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 VARGA, S.A. Operating Reactors Branch 1

SUBJECT: Requests approval of exemption from scheduler requirements of 10CFR50, App R requirements re interim post-fire shutdown capability. Util will implement two NRC positions stated in 8312107 ltr.

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WISCONSIN PUBLIC SERVICE CORPORATION

P.O. Box 1200, Green Bay, Wisconsin 54305

December 28, 1983

Director of Nuclear Reactor Regulation
Attention: Mr. S. A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Docket 50-305
Operating License DPR-53
Kewaunee Nuclear Power Plant
Appendix R Extension Request

Reference: 1) Letter from S. A. Varga (USNRC) to C. W. Giesler (WPSC) dated
December 7, 1983

Your letter of December 7, 1983, provided four "interim positions" in regards to fire protection requirements which, if implemented at KNPP, would form an adequate interim post-fire shutdown capability justifying an extension in the scheduler requirements of Appendix R. The interim positions are:

1. The licensee shall have the capability of providing instrumentation for the following parameters utilizing only on site personnel: reactor coolant system pressure, reactor coolant hot leg and cold leg temperatures, pressurizer level, steam generator pressure and level, and neutron flux. The instrumentation must be available within 30 minutes of the time of evacuation of the control room.
2. The licensee must provide the capability of opening all security doors independent of the control room.
3. All actions necessary to achieve shutdown must be identified and the person performing the action be clearly delineated in the procedure E-0-06, Control Room Inaccessibility.

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4. A continuous fire watch should be provided in fire area TU-95, or modifications which would provide passive fire protection (such as the dedicated shutdown panel, or an automatic fire suppression system coupled with a partial fire barrier) in this area should be completed.

WPSC has evaluated each of these positions. We believe that positions 2 and 3 (as numbered above) are reasonable and prudent and therefore, we will take the actions necessary to comply with them by March 1, 1984. We do not believe, however, that positions one and four are necessary for justification of our extension request.

Position one requires the capability to provide additional instrumentation within thirty minutes of evacuation of the control room. This position seems predicated on various assumptions, which are discussed individually below:

- a) The position assumes that a debilitating fire is of such likelihood and consequence that it is unacceptable for the three years between the 1984 and 1987 refueling outages.

This assumption is contrary to previous assessments made by the NRC, the most recent being the Fire Protection Safety Evaluation Report. Based on our compliance with the criteria of Appendix A to Branch Technical Position 9.5-1, the NRC concluded that there was an acceptable level of fire protection at the Kewaunee Plant. We are not aware of any events which would invalidate this conclusion. (See discussion starting on page 4).

- b) The position assumes that such a fire would result in the loss of the ability to control the reactor due to loss of instrumentation.

Again, this assumption is contrary to previously accepted NRC positions. In fact, procedure E-0-06 (which the staff has reviewed) provides a method to safely control the reactor independent of the control room for about $3\frac{1}{2}$ hours. This provides ample time for additional personnel to get to the site, as needed. At that time, the additional instrumentation useful in bringing the reactor to the cold shutdown condition can be obtained.

The requirement for source range instrumentation is not necessary. We assume that this requirement is intended to monitor the shutdown condition of the reactor. The technical specifications require that the control and shutdown rods have sufficient reactivity worth to provide a minimum of 1000 PCM shutdown margin for all hot shutdown conditions. This is verified for each of our reload cores. Thus, reactor trip provides the needed assurance that the reactor will be subcritical following a fire.

As noted above, our procedures provide the ability to control the reactor at the hot shutdown condition for approximately $3\frac{1}{2}$ hours. One of the requirements of this procedure is to line up the boric acid supply tank to the safety injection pump suction and start a safety injection

pump. This will assure that sufficient shutdown margin is maintained as the plant is taken to the cold shutdown condition. The shutdown margin can be verified by sampling and analyzing the reactor coolant system fluid.

Based on these items alone, we feel that there is an acceptable level of fire protection and fire emergency preparedness at the Kewaunee Plant, and consequently, additional interim measures are not necessary.

Furthermore, it should be noted that the control room is continuously occupied, in effect providing a continuous fire watch. Based on position 4, it appears that a continuous fire watch is, in the staff's opinion, an acceptable measure to limit the probability of the occurrence of a fire to an acceptably low level. Although we do not think that a fire watch is necessary, we do feel that if this is an acceptable interim position for fire area TU-95, it should be equally acceptable for the relay and control room.

Position four requires a continuous fire watch in fire area TU-95 or certain fire protection modifications. WPSC evaluated alternate fire protection modifications in developing the design for compliance with Appendix R. We concluded that those alternate designs were impractical to implement; therefore, this position is essentially limited to the fire watch alternative. The basis of this position is formed by several assumptions which we believe to be erroneous.

First, your letter of December 7, 1983, notes that "...the loss of the dedicated shutdown panel or the loss of redundant cables in this room [TU-95] due to a fire would preclude the achievement and maintenance of safe shutdown conditions." This is not the case. A fire in this area would not result in a complete loss of instrumentation since many instruments (including the set needed for reactor control) are powered from the battery rooms which are separate fire areas. Additionally, the steam driven auxiliary feedwater pump would be available to provide cooling water to the steam generator.

Secondly, the assumption that the loss of the auxiliary feedwater panel would result in a loss of the instrumentation necessary to achieve and maintain hot shutdown is also erroneous. The instrumentation on the AFW panel is the minimum set necessary at that location to effect a shutdown. There is a considerable amount of additional information in the control room which would be sufficient to monitor and control the plant.

Thirdly, the recent tests conducted at Underwriters Laboratories had a considerable external fire source which created the hot gas that subsequently stratified, and which you referred to in your letter. Since there is no such external source of fire in fire area TU-95 to cause the hot gas at KNPP in the first place, this test is not applicable to KNPP. The only credible source of fire in this area is an electrical fault which would be limited to one train. Such a fault may result in a smoldering fire in the affected cable tray prior to electrical isolation (by fuses or breakers, for example). This sort of fire would be hard to detect, except by electronic

fire detection equipment, which is installed in the area. Furthermore, this detection equipment would detect such a fire very rapidly (certainly more rapidly than a person on a fire watch). Based on these considerations, we cannot agree that a continuous fire watch provides any additional margin of safety.

Based on these evaluations, we feel that sufficient justification currently exists through our compliance with the criteria of Appendix A to Branch Technical Position 9.5-1 to warrant extension of the schedular requirements of Appendix R. We feel it is important to note that the technical adequacy of those requirements has never been successfully challenged.

In the rule making process and subsequent legal developments surrounding the promulgation of 10 CFR 50.48 and Appendix R to 10 CFR 50, the staff provided many reasons for the new fire protection requirements; that BTP 9.5-1 did not provide an acceptable level of fire safety was not included among these reasons. The reasons given for proceeding with the Appendix R requirements can be generally categorized as an abandonment of the "Postulated Hazards" approach to fire protection in favor of the passive fire protection approach of Appendix R because the former was too complex. This complexity resulted in continuing disagreement with a number of plants ("industry heel-dragging"), and it was felt by some that the postulated hazards approach was insufficiently protective because it is not possible to predict the specific condition under which fires may occur and propagate.

Both of these concerns regarding the postulated hazards approach had been resolved for the Kewaunee plant prior to final promulgation of Appendix R. The fact that there were no open items from the BTP at the time of promulgation of Appendix R shows that KNPP was not one of the "heel draggers". Our fire hazards analysis was done in a conservative manner to bound credible fire conditions (not unlike analyses performed in response to other NRC requirements) and hence adequately addresses the "specific conditions" concern noted above.

The NRC itself has indicated that the postulated hazards approach is an acceptable method of demonstrating adequate fire protection. In the Connecticut Light and Power Company, et.al. versus Nuclear Regulatory Commission proceeding, the NRC stated in oral argument that the final rule as adopted with the exemption provisions was functionally the same as the postulated hazards approach.

Based on this, WPSC believes that our current dilemma must be kept in proper perspective. While we feel that adequate technical justification may exist for exemption from many of the technical requirements of Appendix R, we have chosen (for many reasons) not to pursue this approach. We have, however, expended a great deal of effort to thoroughly analyze the entire design and associated modifications for compliance with Appendix R and scheduled them in a manner which provides for the maximum continued safe operation of the Kewaunee Plant. We have requested no technical exemptions; we have requested only one, non-technical exemption related the implementation schedule. The justification for this is the past, present and continuing high level of fire protection at the Kewaunee Nuclear Power Plant, both in hardware features and in our overall program. The acceptability of our program was exemplified by the category 1 rating received during the most recent SALP assessment.

Mr. S. A. Varga
December 28, 1983
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In summary, we are again requesting your approval of our extension request as soon as possible. We have agreed to implement two of the positions stated in your letter of December 7, 1983. We have addressed the technical concerns of the remaining two positions in a manner which we feel is acceptable. We feel that adequate technical justification exists to demonstrate that the KNPP has an acceptable fire protection program and therefore, this schedule extension request should be approved. As always, we will be happy to discuss this with you at any time, either at the Kewaunee Plant or in your offices.

Very truly yours,



C. W. Giesler
Vice President - Nuclear Power

CAS:jks

cc - Mr. Robert Nelson, US NRC
Mr. David Baker, Foley & Lardner
Mr. Clarence Riederer, PSCW
Mr. Adrian Forcier, ANI