without the concerns of SRAB resolved. It should be noted that TS and implementing guidelines only require that SRAB review various issues and advise NPPD top management. The comments following in later paragraphs on root cause, corrective action, and generic impact in regard to Nonconformance Report (NCR)/Licensee Event Report (LER) reviews are also applicable to SRAB.

## b. SORC

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The NRC inspector attended a SORC meeting on February 9, 1988, and reviewed the meeting minutes of the last 6 months. The NRC inspector observed that it was difficult to identify in the meeting minutes what was an open item for SORC followup. Examples of this were the actions to be taken on issues such as the diesel generator failures discussed in meeting 89-003 and recirculation pump trip procedures discussed in meeting 88-159. The NRC inspector found it was difficult to identify in the meeting minutes what was the discussion and what were the recommendations made by SORC in regard to various subjects. An example of this was the concerns in regard to a procedure on flux oscillation in the instability region at the 88-009 meeting. Although SORC members seem to recall differently, there was no discussion noted in minutes on the design change and special test procedure noted above on which SRAB had concerns. Some issues did track well from identification through resolution, such as the design change 87-15M on annunciator upgrades.

#### Summary

Based on the above review, it appears that SORC issues were resolved although it was difficult to find certain resolutions documented in SORC minutes. Actions identified to be taken in SORC were found to be resolved outside SORC minutes in certain cases. The comments following in later paragraphs on root cause, corrective action, and generic impacting regarding NCR/LER reviews, are also applicable to SORC.

#### c. Technical Staff

The activities that parallel the activities of an ISEG were reviewed, an annual operating experience effectiveness review and review of NCRs. The operating experience effectiveness review was found to be governed by Procedure 0.10.3, "Operating Experience Review Effectiveness Review," Revision 0, dated January 15, 1987. This review evaluated the analysis of NRC notices, bulletins, and generic letters; vendor service information and maintenance letters; the Institute of Nuclear Power (INPO) Significant Event Reports (SERs), Significant by Other Reports (SOs), Significant Operating Experience Reports (SOERs), and Operations & Maintenance Reminders (O&MRs). These reviews had been performed in 1987 and 1988. One observation by the NRC inspector was that the 1987 review identified three recommendations, but there was no followup in the 1988 review of these recommendations to ensure their implementation, resolution, and effectiveness. In this regard, the technical staff supervisor indicated that actions are to be taken to prevent this in the future.

In regard to the review of NCRs, the NRC inspector found that this activity which began in October 1988 was governed by a checklist

which was not yet prescribed in a procedure. The checklist focused on the review of the adequacy of the root cause determination and corrective action. The NRC inspector selected five NCRs (88-187, 88-194, 88-195, 88-197, and 88-199) which had been reviewed by the technical staff and had also resulted in an LER. This was done in order to measure the effectiveness of the reviews by technical staff of NCRs and the effectiveness of SRAB and SORC reviews of LERs. The observations of the NRC inspector were:

- Of the five NCRs reviewed, it was noted that the same individual in two cases (88-194 and 88-195) had established the root cause in the NCR and also performed the technical staff review. It would appear that some measure of independence may have been lost. The licensee has taken actions to ensure independence of reviews in the future.
- Two NCRs (88-187 and 88-195) dealt with solid state electronic component (transistor and zener diode) failures. The documentation in the NCR/LER files did not fully support that a premature wear out had occurred in both of these cases. Data that would eliminate the possibility of end of service life or burn in type failures was not documented, although some data should exist in equipment qualification studies and equipment or maintenance history records. It would appear that the root cause evaluation may have been less than rigorous. The technical staff is rereviewing the NCRs in question in light of the above comment.
- The corrective actions for NCRs 88-187 and 88-195 added to surveillance procedures a check of output voltages for the components. There was no data in the NCR/LER file that would support that the failure mechanism was a slow degradation such that the corrective actions would be effective. This would seem to be questionable, in the case of a transistor failure, that a slow degradation would be a precursor to failure. It would appear that the corrective action evaluation may have been less than rigorous. As noted above, the technical staff is rereviewing the NCRs in light of the above comments.
- The corrective actions for the high pressure coolant injection system (HPCI) identified in NCR 88-187 did not include in the scope the reactor core isolation cooling system (RCIC) which also has the same component. It would appear that generic impact evaluation may have been less than rigorous. It was noted, however, by the NRC inspector that the corrective action was extended to the RCIC surveillance procedure even though the NCR did not require such.
- The files on NCRs 88-194 and 88-197 which both addressed General Electric CR120A relay end of service life failures had also a Nuclear Network Entry data sheet. This sheet identified additional information, namely that there were 19 normally energized relays at CNS of which 8 had failed since 1981 and that 4 of the 19 had failed in 1988. The NRC inspector noted that this information was not

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specifically identified in LERs 88-23 and 88-25. In light of the comment, the licensee changed what was a planned supplement to LER 23 to include the additional information.

It should be noted that some of the above observations are also applicable to SRAB and SORC in that they also reviewed the LERs in question. In particular, the observations in regard to root cause, corrective action, and generic impact bring into question the effectiveness of certain reviews by SRAB and SORC.

#### Summary

The technical staff activities that were similar to ISEG were not fully effective in regard to followup, independence, adequacy of reviews of root cause analysis, and corrective action. However, CNS TS do not require an ISEG type group at CNS. The technical staff supervisor has indicated that his staff will be sent to training this year in regard to root cause determination and corrective action evaluation.

### d. Other Self-Assessment Activities

The NRC inspector found that other management oversight functions were performed at managers' meetings and division managers' meetings. A review of the last 6 months activities of these two groups found managers' meetings addressed such subjects as plant enhancement, outage management, maintenance self-assessment, Institute of Nuclear Power Operations (INPO) findings, and containment integrity. Division managers' meetings addressed such subjects as Boiling Water Reactors Owner's Group (BWROG) severe accident management program, performance monitoring, and independent plant evaluation/reliability centered maintenance. The NRC inspector noted that the tracking of issues to resolution was not always clearly documented in meeting minutes. Examples of this were a question in the November managers' meeting regarding the safety of power lines for a temporary design change on a trash monitor and questions in the September managers' meeting on the recirculation pump seal failures. In division managers' meetings, an example of this was the discussion on procedural compliance addressed in the January meeting. These issues were raised but documentation of resolution did not appear in meeting minutes. It was also noted by the NRC inspector that the definition of an issue was not always clear in division managers' meetings. An example of this is the discussion in the January meeting of a CA audit finding which failed to identify the subject as an audit finding. In both of the above formats, the issues appeared to be tracked outside of meetings. The NRC inspector found, by review of a sample of issues, that actions apparently were taken to resolve the questions raised.

## Summary

Other self-assessment activities are being performed at CNS although it appears that resolutions of some issues are not documented meeting minutes.

# 3. Exit Meeting

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An exit meeting was held on February 10, 1989, with those individuals denoted in paragraph 1 of this report. At this meeting, the scope of the inspection and the findings were summarized. The NRC resident inspector also attended. The licensee did not identify as proprietary any of the information provided to, or reviewed by, the NRC inspector.