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Docket No. 50-220

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Mr. Charles V. Mangan
Senior Vice President
Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Dear Mr. Mangan:

SUBJECT: NINE MILE POINT 1 INSERVICE TESTING PROGRAM - SUMMARY OF SEPTEMBER 9 and 10, 1987 MEETING (TAC 60450)

On September 9 and 10, 1987, the staff and its contractor met with your staff to discuss staff questions and comments that had been sent to you earlier. Enclosure 1 summarizes the discussion on each question/comment and the results of those discussions. Enclosure 2 lists the names and affiliations of those who attended.

The following staff positions on open items are provided so that the clarifications they contain can be reflected in your resubmittal:

1. Coverage of the program - You have limited the program coverage to components classified as ASME Code Class 1, 2, or 3. Essentially, you argued that, since some systems, such as the diesel auxiliary systems and the control room HVAC system, were not designed according to the ASME Section III rules, you do not have to follow the Section XI inspection and testing rules. However, our position is that 10 CFR 50.55a requires pumps and valves in safety-related systems to be included in the IST program. Systems deemed to be not safety-related, even if they were designed and constructed in accordance with ASME Section III, are not required to be included in the IST Program. The diesel auxiliary systems, including the diesel engine cooling water system, the diesel fuel transfer system, and the air start system, and the control room HVAC chilled water system all have safety-related functions, and they must be included in the proposed program. Skid-mounted diesel generator equipment need not to be included in the program since inclusion of this equipment results in numerous relief requests without an increase in testing beyond that performed under the Technical Specification.

2. High point vent valves - On August 4, 1983, the NRC issued its NMP-1 Safety Evaluation Report for RCS high point vents, TMI Item II.B.1. This SER indicated that the testing of the vent valves could be performed during cold shutdowns or refueling outage but would not be required to be performed every three months. While it may not be practical to exercise these valves during plant operation, justification must be made as to why

it is not practical to perform this testing during cold shutdowns. In the final submittal, Niagara Mohawk must commit to exercising these valves at either cold shutdowns or refueling outages and must provide suitable justification to support the proposed testing frequency.

3. Appendix J surveillance program - You stated that a proposed Appendix J surveillance program is currently under review by the NRC staff. This proposed program requested certain exemptions, and the scope of the proposed program was used as the basis for the scope of inservice testing of containment isolation valves. This letter confirms the position taken in the September 9, 10 meeting that the final IST program must reflect all modifications to the Appendix J program that result when NRC completes its review of that program.

Sincerely,

Robert A. Benedict, Senior Project Manager
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Division of Reactor Projects, I/II

Enclosures:
As stated

cc: See next page

PDI-1
CVogan
12/16/87

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12/17/87

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NINE MILE POINT NUCLEAR STATION, UNIT 1
PUMP AND VALVE INSERVICE TESTING PROGRAM
QUESTIONS, COMMENTS, AND RESPONSES.

1. VALVE TESTING PROGRAM

A. General Questions and Comments

1. If a manual operator is used to full-stroke exercise check valves that cannot be full-stroke exercised with flow, is the force or torque that is applied to the mechanical exerciser measured to assure compliance with IWV-3522(b)?

   Response:

   The licensee has stated that these check valves with manual operators, with the exception of the torus vacuum breakers, are not presently tested using torque measurements. Where torque measurement testing is impractical the licensee will provide a request for relief providing the basis to demonstrate that this testing cannot be performed.

2. The NRC has concluded that the applicable leak test procedures and requirements for containment isolation valves are determined by 10CFR50, Appendix J. Relief from paragraphs IWV-3421 through 3425 for containment isolation valves presents no safety problem since the intent of IWV-3421 through 3425 is met by Appendix J requirements, however, the licensee shall comply with Paragraphs IWV-3426 and 3427. General Relief Request VG-2 is at variance with this staff position.

Response:

The licensee stated that their testing complies with the requirements of IWV-3426 and 3427. The relief request will be modified to reflect that their testing is in compliance with the Code requirements.

3. The Nine Mile Point Nuclear Station, Unit 1, IST program definition of cold shutdown states that no cold shutdown testing will be performed on any components tested less than 92 days prior to achieving cold shutdown. The Code does not require cold shutdown testing more frequently than once every three months, however, the Code does require components to be tested if it has been three months or greater since they were last tested regardless of how long it has been between the previous testing and when cold shutdown is achieved.

Response:

Revision 0 of NMP-1 IST program adequately addresses this concern.

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 VG-1 does not comply with this staff position.

Response:

The NRC staff's position on rapid acting valves was discussed. <u>OPEN ITEM</u> for the licensee to evaluate implementation. NMP-1 valve stroke time information may be provided to EG&G.

5. Provide the limiting values of full-stroke times for the power operated valves in the Nine Mile Point Nuclear Station, Unit 1, IST program for our review. What are the bases used to assign the limiting values of full-stroke time for these valves?

Response:

The limiting values of full-stroke times for all valves in the NMP-1 IST program will be provided as an attachment to the revised program with a description of the basis used to assign these values.

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 Nine Mile Point Nuclear Station, Unit 1, IST program conform to this staff position?

Response:

The NRC staff's position was discussed. Where the utility is not full-stroke exercising check valves in accordance with this position relief will be requested.

7. The relief request and cold shutdown justification bases should indicate the negative consequences that make testing at the Code required frequency impractical such as endangering personnel, damaging equipment, or resulting in a plant shutdown.

Response:

Relief request and cold shutdown justification bases were discussed (i.e., EG&G's need for more information describing the consequences of testing in accordance with the code).

8. Which valves at Nine Mile Point Nuclear Station, Unit 1; are currently leak rate tested to verify a pressure boundary isolation function?

Response:

The following valves perform a pressure boundary isolation function as identified in NMP-1 Technical Specifications. Table 3.2.7.1, "Primary Coolant System Pressure Isolation Valves":

Core spray system valves 40-03, 40-13.

Condensate supply to core spray (keep fill system) valves 40-20, 21, 22, and 23.

NOTE: EG&G will provide NMP-1 an informal list of PIV candidates identified during their review.

9. Provide a more detailed technical justification for not testing the excess flow check valves quarterly during power operations and during cold shutdowns (refer to General Relief Request VG-3). These valves should be included in the IST program.

Response:

The excess flow check valves will be included in the IST program and where testing cannot be performed in accordance with the Code, relief may be requested.

10. If failure of a pump discharge check valve to close on reverse flow could prevent the associated system from performing its safety function, then the pump discharge check valve does perform a safety function in the closed position and must be verified in that position during quarterly valve testing. Does the Nine Mile Point Nuclear Station, Unit 1, IST program conform to this staff position (refer to the discussion on pump discharge check valves on page III-6)?

Response:

Where failure of a check valve in the open position would divert flow in a parallel pump configuration these valves are verified to operate to the closed position.

11. The NRC staff position is that the emergency diesel generators perform a safety-related function and that the appropriate valves in the emergency diesel air start, cooling water, and fuel oil transfer systems should be included in the IST program and be tested in accordance with the Code. Engine driven pumps are considered to be part of the diesel and need not be tested separately. Provide the P&IDs that show these emergency diesel generator subsystems for our review.

Response:

<u>OPEN ITEM</u> for licensee to evaluate inclusion of the emergency diesel generator subsystems in their IST program. The NRC staff's position was explained to the licensee.

OPEN ITEM for NRC to provide guidance to the licensee concerning inclusion of emergency diesel generator components in the IST program.

12. If failure of a system piping keep fill check valve to close on reverse flow could prevent the associated system from performing its safety function, then the system piping keep fill check valve does perform a safety function in the closed position and must be verified in that position during quarterly valve testing. Does the Nine Mile Point Nuclear Station, Unit 1, IST program conform to this staff position (refer to the discussion on system piping keep fill check valves on page III-6)?

Response:

These valves cannot be individually verified to close quarterly during operations. These valves will be verified shut in series quarterly and individually during refueling outages. A relief request will be provided to describe this testing. These valves perform a pressure boundary isolation function.

13. Are all safety-related valves in the Nine Mile Point Nuclear Station, Unit 1, IST program with fail-safe actuators tested in accordance with the requirements of Section XI, IWV-3415?

Response:

All valves with fail-safe actuators are being tested in accordance with IWV-3415. The discussion, Page III-6, "Valve Fail Safe Testing" will be revised to include more details concerning this testing.

14. Are remote position indicators being verified in accordance with the requirements of Section XI, IWV-3300 for all applicable valves in the Nine Mile Point Nuclear Station, Unit 1, IST program (the comment on page III-8 of the IST program indicates that it is your "intent" that this testing be performed)?

Response:

The discussion on Page III-6, "Valve Position Indicator Verification" will be revised to indicate that all applicable valves are being verified.

Additional comment:

VG-3 in Revision 0 of the NMP-1 IST program need not be included as a relief request. This relief request will be deleted from the IST program and the information presented in another form.

B. Main Steam System

1. Provide a more detailed technical justification that explains why repeatable test conditions cannot be established when testing the ADS valves during reactor refueling outages to allow measurement of meaningful valve stroke times in order to provide a means to detect valve degradation (refer to Relief Request RR-1).

Response:

The licensee will provide additional discussion in their relief request to demonstrate that it is impractical to obtain accurate stroke time measurements for these valves.

2. Provide a more detailed technical justification that explains why it is not possible to enter the drywell during normal operation or cold shutdowns to exercise the ADS line vacuum relief check

valves (refer to Relief Request RR-2). Is the torque required to actuate these valves measured when the valves are manually exercised?

Response:

The licensee will provide additional discussion to explain why these valves cannot be exercised quarterly during operations and cold shutdown.

3. Provide the P&ID(s) that shows ADS line vacuum relief check valves 66-25 through -29 and 66-31 through -36 for our review.

Response:

The P&IDs where provided. No further questions.

C. Feedwater System

1. Provide Note 1 that is referenced for valve 30-32 on page III-2-2 of the valve test table for our review.

Response:

Valve 30-32 has been deleted from Revision 0 of the IST program. Credit is not taken in NMP-1 accident analyses for operability of the high pressure injection function of the feedwater system.

2. P&ID C-18005-C Sh.2 identifies the feedwater inlet isolation valves as 31-03 and -04 while the valve test table lists them as 31-07 and -08. What are the correct numbers for these valves?

Response:

The valve numbers in the IST program are 31-07 and 31-08. This is correct in the Revision 0 of the NMP-1 IST program.

D. Reactor Recirculation System

1. Provide the P&ID (Drawing No. C-18020-C) that shows reactor recirculation valves 110-127 and -128 for our review.

Response:

This P&ID was provided. No further questions.

E. Control Rod Drive System

1. Provide a detailed discussion that explains how it was determined that the technical specification control rod scram insertion testing meets the intent of Section XI testing requirements (refer to Relief Request RR-1).

Response:

The licensee will provide additional technical discussion in their relief request to demonstrate that valves 138 are verified closed during Technical Specification testing and propose a testing frequency. The licensee will provide more detailed information to justify the test method and frequency for valves 106.

2. Section XI, IWV-3412, permits exercising valves during cold shutdowns when it is impractical to exercise them quarterly during power operations; what is the basis for only exercising 8 out of 129 control rod drive valve sets (108, 126, 127, and 138) during each cold shutdown?

Response:

OPEN ITEM for licensee and NRC to determine the test frequency for valve sets (108, 126, 127, and 138). Relief request No. RR-2 has been deleted in Revision 0 of the NMP-1 IST program.

3. Provide a detailed discussion that explains how it was determined that the technical specification control rod scram insertion testing meets the intent of Section XI testing requirements (refer to Relief Request RR-2).

Response:

The licensee will provide additional technical discussion in their revised IST program.

4. Does the alternate testing specified for control rod drive valves 138 verify the reverse flow closure of these valves during rod scram testing (refer to Relief Request RR-2)?

Response:

The licensee will provide additional technical discussion in their relief request to demonstrate that valves 138 are verified closed during Technical Specification testing and propose a testing frequency.

5. Review the safety-related function of valves 301-3A and -3B (P&ID C-18016-C Sh.1 coordinates B-7 and C-7) to determine if they should be included in the IST program.

Response:

These valves are not safety-related and need not be included in the IST program. The control rod drive pump and associated valves do not perform a safety-related function.

6. Is valve 301-113 Appendix J, Type C, leak rate tested to verify its ability to perform a containment isolation function?

Response:

A proposal has been made to exempt this valve from Appendix J, Type C, leak rate testing. If this request is denied this valve will be tested in accordance with the applicable requirements.

7. Provide the P&ID (Drawing No. C-18016-C Sh.2) that shows scram discharge volume vent and drain valves 44.2-15, -16, -17, and -18 for our review.

Response:

The P&ID was provided. No further questions.

8. Provide a more detailed technical justification for not measuring the stroke times of valves 44.2-15 and -18 when testing these valves quarterly during power operations in order to provide a means to detect valve degradation (refer to Relief Request RR-3).

Response:

The licensee will provide additional discussion to demonstrate the impracticality of stroke timing these valves quarterly during power operation.

9. Review the safety-related function of valves CV-NC-11 and BV-NC-12 (Drawing No. C-18016-C Sh.1) to determine if they should be included in the IST program.

Response:

These valves have been replaced by valves 44.2-15, 16, 17, and 18 which are included in Revision 0 of the NMP-1 IST program.

F. High Pressure Coolant Injection System

1. Provide the following P&IDs for our review.

C-18005-C Sh.1 C-18003-C C-18033-C

Response:

These P&IDs were provided. Question 1A was generated.

1A. Can reverse flow closure be verified for Valves 31-01 and 02 when entering or leaving cold shutdown.

Response:

The licensee will provide additional information in their relief request for not performing reverse flow closure tests on these valves during cold shutdown.

2. Do the following valves have required fail-safe positions? If so, in addition to testing their fail-safe function, these valves must be exercised and have their full-stroke times measured in accordance with the Code.

29-51	51-59	51.1-03	51.1-13
29-52	51-60	51.1-08	51.1-18
51-58	ID-12A	ID-12B	

Response:

These valves perform no safety-related function and will be deleted from the IST program resubmittal.

3. Do valves 50-15, 50-20, 59-07, and 59-08 have required fail-safe positions? If so, in addition to testing their fail-safe function, these valves must be exercised and have their full-stroke times measured in accordance with the Code.

Response:

These valves perform no safety-related function and will be deleted from the IST program resubmittal.

G. Reactor Core Spray System

1. Provide the P&ID that shows the following core spray system valves for our review.

40-20	40-30	93-58
40-21	40-31	93-64
40-22	40-32	93-71
40-23	40-33	93-74

Response:

The P&ID was provided. Question 1A was generated.

1A. Does Valve 53-08 perform any safety-related function? If so, it should be included in the IST program and tested in accordance with the code requirements.

Response:

OPEN ITEM for licensee to determine if valve 53-08 performs a safety-related function and should be included in the IST program.

2. If opening valve 40-01, -09, -10, or -11 results in the downstream check valve becoming the single boundary between the RCS and the low pressure core spray piping as stated in Cold Shutdown Test Justification CS-1; are these motor operated isolation valves leak rate tested to verify a pressure boundary isolation function?

Response:

These valves are not leak rate tested as pressure boundary isolation valves.

3. Is design accident flow verified through valves 40-03 and -13 during quarterly valve testing? If not, how are these valves full-stroke exercised (refer to the comment in Item A.6)?

Response:

These valves are exercised with 3100 gpm during quarterly testing as opposed to design accident flow of 3400 gpm. A relief request will be provided to discuss this near full-stroke exercise of these valves.

4. Are valves 40-05 and -06 Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

Response:

These valves are not currently required to be Appendix J, Type C, leak rate tested. The reverse flow test requirement will be deleted from the IST program. These valves perform no safety-related function in the closed position.

5. How is the reverse flow closure individually verified for check valves 40-20, -21, -22, and -23?

Response:

The relief request will be revised to indicate that these valves will be verified to shut in series during quarterly testing and shut individually during refueling outages.

6. Is design accident flow verified through valves 81-07, -08, -27, and -28 during quarterly valve testing? If not, how are these valves full-stroke exercised (refer to the comment in Item A.6)?

Response:

These valves are exercised with 3100 gpm during quarterly testing as opposed to design accident flow of 3400 gpm. A relief request will be provided to discuss this near full-stroke exercise of these valves.

7. Review the safety-related function of valves 93-51 and 93-52 (Drawing No. C-18007-C) to determine if they should be included in the IST program.

Response:

Valve 93-52 is normally open, locked open, and is Category B passive, valve 93-51 has been removed. These valves do not perform a safety-related function and need not be included in the IST program.

8. Is valve 58.1-01 Appendix J, Type C, leak rate tested to verify its ability to perform a containment isolation function?

Response:

Valve 58.1-01 does not perform a containment isolation function and is not leak rate tested (Downstream of this valve a blind flange has been installed).

9. What is the function of the 3/4 inch check valves on the discharge of relief valves 81-11 and -31?

Response:

When the system is shutdown these valves open to break vacuum and allow these pipes to drain to the torus. These valves perform no safety-related function and need not be included in the IST program.

H. Emergency Cooling System

1. Provide a more detailed technical justification for not exercising valves 39-05 and -06 when testing valves 39-07, -08, -09, and -10 quarterly during power operations (refer to Cold Shutdown Test Justification CS-2).

Response:

The licensee will provide additional technical information in their IST program resubmittal to demonstrate the impracticality of exercising these valves quarterly during power operations. Opening these valves during power operation could cause a cold water reactivity transient and result in a plant shutdown.

2. Do valves 60-17 and -18 have required fail-safe positions? If so, in addition to testing their fail-safe function, these valves must be exercised and have their full-stroke times measured in accordance with the Code.

Response:

OPEN ITEM for licensee to further review these valves' safety function to determine if they should be stroke timed in accordance with the Code requirements. The reviewers feel that if these valves have required fail-safe positions they must be stroke timed in accordance with the Code requirements.

3. NUREG-0800, Acceptance Criterion #9, states that the reactor coolant system high point vent valves should be tested to the requirements of subsection IWV of Section XI of the ASME Code for Category B valves. The Code requires quarterly valve testing unless it is shown that quarterly testing is impractical, then the testing can be performed during cold shutdowns. Provide the justification that demonstrates that it is impractical to test valves 05-01, -02, -03, and -04 quarterly during power operations (refer to Cold Shutdown Test Justification CS-3).

Response:

OPEN ITEM for NRC to further evaluate the testing frequency for these valves. Refer to letter, Dominic B. Vassallo to Mr. G. K. Rhode, Aug. 4, 1983, subject: "Safety Evaluation For RCBS High Point Vents".

4. Review the safety-related function of the check valves downstream of the emergency cooling system steam line vent valves (Drawing No. C-18017-C) to determine if they should be included in the IST program.

Response:

These valves have been deleted from the system.

5. Provide the P&ID that shows emergency cooling system valves 05-05, -07, -11, and -12 for our review.

Response:

The P&ID was provided. These valves are high point vents and the same concern applies as in H-3.

6. Are valves 39-03, -04, -05, and -06 Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

Response:

These valves are not currently required to be Appendix J, Type C, leak rate tested. The reverse flow test requirement will be deleted from the IST program. These valves perform no safety-related function in the closed position.

I. Reactor Shutdown Cooling System

1. Are valves 38-01, -02, -12, and -13 leak rate tested to verify their ability to perform a containment isolation and/or a pressure boundary isolation function?

Response:

No. These valves are not identified as containment isolation valves. These valves perform no safety-related function in the closed position and will not have reverse flow closure verified.

2. Do the following valves have required fail-safe positions? If so, they should be exercised, fail-safe tested, and have their full-stroke times measured in accordance with the Code.

NU-03A	NU-03C	38-10
NU-03B	38-09	38-11

Response:

Credit is not taken in accident analysis for the reactor shutdown cooling system. These valves do not perform a safety-related function and need not be included in the IST program.

J. Containment Spray System

1. Are valves 80-01, -02, -21, and -22 ever required to change position to accomplish a specific function?

   Response:

   No. These valves are Category B-passive with no testing required and they need not be included in the IST program.

2. Is design accident flow verified through valves 80-05, -06, -25, and -26 during quarterly valve testing? If not, how are these valves full-stroke exercised (refer to the comment in Item A.6)?

   Response:

   Quarterly test flow through these valves is 2900 gpm and accident analyses requires 3000 gpm. A relief request will be provided to discuss this near full-stroke exercise of these valves.

3. How is the full-stroke capability of the valves addressed in Relief Request RR-1 verified during the air test performed on these valves during refueling outages? Provide the justification for not performing this testing quarterly during power operations and during cold shutdowns.

   Response:

   OPEN ITEM for licensee to further evaluate some method to determine full-stroke capability of these valves.

4. Are valves 80-15, -16, -35, and -36 Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

Response:

No. These valves are in the IST program, however, they are not Appendix J, Type C, leak rate tested.

5. Are valves 80-43 and CS-C-4 Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

Response:

No. These valves are not Appendix J, Type C, leak rate tested and are not included in the IST program.

6. Note 1 indicates that 93-10 and -11 are series check valves, however, the P&ID does not show them as such; what is the true configuration of these valves? If a series check valve performs a safety function in the closed position, it must be individually verified in that position.

Response:

The P&ID was provided. Valves 93-10 and 11 do not perform a safety-related function in the closed position and need not be tested to the closed position. No change is necessary to IST program.

ADDITIONAL COMMENT:

Valves 93-57, 59, 61, and 63 do not perform a safety-related function in the closed direction and will be included in the IST program resubmittal as Category C.

7. Review the safety-related function of valves 93-49 and 93-50 (Drawing No. C-18012-C) to determine if they should be included in the IST program.

Response:

Valves 93-49 and 50 have been removed from the system and replaced by valves 93-60, 62, 72, and 73 which are included in the IST program and tested to verify their containment isolation function. Valves 93-72 and 73 are Category A-passive and valves 93-60 and 62 are Category A/C passive. Credit is not taken in any accident analyses for a raw water flow path into the containment spray system.

8. The NRC staff has concluded that a valve sample disassembly and inspection utilizing a manual full-stroke exercise of the valve disk is an acceptable method to verify a check valve's full-stroke capability. This program involves grouping similar valves together and testing one valve in each group during each refueling outage. The sampling technique requires that each valve in the group be of the same design (manufacturer, size, model number and materials of construction) and have the same service conditions. Additionally, at each disassembly it must be verified that the disassembled valve is capable of full-stroking and that its internals are structurally sound (no loose or corroded parts).

A different valve of each group is required to be disassembled, inspected and manually full-stroke exercised at each refueling outage, until the entire group has been tested. If it is found that the disassembled valve's full-stroke capability is in question, the remainder of the valves in that group must also be disassembled, inspected and manually full-stroke exercised during the same outage.

Does the Nine Mile Point Nuclear Station, Unit 1, disassembly and inspection program for valves 93-60 and -62 conform to this staff position (refer to Relief Request RR-2)?

Response:

Disassembly and inspection is not required for valves 93-60 and 62 because they do not perform a safety-related function in the open position. These valves are Category A-passive and will be leak rate tested on a refueling outage frequency as described in relief request RR-3.

9. Provide the P&ID that shows the following containment spray system valves for our review.

80-114	93-57	93-63
80-115	93-60	93-72
80-118	93-62	93-73

Response:

The P&ID was provided. No further questions.

K. Reactor Cleanup System

1. Provide the P&ID that shows reactor cleanup system valves 63-04, 63-05, 63.2-01, and 63.2-02 for our review.

Response:

P&IDs were provided. Question 1A was generated.

1A. Provide a more detailed technical justification for not verifying reverse flow closure of valves 63.2-01 and 02.

Response:

More discussion will be provided in the relief request for these valves.

L. Inert Gas Purge and Fill System

1. Provide the P&ID(s) that shows valves 201.1-09, -11, -14, and -16 for our review.

Response:

P&IDs were provided. No further questions.

2. Is valve 201-21 ever required to change position to accomplish a specific function? If so, review the safety-related function of valve 201-22 to determine if it should be included in the IST program.

Response:

These valves perform no safety-related function and neither valve 201-21 nor 201-22 will be included in the IST program resubmittal.

3. Are valves 70-94 and -95 Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

Response:

No. These valves do not receive an Appendix J, Type C, leak rate test and will be listed as Category B in the NMP-1 IST program resubmittal.

M. Hydrogen-Oxygen Monitor System

1. Provide the P&IDs (Drawing Nos. C-26939-C and C-26949-C) that show various hydrogen-oxygen monitor system valves for our review.

   Response:

   The P&IDs were provided. No further questions.

2. Do the solenoid operated valves in the hydrogen-oxygen monitor system have fail-safe actuators? If so, is the fail-safe operation of these actuators tested in accordance with the requirements of IWV-3415? How is the remote position indication of these valves verified?

   Response:

   These valves have fail-safe actuators and will be fail-safe tested to their safety function position. The licensee will review the system configuration to develop a method for verification of remote valve position indication.

3. Are valves 201.7-08 and -09 Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

   Response:

   Yes. These valves will be Categorized A in the IST program resubmittal.

ADDITIONAL COMMENT:

The licensee has stated that any changes in NMP-1 Appendix J program will be reflected by IST program changes.

4. Are the valves in the lines from the drywell and the torus to the ILRT system (Drawing No. C-18014-C Sh.2) Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

Response:

No. These valves are not leak rate tested to the Appendix J requirements.

N. Traversing In-Core Probe System

1. Provide a drawing that shows the TIP system valves for our review.

Response:

The P&ID was provided. No further questions.

2. Provide a more detailed technical justification for not exercising ball valves TIP-1, -2, -3, and -4 quarterly during power operations or during cold shutdowns (refer to Relief Request RR-2).

Response:

These valves are included in Revision 0 to be exercised quarterly and no relief is requested.

3. Are the explosive squibs for the TIP shear valves tested in accordance with the requirements of IWV-3610? Are these valves Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

Response:

These valves are tested in accordance with IWV-3610 and are not leak rate tested in the licensee's Appendix J program.

O. Nitrogen Supply System

1. Provide the P&IDs (Drawing Nos. C-18014-C Sh. 3 and Sh. 4) that show the nitrogen supply system valves for our review.

Response:

The P&IDs were provided. No further questions.

2. Do valves 201.8-02 and 201.9-49 have required fail-safe positions? If so, in addition to testing their fail-safe function, these valves must be exercised and have their full-stroke times measured in accordance with the Code.

Response:

These valves do not have required fail-safe positions. No changes are necessary to the IST program.

P. Reactor Building HVAC System

1. Provide the P&ID (Drawing No. C-18013-C) that shows the reactor building HVAC system valves for our review.

Response:

The P&ID was provided. No further questions.

Q. Control Room HVAC System

1. Provide the P&ID (Drawing No. C-18047-C) that shows the control room HVAC system pumps and valves for our review.

Response:

OPEN ITEM for NRC to determine if the valves in the control room HVAC system need to be included in the IST program. The P&ID was provided.

R. Reactor Liquid Poison System

1. Has the plant modification identified in Relief Request RR-2 which will allow testing of valves 42-19 and -20 been performed? If not, what alternate testing can be performed to verify the reverse flow closure of these valves?

Response:

The plant modifications have not been performed. These valves are not required to be reverse flow closure tested. (These valves are discharge check valves for positive displacement pumps).

2. Provide a more detailed technical justification for not exercising valves 42.1-02 and -03 during cold shutdowns (refer to Relief Request RR-1).

Response:

The relief requests (RR-1 and RR-2) will be revised to demonstrate that this testing is not practical on a cold shutdown frequency.

3. Are valves 42.1-02 and -03 Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

Response:

Yes. These valves are leak rate tested to verify their containment isolation function and will be Categorized A/C in the IST program resubmittal.

S. <u>Spent Fuel Storage Pool Filtering & Cooling System</u>

1. Provide the P&ID (Drawing No. C-18008-C) that shows the spent fuel pool filtering and cooling system valves for our review.

Response:

The P&ID was provided. Question 1A was genreated.

1A. Should valves 54-71 and 72 be included in the IST program and tested to the closed position?

Response:

Credit is not taken for reverse flow closure of valves 54-71 and 72. Relief request RR-1 is not required and will be deleted. (Credit is taken for operability of the associated vacuum breakers).

2. Are valves 54-16, -17, and -18 ever required to change position to accomplish a specific function?

Response:

Valves 54-16, 17, and 18 need not change position to accomplish a specific function. These valves have been deleted from Revision 0 of the IST program.

T. Sample System

1. Provide the P&ID (Drawing No. C-18041-C Sh. 7) that shows valve 122-03 for our review.

Response:

The P&ID was provided. No further questions.

2. Are valves 110-127 and -128 (Drawing No. C-18041-C Sh. 2) Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

Response:

Yes. These valves are included in the IST program Revision 0 in the reactor recirculation system as Category A valves and tested to the Code requirements.

U. Reactor Building Closed Loop Cooling Water System

1. Provide the P&IDs (Drawing Nos. C-18022-C Shs. 2, 3, and 4, and Drawing No. C-18034-C Sh. 1) that show the reactor building closed loop cooling water valves for our review.

Response:

The P&IDs were provided. No further questions.

2. Do valves 70-212 and -222 have required fail-safe positions? If so, in addition to testing their fail-safe function, these valves must be exercised and have their full-stroke times measured in accordance with the Code.

Response:

Valves 70-212 and 222 do not have required fail-safe positions and have been deleted from the IST program.

3. What is the safety-related function of valve 70-257? How is a full-stroke exercise of this valve verified?

Response:

Valve 70-257 has been deleted from the IST program and replaced in function by MU-7 (P&ID 18022-C, L-5). Note 1 will be revised to indicate the method used to demonstrate valve operability.

4. Are valves 70-92, -93, -94, and -95 Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

Response:

These valves do not perform a reverse flow closure function. Relief requests RR-2 and RR-3, Revision 0, will be deleted. These valves are not Appendix J, Type C, leak rate tested in the licensee's IST program.

V. Condensate Transfer System

1. Provide the P&IDs (Drawing Nos. C-18009-C Sh. 2, C-18035-C, C-18043-C Sh. 2, C-18045-C Sh. 5, and C-18048-C) which show the condensate transfer system valves for our review.

   Response:

   The P&IDs were provided. Question 1A was generated.

1A. What is the safety-related function of the condensate transfer system?

   Response:

   To provide makeup to the emergency cooling system and the fuel pool cooling system. The valves associated with these systems remain in the IST program. The valves deleted are in auxiliary systems and need not be included in the IST program.

2. Does valve 57.1-72 have a required fail-safe position? If so, in addition to testing its fail-safe function, this valve must be exercised and have its full-stroke times measured in accordance with the Code.

   Response:

   Valve 57.1-72 does not have a required fail safe position and need not be included in the IST program.

W. Torus Vacuum Relief System

1. Do valves 68-01, -02, -03, and -04 perform a safety function in the closed position? If so, how are they verified in the closed position during quarterly valve testing?

   Response:

   Yes. These valves are equipped with remote position indication for verification of position. The IST program will be revised to indicate that these valves perform a safety function in the closed direction.

2. Are cleanup system valves 63.1-01 and -02 Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

   Response:

   Valves 63.1-01 and 02 are not Appendix J, Type C, leak rate tested in the licensee's Appendix J program. The valve tables will be revised to delete the leak rate testing notation.

X. Emergency Service Water System

1. Provide the P&ID (Drawing No. C-18027-C Sh. 2) that shows the emergency service water system valves for our review.

   Response:

   The P&ID was provided. Question 1A was generated.

1A. Are valves SW-121 and 122 Category A?

Response:

Yes. The IST program will be revised to indicate that these valves are Category A.

1B. ADDITIONAL COMMENT.

Relief request RR-1 for Valves 72-11 and 12 will be revised to delete the request from reverse flow closure verification and to provide more details for not verifying forward flow capability quarterly using the installed test lever.

1C. ADDITIONAL COMMENT.

CS-1 will be revised and presented as a relief request.

Y. Emergency Diesel Generator Starting Air & Cooling Water System

1. Review the safety-related function of the emergency diesel generator air start relay valves and pinion drive solenoid valves (DGA-SOV-1 and -2) to determine if they should be included in the IST program.

Response:

OPEN ITEM for NRC and licensee (See A-11).

Z. Waste Disposal System

1. Provide the P&IDs (Drawing Nos. C-18045-C Sh. 7 and Sh. 9) that show the waste disposal system valves for our review.

Response:

The P&IDs were provided. No further questions.

2. Is the fail-safe actuator of valve 83.1-10 tested in accordance with the requirements of Section XI, IWV-3415?

Response:

Yes. Revision 0 identifies this test.

AA. Instrument Air System

1. Provide the P&ID (Drawing No. C-18011-C Sh. 2) that shows the instrument air system valves for our review.

Response:

The P&ID was provided. No further questions.

NOTE:

No safety-related air operated valves utilize accumulators.

BB. Emergency Diesel Generator Fuel Oil Handling System

1. Provide the P&ID (Drawing No. C-18040-C Sh. 1) that shows the emergency diesel generator fuel oil handling system valves for our review.

Response:

OPEN ITEM for NRC and licensee (See A-11).

CC. Breathing Air To Drywell System

1. Provide the P&ID (Drawing No. C-18578-C) that shows the breathing air to drywell system valves for our review.

   Response:

   The P&IDs were provided. No further questions.

2. Are valves 114-BA1 and -BA2 Appendix J, Type C, leak rate tested to verify their ability to perform a containment isolation function?

   Response:

   Valves 114-BA1 and BA2 have been renumbered 114-BA102 and 103 and they will be changed to Category A.

DD. Chilled Water System

1. Is the chilled water system utilized to meet the post accident control room habitability requirements? If so, all active system pumps and valves used for this function should be included in the IST program and be tested to the Code requirements unless specific relief is requested and granted.

   Response:

   OPEN ITEM for NRC (See Q-1).

2. PUMP TESTING PROGRAM

1. A general relief from the allowable ranges of a test quantity, as listed in Table IWP-3100-2, cannot be granted as requested in General Relief Request PG-1. If specific cases are identified where the Code specified allowable ranges cannot be met for individual pumps or groups of pumps, then the licensee should submit a specific request for relief providing sufficient technical data for an evaluation by the NRC staff.

   Response:

   Discussed the need for specific rather than general requests for relief from Code requirements.

2. What is the basis for selecting the lower driver bearing as the alternate location for measuring the pump vibration for the emergency service water pumps (refer to Pump Relief Request PR-11)?

   Response:

   (This References PR-6 in Revision 0). The licensee will further investigate the measurement point which provides the most representative vibration measurement for the determination of pump degradation for the pumps listed in PR-6.

3. Lack of installed instrumentation is not an acceptable justification for not measuring the pump flowrate for the emergency diesel generator cooling water pumps during pump quarterly testing (refer to Pump Relief Request PR-1).

Response:

The licensee will provide additional information in relief request PR-1 to demonstrate the adequacy of their alternative testing relative to the Code requirements.

4. Provide a more detailed technical justification for not making independent pump differential pressure measurements for the core spray and the core spray topping pumps (refer to Pump Relief Request PR-2).

Response:

The licensee will provide additional information in the technical justification Section of PR-2.

5. What alternate testing has been considered to provide information to determine the hydraulic condition of the condensate transfer pumps and to detect pump hydraulic degradation (refer to Pump Relief Request PR-3)? Provide the P&ID that shows these pumps.

Response:

The P&ID was provided. The licensee will investigate some method for determination of degradation of these pumps. Relief request PR-3 will be revised with additional information concerning testing methods that have been unsuccessful in gathering meaningful test data.

6. Lack of installed instrumentation is not an acceptable justification for not measuring the pump inlet and differential pressures for the diesel fuel oil handling pumps during pump quarterly testing (refer to Pump Relief Request PR-4).

Response:

OPEN ITEM for NRC and licensee (See A-11).

7. Are the flowrate measurements for the diesel fuel oil handling pumps sufficiently accurate to allow the detection of pump hydraulic degradation? Since the Code allowable ranges of Table IWP-3100-2 cannot be met (refer to Pump Relief Request PR-5), what are the allowable ranges of pump flowrates that are being used for these pumps?

Response:

OPEN ITEM for NRC and licensee (See A-11).

8. Lack of adequate instrumentation is not an acceptable justification for not measuring the pump inlet and differential pressures, and flowrates for the condensate, the feedwater booster, and the feedwater pumps during pump quarterly testing (refer to Pump Relief Request PR-7). What alternate testing has been considered to provide information to determine the hydraulic condition of these pumps and to detect pump hydraulic degradation?

Response:

These pumps are not safety-related and have been deleted from the IST program.

9. Why is one of the safety-related feedwater pumps not in the same flow train as the safety-related feedwater booster pumps?

Response:

These pumps are not safety-related and have been deleted from the IST program.

10. Provide a more detailed technical justification why the shutdown cooling pumps cannot be tested quarterly in the minimum flow recirculation flow path without resulting in extensive pump damage.

Response:

These pumps are not safety-related and have been deleted from the IST program.

11. Provide a more detailed technical justification for not measuring pump inlet pressure for the reactor liquid poison pumps. What variation would be seen in the pump inlet pressure from the start to the finish of the pump test? Provide more detailed information that justifies the relaxation of the allowable ranges for the pump flowrate and discharge pressure for these pumps.

Response:

The licensee will provide more information in relief request PR-4 for not measuring pump suction pressure and to demonstrate the impracticality of complying with the Code allowable ranges.

12. Lack of installed instrumentation is not an acceptable justification for not measuring the pump flowrate for the emergency service water pumps during pump quarterly testing (refer to Pump Relief Request PR-10).

Response:

The licensee will provide more information in relief request PR-5 to demonstrate the adequacy of their proposed alternate testing.

13. Lack of installed instrumentation is not an acceptable justification for not measuring the pump flowrate for the reactor building closed cooling water pumps during pump quarterly testing (refer to Pump Relief Request PR-12).

Response:

The licensee will investigate some method for determination of degradation of these pumps. (These pumps are required by system constraints to be run in pairs).

14. Calculation of pump inlet pressure may be an acceptable alternate test method, however, detailed requests for relief should be submitted for the pumps that utilize pump test table Notes 2 and 9.

Response:

The licensee will provide more information in the form of a relief request concerning the method used in measuring pump suction pressure for the pumps referenced in Note number 2. Note number 9 has been deleted.