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Mr. J. M. Pilant, Technical
Staff Manager
Nuclear Power Group
Nebraska Public Power District
Post Office Box 499
Columbus, Nebraska 68601

February 12, 1986

Dear Mr. Pilant

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION - INSERVICE TESTING PROGRAM

Re: Cooper Nuclear Station

Your letters dated June 15, 1984, May 22, 1985, and July 12, 1985 describe the Cooper Nuclear Station second 10-year IST pogram. In order to complete our review of the IST program additional information is necessary. Our Request for Additional Information (RAI)is enclosed. Please respond to the RAI within 45 days of receipt of this letter.

The reporting and/or record keeping requirements of this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

William O. Long

William O. Long, Project Manager
BWR Project Directorate #2
Division of BWR Licensing

Enclosure:
As stated

cc w/enclosure:
See next page

DBL:PD#2	DBL:PD#2	DBL:PD#2
SNorris	WLong	DPilmer
2/21/86	2/21/86	2/21/86

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COOPER NUCLEAR STATION
PUMP AND VALVE INSERVICE TESTING PROGRAM
QUESTIONS AND COMMENTS

1. VALVE TESTING PROGRAM

A. General Questions and Comments

1. Provide a listing of the limiting values of full-stroke time for all power operated valves in the Cooper IST program for our review.

2. Solenoid operated valves are not exempted from the stroke time measurement requirements of Section XI; their stroke times must be measured and corrective action taken if these times exceed the limiting value of full-stroke time. The NRC staff will grant relief from the trending requirements of Section XI (Paragraph IWV-3417 (a)) for these rapid acting valves, however, in order to obtain this relief the licensee must assign a maximum limiting stroke time of 2 seconds to these valves.

3. The NRC staff position is that the emergency diesel generators perform a safety-related function and the appropriate pumps and valves in the emergency diesel air start, service water cooling, and fuel oil transfer systems should be included in the IST program and be tested in accordance with the Code. Engine mounted pumps are considered to be part of the diesel and need not be tested separately.

4. Are all valves that are Appendix J type C leak-rate tested included in the Cooper IST program and categorized A or A/C?

5. The NRC has concluded that the applicable leak test procedures and requirements for containment isolation valves are determined by 10 CFR 50 Appendix J, however, the licensee must comply with

The Analysis of Leakage Rates and Corrective Action Requirements Paragraphs of Section XI, IWV-3426 and 3427. Does the current Cooper IST program meet this NRC staff position?

6. Are any valves at Cooper Nuclear Station currently leak-rate tested to verify a pressure boundary isolation function? Those valves that serve both a pressure boundary isolation function and a containment isolation function must be leak tested to both the Appendix J and Section XI requirements.

7. It is the NRC staff position that excess flow check valves perform a safety-related function and should be included in the IST program.

8. When flow through a check valve is used to indicate a full-stroke exercise of the valve disk, the NRC staff position is that verification of the maximum flow rate identified in any of the plant's safety analyses through the valve would be an adequate demonstration of the full-stroke requirement. Any flow rate less than this will be considered partial-stroke exercising unless it can be shown (by some means such as measurement of the differential pressure across the valve), that the check valve's disk position at the lower flow rate would permit maximum required flow through the valve.

   Do the licensee's testing procedures which are based on observing "substantially free flow" (Cooper IST Program, Rev. 4, Section VIII.B.4.b.4) meet this staff position?

9. The Code permits valves to be exercised during cold shutdowns where it is not practical to exercise during plant operation and these valves are specifically identified by the licensee and are full-stroke exercised during cold shutdowns. The staff requires that the licensee provide a technical justification for each valve that cannot be exercised quarterly during power operation

that clearly explains the difficulties or hazards encountered during that testing. The staff will then verify that it is not practical to exercise those valves and that the testing should be performed during cold shutdowns. Cold shutdown testing of valves identified by the licensee is acceptable when the following conditions are met:

a. The licensee is to commence testing as soon as the cold shutdown condition is achieved, but not later than 48 hours after shutdown, and continue until complete or the plant is ready to return to power.

b. Completion of all valve testing is not a prerequisite to return to power.

c. Any testing not completed during one cold shutdown should be performed during any subsequent cold shutdowns starting from the last test performed at the previous cold shutdown.

d. For planned cold shutdowns, where ample time is available and testing all the valves identified for the cold shutdown test frequency in the IST program will be accomplished, exceptions to the 48 hours may be taken.

10. A relief request from the Section XI exercising requirements must be provided for Category A/C valves whose closed position can be verified only by leak testing.

11. Is Cooper Station required to have an operational safety grade post accident sampling system? If so, the associated valves should be included in the IST program and be tested in accordance with Section XI.

12. Does the control room ventilation system perform any safety related function? If so, the appropriate support system valves should be included in the IST program.

13. Review the safety-related function of the Reactor Building Closed Cooling System (RECC) to determine if the system should be included in the IST program and the applicable components tested in accordance with the requirements of Section XI.

B. CORE SPRAY SYSTEM

1. Review the safety function of valves CS-AO-13A and 13B to determine if they should be categorized A/C.

2. Do valves CS-CV-12, 13, 14, and 15 perform a safety related function in both the open and closed positions? How are these valves individually verified to perform their safety related function?

3. Are the following valves ever required to change position in order to perform a safety related function?

CS-MO-11A	CS-MO-26A	CS-MO-5A	CS-MO-7A
CS-MO-11B	CS-MO-26B	CS-MO-5B	CS-MO-7B

4. Review the safety related function of valves CS-MO-15A and 15B to determine if they should be included in the IST program and categorized A.

C. RESIDUAL HEAT REMOVAL SYSTEM

1. Provide a detailed technical justification for not full-stroke exercising valves RHR-920-MV and 921-MV quarterly.

2. Review the safety function of valves RHR-AO-68A and 68B to determine if they should be categorized A/C.

3. How are valves RHR-CV-10, 11, 12, and 13 verified to full-stroke exercise during the quarterly testing.

4. Do valves RHR-CV-18, 19, 24, and 25 perform a safety related function in both the open and closed positions? How is each valve individually verified to perform its safety related function.

5. Provide a detailed technical justification for not full-stroke exercising valve RHR-CV-20 quarterly in accordance with the requirements of Section XI.

6. Provide a detailed technical justification for not full-stroke exercising valves RHR-CV-21 and 22 quarterly in accordance with the requirements of Section XI.

7. What is the test interval designated IST-1?

8. What is the P&ID location of valves RHR-RV-10, 11, 12, and 13?

9. Are valves RHR-MO-17 and 18 ever required to change position in order to perform a safety related function?

10. Review the safety related function of the following valves to determine if they should be included in the IST program and be categorized as indicated.

RHR-MO-15A	A	RHR-CV-23	A/C
RHR-MO-15B	A	RHR-MO-57	B
RHR-MO-15C	A	RHR-MO-67	B
RHR-MO-15D	A	RHR-MO-20	B
RHR-MO-274A	A		
RHR-MO-274B	A		

11. Review the safety related function of valves RHR-FCV-43, RHR-LCV-71A, and RHR-LCV-71B to determine if they should be included in the IST program and tested in accordance with the Code. Do these valves have a required fail-safe position?

D. STANDBY LIQUID CONTROL SYSTEM

1. Provide a detailed technical justification for not exercising valves SLC-CV-12 and 13 quarterly in accordance with the requirements of Section XI.

2. How is a full-stroke exercise verified for valves SLC-CV-10 and 11 quarterly?

E. HIGH PRESSURE COOLANT INJECTION

1. Would failure of HPCI-MO-15 in a nonconservative position during testing render an entire safety system inoperable?

2. Are there any adverse operational consequences that would result from full-stroke exercising valve HPCI-MO-16 quarterly? Should valves HPCI-MO-15 and 16 be tested during cold shutdowns?

3. How is valve HPCI-CV-15 exercised quarterly during extended cold shutdown periods?

4. Provide a detailed technical justification for not full-stroke exercising valve HPCI-CV-11 quarterly.

5. Do valves HPCI-CV-18 and 19 perform a safety related function in both the open and closed positions? How are these valves individually verified to perform their safety related function?

6. What type of valves are HPCI-LVSC-44 and 50? How are these valves exercised quarterly?

7. What is the normal position of valve HPCI-MO-57?

8. Review the safety related function of the following valves to determine if they should be included in the IST program. If it is determined that these valves do perform a safety related function, how will they be fail-safe tested?

Valves	P&ID Coordinates
PCV-69A	2041 F-1
PCV-69B	2041 F-3
PCV-70A	2041 F-1
PCV-70B	2041 F-3

9. Review the safety related function of valves HPCI-MO-20, 21, and 24 to determine if they should be included in the IST program.

10. Review the safety related function of valves HPCI-CV-24, 25, 26, and 27 to determine if they should be included in the IST program.

F. REACTOR CORE ISOLATION COOLING

1. Would failure of RCIC-MO-15 in a nonconservative position during testing render an entire safety system inoperable?

2. Provide a detailed technical justification for not full-stroke exercising valve RCIC-CV-11 quarterly.

3. Do valves RCIC-CV-18 and 19 perform a safety related function in both the open and closed positions? How are these valves individually verified to perform their safety related function?

4. What type of valves are RCIC-LVSC-37 and 42 and how are they exercised quarterly?

5. Review the safety related function of the following valves to determine if they should be included in the IST program.

RCIC-CV-22	RCIC-MO-20
RCIC-CV-23	RCIC-MO-30
RCIC-CV-24	RCIC-MO-33
RCIC-CV-25	

G. REACTOR FEEDWATER

1. Provide a detailed technical justification for not full-stroke exercising valves RF-CV-13, 14, 15 and 16 quarterly.

H. MAIN STEAM

1. Review the safety related function of valves MS-RV-71A through H, to determine if they should be categorized B/C and be tested in accordance with the Section XI requirements for power operated valves.

2. It is the NRC staff position that the following valves be included in the IST program.

Main Steam Safety and Relief Valve Tail Pipe Vacuum Breakers

MS-CV-10	MS-CV-16	MS-CV-24	MS-CV-30
MS-CV-11	MS-CV-17	MS-CV-25	MS-CV-31
MS-CV-12	MS-CV-20	MS-CV-26	MS-CV-32
MS-CV-13	MS-CV-21	MS-CV-27	MS-CV-33
MS-CV-14	MS-CV-22	MS-CV-28	MS-CV-34
MS-CV-15	MS-CV-23	MS-CV-29	MS-CV-35

Check Valves in the Air/Nitrogen Supply Lines to the ADS Valve Accumulators

-CV-17	-CV-19	-CV-21
-CV-18	-CV-20	-CV-22

I. REACTOR RECIRCULATION

1. Provide a more detailed technical justification for not exercising valves RR-MO-53A and 53B quarterly. The testing schedule on the valve table does not agree with the alternate testing described in relief request RV-03.

2. Valves RR-MO-54A and 54B should be deleted from the IST program.

J. REACTOR WATER CLEANUP SYSTEM

1. Provide a detailed technical justification for not full-stroke exercising check valve RWCU-CV-15 quarterly.

K. RADWASTE SYSTEM

1. Review the safety related function of valve RW-MO-93 to determine if it should be included in the IST program and be categorized A.

L. PRIMARY CONTAINMENT

1. Review the safety related function of the motor operated bypasses for valves PC-MO-230 and 231 to determine if they should be included in the IST program and be categorized A.

M. ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM

1. Review the safety related function of the following valves to determine if they should be included in the IST program and be categorized C.

ACAD-CV-10	ACAD-CV-13	ACAD-CV-16
ACAD-CV-11	ACAD-CV-14	ACAD-CV-17
ACAD-CV-12	ACAD-CV-15	

N. CONTROL ROD DRIVE SYSTEM

1. It is the NRC staff position that valves CRD-CV-126 and 127 and check valves 114, 115 and 138 perform a safety related function and must be included in the IST program and be tested in accordance with the requirements of Section XI.

2. Review the safety related function of the following valves to determine if they should be included in the IST program and be categorized as indicated

CRD-CV-13 (A/C)	CRD-CV-19 (C)	CRD-CV-21 (C)
CRD-CV-15 (A/C)	CRD-CV-20 (C)	CRD-CV-22 (C)

O. SERVICE WATER SYSTEM

1. Provide P&ID 2077 for our review. Any service water valves on this drawing that are required to change position to support emergency diesel generator operation must be included in the IST program and be tested in accordance with Section XI (also see question A.3).

2. Provide the test procedure used to verify operability of valves SW-CV-35, 36, 37 and 38. Does this test procedure meet the requirements of IE BULLETIN NO. 83-03 "Check Valve Failures in Raw Water Cooling Systems of Diesel Generators"?

3. Are the following valves required to change position to protect the RHR service water booster pumps?

SW-MV-104	SW-MV-97	SW-CV-23	SW-CV-25
SW-MV-90	SW-MV-243	SW-CV-24	SW-CV-26

4. Review the safety related function of the following valves to determine if they should be included in the IST program

SW-CV-19	SW-CV-21	SW-CV-27	SW-MO-650
SW-CV-20	SW-CV-22	SW-CV-28	SW-MO-651
SW-MO-89A	SW-MO-886	SW-MO-888	SW-CV-10
SW-MO-89B	SW-MO-887	SW-MO-889	SW-CV-11
SW-MO-37	SW-MO-117	SW-CV-13	SW-CV-12

P. MISCELLANEOUS SYSTEMS

1. Provide the P&IDs that show the instrument air and/or service air containment penetrations.

2. The NRC staff position is that the torus to drywell vacuum breakers perform a safety related function and must be included in the IST program.

3. Review the safety related function of the standby gas treatment system valves to determine if they should be included in the IST program. These components need not be considered if they are simple air dampers rather than valves.

4. Review the safety related function of the TIP system valves to determine if they should be included in the IST program.

2. PUMP TESTING PROGRAM

1. Are lubricant levels/pressures observed during pump testing for all pumps in the Cooper IST program? If not, provide the specific technical justifications for not performing this testing.

2. How is the standby liquid control pump flow rate (Q) measured during each inservice test of these pumps?

3. The NRC staff position is that measurement of vibration velocity is an acceptable alternate method to utilize to monitor pump vibration and has established a maximum velocity of 0.314 in/s. as the Required Action limit. Exceptions to this staff position may be taken on a case by case basis provided that the licensee can adequately demonstrate that a particular pump historically exceeds this limit.

4. Does the RCIC pump perform a safety related function at Cooper Nuclear Station?

5. Do the reactor building closed cooling (REC) pumps perform a safety related function (Refer to question A.13)?

6. If pump parameter deviations fall within the Required Action Range of Table IWP-3100-2, the pump shall be declared inoperative regardless of whether it is also required to be declared inoperative by the Station Technical Specifications. The IST program is implemented by and is, therefore, a part of the Station Technical Specification. Exceeding an IST program limit requires that the Code mandated corrective actions be followed even if other Technical Specification limits have not been exceeded (Refer to Inservice Testing of Pumps General Procedure IV.B.5.C.2).