

October 10, 2003

Mr. Clay C. Warren  
Chief Nuclear Officer  
Nebraska Public Power District  
P. O. Box 98  
Brownville, NE 68321

SUBJECT: COOPER NUCLEAR STATION - REQUEST FOR ADDITIONAL INFORMATION REGARDING THE REQUEST FOR RELIEF FROM THE REQUIREMENTS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE CONCERNING INSERVICE TESTING OF CORE SPRAY PUMP CS-P-B AS REQUIRED BY ASME/ANSI OMa-1988, PART 6, PARAGRAPHS 4.6.1.6 AND 5.2.(d) (TAC NO. MB6821)

Dear Mr. Warren:

By letter dated November 14, 2002, Nebraska Public Power District (the licensee) requested relief (Relief Request RP-06) from certain American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) and American National Standards Institute (ANSI) requirements for Inservice Testing as required by ASME/ANSI OMa-1988, Part 6, Paragraphs 4.6.1.6 and 5.2.(d).

By letter dated September 19, 2003, the licensee submitted the response to the NRC staff request for additional information dated August 5, 2003. During the course of review of the September 19, 2003 submittal, the NRC staff determined that additional information is necessary to complete our review. A draft request for additional information (RAI) was e-mailed to Mr. R. Rogers on October 6, 2003. The information was discussed during a telephone call on October 9, 2003, with Mr. E. McCutchen of your licensing staff. Based on our discussion, a revised RAI is enclosed for your response. Mr. E. McCutchen agreed that you will respond to this RAI within 45 days of its receipt. If circumstances result in the need to revise the target date, please call me at your earliest opportunity.

Sincerely,

***/RA by B. Vaidya for/***

Michelle C. Honcharik, Project Manager, Section 1  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-298

Enclosure: As stated

cc w/encl: See next page

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Michelle C. Honcharik, Project Manager, Section 1  
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Office of Nuclear Reactor Regulation

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Enclosure: As stated  
cc w/encl: See next page  
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REQUEST FOR ADDITIONAL INFORMATION

RELIEF REQUEST RP-06

COOPER NUCLEAR STATION

DOCKET NO. 50-298

TAC NO. MB6821

RAI #1

The licensee and its pump experts have concluded that since initial installation of the core spray pump, the pump tests using the full-flow capabilities of the test line have not caused any damage to the pump, and the pump is operable. The staff finds that although no significant damage may have occurred based on the cumulative pump operating time during the quarterly tests (approximately 40 to 50 hours), the core spray pump is required to perform a safety function for an extended period of time following a loss-of-coolant accident (LOCA). Therefore, the data collected from the pump tests are not sufficient to justify the long-term reliability of the pump.

With regard to the long-term reliability of the pump, the licensee states that the pump vendor (Byron-Jackson), in a letter dated February 16, 1973, indicated that "such low acceleration levels, along with the system acting as a rigid structure (between motor and pump), means that the motor and pump can operate with these levels of vibration with absolutely no impairment of operating life." (Reference page 7 of Attachment 2 to the submittal).

The above statement, however, did not provide an adequate basis for its conclusion. In order to justify the long-term reliability of the affected pump, the conclusion should be substantiated by analyses, operating history of similar pumps, or other technical bases appropriate to the pump. The staff requests that further justification or relevant documents demonstrating the pump's long-term reliability at these low-frequency vibration levels be submitted for staff review.

The licensee further argues that its alternative is similar or more conservative than that provided by the Sequoyah Nuclear Plant (SNP) in its alternative that was authorized by the staff. In the case of SNP, the licensee requested relief from the vibration that occurred only during the quarterly pump test using a mini-flow test line. During refueling outages, the pump test at SNP uses the normal post-LOCA flow path (full-flow line) and did not experience vibration problems. Consequently, SNP did not have to address the issue related to long-term reliability of the affected pumps. SNP was requested only to justify that the mini-flow test had not caused damage or degradation to the pump, which in turn could be verified every two years by a full-flow test.

RAI #2

In lieu of meeting the Code requirements, the licensee proposes to filter out the low-frequency vibration data at points 1H and 5H, and monitor them administratively for any anomaly or trend of high vibration. However, before the staff can evaluate the acceptability of monitoring low-

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frequency vibration administratively, (i.e., not in conjunction with ASME Code inservice testing requirements), the licensee is requested to demonstrate (1) that the excluded low-frequency vibration has no significant impact on the pump's long-term reliability (see RAI #1) and (2) the excluded vibration can be verified to stay within acceptable limits. To ensure that the vibration remains within acceptable levels, the proposed alternative should be revised to include an acceptable vibration limit for points 1H and 5H and required actions to be taken if these limits are exceeded. Any proposed alternative must be part of the inservice testing program, and administrative monitoring of the affected vibration parameters without specific acceptance criteria and corrective action will not be accepted.

### RAI #3

The licensee states (Reference page 5 of Attachment 2) that the forcing function in this case is caused by flow turbulence attributed in large part to the S-curve in the piping just off the pump discharge. The licensee is requested to address what actions have been taken to modify this portion of the piping in order to reduce vibration, especially when it became clear to the licensee that the primary source of high vibration was the flow turbulence in and around these areas.

Cooper Nuclear Station

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August 2003