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Wisconsin Electric POWER COMPANY
231 W. MICHIGAN, P.O. BOX 2046, MILWAUKEE, WI 53201

April 9, 1981

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. NUCLEAR REGULATORY COMMISSION
Washington, D. C. 20555

Attention: Mr. Robert A. Clark, Chief
Operating Reactors Branch #3

Gentlemen:

DOCKET NOS. 50-266 AND 50-301
REQUIREMENTS FOR AUXILIARY FEEDWATER SYSTEM
POINT BEACH NUCLEAR PLANT UNITS 1 AND 2

Your letter dated January 27, 1981, requested that we respond to those unresolved items identified in the Safety Evaluation Report (SER) for the Point Beach Nuclear Plant Units 1 and 2 auxiliary feedwater systems. The SER was enclosed with the letter. This SER presents an evaluation of Wisconsin Electric's previous responses to your inquiries regarding auxiliary feedwater system reliability. Seven items have been identified for which the NRC review is not complete.

The first of these items concerns the Commission short-term recommendation GS-1 regarding technical specifications for continued plant operation with an inoperable auxiliary feedwater (AFW) pump. Although Wisconsin Electric Power Company (the Licensee) has proposed a number of technical specification changes to further improve AFW system reliability during plant operations, your recommendation is that both operating units be shut down if one motor-driven AFW pump is inoperable for more than 72 hours. As stated in Licensee's July 8, 1980 letter, this recommendation is unduly restrictive since the single operating unit would still have two diverse means of obtaining auxiliary feedwater via the second motor-driven pump and the steam-turbine driven pump. Either of these diverse methods of providing auxiliary feedwater flow is capable of providing sufficient feedwater to permit a controlled cooldown of the plant by itself. It should be noted that it is Licensee's position that the design basis for the Point Beach Nuclear Plant is based upon the ability to safely maintain the unit in the hot shutdown condition.

We understand that your specific concern is a steam line failure in the supply to the turbine-driven AFW pump together with a single failure in the remaining motor-driven AFW pump. In the design of the Point Beach

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Nuclear Plant auxiliary feedwater system, there are remotely operated valves which would permit either isolating the turbine-driven AFW pump steam leak and thus terminating the casualty, or restricting the steam leak to one steam generator, thus supplying the turbine-driven AFW pump from the intact steam generator. These motor-operated valves are numbered 2019 and 2020 on Figure 10.2-1a in the Point Beach Nuclear Plant Final Facility Description and Safety Analysis Report. In addition, you should note that the discharge of the motor-driven AFW pumps can be cross connected via manually operated valves for enhanced reliability and versatility. Accordingly, we propose no further changes to the Technical Specification changes already forwarded for your consideration.

The second unresolved item concerns additional short-term recommendation 1. The item recommended redundant level indications and low level alarms for the AFW system primary water supply. We responded that the condensate storage tanks are normally cross connected and that the independent level indicator on each tank served as a redundant AFW primary water level indication system. Because the capability exists to operate with the condensate storage tanks split, we are proceeding with the design and installation of a second level detection and alarm system on each of the two condensate storage tanks. This system will be independent of the existing level indicators up to the common alarm on the control board. We are scheduling installation of this system by April 1982. We believe this action will resolve your concerns in this matter.

The third unresolved AFW review item concerns safety grade design for auxiliary feedwater flow indication. Licensee's plans and schedules regarding compliance in this matter are addressed in the NUREG-0737 schedule requirements letter we submitted on December 23, 1980 and are discussed further in our NUREG-0737 follow-up letter dated March 31, 1981.

The fourth item for which NRC review has not been completed is recommendation GL-3, assuring long term AFW system flow independent of AC power. It is the Staff position that Licensee has not provided sufficient information to demonstrate why bearing lube oil cooling cannot be provided by a design involving no other external plant systems. This is a significant and unjustified extension of the NRC's previous requirement for bearing lube oil cooling independent of AC. Licensee considered a number of alternatives for providing bearing lube oil cooling, including the use of the AFW system water flow. The decision for using the firewater system and rejecting use of the AFW system was based on the following observations:

1. The firewater system is extremely reliable with or without the availability of AC power. The electrical firewater pumps are supplied from the plant vital electrical power supplies. On failure of all AC or on low water pressure in the fire main, a diesel driven fire pump, provided with its own battery starting system, will cut in to maintain adequate firewater system pressure. The reliability of this system is assured through monthly Technical Specification testing and surveillance.

2. The temperature of the water supplied by the firewater system is, under all possible operating conditions, compatible with the AFW pump bearing lube oil cooling requirements.

3. Water stored in the condensate storage tank must regularly be warmed when the AFW system is used to supply the steam generators, such as during refueling. Sending 150°F water to the bearing lube oil coolers combined with the addition of pump heat during long periods of recirculation would not provide optimum bearing oil cooling.

4. Use of auxiliary feedwater system water for bearing cooling would reduce the AFW pump output available to the steam generators. Unless provisions were made to return the water to the condensate storage tanks, the total water inventory available to the steam generators from the condensate storage tanks would be reduced.

5. The additional AFW to bearing lube oil cooler supply and return piping may reduce overall system reliability.

6. Use of the firewater system results in the simplest arrangement for overall design and operation and requires a minimum amount of system modifications to implement.

Your fifth item, recommendation GL-4, requests that Licensee provide automatic protection of the AFW pumps if the AFW system water supplies are not completely protected from damage following a seismic event or a tornado. In our past responses we have expressed concerns that additional instrumentation to provide automatic switchover of the AFW pump to the alternate water source would result in decreased rather than enhanced system reliability. We also advised that the condensate storage tanks were designed to specified seismic criteria, although not as Class I water sources. The SER continues to treat this as an unresolved item. Accordingly, and reluctantly, we are presently studying the feasibility and desirability of providing automatic AFW pump trips on low suction pressure as a possible protective measure. We expect to complete this study and advise you of our conclusion and proposed modification, if any, by September 1, 1981

The sixth unresolved item in your letter concerns the safety grade design of the AFW automatic initiation signals and circuits. Your continued review of this subject is acknowledged.

The final unresolved issue concerns your repeated request that we provide an extensive listing of information to establish the bases for

the auxiliary feedwater system flow requirement. This request was originally provided with your letter dated September 21, 1979, and was based on the Staff reviews done at that time. These reviews concluded that the design bases and criteria for establishing AFW system requirements to assure adequate removal of reactor decay heat were not well defined or documented. Since that time the NRC has received, from many sources, extensive auxiliary feedwater design information and descriptions from numerous licensees regarding AFW system design and flow capabilities. A comparison between the Point Beach system description and information already available to the NRC should demonstrate that the system flow capabilities of the Point Beach AFW system fall within the bounds of other system flow requirement bases. If this is not correct, we request you identify specifically which plant transient and accident conditions have not been adequately discussed.

Very truly yours,

C. W. Fay, Director
Nuclear Power Department

Copy to: NRC Resident Inspector
Point Beach Nuclear Plant

Blind Copies to Messrs. C. S. McNeer
Sol Burstein
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