

WISCONSIN PUBLIC SERVICE CORPORATION



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October 1, 1981

Mr. S. A. Varga, Chief
 Operating Reactors Branch #1
 Office of Nuclear Reactor Regulation
 U. S. Nuclear Regulatory Commission
 Washington, D. C. 20555



Gentlemen:

Docket 50-305
 Operating License DPR-43
 Kewaunee Nuclear Power Plant
Auxiliary Feedwater System

This letter serves to document the results of our review of the Auxiliary Feedwater System which we initiated as a result of concerns identified during a security-related "Vital Area Analysis" performed by NRC representatives at the Kewaunee Plant. It is in accordance with the verbal agreement reached between members of our staffs during a phone conversation on August 22, 1981.

Background

During a security-related inspection (confirmation of vital areas) NRC personnel noted that the crossover valves on the Auxiliary Feedwater System (valves AFW10A and AFW10B) received their motive power from the same DC power supply. On February 23, 1981, they informed the Kewaunee Nuclear Plant staff of this. Subsequently, incident report 81-10 was issued and the Senior Resident Inspector notified. During the resulting reviews, questions were also raised as to whether the Kewaunee Nuclear Power Plant Technical Specifications should be revised to require three auxiliary feedwater pumps operable, instead of two, when the reactor coolant system is heated about 350°F.

Power Supplies to Crossover Valves

The safety implications of the single power supply to the crossover valves and whether a Licensee Event Report (LER) should be submitted were the

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subjects of discussions between the NRC and WPS. Any negative impact on safety caused by this power supply configuration would be the result of an assumed accident which would require the isolation of the separate trains of the Auxiliary Feedwater System, coincident with the failure of the power supply such that the valves could not be closed from the control room. The impact of any scenario of this nature is minimal since analyses have shown that there is a sufficient amount of time for the operator to take appropriate manual action and close the crossover valves (reference WCAP 7306, Reactor Protection System Diversity in Westinghouse Pressurized Water Reactors).

Furthermore, the assumption that the motive power supply for these valves fails is not in agreement with the FSAR design basis assumptions. Specifically, the FSAR states that the Auxiliary Feedwater System, as an Engineered Safety Feature, is designed to be capable of performing its intended function even in the event of a single active failure. The failure of a DC power supply is not considered an active failure for the Kewaunee Plant; therefore, this assumption is beyond the licensing basis, and the fact that both crossover valves, AFW10A and AFW10B, are powered from the same supply does not warrant an LER.

It should be noted, however, that in spite of the technicality that an LER was not appropriate for this item, there was no lack of candor between WPS and the NRC. Additionally, we have recognized the desirability of providing diverse motive power to the AFW system crossover valve and have initiated a design change to provide for this.

Auxiliary Feedwater Pump Operability Technical Specifications

The reviews initiated because of the power supply concerns resulted in questions on the basis of Technical Specification 3.4.a.2. This specification requires two of the three auxiliary feedwater pumps to be operable when the reactor coolant system is heated above 350°F. This specification appeared to be inconsistent with the assumptions in the FSAR used for the accident analyses. Because of this inconsistency and due to the uncertainty of the licensing basis for the Kewaunee Plant pending review of this matter, WPS committed to an administrative control which required that three auxiliary feedwater pumps be operational when the reactor coolant system was heated above 350°F.

Our review of the FSAR and historical files indicated that certain accidents which result in the depressurization of a steam generator (e.g., feed line break or steam line break) were considered in the design basis of the Auxiliary Feedwater System. If a single active failure is also assumed for these accidents, it is necessary to also assume that three auxiliary feedwater pumps are operable to provide feedwater to the intact steam generators. Additionally, accidents, such as a steam generator tube rupture, which require isolation of a steam generator, would require that three auxiliary feedwater pumps be operable in order to assure auxiliary feedwater can be provided to the intact steam generator under the assumption of a single active failure.

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Based on these considerations, WPSC determined that the Kewaunee Nuclear Power Plant Technical Specifications should be revised to require that three auxiliary feedwater pumps be operable when the Reactor Coolant System is heated to a temperature greater than 350°F. When the reactor is above 350°F, one auxiliary feedwater pump may be out of service provided the pump is restored to operable status within 72 hours, or the reactor shall be shut down and cooled below 350°F using normal operating procedures. Proposed Amendment 46 to the Kewaunee Nuclear Power Plant Technical Specifications includes this revision which was submitted to the NRC on August 7, 1981.

Very truly yours,



E. R. Mathews
Senior Vice President
Power Supply & Engineering

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cc - Mr. Robert Nelson, NRC Resident Inspector
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Mr. J. G. Keppler, Reg Dir
US NRC