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 EVERS, K.H. Wisconsin Public Service Corp.
 RECIP. NAME RECIPIENT AFFILIATION
 Document Control Branch (Document Control Desk)

SUBJECT: Forwards Relief Request RR 3-1 & RR 3-2 which demonstrates ASME Section XI Code requirements impracticality, per 910307 telcon. Relief requests pertain to insp scheduled to be performed during current refueling outage.

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WISCONSIN PUBLIC SERVICE CORPORATION

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March 11, 1991

10 CFR 50.55a

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Hydrostatic Test Relief Requests

Reference: 1) Letter from K. H. Evers (WPSC) to Document Control Desk (NRC)
dated February 11, 1991.

10 CFR 50.55a(g)(4) requires that the inservice inspections (ISI) performed at the Kewaunee Nuclear Power Plant (KNPP) comply with Section XI of the ASME Boiler and Pressure Vessel Code, 1980 Edition including the Winter 1981 Addenda. Wisconsin Public Service Corporation (WPSC) had determined that certain ISI requirements for ASME Code Class 3 components, as delineated in Reference 1, were impractical and therefore requested relief. The NRC's preliminary evaluation of Reference 1 determined that the relief requests did not adequately present a basis that showed impracticality. In a March 7, 1991 teleconference between cognizant NRC and WPSC personnel it was agreed that additional information would be necessary to demonstrate ASME Section XI Code requirements were impractical. This correspondence serves that purpose and supersedes Reference 1.

Relief Request No. RR-2-8 pursued relief from hydrostatically testing the Class 2 "A" main steam relief header piping being modified during the 1991 outage. Code Case N-416, endorsed

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Document Control Desk
March 11, 1991
Page 2

by Regulatory Guide 1.47, allows for deferral of a repair/replacement hydrostatic test until the next regularly scheduled hydrostatic test. WPSC recognized this fact but thought it prudent to seek relief at this point since WPSC plans on submitting a relief request for the second interval hydrostatic test for the main steam system. During the aforementioned conversation it was determined that it would be acceptable to invoke Code Case N-416 at this time and pursue additional relief as necessary in the future. Therefore, relief is no longer needed for this outage activity.

As a result of Service Water System modifications planned for the 1991 refueling outage, it was necessary to request relief from hydrostatically testing piping for the tie-in welds to the main Service Water headers. This would only entail short sections of pipe from the main Service Water headers to the isolation valves which are part of the new branch lines. To demonstrate impracticality, additional design information has been included in Relief Request No. RR-3-1.

The purpose of Relief Request RR-3-2 was to seek relief for the second interval hydrostatic test for the Service Water System. Additional information has been included in the revised relief request to demonstrate impracticality.

As these relief requests pertain to inspections scheduled to be performed during the current KNPP refueling outage, your prompt review would be appreciated.

Sincerely,



K.H. Evers
Manager-Nuclear Power

SLC/slh

Attach.

cc - US NRC, Region III
Mr. Patrick Castleman, US NRC
MR. R. S. Cullen, PSCW

Attachment A

To

Letter from K. H. Evers (WPSC) to Document Control Desk (NRC)

Dated

March 11, 1991

Requests for Relief

Relief Request No. RR 3-1

1) Components Affected

Class 3 portions of the Service Water System piping.

2) Section XI Requirements

System hydrostatic pressure test following repair and/or attachment of replacements by welding (IWA-4400, IWA-4600 Section XI of the ASME Boiler and Pressure Vessel Code, 1980 W1981 Edition).

3) Description of Modifications

DCR 2459 Parts 1 and 2

This modification will redesign the Service Water (SW) supply and return to the control room air conditioning (CR A/C) chiller units and control rod drive mechanism (CRDM) fan coil units. This is required due to the pipe wall thinning found during radiographic examinations.

The current design supplies the CR A/C, CRDM, auxiliary building basement C and D fan coil units, and the auxiliary building fan floor fan coil units from a single 4-inch header for each respective train. The new design will provide a new supply header for the CR A/C and CRDM units. The existing header will continue to supply the auxiliary building basement C and D fan coil units and fan floor fan coil units. The returns for the CR A/C will also be repiped to split the trains and replace pipe found to have significant pipe wall pitting.

The new 1A and 1B supply headers will be fabricated from 4-inch schedule 40 carbon steel piping. They will be tied into 16-inch Service Water piping with butt welds. The new 1A return header will be constructed of 3-inch schedule 40 carbon steel piping. It will tie into a 12-inch Service Water return header.

This modification will install header isolation valves in both the supply and return piping. Tees will be installed for chemical cleaning/flushing. All piping and components will be procured QA Type 1. The header isolation valves will be gate valves. Piping and hangers will be analyzed in accordance with Bulletin 79-14 requirements.

Relief is being pursued for the small sections of piping from the tie-in welds on the main headers to the new isolation valves. The basis for impracticality is presented following the design descriptions.

DCR 2460

This modification will change the service water supply to the auxiliary building mezzanine 1A/1B area fan coil units. The current design will be improved by supplying service water directly from the 10-inch Service Water supply header for the containment FCUs. This will provide a higher flow to the auxiliary building mezzanine FCUs. The new piping will be 1-1/2 inch schedule 80 carbon steel. It will be tied into the existing Service Water headers with socket welds.

This modification will install header isolation valves in both the supply and return lines. Tees will be installed for chemical cleaning/flushing. All piping and components will be procured QA Type 1. The header isolation valves will be ball valves. Piping and hangers will be analyzed in accordance with Bulletin 79-14 requirements.

Document Control Desk
March 11, 1991
Attachment A, Page 3

Relief is being pursued for the small sections of piping from the tie-in welds on the main Service Water headers to the new isolation valves. The basis for impracticality is presented following the design descriptions.

DCR 2475

This modification will modify service water supply piping to the series of auxiliary feedwater pumps. This is being done to alleviate sediment buildup in the horizontal piping.

The 1B header supply piping will be routed so the piping will tap into the upper side of the main Service Water header instead of the bottom. New 3/4-inch normally closed vent valves will be added. These will aid in venting and filling the header.

The 1A header supply piping already tops off of the upper portion of the main header. A new "dirt leg" will be added to these lines along with new, larger size (2-inch) drain valves so that flushing capability is increased.

All piping and components will be procured QA Type 1. Analysis will be performed in accordance with Bulletin 79-14 requirements.

Relief is being pursued for the small sections of piping from the tie-in welds on the main Service Water headers to the isolation valves. The basis for impracticality is presented below.

Basis for Requesting Relief

The modifications discussed above all are similar in that the new design involves a tie-in weld to a large diameter Service Water supply line. The lack of isolation valves in the large diameter

supply headers makes it impractical to hydrostatically test these new sections. The new sections of piping that can be isolated from the main headers will be hydrostatically tested at 1.5 times the design pressure to meet the original construction code (B31.1, 1967). In order to hydrostatically test the new piping from the tie-in welds to the isolation valves a significant amount of safety related equipment would have to be taken out of service.

The Service Water System is an open loop cooling system in continuous operation. It operates at a temperature of less than 100°F and a maximum operating pressure of approximately 100 psi which is provided by the centrifugal SW pumps. These pumps are not capable of pressurizing the SW system to the required hydrostatic test pressure.

Alternate testing methods, as discussed below, will provide assurance that the system pressure boundary will be maintained.

4) Alternate Method of Examination

- A) Perform a VT-2 visual examination of the new piping from the tie-in weld to the isolation valve during a system inservice test per IWD-5221 and/or IWD-5222 at inservice and/or functional operating pressure, and
- B) Perform a surface examination per IWA-2200 of the weld repair joints, and
- C) Radiograph the final tie-in welds for DCR No. 2459 and 2475.

NOTE: The new branch lines will be hydrostatically tested as spool pieces prior to final tie-in to the Service Water header.

Relief Request No. RR 3-2

1) Components Affected

Class 3 portions of the Service Water System.

2) Section XI Requirements

System hydrostatic pressure test (IWD-2410, IWD-5210(a)(3), and Table IWD-2500-1 Section XI of the ASME Boiler and Pressure Vessel Code, 1980 W1981 Edition.

3) Basis for Requesting Relief

The Service Water System (SWS) is an open loop cooling system in continuous operation during all modes of plant operation. Continuous functional operation demonstrates the structural and leak tight integrity of the SWS. Service Water is a low energy system operating at a temperature less than 100°F and a maximum operating pressure of approximately 100 psi. The low energy operating conditions make a sudden gross failure of piping/components unlikely to occur.

In order to subject the SWS to the code required pressure a significant number of safety related components would have to be taken out of service. In addition, since the SWS was designed prior to the issuance of the ASME Boiler and Pressure Vessel Code it does not have the necessary provisions to effectively perform hydrostatic pressure tests. The SWS has redundant, cross connected trains. Each train is capable of providing the required accident cooling flow. The centrifugal SW pumps take water from Lake Michigan and deliver it to components for cooling. The pumps are not capable of

pressurizing the SWS to the required hydrostatic test pressure. The water is discharged to the circulating water discharge which is returned to the lake. The lack of isolation valves in the main SW headers make it difficult to pressurize portions of the SWS which makes the use of portable pumps impractical.

In our discussions with the NRC regarding Reference 1, the NRC stated that although this relief was granted in the past, current code requirements are less restrictive and therefore the hydrostatic test may now be practical using current criteria. Current criteria would require a hydrostatic test to be performed at 1.1 times the lowest relief valve setting, as opposed to 1.1 times system design pressure. However, the only relief valve in the Service Water System is set at 150 psig. IWD-5223 would therefore require a hydrostatic test pressure of 165 psi. The SWS supply piping to the auxiliary building and to containment has a nominal pressure class of 150 psi. Therefore, previous code requirements, which called for hydrostatic tests to be performed at 1.1 times design pressure, would have also required a 165 psi hydrostatic test pressure. This demonstrates that the requirements of the 1980 W1981 Edition of Section XI are as restrictive for KNPP as the first interval SWS hydrostatic test requirements. The NRC concurred with WPSC's position that the first interval SWS hydrostatic test requirements were impractical for KNPP and granted relief from performing them. Consistent with that determination and having demonstrated that current requirements are just as restrictive as first interval requirements, we request relief from performing the SWS hydrostatic test in the second interval. The alternate method of examination described below will insure SWS integrity.

Document Control Desk
March 11, 1991
Attachment A, Page 7

Alternate Method of Examination

Perform a VT-2 visual examination during a system inservice of system functional test per IWD-5221 or IWD-5222.