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ALEXICH, M. P. Indiana & Michigan Electric Co.
RECIP. NAME RECIPIENT AFFILIATION
DENTON, H. R. Office of Nuclear Reactor Regulation, Director (post 851125

SUBJECT: Requests ASME Code relief for testing of valves in inservice testing program, per 10CFR50.55(g)(6)(i). RHR sys valves currently subj to quarterly testing per Section XI ASME Boiler & Pressure Vessel Code, 1983 Edition. Fee paid.

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INDIANA & MICHIGAN ELECTRIC COMPANY

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October 31, 1986
AEP:NRC:0969B

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
INSERVICE TEST (IST) - REQUEST FOR
CODE RELIEF OF RHR VALVES

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Denton:

The purpose of this letter, submitted in accordance with 10 CFR 50.55a(g)(6)(i), is to request code relief for testing of certain valves in the Inservice Testing (IST) Program. These valves, which are part of the Residual Heat Removal (RHR) System, are presently subject to quarterly testing in accordance with the ASME Boiler and Pressure Vessel Code, Section XI, 1983 Edition, Subsection IWV, Article IWV-3000. However, it is believed that these valves cannot be full- or part-stroke exercised quarterly as required by the ASME Code when the Emergency Core Cooling System is required by Technical Specifications to be operable without significantly increasing the plant's jeopardy of inadvertently spraying down of containment or of causing undesirable fluctuations of suction pressure to the centrifugal charging pumps. Past testing methology reduced the RHR injection to two loops and provided safeguards to perform the test. Under present interpretation of operability, similar testing now would require the Unit to enter into T/S 3.0.3 and it is unlikely the testing could be completed in the 1 hour limitation of the 3.0.3 requirement thus resulting in commencement of plant shutdown to fulfill the requirements of T/S 3.0.3.

The following are the valves for which we are requesting relief from quarterly testing:

IMO-330 and IMO-331: Discharge lines from the outlet of the RHR heat exchangers for both the East and West RHR pumps going to the containment spray headers.

IMO-340: Discharge from the East RHR pump (downstream of the heat exchanger) to the suction of the centrifugal charging pump.



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IMO-350: Discharge from the West RHR pump (downstream of the heat exchanger) to the suction of the safety injection pumps.

Details as to the nature of the testing, as well as justification of our relief request, are provided in Attachment 1 to this letter. A composite system flow diagram is provided as Attachment 2 to this letter.

We ask that your review of this request be performed on an expedited basis and that you respond to us by December 12, 1986. Relief is required for the Donald C. Cook Nuclear Plant, since the testing is scheduled to be performed for Unit 2 on December 20, 1986 and Unit 1 on December 28, 1986. If we are not granted relief by that date, we may be required to bring the unit to cold shutdown to perform such testing, which would require an outage estimated to last 4 days per unit and would constitute a loss of approximately $2,600,000 to the ratepayers of Indiana and Michigan Electric Company.

Upon receipt of the above-requested relief, the D. C. Cook Nuclear Plant Units 1 and 2 IST Program will be revised to require these valves to be tested during cold shutdown at a frequency described in paragraph IWV-3412(a) of ASME Code, Section XI.

A check in the amount of $150.00 is attached with this letter for the NRC processing of the aforementioned requests.

This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to insure its accuracy and completeness prior to signature by the undersigned.

Very truly yours,

M. P. Alexich
Vice President

RBK 10/31/86

cm
Attachments

cc: John E. Dolan
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Bruchmann
G. Charnoff
NRC Resident Inspector - Bridgman

Background

We are requesting code relief for valves IMO-330, 331, 340, and 350 because the plant configuration and time required for testing the valves may place the plant in a condition that may be inconsistent with the design basis and associated Technical Specification requirements. Previously we isolated part of one train while testing of these valves was being performed. By isolating one train to do the valve testing, operable flow paths are available to two reactor coolant loops rather than four which are available with the bypass valves open. We recently discovered that this may be inconsistent with the Technical Specification requirements for operable ECCS flow paths.

Testing of valves IMO-330 and -331 opens a flow path from the RHR pumps to the containment spray headers which could spray containment in the event of an inadvertent actuation of the RHR pumps. To avoid the possibility of spraying containment, we require that an additional valve be closed upstream of the valve to be tested. In this configuration, it is possible to inject into only two of the four cold legs. Further, if the flow path is not isolated during testing, the required amount of RHR flow may not be delivered to the core, since flow will be partially diverted to the containment spray during the injection phase of the accident.

Valve IMO-340 provides recirculation mode supply to the centrifugal charging pumps suction. When this valve is opened for test, it is possible that the suction to both centrifugal charging pumps will be subjected to initial conditions that are different from that assumed in the accident analysis.

Valve IMO-350 provides recirculation mode supply to the safety injection pumps suction similar to valve IMO-340 for the centrifugal charging pumps.

The detailed relief request is presented below.

Detailed Relief Request and Explanation

The code relief being requested for ASME Section XI, Category B valves IMO-330, -331, -340, and -350 is consistent with relief granted in response to the request made in our ISI/IST submittal (letter AEP:NRC:0969, dated December 31, 1985) for both the first and second ten-year inspection intervals for valves IMO-262, -263, -315, -316, -325, and -326. IST code relief for valves IMO-330, -331, -340, and -350 is necessary to avoid placing the plant in an unanalyzed condition or presenting a risk to plant equipment. As an alternative, we propose to full-stroke exercise and time these valves during cold shutdown at a frequency as described in paragraph IWV-3412(a) of ASME Code, Section XI. The reasons for this relief request are as follows:

Valve IMO-340 This normally closed motor-operated valve is located in the RHR header supplying the centrifugal charging pumps suction lines. The valve is required to open only during the recirculation phase of safety injection.

Reason for Change

The valve cannot be part-stroke exercised during power operation because it is not equipped with intermediate stop capability. The valve cannot be full-stroke exercised during power operation because:

(1) It could possibly cause perturbations in the suction pressure of the operating centrifugal charging pump, which could also affect RCP seal injection and leak-off flow.

(2) It is interlocked with containment sump isolation valve ICM-305 and SI miniflow valve IMO-262. Testing of this valve would require defeating interlocks with temporary jumpers.

Valve IMO-350 This normally closed motor-operated valve is located in the RHR header to SI pumps suction lines. It is required to open only during the recirculation phase of safety injection.

Reason for Change

The valve cannot be part-stroke exercised during power operation, because it is not equipped with intermediate stop capability. The valve should not be full-stroke exercised during power operation because it is interlocked with containment sump isolation valve ICM-306 and SI miniflow line valve IMO-263. The interlocks have to be defeated in order to test the valve.

Valves IMO-330 & -331 These normally closed motor-operated valves are located in the RHR lines to provide RHR containment spray. They may be opened during the recirculation phase to supplement containment spray.

Reason for Change

They cannot be part-stroke exercised because the valves are not equipped with intermediate stop capability. These valves should not be full-stroke exercised during power operation because:

(1) The valves are interlocked with ICM-305 and ICM-306 (which provide suction from the containment sump), which would be required to be defeated as described for IMO-340 and -350.

(2) An actuation of the RHR pumps as a result of a spurious SI signal while the valves open would result in an inadvertent containment spray. This would require an extended outage for containment clean-up.

Maintenance records at D. C. Cook have shown the above valves to be of a high reliability with little occurrence of failure. The only valve testing failure on record was a failure of IMO-340 on July 4, 1981. These records date back to 1979 for Unit 1 and 1978 for Unit 2. The testing requirements date from 1981.

For the reasons cited above, it is our belief that this exemption request is consistent with the current plant licensing basis and would not adversely affect the public health and safety.

Attachment 2 AEP:NRC:0969B