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January 12, 1979

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Dresden Station Units 2 and 3
Inservice Inspection Program
NRC Docket No. 50-237 and 50-249

References (a): M. S. Turbak letter to T. A. Ippolito dated July 31, 1978

(b): Dennis L. Ziemann letter to Cordell Reed dated October 26, 1978

Dear Sir:

Enclosure 1 to Reference (b) requested additional information with respect to the Dresden Units 2 and 3 Inservice Inspection Program transmitted in Reference (a).

Enclosure 1 to this letter provides answers to the questions presented in that request.

One (1) signed original and thirty-nine (39) copies of this letter are provided for your use.

Please direct any additional questions or comments to this office.

Very truly yours,

Robert F. Janecek

R. F. Janecek
Nuclear Licensing Administrator
Boiling Water Reactors

enclosure

ENCLOSURE 1

RESPONSE TO QUESTIONS DRESDEN UNITS 2 & 3 ISI PROGRAM

GENERAL QUESTIONS AND COMMENTS
PUMPS

1&2 Dresden Station believes that the measurement of vibration amplitude provides more concise and consistent information with respect to pump and bearing condition. The usage of vibration amplitude measurements can provide information as to a change in the balance of rotating parts, misalignment of bearings, worn bearings, changes in internal hydraulic forces and general pump integrity prior to the condition degrading to the point where the component is jeopardized. With bearing temperature measurements an increase in temperature will often not occur until the bearing has deteriorated to a point where additional pump damage may occur. Additionally, vibration readings are not affected by the temperature of the medium being pumped, providing one with more consistent readings.

Dresden Station believes the intent of pump testing should be to detect changes in the hydraulic characteristics. Since the pumps listed in the program are either emergency core cooling pumps or support pumps for emergency systems, they are run primarily in response to Technical Specification required testing. For this reason the operating time for the equipment is very low. Since hydraulic parameters will not change in idle or standby equipment, monthly testing would only add equipment running time with no compensatory increase in reliability. Exercising the pumps on a monthly basis will provide the rotation necessary to ensure the equipment is ready for operation.

SPECIFIC QUESTIONS AND COMMENTS
PUMPS

A.1 As stated on page A-202 there is no direct instrumentation to measure pi, however the NPSH for these pumps is supplied by the inlet cooling canal. Therefore, the total pump suction head is the difference between the pump elevation and the level of the intake canal.

Since no flow instrumentation is installed in the pump discharge line the intent is to use pump motor running current as an indicator of pump performance.

B.1 As stated on page A-201 Pi will be calculated from the height differential between the pump suction and the supply tank level.

GENERAL QUESTIONS AND COMMENTS

1. At present there are existing procedures which verify positions of many ET valves listed. Upon approval of the program these procedures will be reviewed, revised as necessary and implemented to reflect the program.

2. PIT denotes position indicator check as delineated in IWV-3300.

   FST denotes fail safe test as delineated in IWV-3410(e).

   HR this is not a test, rather it is a note on the radiation environment around the component. HR should appear only in the column headed Operator Accessibility.

3. Item 3 is a comment to be answered in later questions.

4. At the present time we do not know the total time to cycle all valves until such time as tests can be completed under specific plant conditions. Once the total time is established the controls will be established as necessary to ensure that all valves will be cycled as required.

5. Valves which require position indicator tests were included in the original transmittal under test PIT.

6. The September 11, 1978 letter to Mr. Denton from Mr. Reed requested Technical Specification changes for Dresden Unit 2 and Unit 3. This letter proposed changes to the Technical Specifications based on a review against "NRC staff guidance for complying with certain provisions of 10CFR50.55 a(g)". This letter with its enclosures is intended to answer question 5.

SPECIFIC QUESTIONS AND COMMENTS
VALVES

A.1, C.1, D.1, E.1, F.1, G.1

The question of Appendix J testing verses Section XI testing is currently under review by CECo. Since this testing is only done during scheduled refueling outages, Dresden Station requests additional time to answer these questions.

A.2 This system is only used during Reactor Shutdown. Since there are no manual valves between the check valve and the reactor, the only method of introducing a seating pressure is to remove the spool piece between the valve and the Reactor head. By blind flanging the valve side of the spool piece flange one can form a pressure boundry such that pressure can be introduced to close the valve. This particular operation is beyond the scope of a cold shutdown. The only alternative would be to open the upstream test connection with the reactor at pressure. This test in addition to being contrary to personnel safety, would require establishing reactor conditions which are not normal during cold shutdown. The line in question is of high pressure design. During the period that the line is not required for use the flow control valve is manually closed and the lines are manually valved out at the Control Rod Drive pumps. Since the Control Rod Drive pump discharge is a higher pressure than Reactor pressure any leakage in this line would be towards the containment. For this reason Dresden Station believes the exemption is justified.

B.1. These valves are air actuated globe valves with air supplied to keep the valve closed. The valves are designed to perform one function, i.e., the scramming of the Reactor. The valves are not designed to isolate during accident conditions. To have these valves isolate during accident conditions would negate the scram function. The winter 1977 addenda of the Code, section IWV-1200 exempts this type of valve from testing. Although this addenda cannot be applied to this update, Dresden Station believes this exemption is within the philosophy of the code.

B.2 The valves listed either establish or are part of the scram flow path. The three check valves in question are ballcheck valves. The purpose of exercising as defined in IWV-2140 is to demonstrate "...that the moving parts of a valve function satisfactory". Since a ball check valve has but one moving part the term full stroke exercising cannot readily be applied. It is felt that due to the simplicity of the valve design testing as delineated in note B.3 of the original submittal is sufficient to verify the valve functions satisfactorily.

Valves 126 and 127 are connected to a common air bleed header such that individual actuation is not possible. This coupled with the fact that there is no method of isolating the scram accumulator pressure from the 126 valve would dictate that cycling the valves will result in a scram of that drive. Dresden Station presently scram tests all drives in a given unit each 32 weeks - 50% of the drives each 16 weeks. Since these valves cannot be tested during normal plant operation, Dresden feels that the testing program proposed will be more conservative than cycling during cold shutdown. The Winter 1977 addenda of the Code, section IWV-1200 exempts this type of valve from testing. Although this addenda cannot be applied to this update, Dresden Station believes this exemption is within the philosophy of the code.

B.3 The 305-126 & 127 valves are presently timed during scram testing. The remaining valves serve to isolate the scram discharge volume following a reactor scram so as to ensure the reactor vessel does not lose water inventing through the control rod system. To meet the function the only requirement is that they be closed following a scram. Additionally these valves are not power actuated in the time sense of the word. They are simply held in the operating position, i.e., open by air pressure. The actuating signal deenergizes solenoid valves which vent off pressure allowing the valves to be mechanically repositioned. The Winter 1977 addenda of the Code, section IWV-1200 exempts this type of valve from testing. Although this addenda cannot be applied to this update, Dresden Station believes this exemption is within the philosophy of the code.

B.4 Valve 0305-112 these valves are presently administratively controlled through valve lineup procedures. This valve will be added under the category E*.

Valves 0399-504 and 0399-506.

These valves are maintenance testing valves for use during the hydrostatic testing on Recirculation pump seals. Since the line is for refuel outage; testing during normal operation it is isolated from Reactor Pressure by two normally closed manual valves. On the outside of the containment there is one valve which is normally closed isolating the piping from the control Rod Drive system. Since the control rod drive pressure is higher than reactor pressure any leakage through the valve would be into the containment. Since it would take a double line break to break containment Dresden does not feel these valves are category A. Therefore, we believe they are emempt per paragraph IWV-1200.

Valve 0305-138

This valve is a ball check valve which limits the possibility being left out of position or malfunctioning. During Reactor operation there is continuous flow at higher pressure through the valve and into the drive. Additionally, each individual control Rod Drive contains a ball check valve on this line which will seat if line pressure drops below Reactor pressure eliminating a back flow situation. The Winter 1977 addenda of the Code, section IWV-1200 exempts this type of valve from testing. Although this addenda cannot be applied to this update, Dresden Station believes this exemption is within the philosophy of the code.

B.5 Valve 0301-94

In the original plant design, this valve was installed to be a normally open maintenance valve. Due to recent metallurgical considerations the valve was closed such that there would be no flow

through this line. The valve is currently locked closed and controlled administratively through Dresden's out of service procedure. The Winter 1977 addenda of the Code, Section IWV-1200 exempts this type of valve from testing. Although this addenda cannot be applied to this update, Dresden Station velieves this exemption is within the philosophy of the code.

Valves FCV 0305-120, 121, 122, and 123.

The safety related function of the control rod drive system is the scram function. Since these valves are not required during the scram function they are not safety related. These valves are equipped to open, the failed position is the normal position. The Winter 1977 addenda of the Code section IWV-1100 exempts these valves from testing. Although this addenda cannot be applied to this update, Dresden Station believes this exemption is within the philosophy of the Code.

Valve 0302-23

The relief valve on the scram discharge volume should be included as category CT-2.

C.2 These valves are inside an established pressure boundry for this system. Since shutdown cooling is not used as a safety system these valves are not required to function during accident conditions. In both cases the valves are outside the second of two isolation valves in a low pressure system protected by interlocks which would prevent the admission of water until reactor pressure is below 350 psi. The Winter 1977 addenda of the Code section IWV-1100 exempts these valves from testing. Although this addenda cannot be applied to this update, Dresden Station believes this exemption is within the philosophy of the code.

E.1 See discussion under L.1 and L.2

F.2 Measuring the stroke time of these valves is not a meaningful test as the closure signal for these valves initiates from pump flow and not drywell or primary plant conditions. Even during accident conditions, until a Core Spray injection signal is present these valves will remain open performing the design function of a pump minimum flow valve. It is Dresden's position that verification of closure action is sufficient to meet the intent of the program.

F.3 Valves 1402-18A, B and 1402-19A, B

These valves are maintenance valves in the lines to the pump upper bearing oil cooler. Since these valves are presently administratively controlled by valve lineup procedures and out of service procedures they should be listed as category E*.

G.2 Valves 1501-28A, -28B, -27A, -27B, -18A, -18B, -19A, -19B, -20A, -20B, -38A, -38B are currently tested to Appendix J. Since they do not meet closed system isolation valve criteria Dresden will continue Appendix J testing.

G.3 These valves fulfill the same function as the valves in F2, above. The statements in F.2 also are applied in this situation.

G.4 These valves fulfill the same function as F.3 above. The resolution is the same in both cases.

H.1 Note B.11 was in error - Note B.12 applies.

H.2 These valves should have been included in the original submittal. They will be included in the program and categorized as CTI.

I.1/O.1 Line 4327 is the only line which penetrates the Drywell. This line is used to fill the bellows seal cavity with water during refueling outage. During normal operations it is isolated by closed manual valves both inside and outside the Drywell. The Winter 1977 addenda of the Code, section IWV-1200 exempts this type of valve from testing. Although this addenda cannot be applied to this update, Dresden Station believes this exemption is within the philosophy of the code.

J.1 The valve was listed in the original submittal as BT which requires timing, however, the time for the opening stroke was omitted, it should have been listed as 25 seconds.

J.2 These valves are tested in the open direction during pump operability testing, however, existing plant design, both the valve design and the piping configuration, do not allow for positive verification that the valves close following turbine operation. Since these lines terminate in the vapor space of the torus there is no method of utilizing any type of flow reversal to verify closure. The only viable method of proving closure is to introduce a closure pressure downstreaming the valves. Existing plant design does not allow for this testing to be done for the stop check valve. The design of both valves - a stop check and a mission duo flow check-in and that the probability of both valves failing to clear is remote. This fact coupled with the fact that the piping configuration forms a closed loop of steam supply, turbine and turbine exhaust leads are to the conclusion that should leakage past this valve occur it would not present a significant hazard. It is felt that pressure testing these valves during Reactor Refueling outages, coupled with the containment integrated testing program proves these valves are capable of achieving seats within allowable leakage limits. Increased testing would not further increase valve reliability.

K.1 The relief valves listed should be numbered 203-3A through 203-3E.

K.2 The valves listed should be numbered 203-1A-D and 203-2A-D.

K.3 Dresden has proposed to complete 10% closure tests to prove operability with a full stroke timed test each cold shutdown period which is allowable by section IWV-3410(b)(1) of the code. To full stroke these valves during operation requires establishing Reactor conditions to support the test and provides the possibility of a Reactor Scram during testing. Dresden Station believes that the testing program as submitted meets the code.

E.1, L.1, L.2

All valves in question are Crane model 973 tilting disc check valves. This particular valve design has no external actuation or linkages. The only methods for checking the closure stroke is flow reversal or the introduction of pressure downstream of the valve. The piping configuration and operating parameters of the systems involved preclude testing except during refueling outages. The Reactor Water Cleanup System, which is only shutdown during refueling outages, discharges through a portion of this system. This results in 1201-158, 220-58B, 220-59, and 220-62B having flow either immediately downstream or through them whenever the cleanup system is in operation.

During cold shutdown periods normal Reactor water level makeup is accomplished using the condensate pumps to supply flow through the Feedwater System. Taking these lines out of service, to verify check valve closure, is beyond the scope of a normal cold shutdown period. Since the plant was not designed for this type of testing, Dresden Station's position of testing these valves during refueling outages is adequate to show these valves will function as designed.

L.3 This valve is a maintenance valve, as such position changes are administratively controlled through existing out of service procedures. Should this valve be left out of its required operating position the unit in question would find it difficult to achieve power operation due to insufficient feedwater flow. Dresden Station believes that no additional controls are warranted for this valve. The Winter 1977 addenda of the Code, section IWV-1200 exempts this type of valve from testing. Although this addenda cannot be applied to this update, Dresden Station believes this exemption is within the philosophy of the code.

L.4 The test made for these valves should be Reactor Refueling (RR).

M.1 Plant design does not allow for the testing of these valves as no test connections or maintenance valves are provided. An error was made in applying exemption B-12 to these valves as they are not presently tested to Appendix J and cannot be tested unless plant modifications are initiated. This subject was covered in a letter from M. Turbak to D. Ziemann dated April 5, 1977 requesting exemption for these valves.

N.1 Valves 3930-525 and 3931-525 direct flow rather than regulate flow as stated in the question. These valves are manual multi-position plug valves which simply establish a flow path through the diesel engine coolers. There is no automatic or powered function associated with the valves.

N.2 The HPCI & LPCI room cooler outlet valves and the diesel generator cooling pump motor cooling valves will be included in the program and categorized as E*.

O.1 See response I.1/o.1.

P.1 The intent of the question is unclear as the original submittal meets the intent of GDC-57. Valve 2001-5 is "...outside the containment and located as close to the containment as possible." Since valve 2001-3 is inside the containment to make any change would appear to be contrary to GDC-57.

Q.1 Valve 5001-3 is currently out of service in the closed position. IWV-3410(f) states that "...exercising is not required for such valves except prior to the return of the system to operation. Since the corrosion test loop has been out of service for some time with no plans to return it to service in the foreseeable future the valve was exempted per IWV-1300 as a test valve.