

September 8, 1988

Docket Nos.: 50-369  
50-370

Mr. H. B. Tucker, Vice President  
Nuclear Production Department  
Duke Power Company  
422 South Church Street  
Charlotte, North Carolina 28242

Dear Mr. Tucker:

SUBJECT: MEETING SUMMARY REGARDING MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

On August 16, 1988, a working meeting was held among representatives of Duke Power Company, NRC, and EG&G Idaho, Inc., at the McGuire Nuclear Station, near Cornelius, North Carolina. The purpose of the meeting was to discuss the questions resulting from the review of the McGuire Nuclear Station, Units 1 and 2, pump and valve inservice testing (IST) program.

Enclosure 1 is a list of meeting attendees. Enclosure 2 records the questions that served as an agenda for the meeting, and the responses to those questions by Duke personnel during the meeting. Duke 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 McGuire Nuclear Station, Units 1 and 2, IST program. The attached responses are as recorded by EG&G and acknowledged by Duke personnel at the conclusion of the meeting, except for minor changes primarily of an editorial nature.

The meeting resulted in 14 open items which are identified in enclosure 2. There are several additional items where the Duke representatives agreed to make corrections or changes to the IST program as indicated in the responses to the questions. The questions and comments on the systems and components apply to both units unless otherwise noted.

The NRC Project Manager noted that a timely resolution of the open items and submittal of the IST program revisions in October of 1988 is needed to maintain the existing schedule for completion of the review this calendar year. Duke indicated that most, if not all, of the open items could be addressed in about 60 days.

Sincerely,

Original Signed By:

Darl S. Hood, Project Manager  
Project Directorate II-3  
Division of Reactor Projects - I/II

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Enclosures:  
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McGuire Nuclear Station

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McGUIRE NUCLEAR STATION, UNITS 1 AND 2  
IST PROGRAM WORKING MEETING

August 16 and 17, 1988

<u>NAME</u>	<u>REPRESENTING</u>
Steve Kirksey	Duke Power
Rick Smith	Duke Power
Garry Galbreath	Duke Power
Todd Oswald	Duke Power
David N. Smith	Duke Power
M. K. Nazar	Duke Power
Stephan K. Morales	Duke Power
Ken Rohde	Duke Power
Mark Hutcheson	Duke Power
P. B. Woodcock	Duke Power
J. E. Snyder	Duke Power
R. W. Revels	Duke Power
Darl Hood	NRC/NRR
Ed Girard	NRC/Region II
Tom McLellan	NRC/EMEB
T. L. Cook	INEL/EG&G Idaho
Brad Stockton	INEL/EG&G Idaho

McGUIRE NUCLEAR STATION, UNITS 1 AND 2  
PUMP AND VALVE INSERVICE TESTING PROGRAM  
MEETING MINUTES

I. VALVE TESTING PROGRAM

A. General Questions and Comments

1. Provide the documentation that ensures that IWV-3300 is being met (remote position indication verification).

Response:

Remote position verification is being performed. This will be documented in the McGuire Nuclear Station IST program.

2. The NRC has concluded that the applicable leak test procedures and requirements for containment isolation valves are determined by 10CFR50, Appendix J. General Relief Request III does not state that it applies to only Category A containment isolation valves. Additionally, the licensee must comply with the Analysis of Leakage Rates and Corrective Action Requirements paragraphs of Section XI, IWV-3426 and 3427, when leak testing containment isolation valves in accordance with the requirements of Appendix J.

Response:

General relief request III will be modified to cover only containment isolation valves. McGuire Nuclear Station is not in compliance with IWV-3426 and 3427. Presently, engineering judgement is used to determine which valves are leaking excessively and are in need of repair. The licensee understands the NRC Staff's position on compliance with IWV-3426 and 3427. THIS IS AN OPEN ITEM FOR THE LICENSEE.

3. Provide a listing of all valves that are Appendix J, Type C, leak rate tested which are not included in the IST program and Categorized A or AC?

Response:

There are no Appendix J, Type C, leak rate tested valves which are not included in the IST program and categorized A or AC.

Additional comment:

Manual vents and drains in capped lines are not required to be included in the IST program.

4. The NRC staff has identified rapid-acting power operated valves as those which stroke in 2 seconds or less. Relief may be obtained from the trending requirements of Section XI, Paragraph IWV-3417(a), however, in order to obtain this Code relief the staff does require that the licensee assign a maximum limiting stroke time of 2 seconds to these valves and comply with the requirements of IWV-3417(b) when the 2 second limit is exceeded. General Relief Request I does not comply with this staff position.

Response:

McGuire Nuclear Station will evaluate the NRC Staff position on rapid-acting valves. THIS IS AN OPEN ITEM FOR THE LICENSEE'S EVALUATION.

Additional comment:

The licensee may designate which valves will be considered rapid-acting and have this NRC Staff position applied to them.

5. Provide the limiting values of full-stroke times for the power operated valves in the McGuire Nuclear Station, Units 1 and 2, IST programs for our review. What are the bases used to assign the limiting values of full-stroke time for these valves?

Response:

The limiting values for full-stroke time for all power operated valves in the McGuire Nuclear Station, Units 1 and 2, IST submittal are identified in the remarks column of the valve table for each system. The response times for the individual valves are set such that each component will complete its required function in time to permit the system to meet the response time limitations stated in the Final Safety Analysis Report (FSAR). Note that this question was the subject of unresolved item No. 369(370)/87-16-02 in NRC/OIE Inspection Report No. 369(370)/87-16.

6. 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. Does the test designated "MT" satisfy this NRC Staff position?

Response:

McGuire Nuclear Station will revise their IST program to meet the required safety position and the valve test position. The licensee is aware of the NRC Staff position on verification of full-stroke exercising of check valves. Current testing methods will be evaluated to determine if they are in compliance with the Staff position. THIS IS AN OPEN ITEM FOR THE LICENSEE.

7. Provide the documentation that ensures that IWV-3415 is being met (fail-safe testing of valves).

Response:

Fail-safe testing is being performed. This will be documented in the McGuire Nuclear Station IST program.

8. Section XI specifically makes provisions for testing valves during cold shutdowns when it is impractical to exercise these valves quarterly during power operation. A formal relief request is not required, however, the licensee should include a cold shutdown justification in the IST program. The cold shutdown justification bases should indicate the negative consequences that make quarterly testing during operation impractical such as endangering personnel, damaging equipment, or resulting in a plant shutdown.

Response:

Justification is provided for cold shutdown valves in the form of a relief request. McGuire will make these justifications in the form of a cold shutdown justification and remove the relief requests for the IST program submittal. Cold shutdown justifications will be included in the respective system sections of the submittal. These program revisions will be included in the scheduled October 1988 IST program revision incorporating the commitments of the August 1988 meeting.

10. The valve testing frequency should be indicated in the valve tables. Only a portion of the valves in the McGuire IST program currently have the testing frequency identified in the valve tables.

Response:

The McGuire Nuclear Station IST program valve tables will be changed to clarify the valve testing frequencies.

11. Does the fuel pool cooling system perform a safety function at the McGuire Nuclear Station? If so, the appropriate pumps and valves

should be included in the IST program and tested in accordance with the requirements of Section XI to the extent practical.

Response:

The nuclear service water system provides safety-grade makeup, and the refueling water storage tank is the safety-grade makeup water source. See additional comments in Section R (Nuclear Service Water) of this report.

12. What is the frequency of the testing designated SP in the valve test program?

Response:

The SP testing method will be clarified in the McGuire Nuclear Station IST program.

13. The NRC staff position is that valves that serve both a pressure boundary isolation function and a containment isolation function must be leak tested to both the Appendix J and the Section XI requirements. Identify the valves, if any, at McGuire Nuclear Station that serve both a pressure boundary isolation function and a containment isolation function. What leak rate testing is performed on these valves?

Response:

There are no valves at the McGuire Nuclear Station which are leak rate tested for a pressure boundary isolation function and a containment isolation function.

#### B. Annulus Ventilation System

1. Why are valves 1(2)VE-10A identified as passive valves?



Response:

VE-10A is the hydrogen purge inlet blower discharge valve. It provides a class break and receives a Phase A (St) isolation signal. It was identified as passive in error and will be changed in the scheduled October 1988 revision.

2. Review the safety function of valves 1(2)VE-5A and 6B to determine if they should be categorized A.

Response:

These valves terminate inside the annulus, but do not provide a leak path to the environment. These valves are Type C leak rate tested and will be evaluated to determine if they should be categorized A.

#### C. Auxiliary Feedwater System

1. Concerning the relief request for valves 1(2)CA-60A, what prevents measuring the stroke time of these valves when they are exercised quarterly? What is the frequency of the stroke timing now being done, i.e., during ESF testing?

Response:

CA-60A and all other auxiliary feedwater control valves (CA-64, CA-56A, CA-52AB, CA-44B, CA-48AB, CA-40B, and CA-36AB) are now cycled and timed quarterly. The relief request will be removed in the scheduled October 1988 IST program revision.

2. How are the following valves verified to full-stroke exercise quarterly?

1(2)CA-8  
1(2)CA-22

1(2)CA-10  
1(2)CA-26

1(2)CA-12  
1(2)CA-31

Response:

The auxiliary feedwater pumps are tested monthly to ensure they will develop full discharge pressure at full flow per Technical Specifications. The pumps are placed on recirculation to the upper surge tank. Full flow is passed through these valves which constitutes a full-stroke exercise.

3. What is the frequency of the stroke timing now being done for valves 1(2)CA-20AB?

Response:

Valves 20AB, 27A, and 32B are now full-stroke exercised and stroke-timed quarterly.

4. What is the safety grade water source for the AFW pumps? Review the safety function of the following valves to determine if they should be included in the IST program and tested to Section XI requirements:

<u>Valve</u>	<u>P&amp;ID</u>	<u>Valve</u>	<u>P&amp;ID</u>
1(2)CA-3	1(2)592-1.1	1(2)CA-4	1(2)592-1.1
1(2)CA-5	1(2)592-1.1	1(2)CA-6	1(2)592-1.1
1(2)CA-151	1(2)592-1.1		

Response:

The safety grade water source for the auxiliary feedwater pumps is the nuclear service water system through valves 1(2)CA-15A, 86A, 165, and 1(2)RN-69A for train "A", 1(2)CA-18B and 1(2)RN-162B for train "B", and 1(2)CA-165, 86A, and 1(2)RN-69A or 1(2)CA-166, 166, and 1(2)RN-162B for the turbine driven auxiliary feedwater pump. These valves are all being exercised to Section XI requirements.

The safety function of valves 1(2)CA-3, 4, 5, 6, and 151 have been reviewed. These valves do not provide a safety function. This position is unchanged from Duke's previous response dated 8/17/82.

D. Boron Recycle System

1. If the only practical method of verifying valve closure is leak rate testing, then closure verification can be demonstrated each refueling outage. However, it must be done each refueling outage irrespective of the Appendix J required frequency. Does the testing frequency for valves 1(2)NB-262 conform to this position?

Response:

Yes. McGuire will clarify the wording on the relief request. Alternate testing will be changed to indicate every refueling, as indicated on the valve table in the submittal. These IST program revisions will be included in the scheduled October 1988 revision.

E. Breathing Air System

1. If the only practical method of verifying valve closure is leak rate testing, then closure verification can be demonstrated each refueling outage. However, it must be done each refueling outage irrespective of the Appendix J required frequency. Does the testing frequency for valves 1(2)VB-50 conform to this position?

Response:

Yes. McGuire will clarify the wording on the relief request. Alternate testing will be changed to indicate every refueling, as indicated on the valve table in the submittal. These IST program revisions will be included in the scheduled October 1988 revision.

F. Chemical and Volume Control System

1. Are valves 1(2)NV-94AC and 95B ever required to perform a containment isolation function?

Response:

Valves 1(2)NV-94AC and 95B are required to perform a containment isolation function. However, they are exempt from Appendix J, Type C leak rate testing per the NRC Standard Review Plan (SRP) concerning secondary containment functional design, and the NRC Branch Technical Position (BTP) CSB 6-3. Therefore, these valves are category B valves. Isolation of these valves is not important for bypass leakage.

2. Review the safety function of valves 1(2)NV-7B, 457A, 458A, and 459A to determine if they should be Categorized A.

Response:

These valves are required to perform a containment isolation function. However, they are exempt from Appendix J, Type C leak rate testing per the NRC Standard Review Plan (SRP) concerning secondary containment functional design, and the NRC Branch Technical Position (BTP) CSB 6-3. Therefore, these valves are category B valves. Isolation of these valves is not important for bypass leakage.

3. Do valves 1(2)NV-12 perform a safety function in the closed position?

Response:

These valves are not required to be Appendix J, Type C leak rate tested, and do not perform a safety function. They will be removed from the IST program.

4. How will full-stroke exercising valves 1(2)NV-225 and 231 quarterly result in an increase in RCS boron inventory?

Response:

McGuire Nuclear Station will provide a more detailed technical justification for this relief request in the scheduled October 1988 IST program revision.

5. Review the safety function of the following valves to determine if they should be included in the IST program and tested to Section XI requirements:

<u>Valve</u>	<u>P&amp;ID</u>	<u>Valve</u>	<u>P&amp;ID</u>
1(2)NV-45	1(2)554-1.0	1(2)NV-29	1(2)554-1.0
1(2)NV-77	1(2)554-1.1	1(2)NV-61	1(2)554-1.1
1(2)NV-14	1(2)554-1.2	1(2)NV-15	1(2)554-1.2
1(2)NV-20	1(2)554-1.2	1(2)NV-841	1(2)554-1.2
1(2)NV-218	1(2)554-3.0	1(2)NV-241	1(2)554-3.0
2NV-1044	2554-3.0	2NV-1046	2554-3.0
1(2)NV-264	1(2)554-3.1	1(2)NV-472	1(2)554-3.1
1(2)NV-267A	1(2)554-3.1	1(2)NV-265B	1(2)554-3.1
1(2)NV-411	1(2)554-5.0	1(2)NV-413	1(2)554-5.0

Response:

Valves 1(2)NV-29, 45, 61, and 77 will be evaluated to determine if they have a safety function. Valves 1(2)NV-14, 15, 17, and 18 are pressure boundary isolation valves, but are exempt from leak testing (letter supplied). Valves 1(2)NV-20 have no safety function. Valves 1(2)NV-841 are not in an RSB 5-1 required flowpath, therefore, they do not have a safety position. Valves 1(2)NV-218 are required to prevent gross diversion of flow, however, because of their location on the discharge of the positive displacement charging pumps, it is our position that gross flow through those pumps would be near impossible and these valves do not require backseat testing. Valves 1(2)NV-241, 2NV-1044, and 2NV-1046 have no safety function since the reciprocating

charging pump is not safety related. Valves 1(2)NV-264, 472, 267A, 265B, 411, and 413 are required per NRC BTP RSB 5-1 and will be added to the IST program in the scheduled October 1988 revision.

G. Component Cooling System

1. Do valves 1(2)KC-5, 8, 11, and 14 perform a safety function in the open and closed positions? IF so, the valves must be exercised to both positions.

Response:

Valves 1(2)KC-5, 8, 11, and 14 perform a safety function in the open position only.

2. Review the safety function of valves 1(2)KC-972 [P&ID 1(2)573-1.1] to determine if they should be included in the IST program and tested to Section XI requirements.

Response:

McGuire Nuclear Station will add valves 1(2)KC-972 to the IST program and test them to Section XI requirements.

3. Review the safety function of valves 1(2)KC-315B, and 305B to determine if they should be categorized A.

Response:

Valves 1(2)KC-315B and 305B perform a containment isolation function, but are exempt from Appendix J, Type C, leak rate testing and are therefore category B valves.

#### H. Containment Air Release and Addition System

1. Clarify the testing being performed on valves 1(2)VQ-1A, 2B, 5B, and 6A.

Response:

1(2)VQ-1A, 2B, 5B, and 6A are leak rate tested every refueling outage in accordance with 10 CFR 50, Appendix J. These valves are stroke timed quarterly.

#### I. Containment Purge Ventilation

1. Clarify the proposed alternate testing in the relief request for all containment purge ventilation category A valves. The stroke time of all power operated valves must be measured every time the valve is full-stroke exercised as required in Section XI, paragraph IWV-3413(b).

Response:

The proposed alternate testing in the relief request for these valves will be clarified and the trending of stroke times will be addressed.

#### J. Containment Spray System

1. The NRC Staff position is that check valves must be full-stroke exercised. If the Code required frequency is impractical, then the licensee must request relief to perform the testing at a lesser frequency. However, relief requests seeking exemption from full-stroke exercising of check valves will not be granted. The relief request for the following valves will be affected by this Staff position:

1(2)NS-13  
1(2)NS-33

1(2)NS-16  
1(2)NS-41

1(2)NS-30  
1(2)NS-46

Response:

Currently there is no way to verify a full-stroke of these valves. An evaluation will be performed to determine a method of verifying the full-stroke operability of these valves. The licensee should recommend and justify an appropriate time for the implementation of this testing, as it will require physical modifications to the plant. THIS IS AN OPEN ITEM FOR THE LICENSEE

2. Review the safety function of the following valves to determine if they should be categorized A:

1(2)NS-12B  
1(2)NS-32A

1(2)NS-15B  
1(2)NS-383

1(2)NS-29A  
1(2)NS-43A

Response:

These valves are required to perform a containment isolation function, however, they are exempt from Appendix J, Type C leak rate testing per the NRC SRP and NRC BTP CSB 6-3 and are therefore categorized B.

K. Diesel Generator Room Sump Pump System

1. Do valves 1(2)WN-3, 5, 11, and 13 perform a safety function in the closed position?

Response:

These valves are required to perform a safety function in the closed position and will require backseat testing. This change will be incorporated in the IST program in the scheduled October 1980 revision.



L. Diesel Generator Starting Air System

1. Provide P&IDs MC-1609-4.0 and 2609-4.0 for our review.

Response:

The requested P&IDs were provided.

Additional comment:

The air dryer, air compressor, and associated piping are now seismically qualified, therefore, the air compressor discharge check valves do not need to be tested in the closed position.

M. Equipment Decontamination System

1. What type of valve is 2UE-23? Is the AC categorization for this valve correct?

Response:

No. This is a packless stem valve. The AC categorization is incorrect and was changed to category A in the May 6, 1988 IST program submittal, revision 6.

N. Liquid Waste Recycle System

1. Review the safety function of valve INI-266A to determine if it should be categorized A.

Response:

Valve INI-266A has been deleted by a Nuclear Station Modification (NSM) and was removed from the IST program. Note however, that valves 1(2)NI-263, 264B, 265, and 267A

have been re-tagged per a different NSM for use as containment isolation valves 1(2)WL-1306, 1301B, 1307, and 1302A respectively. Valves 1(2)WL-1301B and 1302A are categorized A and were added to the IST program in revision 10, for Unit 1, and revision 6, for Unit 2. They will require Appendix J, Type C, leak rate testing.

O. Main Steam Supply to Auxiliary Equipment

1. How are valves 1(2)SA-5 and 6 verified to full-stroke open quarterly?

Response:

These valves are full-stroke exercised, alternately, during monthly turbine driven auxiliary feedwater pump testing. The test positions will be specified in the valve table.

P. Main Steam Vent to Atmosphere

1. Review the safety function of the following valves to determine if they should be included in the IST program and tested to Section XI requirements:

<u>Valve</u>	<u>P&amp;ID</u>	<u>Valve</u>	<u>P&amp;ID</u>
1(2)SV-25	1(2)593-1.3	1(2)SV-26	1(2)554-1.3
1(2)SV-27	1(2)593-1.0	1(2)SV-28	1(2)593-1.0

Response:

These valves do not perform a safety function, are not active valves, and do not receive emergency power.

Q. Nuclear Sampling

1. What type of valves are 1(2)NM-420 and 421? Should these valves be categorized AC?

Response:

Valves 1(2)NM-420 and 421 are pressure equalization check valves, and should be categorized AC. This change will be incorporated into the IST program in the scheduled October 1988 revision.

R. Nuclear Service Water System

1. Do valves 1(2)RN-28 and 30 perform a safety function in both the open and closed positions? If so, both positions must be verified during valve tests.

Response:

The trains are not run in parallel during an accident. These valves perform a safety function in the open position only.

2. Valves 2RN-41B and 2RN-43A are listed in both Unit 1 and Unit 2 valve tables. Is this correct?

Response:

These valves are Unit 2 valves, however, they will remain in Unit 1's IST program since they receive a Unit 1 safety signal to shut. These valves are in a partially shared system.

Additional comment:

It is the NRC Staff position that if the nuclear service water system is the safety-grade makeup for the spent fuel pool, and if the spent fuel pool cooling system is not to be included in the IST program, then the valves in this flow path must be included in the IST program and tested to Section XI requirements. The licensee should evaluate check valves 1(2)RN-113 and 214 for inclusion in the IST program as Category C valves. THIS IS AN OPEN ITEM FOR THE LICENSEE.

S. Reactor Coolant System

1. The NRC Staff position is that the PORVs should be exercised during cold shutdown or prior to establishing conditions where the PORVs are utilized for low temperature overpressure protection. The relief request for the PORVs will be affected by this Staff position.

Response:

McGuire Nuclear Station will reevaluate the current testing frequency of every 18 months. The reevaluation should consider whether the power operated relief valves should be tested at the entrance to cold shutdown, not to exceed every three months, but no less than once each refueling cycle. Results of the reevaluation and any recommended changes should be submitted to the NRC. THIS IS AN OPEN ITEM FOR THE LICENSEE.

2. What is the full-stroke test frequency for valves 1(2)NC-27C and 29C?

Response:

McGuire Nuclear Station will evaluate whether the spray control valves have a safety function. If it is determined

that these valves have no safety function, then they will be removed from the IST program and the relief request deleted. THIS IS AN OPEN ITEM FOR THE LICENSEE.

3. Provide P&ID MC-1553-2.1 for our review.

Response:

The requested P&ID was provided.

Additional question:

Do valves 1(2)NC-59 perform a containment isolation function?

Additional response:

No. This valve does not perform a containment isolation function.

4. Are valves 1(2)NC-141 and 142 passive valves?

Response:

Yes. This will be reflected in the scheduled October 1988 IST program revision.

#### T. Refueling Water System

1. Provide a detailed technical justification for not full-stroke exercising valves 1(2)FW-28 during cold shutdowns.

Response:

McGuire Nuclear Station will revise the relief request for these valves to provide a detailed technical justification

for not full-stroke exercising during cold shutdowns. Currently, full flow testing through these valves cannot be done because the reactor coolant system cannot accommodate this quantity of water.

2. Why are valves 1(2)FW-67(63) designated passive while all other small check valves that perform a thermal relief function are not?

Response:

These valves are thermal relief check valves on a passive containment penetration. The other isolation valves in the penetration are 1(2)FW-11 and 13, which are listed as passive. Valves 1FW-67 and 2FW-63 are categorized AC passive and closure verified via the leak test performed during refueling outages.

#### U. Residual Heat Removal System

1. What type of leak testing is performed on valves 1(2)ND-1B and 2AC? Do these valves perform both a pressure isolation function and a containment isolation function? See general comment A.13.

Response:

These valves are categorized A because they are pressure isolation valves. They are also containment isolation valves, however, they are exempt from Appendix J, Type C, leak rate testing per the NRC SRP and NRC BTP CSB 6-3. These valves will be noted in the IST program as pressure isolation valves.

2. Provide a detailed technical justification for not full-stroke exercising valves 1(2)ND-8 and 23 during cold shutdowns.

Response:

The relief request for these valves will be revised to include a more detailed technical justification for not testing during cold shutdowns.

3. Provide a more detailed technical justification for not full-stroke exercising valves 1(2)ND-70 quarterly and during cold shutdowns.

Response:

The relief request for these valves will be expanded to include the concerns of low temperature overpressurization when full-flow testing these valves during cold shutdowns.

4. Why must both trains of the residual heat removal system be removed from service to test the 1(2)ND-58A valves?

Response:

The relief request will be changed to a cold shutdown justification and expanded to explain that interlocks would have to be defeated, using jumpers, to perform this testing.

#### V. Safety Injection System

1. Review the safety function of valves 1(2)NI-12 to determine if they should be categorized AC.

Response:

Valves 1(2)NI-12 perform a containment isolation function. However, they are exempt from Appendix J, Type C, leak rate testing per the HRC SRP and NRC BTP CSB 6-3. Therefore, the valves will remain Category C valves.

2. Review the safety function of valves 1(2)NI-11 [P&ID 1(2)562-1.0] to determine if they should be included in the IST program and tested to Section XI requirements.

Response:

These valves are passive and do not perform a safety function.

3. How are valves 1(2)NI-59, 70, 81, and 93 verified to full-stroke open during refueling outages?

Response:

McGuire Nuclear Station currently calculates the differential pressure required to full-stroke exercise these valves. These calculations may be provided for NRC evaluation. An evaluation will be performed to determine whether the current method of testing will indeed full-stroke exercise the accumulator discharge check valves. THIS IS AN OPEN ITEM FOR THE LICENSEE.

4. How are valves 1(2)NI-60, 71, 82, and 94 verified to full-stroke open during cold shutdowns?

Response:

Current practice is to put 3000 gpm of flow through these valves, two at a time. McGuire Nuclear Station has been informed of the following NRC Staff positions. First, that these valves must be demonstrated capable of passing at least the same amount of flow as the accumulator discharge check valves. Second, that these valves should be individually verified to full-stroke. An evaluation will be performed to determine a method to adequately, and individually, demonstrate a full-stroke of these valves. THIS IS AN OPEN ITEM FOR THE LICENSEE.



5. Review the safety function of valves 1(2)NI-121A and 152B to determine if they should be categorized A.

Response:

Valves 1(2)NI-121A and 152B perform a containment isolation function. However, they are exempt from Appendix J, Type C, leak rate testing per the NRC SRP and NRC BTP CSB 6-3. Therefore, the valves will remain Category B valves.

6. What is the safety function of valves 1(2)NI-122B?

Response:

These valves are passive and do not perform a safety function. Duke has concluded per consultation with Westinghouse that this should not be an automatic isolation valve. Technical Specification changes have deleted these valves as Engineered Safety Features (ESF). Therefore, these valves no longer receive a Phase A isolation signal. McGuire Nuclear Station has been informed of the NRC Staff's position that if these are indeed B passive valves, then they may be removed from the IST program.

7. Describe the procedure used to full-stroke exercise the following valves during refueling outages:

1(2)NI-124  
1(2)NI-157

1(2)NI-128  
1(2)NI-159

1(2)NI-156  
1(2)NI-160

Response:

A flow balance test was performed during startup testing. With current testing methods only total flow is actually measured. An evaluation will be performed to determine a method to adequately, and individually, verify a full-stroke of these valves. THIS IS AN OPEN ITEM FOR THE LICENSEE.

8. How are valves 1(2)NI-125, 126, 129, and 134 verified to full-stroke during cold shutdowns.

Response:

Current practice is to put 3000 gpm through all four valves. There is no means to isolate the parallel injection flow paths. An evaluation will be performed to determine a method to adequately, and individually, verify a full-stroke of these valves. THIS IS AN OPEN ITEM FOR THE LICENSEE.

9. Review the safety function of the following valves to determine if they should be categorized A:

1(2)NI-162A  
1(2)NI-184B

1(2)NI-173A  
1(2)NI-185A

1(2)NI-178B

Response:

Valves 1(2)NI-162A, 173A, and 178B are containment isolation valves; 1(2)NI-184B and 185A are containment sump recirculation isolation valves. None of these valves perform an automatic isolation function. These valves are exempt from Appendix J, Type C, leak rate testing per the NRC SRP and NRC BTP CSB 6-3.

10. Review the safety function of the following valves to determine if they should be included in the IST program as category A valves and tested to Section XI requirements:

<u>Valve</u>	<u>P&amp;ID</u>
1(2)NI-163	1(2)562-3.1
1(2)NI-174	1(2)552-3.1
1(2)NI-179	1(2)562-3.1

Response:

These valves are B passive valves. These penetrations are not Appendix J, Type C, leak rate tested.

11. Describe how the interlocks mentioned in the relief request for valves 1(2)NI-184B and 185A preclude valve operation.

Response:

The relief request for these valves will be changed to a cold shutdown justification and revised to include a more detailed technical justification. This change will be reflected in the scheduled October 1988 IST program revision.

12. How are valves 1(2)NI-175, 176, 180, and 181 full-stroke exercised during cold shutdowns?

Response:

Current practice is to put 3000 gpm through these valves, two at a time. An evaluation will be performed to determine a method to adequately, and individually, verify a full-stroke of these valves. THIS IS AN OPEN ITEM FOR THE LICENSEE.

13. The NRC Branch Technical Position, RSB 5-1, establishes requirements for taking reactor plants from power operation to cold shutdown using only safety-grade equipment. To comply with this position, credit is normally taken for the safety injection accumulator vent paths and/or the accumulator motor operated isolation valves. Evaluate the safety function of the following valves to determine if they should be included in the IST program and tested to the Code requirements:

Valve	P&ID	Valve	P&ID
1(2)NI-50	1(2)562-2.0	1(2)NI-54A	1(2)562-2.0
1(2)NI-61	1(2)562-2.0	1(2)NI-65B	1(2)562-2.0
1(2)NI-72	1(2)562-2.1	1(2)NI-76A	1(2)562-2.1
1(2)NI-83	1(2)562-2.1	1(2)NI-84	1(2)562-2.1
1(2)NI-88B	1(2)562-2.1		

Response:

In compliance with BTP RSB 5-1, no credit is taken for remote manual operation of either the cold leg accumulator (CLA) vent valves or the CLA discharge isolation valves. Credit was taken for the local manual operation of valves at hot standby and during cooldown, if necessary, to achieve cold shutdown.

Valves 1(2)NI-50, 61, 72, 83, and 84 do not perform a safety function and will not be included in our IST program.

However, valves 1(2)NI-54A, 65B, 76A, and 88B do perform a safety function. These valves are categorized B, will be added to the IST program in the scheduled October 1988 IST program revision, and will be tested to Section XI requirements.

14. Review the safety function of the following valves to determine if they should be included in the IST program and tested to Section XI requirements:

Valve	P&ID	Valve	P&ID
1(2)NI-242B	1(2)562-4.0	1(2)NI-243A	1(2)562-4.0
1(2)NI-244B	1(2)562-4.0	1(2)NI-245A	1(2)562-4.0
1NI-266A	1562-4.0		

Response:

These valves have been deleted by a Nuclear Station Modification (NSM), and are no longer in the IST program.

15. What type of the valves are the following:

INI-248  
INI-251

INI-249  
INI-252

INI-250  
INI-253

Response:

These valves were upper head injection system check valves and were deleted by the NSM mentioned in the previous response. These valves have been removed and the piping has been capped.

## II. PUMP TESTING PROGRAM

1. The deviations from the Code requirements discussed in Item I.A and B, page I.1-1, have not been indicated on the pump table.

Response:

These deviations will be added to the pump table in the scheduled October 1988 IST program revision.

2. Section XI requires that both flow and differential pressure be measured during the performance of pump testing, i.e., all quantities required by Table IWP-3100-1 should be recorded and that lack of installed instrumentation is not a suitable long term justification for not performing the required Section XI testing. Item I.C does not agree with this Staff position.

Response:

McGuire Nuclear Station will evaluate methods of flow measurement for the centrifugal charging pumps. Also, the frequency of flow measurement for the residual heat removal and safety injection pumps will be evaluated. THESE ARE OPEN ITEMS FOR THE LICENSEE.

3. Has McGuire Nuclear Station attempted to procure portable vibration instrumentation that meets the accuracy requirements of Section XI?

Response:

Investigation into a meter and probe that would give an accuracy range of 5% is in progress now. Information is being supplied from Duke's standards lab on a vendor that can potentially satisfy this requirement. THIS IS AN OPEN ITEM FOR THE LICENSEE.

4. Is the pump vibration monitoring program conducted utilizing units of vibration displacement or vibration velocity?

Response:

Units of displacement are used.

5. Relief may be granted from the requirement of Section XI to measure pump bearing temperature annually, however, specific relief must be requested describing the difficulties encountered in each case. These relief requests will then be reviewed on a case by case basis. Item I.E does not agree with this Staff position.

Response:

McGuire Nuclear Station will request relief from the bearing temperature measurement requirements of Section XI on a case by case basis if vibration measurement is in the units of displacement.

6. Is the flow rate of the diesel generator fuel oil transfer pumps determined while the diesel engine is running?

Response:

The relief requests for the diesel generator fuel oil transfer pumps will be revised to clearly state the acceptance criteria for pump testing, and when corrective action will be initiated. This will also be done for the diesel generator sump pumps. A detailed technical justification for deviations from Section XI requirements will be provided.

7. In those cases where instrumentation is not installed to permit monitoring pump performance, individual specific relief must be requested. This requirement will affect the pump test program for the diesel fuel oil transfer pumps, diesel generator room sump pumps, and the standby makeup pumps.

Response:

McGuire Nuclear Station will request individual relief from the measurement requirements of Section XI for each parameter listed on Table IWP-3100-1, with a detailed technical justification for deviation from the Code requirements.

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