

August 5, 2003

Mr. Clay C. Warren
Vice President of Nuclear Energy
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).

During the course of review of this request, the NRC staff determined that additional information is necessary to complete our review. After the telephone call discussions on March 13, and May 27, 2003, with Mr. R. Rogers of your licensing staff, a draft request for additional information (RAI) was e-mailed to Mr. R. Rogers on July 11, 2003. The information was discussed during a telephone call on July 31, 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/

Mohan C. Thadani, Senior 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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***See previous concurrence**

NRR-088

OFFICE	PDIV-1/PM	PDIV-1/PM	PDIV-1/LA	EMEB/SC	PDIV-1/SC
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DATE	8/04/03	8/04/03	8/04/03	08/01/2003	8/05/03

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REQUEST FOR ADDITIONAL INFORMATION

RELIEF REQUEST RP-06

COOPER NUCLEAR STATION

DOCKET NO. 50-298

TAC NO. MB6821

RP-06 requests relief from the requirements to obtain vibration measurements for Core Spray Pump CS-P-B from one-third minimum pump shaft rotational speed to at least 1000 Hz. Nebraska Public Power District (NPPD), the licensee, proposes that the vibration data be filtered, removing the measurement associated with the piping induced vibration occurring at less than 1/2 of the pump operating speed. Currently, the vibration measurements are taken from one-third of pump minimum rotational speed to 1000 Hz. The proposed relief would allow exclusion of vibration data between 1/3 and 1/2 pump speed.

The licensee has provided the following statements for the relief request:

1. A similar relief request has been approved by the NRC for the Sequoyah Nuclear Plant (SNP) on October 5, 2000.
2. Vibrations occurring at these low frequencies should not be detrimental to the long term reliability of either the pump or the motor.

With regard to Item #1, RP-06 is different from SNP's relief request in two respects.

- a) At SNP, the pumps are tested quarterly using the minimum flow recirculation line. However, during each refueling outage, the pumps are tested at full flow in accordance with Code requirements, i.e., the relief request is only applicable to quarterly mini-flow.
- b) At SNP, the higher vibration only occurs during mini-flow tests, and is primarily caused by low frequency flow pulsations combined with low structural resonant frequencies of the pump assembly. Although the pumps have experienced high vibration during previous mini-flow tests, the licensee for SNP has monitored this high vibration condition since **original installation of these pumps** and was able to conclude that there has been no degradation of the pump/motor/foundation assembly from the inherent high vibration in this range during mini-flow tests. Another key element for approving SNP's relief request is that **the pump operability can be demonstrated and verified each refueling outage by full flow test without the relief from Code requirements**. Therefore, the vibration data between 1/3 and 1/2 pump speed are excluded only from mini-flow tests but the vibration between 1/3 and 1/2 pump speed continues to be monitored by full flow tests during each refueling outage.

The licensee should address the above differences between Cooper and SNP, and determine if SNP's relief request is applicable to Cooper. If so, the licensee should

revise the relief request and resubmit it along with documentation and justification similar to SNP.

With regard to Item #2, NPPD should address the four key components recommended by NRC NUREG/CP-0152 in order to conclude that vibrations occurring at these low frequencies should not be detrimental to the long term reliability of either the pump or the motor. The licensee may want to review more thoroughly the SNP submittal regarding how those components were addressed. The licensee should also discuss whether there are alternative means to monitor the vibration in the excluded range so that action can be taken if they are trending higher. A review of vibration histories at Cooper indicates that the vibration data varied widely and the variation at locations 1H and 5H could be as high as .25 in/sec. The licensee should provide a justification why vibration measurements could vary so widely and discuss actions taken to reduce them. **The key issue for the proposed relief request is to provide justification along with alternative to show that doubling the test frequency does not provide any additional information nor additional assurance as to the condition of the pump and its ability to perform its safety function.**

Cooper Nuclear Station

cc:

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