November 17, 1988

Docket No.: 50-237 and 249

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Mr. Henry E. Bliss
Nuclear Licensing Manager
Commonwealth Edison Company
Post Office Box 767
Chicago, Illinois 60690

Dear Mr. Bliss:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION PERTAINING TO THE DRESDEN STATION INSERVICE TESTING PROGRAM (TAC NOS. 67156 AND 67157)

The staff and its contractor EG&G Idaho, Inc. have reviewed your pump and valve Inservice Testing (IST) Program, Revision 2, dated May 6, 1988 for Dresden 2 and 3. Based on this review, a list of questions and comments have been generated that are provided in the enclosure. These questions have been written using the Dresden Unit 2 designator, however, they apply to both units unless otherwise indicated.

It is proposed that a working meeting be held between the staff, EG&G Idaho, Inc. and CECo and that these questions and comments serve as the agenda for this meeting.

Formal written responses to our questions need not be provided prior to this meeting. It is requested that this meeting be held as early as possible so the staff can complete its review of your IST program. If you have any questions regarding this enclosure or when you have established a date for the proposed meeting, please call me at (301) 492-3019.

The reporting and recordkeeping requirements contained in this letter affect fewer than ten respondents, therefore OMB clearance is not required under P.L. 96-511.

Sincerely,

/S/

Byron Siegel, Project Manager
Project Directorate III-2
Division of Reactor Projects - III, IV, V and Special Projects

cc w/enclosure:
See next page

PDIII-2:PM	PDIII-2:LA	PDIII-2:PD
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
November 17, 1988

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cc w/enclosure:
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Units 2 and 3

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DRESDEN STATION, UNITS 2 AND 3
PUMP AND VALVE INSERVICE TESTING PROGRAM
QUESTIONS AND COMMENTS

1. VALVE TESTING PROGRAM

A. General Questions and Comments

1. The NRC staff defines, for stroke timing purposes, the stroke time of power operated valves as the time interval from the initiation of the actuating signal to the end of the actuating cycle. Does Dresden Station comply with this position?

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(a) (refer to relief request no. VR-A6).

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?

4. Where it has been demonstrated impractical to exercise a valve using system flow, the NRC staff may grant relief allowing testing valves by sample disassembly and inspection. The following NRC staff positions must be met to utilize this sampling technique:

   The sampling technique requires that each valve in the group be the same design (manufacturer, size, model number, and materials of construction) and have the same service conditions (same process fluid, temperature, differential pressure, flow, and testing).

Additionally, at each disassembly the licensee must verify that the disassembled valve is capable of full-stroking and that the internals of the valve are structurally sound (no loose or corroded parts).

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

The Dresden IST program, Additional Information/Methodology, DAIM-V22, Paragraph 3.2.4, differs from this staff position. Further, prior to implementing a sampling program, specific relief must be requested and approval granted by NRC. This request should specify the affected valves and their proposed grouping.

5. 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 Dresden Station, Units 2 and 3, that serve both a pressure boundary isolation function and a containment isolation function. What leak rate testing is performed on these valves (refer to DAIM-V2)?

6. What are the bases used to assign the limiting values of full-stroke times for the power operated valves in the Dresden Station, Units 2 and 3, IST program? The following NRC staff positions should be observed when determining limiting values of full-stroke times:

   The limiting value of full-stroke time should be based on the reference or average stroke time of a valve when it is known to be in good condition and operating properly.

The limits should be a reasonable deviation from this reference stroke time based on the valve size, valve type, and actuator type. The deviation should not be so restrictive that it results in a valve being declared inoperable due to data scatter from factors such as reasonable stroke time measurement variations, expected changes in process variables, and normal maintenance variations. However, the deviation used to establish the limit should be conservative enough that corrective action would be taken for a seriously degraded valve.

When the functional operating limit for a valve identified in the plant Technical Specifications or SAR is consistent with the above criteria, the appropriate Technical Specification or SAR limit should be used as the limiting value of full-stroke time. The limiting value of full-stroke time for a valve should not exceed a Technical Specification or SAR limit specified for that valve.

When the functional operating limit for a valve identified in the plant Technical Specifications or SAR is not consistent with the above criteria, then the limiting value of full-stroke time should be based on the above criteria instead of the plant Technical Specifications or SAR.

7. 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 part-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 Dresden Station, Units 2 and 3, IST program conform to this staff position?

8. 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, external 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.

9. What safety related cooling is provided to the spent fuel pool? Does the spent fuel pool cooling system perform any safety function? If it does, the system pumps and active in-line valves should be included in the IST program and tested to the Section XI requirements. Provide the spent fuel pool cooling system P&IDs for our review. List the components (if any) that will be added to the IST program and the testing that will be performed.

10. The ASME Code specifically addresses testing valves during cold shutdowns, however, the Code does not address testing components during refueling outages. The NRC staff does not consider refueling outages to be cold shutdowns as addressed in either IWV-3412 or 3522. The extension of Code specified testing intervals to refueling outages requires providing specific relief requests to NRC for review and approval (refer to relief request no. VR-P7, Paragraph 4.3.).

11. Safety related valves that cannot be tested during power operations which fail to exhibit the required change in disk position during cold shutdown testing require a successful retest following valve repairs and prior to returning the valve to service and reactor startup (IWV-3417 or 3523). The NRC staff position is that if the failed valve is not repaired prior to startup, the valve must be declared inoperable. If the plant Technical Specification Limiting Conditions for Operations permit startup with the applicable valve inoperable, then plant startup may be allowed. Further, if a power operated valve

requires an increase in the testing frequency to once each month in accordance with IWV-3413(c), corrective action must be taken as specified in IWV-3417 prior to returning to power operation or the plant must be returned to a mode that permits testing the valve on a monthly basis. (See Dresden relief request no. VR-P7, Paragraphs 4.4. and 5.3.5.)

12. Where it is impractical to exercise valves quarterly during power operation, the licensee must submit a justification for exercising these valves during cold shutdown. If there is a determination that these valves cannot be exercised during <u>each</u> cold shutdown, the licensee must submit specific relief requests identifying the affected valves and the technical concerns for review and approval by NRC. (See Dresden relief request no. VR-P7, Paragraph 5.3.3.)

13. The ASME Code, Section XI, Paragraph IWV-2100, defines passive valves as "valves which are not required to change position to accomplish a specific function." The NRC staff position is that valves that are operated routinely during the course of plant operations are not considered passive since they may be out of their safety position at the onset of an accident and could be required to change position to accomplish a specific (safety) function. (see DAIM-V8.)

B. <u>Nuclear Boiler and Reactor Recirculation System</u>

1. IWV-3522 requires that check valves be tested quarterly or during cold shutdowns. DAIM-V15 states that it is a rewrite of a relief request inappropriately submitted, however, it requires relief from the Code requirements to test check valves on a refueling outage frequency. DAIM-V15 should be presented as a request for relief from the Code requirements.

2. What actions will be taken upon exceeding the alert stroke time limit as described in DAIM-V1? If these actions differ from those described in IWV-3417(a), provide the bases for those actions.

3. Provide a detailed technical justification for not full-stroke exercising check valve 2-0205-27 during cold shutdowns. Should this check valve be categorized A/C in the IST program?

4. What is the safety function of valves 2-0220-46 and 47?

C. Main Steam System

1. Provide P&ID M-12, sheet 1, for our review.

2. Describe the quarterly testing performed on the MSIVs. Does this testing verify operability of the associated control valves which must function to close this valve during an accident?

3. Provide a detailed technical justification for not full-stroke exercising the MSIV accumulator check valves, 2-0220-84A through D and 2-0220-85A through D during cold shutdowns (refer to DAIM-V17).

D. Reactor Feedwater System

1. Provide a more detailed technical justification for not full-stroke exercising (closed) check valves 2-0220-62A and B during cold shutdowns.

2. Provide a more detailed technical justification for not full-stroke exercising (closed) check valve 2-0220-59 during cold shutdowns.

E. Control Rod Drive Hydraulic System

1. Are valves 2-0305-115 exercised during cold shutdowns as indicated in DAIM-V4 or during refueling outages as indicated in the valve listing tables? If these valves cannot be exercised during cold shutdowns, a more detailed discussion should be provided.

2. How are valves 2-0305-138 verified closed quarterly? In the IST program valve table check valves 3-0305-138 are indicated to be tested at refueling, however, no relief request is indicated.

3. The IST program valve listing table indicates that valves 2-0305-117 and 118 are affected by relief request No. VR-P9, however, these valves are not referenced in this relief request.

4. Describe the safety function of valves 2-0305-117, 118, 2-0302-19A, 19B, 20A, and 20B.

5. Is credit taken in any Dresden, Units 2 and 3, accident analysis for the operability of the alternate rod insertion/anticipated transient without scram system?

F. Standby Liquid Control System

1. Provide a more detailed technical justification for not full-stroke exercising check valves 2-1101-15 and 16 quarterly (refer to DAIM-V6 section 2.1.)

2. The IST program valve tables indicate that valves 2-1106A and B are tested during refueling outages. Are both of these valves tested at each refueling outage?

G. Isolation Condenser System

1. What is the safety function of check valves 2-1301-11, 2-1301-36, and 2-4107-501? How are these valves verified to full-stroke exercise during quarterly testing?

2. Provide P&IDs M-23, sh. 2, and M-35, sh. 1, for our review. Review the safety function of valve 2-4102 (P&ID M-28, coords. 5C) to determine if it should be included in the IST program and tested to the Code requirements.

H. Core Spray System

1. How are check valves 2-1402-13A and B verified to full-stroke exercise quarterly?

2. Do check valves 2-1402-34A and B perform a safety function in the closed position? If so, how are these valves verified to close quarterly?

3. Are valves 2-1402-4A and B ever required to change position to accomplish a specific safety function? If so, they should be considered active and should be indicated as such in the valve listing table.

4. Do valves 3-1402-4A and B receive Appendix J, Type C, leak rate testing? If so, they should be categorized A in the IST program.

5. What is the safety function of check valves 2-1499-14 and 15? How are these valves verified to full-stroke exercise during quarterly testing?

6. Should an AT (seat leakage test) be indicated in the IST program valve table test column for valves 2-1402-9A and B?

I. Low Pressure Coolant Injection System

1. Is the leak tight integrity of valves 2-1501-22A and B verified after quarterly testing?

2. Is the air operator on valves 2-1501-25A and B capable of full-stroke exercising these valves during power operation?

3. Do valves 2-1501-63A, B, C, and D perform a safety function in the closed position? If so, how are these valves verified to close quarterly?

4. How are check valves 2-1501-65A, B, C, and D verified to full-stroke exercise quarterly?

5. Do check valves 2-1501-67A and B perform a safety function in the closed position? If so, how are these valves verified to close quarterly?

6. How are valves 2-3999-336 and 338 verified to close quarterly?

J. Reactor Building Equipment Drains

1. Why is seat leakage for check valves 2-2001-102A and B (3-2001-101A and B for Unit 3) limited to a specific amount in the closed position of fulfillment of their function?

K. High Pressure Coolant Injection System

1. Is valve 2-2301-10 ever required to change position to accomplish a specific safety function? If so, it should be considered an active valve and should be indicated as such in the valve listing table?

2. Is solenoid operated valve 2-2301-32 fail-safe tested in accordance with the requirements of IWV-3415?

3. Provide a more detailed technical justification for not verifying closure capability of check valves 2-2301-34, 45, 71, and 74 quarterly or during cold shutdowns.

4. Provide a more detailed technical justification for not full-stroke exercising check valve 2-2301-39 quarterly or during cold shutdowns.

5. How is check valve 2-2301-40 verified to full-stroke exercise quarterly?

6. Are valves 2-2301-48 and 49 ever required to change position to accomplish a specific safety function? If so, they should be considered active valves and should be indicated as such in the valve listing table.

7. How are check valves 2-2301-50, 51, 75, and 76 verified to full-stroke exercise quarterly? What is the P&ID location of check valve 2-2301-50A?

8. Provide a more detailed technical justification for not full-stroke exercising check valve 2-2301-7 quarterly. Is the air operator capable of full-stroke exercising this valve? This valve has been identified as Category AC in the IST program, however, this valve has not been indicated to receive seat leakage testing.

9. Is credit taken for the operability of valve 2-2301-7, 8, or 9 to prevent possible overpressurization of the low pressure piping at the suction of the high pressure coolant injection pump?

10. Does check valve 2-2354-500 perform a safety function in the closed position? If so, how is this valve verified to close quarterly?

11. How are check valves 2-2399-76A, 76B, 77A, and 77B verified to full-stroke exercise quarterly?

12. Is fail-safe testing and valve position indication verification performed on valves 2-2301-64 and 65 as required by the Code?

L. Containment Atmosphere Monitor System

1. Provide a detailed technical justification for not full-stroke exercising (closed) check valves 2-2499-28A and B during cold shutdowns.

M. Containment Atmosphere Dilution System

1. How is check valve 2-2599-22 verified to full-stroke exercise quarterly?

2. Provide a detailed technical justification for not full-stroke exercising (closed) check valves 2-2599-23A, B, 2-2599-24A, and B during cold shutdowns.

3. Review the safety function of the check valve on the discharge of air compressor 2-2501 (P&ID M-707, coords. 6A) to determine if it should be included in the IST program and tested to the Code requirements.

N. Reactor Building Cooling Water System

1. Provide a detailed technical justification for not full-stroke exercising (closed) check valve 2-3769-500 during cold shutdowns.

O. Service Water System

1. How are check valves 2-3999-252 and 253 verified to full-stroke exercise quarterly?

2. Does valve 2/3-5741-062 (P&ID M-3121, coords. 3B) have a required fail-safe position? If so, this valve should be included in the IST program and tested to the Code requirements.

P. Pressure Suppression Piping

1. If a manual operator is used to full-stroke exercise check valves 2-0220-105A through E, is the force or torque that is applied to the mechanical exerciser measured as required by IWV-3522(b)?

2. How are check valves 2-1601-32A through F verified to full-stroke exercise quarterly?

Q. Instrument Air System

1. Provide the P&ID that shows valves 2-0733-1, 2, 3, 4, and 5 for our review. Are these valves ever required to change position to

accomplish a specific safety function? If so, they should be considered active valves and should be indicated as such in the valve listing table?

2. If exercising valve 2-4722 places the plant in "an unsafe condition" as stated in DAIM-V13, is instrument air a safety related system?

3. Provide a detailed technical justification for not full-stroke exercising (closed) check valve 2-4799-514 during cold shutdowns.

4. How are check valves 2-4799-567, 569, and 570 verified to full-stroke exercise (closed) quarterly?

R. Reactor Building Ventilation System

1. Is fail-safe testing and valve remote position indication verification performed on valves 2-5741A, B, 2-5742A, and B?

S. High Radiation Sampling System

1. Is fail-safe testing and valve remote position indication verification performed on valves 2-8941-709 and 710?

2. PUMP TESTING PROGRAM

1. The NRC staff may allow the use of newer editions and addenda of the ASME Code for either the pump or valve section of an inservice testing program. However, to utilize a newer edition of the ASME Code, the licensee must upgrade the entire pump or valve section of their inservice testing program to the applicable Code edition and addenda. (See relief request no. PR-A3.)

2. Provide a detailed technical justification that demonstrates that the proposed increase in the upper limit of the required action range to 110% of the reference value is equivalent or superior to that specified in the Code. (See DAIM-P1, section 2.3.2.)

3. The NRC may grant relief for licensees to utilize the guidelines concerning pump testing outlined in OM-6, Draft 11, as an alternative to the Code requirements for pump vibration testing. These guidelines address pump testing utilizing both vibration velocity measurements and vibration displacement measurements. How do the vibration readings for the LPCI and Core Spray pumps compare to the vibration displacement limits expressed in OM-6, Draft 11? (See DAIM-P3.)

4. What is the accuracy of the diesel day tank level instrumentation utilized to calculate the flow rate for the diesel oil transfer pumps? (See relief request no. PR-P4.)

5. When will the flow rate instrumentation modifications for the diesel cooling water pumps (2-3903) be completed? (See relief request no. PR-P5.)

6. Is lubricant level or pressure observed for all pumps in the Dresden IST program?