Nebraska Public Power District

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September 6, 1984

Mr. E. H. Johnson, Chief
Reactor Project Branch 1
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 76011

Subject: NPPD Response to NRC Inspection Report No. 50-298/84-11

Dear Mr. Johnson:

This letter is written in response to your letter dated August 8, 1984 forwarding Inspection Report No. 50-298/84-11. Therein you indicated that two of our activities were in violation of NRC requirements. The following is the statement of the violations and our response in accordance with 10CFR2.201.

Statement of Violation

Failure to Perform a Safety Review of a Change Made To the Facility

10 CFR 50.59, paragraph (a) (1), states, "The holder of a license authorizing operation of a production or utilization facility may (i) make changes in the facility as described in the safety analysis report, (ii) make changes in the procedures as described in the safety analysis report, and (iii) conduct tests or experiments not described in the safety analysis report, without prior Commission approval, unless the proposed change, test, or experiment involves a change in the Technical Specifications incorporated in the license or an unreviewed safety question."

The licensee's response to CNS Final Safety Analysis Report (FSAR) Amendment 17, Question 2.34, states in part, "... the material and special equipment required for implementing the flood control procedure will be maintained onsite. Materials include plywood sheets, lumber, sealant, cement nails, plastic, and sand bags. Special equipment include two portable gasoline powered pumps and 100 feet minimum (per pump) of 2½ inch fire hose."

Contrary to the above, the licensee was maintaining only one portable gasoline powered pump onsite. Further, the licensee had not performed a safety review applicable to a reduction of the above FSAR requirement of maintaining two portable gasoline powered pumps onsite.

The Corrective Steps Which Have Been Taken And The Results Achieved

A second portable gasoline pump was obtained as soon as possible after this shortage was identified. The flood procedure has been changed to require that two portable gasoline pumps be maintained onsite in order to be in complete conformance with the FSAR.

Corrective Steps Which Will Be Taken To Avoid Further Violations

Two portable gasoline powered pumps will be maintained onsite.

The Date When Full Compliance Will Be Achieved

Cooper Station is now in full compliance.

Statement Of Violation

10 CFR Part 50, Appendix B, Criterion V, requires, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings, shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

Contrary to the above, the licensee failed to have procedures for maintenance of safety-related equipment in the following areas:

> Procedures for use and calibration of crimping tools for safety-related cable termination lugs and splices.
>
> Procedures to require determination of required lubrication, bearing life, and other component part life less than 40 years; and to require issuance of maintenance procedures to assure lubrication or part replacement to prevent voiding of equipment qualification and degradation of safety-related equipment during plant life.

The Corrective Steps Which Have Been Taken And The Results Achieved

Procedures are now being prepared which will provide the necessary guidance for the use of crimping tools for making terminations on safety-related equipment. Additionally, calibration gages have been ordered to periodically calibrate the crimping tools. In the case of the TBM-8 crimping tool mentioned in the report, adjustment of the handles prior to use will be included in the procedure.

It is true that no specific overhaul schedules have been established for large rotating equipment at this station which would include bearing changeout at regular intervals. However, Maintenance Procedure 7.2.36 and the Periodic Maintenance Program require lubrication and inspection at fixed intervals to permit station personnel to determine when this equipment starts to deviate from its normal operating condition and thereby schedule maintenance before equipment malfunctions. The bearing vibration analysis program provides

specific historical equipment data to assist in making these judgments. Vibration data is recorded at regular intervals. In addition, an effort is made to record vibration levels when essential equipment is operated on an unplanned basis such as when conducting a surveillance procedure to prove essential system operability. All motors with oil sumps have the oil changed out annually or if not, an analysis is done on the lube oil which would provide warning in advance of bearing degradation. Megger readings are also taken periodically to determine the condition of the insulation of motors, cables, and associated switchgear. These readings are compared to previous readings to determine if there is a possible deterioration of insulation. The bearing temperatures are also recorded on many of the essential bearings along with noise and vibration. Since almost all imminent bearing failures can be detected by monitoring bearing noise, bearing heat, and bearing vibration; the current programs are effective. An effectively protected and well-lubricated ball or roller bearing can operate indefinitely. The first signs of fatigue failure are detectable by noisy operation. An imminent bearing lubrication failure would also be detectable by noisy operation if not detected first by the lube oil analysis program. An antifriction bearing should not wear unless dirt or abrasive foreign matter gets into it.

Thus, the position of Cooper Nuclear Station is that adequate maintenance methods and detection programs are already in place which will prevent common mode failures during times of critical need as mentioned in the report. Operating history supports this position. Additionally, the restrictions of the Technical Specifications concerning required equipment operability, equipment redundancy, and the surveillance programs prescribed therein adequately reinforce the maintenance and monitoring programs already in place.

Corrective Steps Which Will Be Taken To Avoid Further Violations

The procedures in preparation concerning the proper use and calibration of crimping tools when implemented will also be added to the master list of station procedures. This will provide a management method to ensure the procedure will be reviewed periodically and revised as necessary in order to account for changes in crimping tools, and crimping requirements and methods. Routine station audit systems will ensure the tools and procedures are being used in the prescribed manner.

The vibration monitoring methods, lube oil analysis programs and any other means of detecting bearing or other component failures will be upgraded as new technology becomes available should the need for such an upgrading become apparent.

The Date When Full Compliance Will Be Achieved

Full compliance with the crimping tool procedure and calibration gages is expected to be achieved October 1, 1984.

The nuclear industry is currently addressing the concerns of maintaining plant equipment operability over a forty (40) year plant life. One of the issues involved is whether plant reliability is better served by a rigid bearing (or component) replacement schedule or whether monitoring and predictive maintenance methods are superior. Reliability of safety-related equipment appears to be much enhanced by the predictive methods currently employed.

The District has committed to implement the requirements of NUREG 1000 by July 1986. One aspect of NUREG 1000 which relates to this violation is the equipment classification and vendor interface requirement. The qualified life of components in essential equipment issue will be at least partially addressed by the District as this NUREG 1000 action is completed.

Definitive requirements for mechanical equipment qualification are as yet not codified. It is our understanding, however, that such requirements are under development. Once codified, these requirements will be implemented at CNS. In the interim, appropriate CNS procedures will be modified to include requirements to determine component life based on good engineering judgement. The results of vibration analysis, lube oil analysis, inservice testing, and preventive maintenance inspections will form the basis for such judgements. These procedure modifications will also provide guidance to ensure adequate lubrication or part replacement as appropriate to assure equipment qualification and prevent degradation of safety related equipment during plant life. These procedure modifications will be completed by December 1, 1984.

If you have any questions regarding this response, please contact me.

Sincerely,

J. M. Pilant
Technical Staff Manager
Nuclear Power Group

JMP:KRW:ya/kc(COMM3)