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NOTEGRAM

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FORM EG&G-460A
(Rev. 05-84)

Date April 28, 1986

To Horace Shaw

From T. L. Cook

Org. BWR-Engineering Branch Section B

Org. NRR and I&E Support

Address Bethesda, MD

Address EG&G Idaho, Inc.

TRIP REPORT FOR THE PUMP AND VALVE INSERVICE TESTING PROGRAM WORKING MEETING FOR THE COOPER NUCLEAR STATION

On April 15 and 16, 1986, a working meeting was held at the Cooper Nuclear Station in Brownville, Nebraska with Nebraska Public Power District, NRC, and EG&G Idaho, Inc. representatives to discuss the questions resulting from the review of the Cooper Station pump and valve inservice testing (IST) program. Attached is a list of the meeting attendees, the questions that served as an agenda for the meeting, and the responses to those questions as taken from the meeting minutes and the written responses provided by the licensee. The utility representatives were given a brief introduction outlining the agenda and the methods used for the documentation of questions and responses. This was followed by detailed discussions concerning specific pumps and valves in the CNS program.

Those discussions resulted in 7 open items for the NRC staff and 7 open items for the licensee. The open items are identified in this trip report.

acf

Attachment:
As Stated

cc: E. C. Anderson
R. J. Bosnak, NRC-DE
F. C. Cherny, NRC-DE
L. Gilbert, NRC-RIV
W. Long, NRC
C. F. Obenchain
C. B. Ransom
H. C. Rockhold

ATTENDANCE LIST

INSERVICE TESTING PROGRAM WORKING MEETING

PLANT: Cooper Nuclear Station Dates: April 15 and 16, 1986

Name	Representing
Les Gilbert	NRC
E. M. Mace	NPPD
J. C. Major	General Electric
Clair Ransom	EG&G Idaho, Inc.
Scott Fieborg	NPPD
T. L. Cook	EG&G Idaho, Inc.
Horace Shaw	NRC
Bill Long	NRC
Greg Smith	NPPD
Bart Crow	NPPD
Jim Hilgenkamp	NPPD

MEETING MINUTES
COOPER NUCLEAR STATION

April 15 and 16, 1986

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.

   Response: Valve stroke times were provided and reviewed. There were no additional questions. The licensee will request relief from the requirements of IWV-3417(a) for the main steam isolation valves (MSIVs).

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.

   Response: The written response is satisfactory. The licensee will assign a maximum stroke time of 2 seconds to rapid acting valves and request relief from IWV-3417(a).

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.

Response: The emergency diesel generators and their appropriate system pumps and valves are not classified safety related ASME Class 1, 2, or 3. CNS does, however, test the emergency diesel generators and the appropriate system pumps and valves commensurate with their safety functions to be performed. Specifically, the emergency diesel generators, including service water cooling, are tested monthly for a 4 Hour-80% load run. The fuel oil transfer pumps are tested once a cycle for minimum flow. The starting diesel driven and electric air compressors are tested monthly for their ability to charge the air receivers. Additionally the entire emergency diesel generator system undergoes a once per cycle, sequential loading to simulate emergency conditions.

This will remain an open item for the NRC staff to provide the documentation to the licensee requiring that the emergency diesel generators and appropriate support systems be included in the IST program.

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?

   Response: Yes. The written response is satisfactory.

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?

   Response: The written response is satisfactory. The requirements of IWV-3427 will be included in the IST program.

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.

   Response: No, however, RHR-PCV-69A and B and RHR-PCV-70A and B will be included in the IST program as Category A passive valves per Question E.8. (These valves were determined to be not safety-related in Question E.8. This inconsistency was overlooked at the working meeting.)

   This will remain an <u>open item</u> for the <u>licensee</u> to investigate the pressure boundary isolation valve 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.

   Response: Excess flow check valves will be included in the IST program and relief will be requested to perform a modified leak test procedure to verify operability during refueling outages.

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?

Response: The written response is satisfactory. Partial- and full-stroke exercising of check valves was discussed. Specific valve exercising problems will be discussed during the course of the meeting.

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.

Response: The written response is satisfactory. The above staff position was discussed. Specific problem valves will be discussed during the course of the meeting.

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.

    Response: The written response is satisfactory. Relief will be requested as necessary.

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.

    Response: The written response is satisfactory. Alternate methods are utilized to monitor both the containment atmosphere and reactor coolant post-accident.

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.

    Response: The written response is satisfactory. The system is equipped with dampers instead of valves on the air side and the refrigeration system (air conditioning) is a closed system. There are no valves that must change position for system operation. The P&ID was provided.

13. Review the safety-related function of the Reactor Building Closed Cooling System (REC) 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.

Response: This will remain an open item for the NRC staff to provide the documentation to the licensee requiring that the active components in this system be included in the IST program.

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.

   Response: This will remain an open item for the licensee to investigate the pressure boundary isolation valve requirements. (Same as Item A.6).

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?

   Response: Relief will be requested to demonstrate that one of the two in-series valves will shut and that proper core spray system pressure will be utilized to demonstrate that the valves can open.

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

Response: CS-MO-11A - CS-MO-11B - These valves will be included in the IST program as Category A valves and will be exercised quarterly.

CS-MO-26A -	These valves will be included in the
CS-MO-26B -	IST program as Category B valves and
	will be exercised quarterly.
CS-MO-5A -	These valves will be included in the
CS-MO-5B -	IST program as Category A valves and
	will be exercised quarterly.
CS-MO-7A -	These valves will be included in the
CS-MO-7B -	IST program as Category A valves and
	will be exercised quarterly.

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.

   Response: This will remain an open item for the licensee to investigate the pressure boundary isolation valve requirements. (Same as Item A.6.)

C. RESIDUAL HEAT REMOVAL SYSTEM

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

   Response: The written response is satisfactory, however, Relief Request RV-02 will be deleted and the test frequency of these valves will be changed to cold shutdowns instead of each six months because exercising these valves during power operation causes flow and pressure transients in the augmented off gas system which could result in isolation of the AOG system.

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

   Response: This will remain an open item for the licensee to investigate the pressure boundary isolation valve requirements.

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

   Response: These residual heat removal pump minimum flow line check valves will be verified to open during pump testing by opening the minimum flow line motor operated valve and observing a change in system flow.

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.

   Response: Relief will be requested to demonstrate that one of the two in-series valves will shut and that proper RHR system pressure will be utilized to demonstrate that the valves can open.

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

   Response: The 14" RHR-CV-20 valve is the emergency service water (river water) supply for core flooding. This valve is normally closed. To exercise this valve during plant operation would allow river water into the RHR System and eventually the RPV. It is therefore not practical to exercise this valve quarterly. This valve is disassembled and manually full-stroke exercised during refueling outages. A relief request will be provided to explain this test method and frequency.

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.

Response: RHR-CV-21 and 22 are the RHR Heat Exchanger A and B drains to RCIC respectively. To full-stroke valves RHR-CV-21 and 22 quarterly would require that the RHR System be operated in the steam condensing mode. The steam condensing mode was designed to allow operators to maintain the reactor in hot standby during an isolation event in anticipation of quickly resuming power operation. This mode of operation is not utilized by the District. Additionally, this mode of operation is not part of the safety design basis of the RHR System. Therefore, the District feels that manually full-stroke exercising of these valves during refueling outages by disassembly per Surveillance Procedure 6.3.10.15 is adequate, and commensurate with the safety-related function being performed.

A relief request will be provided to explain this test method and frequency.

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

Response: Test interval IST-1 is incorrect. The correct designation is IST-VI. This correction has been made as part of IST Program Revision 4.

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

Response: The written response is satisfactory. A P&ID revision is being done to change the incorrect valve identification.

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

Response: The written response is satisfactory. These valves will remain Category A. Also, it will remain an open item for the licensee to investigate the pressure boundary isolation valve requirements.

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		

Response: RHR-MO-15A - These RHR pump suction valves will be
RHR-MO-15B - included in the IST program as
RHR-MO-15C - Category B valves and will be
RHR-MO-15D - full-stroke exercised during cold shutdowns. That test frequency will be justified because if any one valve failed shut, the associated pump would not have a suction flow path and pump damage could result if the pump started.

RHR-MO-274A - This will remain an open item for the
RHR-MO-274B - licensee to investigate the pressure boundary isolation valve requirements.

RHR-CV-23 - The written response is satisfactory. If system modifications are not completed during the next refueling outage, this valve will be included in

the IST program as Category C and will be full-stroke exercised during cold shutdowns.

RHR-MO-57 -
RHR-MO-67 - These valves will be included in the IST program as Category B valves and will be exercised quarterly.

RHR-MO-20 This valve will be included in the IST program as a Category B valve and will be exercised quarterly.

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?

Response: RHR-FCV-43 - This valve will be removed from the system during the next refueling outage and will not be included in the IST program.

RHR-LCV-71A -
RHR-LCV-71B - These valves are normally closed and fail closed. These valves are not safety-related because the steam condensing mode of RHR is not required to be operable and will not be included in the IST program.

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.

   Response: Relief will be requested to full-stroke exercise these valves during refueling outages and will explain the problems encountered while testing during power operation and cold shutdowns, i.e., boron injection and thermal shock.

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

   Response: The written response is satisfactory. Additionally, flow instrumentation is installed and read locally.

E. HIGH PRESSURE COOLANT INJECTION

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

   Response: Yes. The written response is satisfactory. This valve will be full-stroke exercised during cold shutdowns.

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?

   Response: Yes. These two valves will be full-stroke exercised during cold shutdowns because failure of either valve would disable the HPCI system. A Technical Specification change may be required to change this testing to a cold shutdown frequency instead of quarterly.

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

   Response: The written response is satisfactory. A note will be added to the IST program to explain that the system is out of service during cold shutdowns.

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

   Response: The licensee is presently inspecting this valve each refueling by disassembly. A relief request will be provided to disassemble and inspect this valve every <u>third</u> refueling outage. The past inspection history and inspection results will be provided with the relief request to justify the increased interval.

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?

   Response: Relief will be requested to demonstrate that one of the two in-series valves will shut and that proper HPCI system pressure will be utilized to demonstrate that the valves can open.

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

   Response: The written response is satisfactory. These valves are stop check valves and relief will be requested to verify closure during leak testing at refueling outages because valve failure while testing with the manual handwheel would render the HPCI system inoperable.

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

Response: The written response is satisfactory. The P&ID shows an incorrect position.

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

Response: These valves are not safety-related and will not be included in the IST program.

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.

Response: These valves will be included in the IST program as Category B valves and will be exercised quarterly.

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.

Response: These turbine exhaust vacuum breakers will be included in the IST program and relief will be requested to manually exercise them during refueling outages because the valves are located in the torus and are inaccessible during power operation and most cold shutdowns.

F. REACTOR CORE ISOLATION COOLING

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

   Response: The written response is satisfactory. This system is safety-related, therefore, the applicable valves and the pump will be included in the IST program. This valve will be exercised during cold shutdowns. This change to the testing frequency will also address RCIC-MO-16, the outboard steam supply isolation valve.

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

   Response: The licensee is presently inspecting this valve each refueling by disassembly. A relief request will be provided to disassemble and inspect this valve every third refueling outage. The past inspection history and inspection results will be provided with the relief request to justify the increased interval.

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?

   Response: Relief will be requested to demonstrate that one of the two in-series valves will shut and that proper RCIC system pressure will be utilized to demonstrate that the valves can open.

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

Response: The written response is satisfactory. These valves are stop check valves and relief will be requested to verify closure during leak testing at refueling outages because valve failure while testing with the manual handwheel would render the RCIC system inoperable.

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	

Response: RCIC-CV-22 - These turbine exhaust vacuum breakers
RCIC-CV-23 - will be included in the IST program and
RCIC-CV-24 - relief will be requested to manually
RCIC-CV-25 - exercise them during refueling outages because they are located in the torus and are inaccessible during power operation and most cold shutdowns.

RCIC-MO-20 - These valves will be included in the
RCIC-MO-30 - IST program as Category B valves and
RCIC-MO-33 - will be exercised quarterly.

G. REACTOR FEEDWATER

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

Response: The written response will be revised to discuss a possible reactor trip and feedwater sparger thermal shock while exercising these valves.

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.

   Response: The written response is satisfactory. Relief will be requested to exercise these valves following refueling outages and will explain why these ADS/Relief valves cannot be opened during power operation and cold shutdowns.

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

   Main Steam Safety and Relief Valve Fail 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

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

   Response: Valves MS-CV-10 through -17 will be removed from the system during the next refueling outage (fall 1986) and will not be included in the IST program.

Valves MS-CV-20 through -35 will be included in the IST program and relief will be requested to exercise them during refueling outages because they are located in the drywell and are not accessible during power operation and may not be accessible each cold shutdown.

Valves IA-CV-17 through -22 will be included in the IST program with relief requested to verify closure during leak testing performed at refueling outages because they are located in the drywell and are inaccessible during power operation and may not be accessible each cold shutdown.

Additional Comment: Relief will be requested from the stroke timing requirements of IWV-3417(a) for the MSIVs. Also see Item A.1.

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.

   Response: These valves will be tested during cold shutdowns. An explanation will be provided to justify the cold shutdown test interval.

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

   Response: The written response is satisfactory. These valves will be deleted.

J. REACTOR WATER CLEANUP SYSTEM

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

Response: The written response will be revised to request relief to verify closure during leak testing performed at refueling outages.

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.

   Response: The written response is satisfactory. This valve is not safety-related and will not be included in the IST program.

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.

   Response: The written response is incorrect. These valves will be included in the IST program as Category A and will be exercised quarterly.

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	

Response: The written response is satisfactory. This system is not required to be operational, therefore, these valves will not be included in the IST program.

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.

Response: CRD-CV-126 - CRD-CV-127 - The relief request will be expanded to explain why these valves cannot be stroke timed.

The licensee will investigate the safety function of the CRD-114, -115, and -138 valves. If the determination is made that these valves are safety-related, they will be included in the IST program and the responses below followed.

CRD-114 - This valve will be full-stroke exercised during control rod scram testing.

CRD-115 - This valve will be verified shut during CRD accumulator pressure decay testing which is performed during refueling outages in accordance with Technical Specifications.

CRD-138 - This will remain an open item for the licensee to investigate a method to verify closure of this valve.

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)

Response: CRD-CV-13 - CRD-CV-15 - These valves will be included in the IST program with relief requested to verify closure during leak testing performed at refueling outages. System modifications will be performed to permit leak testing. The categorization of these valves (A/C or C) will remain an <u>open item</u> for the <u>licensee</u>.

CRD-CV-19, -20, -21, and -22 - These valves will be included in the IST program as Category C and will be exercised quarterly.

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).

Response: The P&ID was provided. This will remain an <u>open item</u> for the <u>NRC staff</u> to provide the documentation to the licensee

requiring that the emergency diesel generators and appropriate support systems be included in the IST program.

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"?

   Response: The written response is satisfactory. Test Procedure 6.3.10.16 was provided and reviewed.

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

   Response: The written response is satisfactory. The minimum flow valves and associated check valves are no longer used for pump protection. The RHR heat exchanger outlet valves provide minimum flow protection because the RHRSWBPs are interlocked with the associated valve's position and if that valve does not open, then the pump will not start.

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-8[illegible]	SW-MO-889	SW-CV-11
SW-MO-37	SW-MO-117	SW-CV-13	SW-CV-12

   Response: This will remain an <u>open item</u> for the <u>NRC staff</u> to provide the documentation to the licensee requiring that the service water system be included in the IST program.

P. MISCELLANEOUS SYSTEMS

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

   Response: The P&IDs were provided. The licensee will determine if valve IA-14CV and service air valve SA-15CV should be included in the IST program.

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.

   Response: The written response is satisfactory. The torus to drywell vacuum breakers will be included in the IST program as Category C and will be exercised quarterly.

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.

   Response: This will remain an open item for the NRC staff to determine if the valves in the standby gas treatment system should be included in the IST program.

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

   Response: The TIP system ball valves will be included in the IST program as Category B and exercised quarterly. The explosive shear valves will also be included in the 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.

   Response: The written response is satisfactory. Lubricant levels or pressures are observed.

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

   Response: The written response is satisfactory. Flow instrumentation is installed and read locally. Also see Item D.2.

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.

   Response: The relief request addressing vibration velocity (RP-04) will remain an open item for the NRC staff to investigate the new O&M Working Group Report that discusses velocity limits. This additional information may allow increasing the recommended limit of .314 in./s.

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

   Response: The written response is satisfactory. This pump will be included in the IST program.

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

Response: This will remain an open item for the NRC staff to provide the documentation to the licensee requiring that the REC pumps be included in the IST program.

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).

Response: The handwritten response is satisfactory. The licensee will evaluate pump test results and will retest pumps in accordance with Section XI. If a pump is declared inoperable, then the appropriate Technical Specification will be followed.