

Docket No.: STN 50-454

SEP 12 1984

Mr. Dennis L. Farrar
Director of Licensing
Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Dear Mr. Farrar:

Subject: Pump and Valve Inservice Testing Program

We have reviewed your inservice testing program for pumps and valves at Byron Station, Unit 1, and will grant the relief you requested for two years from issuance of the Operating License or until our detailed review has been completed, whichever comes first. We have begun our detailed review and have generated the enclosed list to serve as an agenda for a working meeting at Byron with your staff. We would like to have this meeting in the near future at a mutually acceptable time.

If any further clarification is needed, please contact the Licensing Project Manager, L. N. Olshan at (301) 492-7070.

Sincerely,

~~ORIGINAL SIGNED BY:~~

B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing

Enclosure: As stated

cc: See next page

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SEP 12 1984

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ENCLOSURE

BYRON UNIT 1

PUMP AND VALVE IST PROGRAM REVIEW

A. General Comments and Questions

1. The current NRC position is the Appendix J leak-rate testing requirements for containment isolation valves is a suitable alternative to the Section XI leak-rate testing requirements except for the requirements of subparagraphs IWV-3426 and IWV-3427 which must be met or specific relief requested.
2. Is the last sentence of the cold shutdown discussion in Section 2.2 (P) of the IST program requesting specific relief from any Section XI requirements?
3. Are all containment isolation valves that are leak-rate tested per 10CFR50 Appendix J included in the IST program and categorized A or A/C?
4. The current NRC position is that the emergency diesel generator air start system performs a function important to safety and the applicable valves should be included in the IST program. Provide the appropriate P&IDs for our review during the working meeting.
5. Provide the applicable P&IDs for our review of the Auxiliary Feedwater and Essential Service Water Diesel Driven Pumps Fuel Oil and air start systems as applicable.

B. Auxiliary Feedwater System

1. How are check valves 1AF001A&B and 1AF003A&B full stroke exercised quarterly during power operation?
2. How are check valves 1AF014A-H full stroke exercised quarterly during power operation?
3. Review the safety function of check valves 1AF029A&B (locations D-5 and C-5) to determine if they should be included in the IST program.

4. Review the safety function of valves 1AF005 A thru H (location A-7 thru F-7) to determine if they should be included in the IST program.

C. Component Cooling System

1. Review the safety functions of valve 1CC9413B to determine if it should be categorized B.
2. Are valves 1CC9437A&B leak-rate tested in accordance with the requirements of Section XI or Appendix J?
3. How are check valves 1CC9486, 1CC9518 and 1CC9534 verified shut during the exercise test performed during cold shutdowns?

D. Containment Spray System

1. How are check valves 1CS008A&B full stroke exercised quarterly during normal operation? Should these valves be categorized A/C?
2. Provide more specific technical information why check valves 1CS020A&B cannot be full stroke exercised (utilizing eductor test connection) quarterly during normal operation.
3. How are check valves 1CS003A&B full stroke exercised quarterly during normal operation?

E. Chemical and Volume Control System

1. How are check valves 1CV8368A,B,C&D verified to shut (the safety position) during cold shutdown testing?
2. How is check valve 1CV8113 verified to shut (the safety position) during cold shutdown testing?
3. What is the expected frequency of cold shutdowns with the reactor vessel head removed (refer to relief request VR-6,7&13)?
4. Review the safety functions of valves 1CV8105 and 1CV8106 to determine if they should be categorized A rather than B.

5. Review the safety function of check valve 1CV8348 (location F-4 on P&ID M-64-3) to determine if it should be included in the IST program and categorized A/C.
6. Does the VCT provide sufficient back pressure to preclude flow from the RWST to the charging pumps suction during exercising of valves 1CV112D&E?
7. Should the valve table for valve 1CV8546 include a "xt" test method and "op" test mode in addition to existing entries?
8. Could failure during quarterly exercising of valve 1CV8804A result in injection of RWST into the RCS or loss of charging pump suction?
9. Provide a more detailed technical justification for not full or partial stroke exercising check valve 1CV8442 during power operation.
10. Would failure to reopen during quarterly exercising of valves 1CV112B or C result in plant shutdown?
11. Review the safety functions of valves 1CV8379A&B to determine if they should be categorized A/C and leak rate tested.
12. Review the safety functions of the following valves to determine if they should be included in the IST program and categorized as indicated.

Category B

1CV121	(location C-5 P&ID M-64-3)
1CV182	(location E-5 P&ID M-64-3)
1CV8324A	(location D-6 P&ID M-64-5)
1CV8324B	(location C-6 P&ID M-64-5)
1CV8146	(location C-8 P&ID M-64-5)
1CV8145	(location C-8 P&ID M-64-5)
1CV8147	(location E-8 P&ID M-64-5)

Category C

1CV8381	(location D-5 P&ID M-64-5)
1CV8320A	(location D-8 P&ID M-64-5)
1CV8320B	(location C-8 P&ID M-64-5)
1CV8393A	(location E-8 P&ID M-64-5)
1CV8393B	(location C-8 P&ID M-64-5)
1CV8377	(location C-8 P&ID M-64-5)

Category A/C

1CV8378A	(location B-8 P&ID M-64-5)
1CV8378B	(location B-8 P&ID M-64-5)

13. Review the safety functions of valves 1CVLCV459 and 1CVLCV460 (locations E-7 and F-8) to determine if they should be included in the IST program and categorized A.

F. Feedwater System

1. Provide a more detailed explanation why the valves identified in relief request VR-10 cannot be full stroke exercised during each cold shutdown.
2. Why do valves 1FW035A&D have different maximum stroke times than valves 1FW035B&C?
3. Provide the P&ID that shows valves 1FW037A thru D and 1FW038A thru D.
4. Provide a more specific technical justification for not full stroke exercising valves 1FW040A thru D and 1FW043A thru D quarterly during power operation.
5. Would failure of any of valves 1FW510A, 1FW520A, 1FW530A and 1FW540A in the open position during quarterly exercising result in loss of steam generator level control?
6. Review the safety functions of the following valves to determine if they should be included in the IST program and categorized as indicated.

Category B

1FW034A	(location E-1 P&ID M-36-1)
1FW034B	(location B-1 P&ID M-36-1)
1FW034C	(location F-1 P&ID M-36-1)
1FW034D	(location C-1 P&ID M-36-1)
1FW510	(location D-2 P&ID M-36-1)
1FW520	(location B-2 P&ID M-36-1)
1FW530	(location E-2 P&ID M-36-1)
1FW540	(location C-2 P&ID M-36-1)

Category C

1FW036A	(location E-4 P&ID M-36-1)
1FW036B	(location B-4 P&ID M-36-1)
1FW036C	(location F-4 P&ID M-36-1)
1FW036D	(location C-4 P&ID M-36-1)
1FW078A	(location D-5 P&ID M-36-1)
1FW078B	(location B-5 P&ID M-36-1)
1FW078C	(location F-5 P&ID M-36-1)
1FW078D	(location C-5 P&ID M-36-1)
1FW079A	(location D-5 P&ID M-36-1)
1FW079B	(location A-5 P&ID M-36-1)
1FW079C	(location F-5 P&ID M-36-1)
1FW079D	(location C-5 P&ID M-36-1)

G. Instrument Air System

1. Provide some examples of "equipment required for cold shutdown operations" (see relief request VR-11) that would preclude exercising of valves IIA065 and IIA066 during cold shutdowns.
2. P&ID M-55-2 indicates valve IIA065 is outside containment therefore Note 3 should not apply to this valve as indicated.
3. Provide a brief description of the criteria utilized to establish the maximum stroke time of 35 seconds for valves IIA065 and IIA066.

4. What is the exercising frequency of check valve 1IA091? Should this valve be categorized A/C passive?

H. Process Radiation Monitoring System

1. How is check valve 1PR032 verified to shut (the safety position) quarterly during power operation?

I. Process Sampling System

1. Are the containment isolation valves listed in the IST program for this system periodically opened during power operation?
2. Provide a copy of P&ID M-68-7 for our review during the working meeting.

J. Reactor Coolant System

1. Are category 1 valves 1RC014A thru D leak-rate tested during refueling outages? Are these valves stroke timed during the quarterly exercise test.

K. Reactor Building and Containment Equipment Drains

1. Do valves 1RE9159B and 1RE1003 remain closed at all times during power operation?

L. Auxiliary Building Floor Drains System

1. Provide a brief description of the criteria utilized to establish the maximum stroke time of 60 seconds for containment isolation valves 1RF026 and 1RF027.

M. Residual Heat Removal System

1. Are valves 1RH8701A&B and 1RH8702A&B interlocked with RCS pressure to prevent valve opening during power operation?
2. Would failure of either of valves 1RH8716A or B in the closed position during quarterly exercising reduce the number of low head safety injection flowpaths to less than the minimum required by the FSAR?

3. Provide a more detailed technical explanation why valves 1RH8730A&B cannot be full stroke exercised during each cold shutdown (with reactor vessel head installed).
4. Review the safety function of the following valves to determine if they should be included in the IST program and categorized as indicated.

Category B

1RH610	(location F-5 P&ID M-62)
1RH611	(location A-5 P&ID M-62)

N. Reactor Coolant Pressurizer System

1. In accordance with the current NRC position, if valves 1RY455A and 1RY456 are utilized for low-temperature overpressure protection then operability of these valves must be demonstrated and the block valves (1RY8000A&B) must be included in the IST program.
2. Is valve 1RY8025 exercised and fail-safe tested quarterly or is this valve passive?
3. How are check valves 1RY8046 and 1RY8047 verified to close (the safety position) quarterly during power operation?

O. Service Air System

1. How is valve 1SA033 fail safe tested quarterly during power operation?

P. Steam Generator Blowdown System

1. Are valves 1SD005A thru D periodically opened to facilitate steam generator sampling during power operation?

Q. Safety Injection System

1. Would failure of 1SI8806 or 1SI8813 in the closed position during quarterly exercising render both safety injection pumps unavailable for accident mitigation?

2. Does opening either of valves 1SI8801A or B during quarterly exercising result in charging flow into the RCS via these valves?
3. Provide a more detailed technical justification for not full or partial stroke exercising the following check valves during power operation or cold shutdowns (with reactor vessel head installed).

VR-3

1SI3906A-D

1SI8815

1SI8905A-D

1SI8949A-D

1SI8819A-D

VR-4

1SI8841A&B

1SI8958A&B

1SI8818A-D

4. Would failure in the open position of valve 1SI8840 during quarterly exercising divert low head safety injection from the FSAR identified injection flowpaths? Review the safety functions of this valve to determine if it should be categorized A.
5. Would failure in the closed position of valve 1SI8835 during quarterly exercising render the FSAR identified injection flowpath unavailable for accident mitigation?
6. Review the safety functions of valves 1SI8809A&B and 1SI8811A&B to determine if they should be categorized A.
7. Would failure in the closed position of any of valves 1SI8808A thru D during quarterly exercising reduce the number of accumulator injection flowpaths to less than the minimum required by the FSAR?
8. Provide a more detailed technical justification for not full or partial stroke exercising check valves 1SI8948A thru D during cold shutdowns (with reactor vessel head installed).
9. What alternate tests have been considered for partial or full stroke exercising check valves 1SI8956A thru D during cold shutdowns (with reactor vessel head installed) and refueling outages?

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

Category A

1SI8881	(location E-4 P&ID M-61-3)
1SI8823	(location C-5 P&ID M-61-3)
1SI8824	(location D-5 P&ID M-61-3)
1SI8825	(location C-6 P&ID M-61-3)
1SI8890A	(location E-5 P&ID M-61-4)
1SI8890B	(location D-5 P&ID M-61-4)
1SI2018A	(location B-4 P&ID M-61-4)
1SI2018B	(location A-4 P&ID M-61-4)
1SI2015A	(location C-5 P&ID M-61-4)
1SI2015B	(location B-5 P&ID M-61-4)

R. Essential Service Water System

1. Provide the specific technical justification for not stroke timing valve 1SX101A during quarterly exercising.
2. What is the safety function of valve 1SX173?
3. Review the safety function of valve 1SX168 (location B-3 on P&ID M-42-3) to determine if it should be included in the IST program and categorized B.
4. Do valves 1SX016A&B and 1SX027A&B perform a containment isolation function?

S. Containment Purge System

1. Are valves 1VQ001A&B and 1VQ002A&B required by plant Technical Specifications to be closed during power operation?

T. Integrated Leak-Rate Test System

1. How are containment isolation valves 1VQ016, 1VQ017, 1VQ018 and 1VQ019 leak-rate tested?

U. Containment Chilled Water System

1. Are the valves listed in the IST program for this system ever open during power operation? Why are stroke times listed for 4 of the motor operated valves?

V. Control Room Chilled Water System

1. Review the safety function of valves OW0002A&B (locations D-6 and B-6 P&ID M-118-1) to determine if they should be included in the IST program.

W. Pump Testing Program

1. What was the criteria utilized for establishing the pump vibration ranges at $.314 \text{ in/sec.} \leq V < .628 \text{ in/sec.}$ for the "Alert Range" and $V \geq .628 \text{ in/sec.}$ for the "Required Action Range"?
2. Does the equipment utilized for monitoring pump vibration on the diesel driven pumps adequately filter the vibration induced by the running diesel engine?
3. How is pump flowrate measured for the component cooling water pumps.
4. Provide the P&ID that shows the diesel driven essential service water makeup pumps.