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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

March 3, 1981

Docket No. 50-298



Mr. J. M. Pilant, Director  
Licensing and Quality Assurance  
Nebraska Public Power District  
P. O. Box 499  
Columbus, Nebraska 68501

Dear Mr. Pilant:

Your letter of December 18, 1979 committed Nebraska Public Power District to operate Cooper Nuclear Station in conformance with the staff's interim position related to containment purge and vent valve operability. The staff in conjunction with Brookhaven National Laboratory has reviewed your submittal. As part of this review your response has been evaluated to determine its applicability to satisfy the long term operability requirements for the purge and vent valves identified in the staff's September 27, 1979 letter.

Based on this review it has been determined that additional information is required before the long term operability review can be completed.

Enclosure 1 contains questions related to operability of the air and motor operated purge and vent valves which you are requested to respond to within 60 days of receipt of this letter.

Sincerely,

*Thomas A. Ippolito*  
Thomas A. Ippolito, Chief  
Operating Reactors Branch #2  
Division of Licensing

Enclosures:  
1. Questions

cc: V. Noonan  
C. Haughney  
E. Reeves

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Mr. J. M. Pilant  
Nebraska Public Power District

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cc:

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ENCLOSURE 1

REQUEST FOR ADDITIONAL INFORMATION  
COOPER NUCLEAR GENERATING STATION  
CONTAINMENT PURGING DURING NORMAL PLANT OPERATION  
MECHANICAL OPERABILITY DEMONSTRATION

1. AIR OPERATED VALVES 237AV, 238AV, 245AV, AND 246A
  - 1.1 a. Was the Allis Chalmers's (AC) test report A-C, VER-0209 used as the basis for predicting valve loading results from the DBA-LOCA postulated?
    - b. What test numbers in the AC report apply to these valves?
    - c. Was the peak containment pressure resulting from the DBA-LOCA used for the "Initial Upstream Pressure" (as used in the AC report)? If not, provide the rationale used to allow use of a lower "Initial Upstream Pressure." Discuss instrument lag times used, actual valve closure times or Tech. Spec. allowable times as they apply.
  - 1.2 What were identified as the critical parts in these valves (shaft, disc to shaft pins, other)? What were the stresses calculated? Do they include simultaneous seismic loading? What are the design allowable stresses? What code or standards are the valves designed to?
  - 1.3 Do the operators have maximum torque rating(s) as established by the manufacturer? How does it compare to the maximum torque developed during the accident postulated? Does combined loading of spring and dynamic torque affect any parts of the operator to the extent that they become the limiting factor?
  - 1.4 Is there sufficient torque margin available from the operator to overcome the torques developed that tend to oppose valve closure as the valve strokes from its initial open position to the fully seated position. What is the minimum margin available and at what disc angle does this minimum exist?
  - 1.5 For those valve assemblies (with air operators) inside containment, has the containment pressure rise (backpressure) been considered as to its affect on torque margins available (to close and seat the valve) from the actuator? During the closure period, air must be vented from the actuators opening side through the solenoid valve into this backpressure. Discuss the installed actuator bleed configuration and provide basis for not considering this backpressure affect a problem on torque margin. Valve assembly using 4 way solenoid valve should especially be reviewed.
  - 1.6 Describe the extent to which the valve assembly (valve and operator) is seismically qualified?
  - 1.7 Describe the extent to which the pilot solenoid valves are seismically qualified and environmentally qualified for long term exposure to the normal plant environment. If the purge valves are to be operative post-LOCA describe the extent to which the solenoid valves are environmentally qualified for the LOCA environment. Do the elastomeric parts, solenoids, etc. have a qualified design life where periodic replacement of parts is required?

- 1.8 Describe the extent to which the operators are seismically qualified and environmentally qualified for long term exposure to the normal plant environment? If the purge valves are to be operative post-LOCA, describe the extent to which the operators are environmentally qualified for the LOCA environment. Do the elastomeric parts in the operator have a qualified design life where periodic replacement is required?
- 1.9 Do the elastomeric parts in the valve body have a qualified design life? Are they required to be replaced periodically?
- 1.10 Have the manufacturer's recommended preventive maintenance instructions (lubrication, etc.) been reviewed for the valve, operator and solenoids and are they being followed?
- 1.11 Where air operated valve assemblies use accumulators as the fail-safe feature, describe the accumulator air system configuration and its operation. Provide necessary information to show the adequacy of the accumulator to stroke the valve i.e., sizing and operation starting from lower limits of initial air pressure charge. Discuss active electrical components in the accumulator system, and the basis used to determine their qualification for the environmental conditions experienced.
- 1.12 Provide an assessment of the structural capability of any ducting or piping in the purge system which is upstream or downstream of the valves and is exposed to the flow condition associated with the LOCA and the seismic event. The staff is particularly interested in the effects that loose debris from the pipe or duct system may have on the closure capability of these valves.

2. MOTOR OPERATED VALVES 230MV, 231MV, 232MV, AND 233MV

- 2.1 Same as Question 1.1 a, b, and c.
- 2.2 Same as Question 1.2.
- 2.3 What are the maximum torque ratings of the operators. How do they compare to the torques developed during the DBA-LOCA postulated?
- 2.4 Same as Question 1.4.
- 2.5 Has the minimum available voltage to the electric operator under both normal or emergency modes been determined and specified to the operator manufacturer, to assure the adequacy of the operator to stroke the valve at DBA conditions with these lower limit voltages available. Does this reduced voltage operation result in any significant change in stroke timing?
- 2.6 Same as Question 1.6.
- 2.7 Same as Question 1.8.
- 2.8 Same as Question 1.9.

2.9 Same as Question 1.10.

2.10 Have the manufacturers recommended preventive maintenance instructions (lubrication, etc.) been reviewed for the valves and operators and are they being followed?

2.11 Same as Question 1.12.