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VPNPD-93-016  
NRC-93-009

January 19, 1993

Document Control Desk  
U.S. NUCLEAR REGULATORY COMMISSION  
Mail Station P1-137  
Washington, DC 20555

Gentlemen:

DOCKETS 50-266 AND 50-301  
REQUEST FOR EXIGENT LICENSE AMENDMENTS  
TECHNICAL SPECIFICATION CHANGE REQUEST 161  
DEGRADED VOLTAGE RELAY SETPOINT  
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

In accordance with the requirements of 10 CFR 50.91(a)(6), Wisconsin Electric Power Company, Licensee, requests amendments to Facility Operating Licenses DPR-24 and DPR-27 for the Point Beach Nuclear Plant, Units 1 and 2, respectively. We request that these proposed license amendments be processed as an exigent request. Consistent with NRC guidance, a request for an NRR Waiver of Compliance from the conditions in Technical Specification Table 15.3.5-3, "Emergency Cooling," Item 4.a, "Degraded Voltage (4.16KV)," for a 14-day period was verbally requested and granted on January 7, 1993. Our request was documented by our letter dated January 8, 1993, with the approval of the waiver documented by letter from Mr. John Zwolinski dated January 14, 1993. As committed to in our request for a Temporary Waiver of Compliance, these proposed Technical Specification changes will prohibit the continued operation of the Point Beach Nuclear Plant (PBNP) with non-conservative degraded voltage relay setpoints for the safeguards buses.

DESCRIPTION OF EXISTING LICENSE CONDITIONS

Technical Specification Table 15.3.5-1, "Engineered Safety Features Initiation Instrument Setting Limits," Item 9, "Degraded Voltage (4.16 KV)," requires the degraded voltage relay setpoints be set at  $\pm 3875$  volts  $\pm 2\%$ . The purpose of this setting is to ensure that, under the worst case conditions, the most limiting safeguards load does not operate at less than 90% of its nameplate voltage rating (414 volts).

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Technical Specification Table 15.3.5-3, Item 4.a, specifies that two of the three existing channels of degraded voltage protection for each 4.16 KV safeguards bus be operable and a minimum degree of redundancy of one channel per bus be maintained. If these conditions cannot be met, the specification permits continued operation for up to seven days provided both emergency diesel generators are otherwise operable and the associated diesel generator is operating and providing power to the affected bus. If the condition is not corrected within seven days, then the affected unit is required to be placed in hot shutdown. The same actions are required if the conditions of Item 4.b, "Loss of Voltage (4.16KV)," are not met.

#### DESCRIPTION OF PROPOSED CHANGES

Technical Specification Table 15.3.5-1, Item 9, allows non-conservative setting of the degraded voltage protection for the safeguards buses. We propose to change this setpoint to  $\geq 3959V \pm 1/2\%$ . This setting will provide an added degree of assurance that adequate terminal voltage is maintained for the proper functioning of safeguards equipment. We also proposed to change the actions required if the conditions specified in Technical Specification Table 15.3.5-3, Items 4.a and 4.b are not met to, "Declare the associated emergency diesel generator inoperable for the affected bus. The applicable Limiting Conditions for Operation shall be immediately entered and required actions taken. Separate LCOs may be entered for the Degraded Voltage and Loss of Voltage Functions." These changes are consistent with the Westinghouse Standard Technical Specifications, NUREG-1431.

In addition, we have made editorial changes to Technical Specification Table 15.3.5-1, Items 9 and 10, and Technical Specification Table 15.3.5-3, Items 4.a, b, and c. These changes add the bus designations for the 4.16KV and 480V buses, as appropriate, to the items.

Technical Specification pages with the proposed changes are included as Attachment 1.

#### BASIS AND JUSTIFICATION

Operation of electrical equipment at voltages lower than their electrical ratings is not desirable because such operation may result in the equipment not properly performing its intended function or may result in damage to the equipment itself. For this reason, existing plant design includes protection against sustained operation of safety-related loads at lower than recommended voltages. Degraded voltage relays and loss of voltage relays are installed on each of safety-related 4160V Buses 1A05, 1A06, 2A05, and 2A06. The Loss of Voltage and the Degraded Voltage Relays sense the presence of lower than acceptable voltage levels and

disconnect the safety-related 4160V buses from its preferred source (off-site), which would then result in the starting of the emergency diesel generators and connect the safety-related 4160V buses to the emergency diesel generators at adequate voltage levels. The degraded voltage relays are set at a higher level than the loss of voltage relays and incorporate a time delay which allows equipment to operate for a short period of time at lower than normal voltage levels. The short period of time prevents the loss of equipment due to short-duration voltage transients on the electrical distribution system, thereby maintaining continuity of power to the safeguards buses. Loss of voltage relays detect severe degraded or loss of voltage to the safeguards buses which results in the isolation of the affected bus, automatic start of the emergency diesel generators and re-energization of the safeguards buses from the emergency diesel generators.

On January 7, 1993, we completed our analysis of ABB Impell Calculation C970-150-007, Revision 0. This analysis indicated that the existing settings for the degraded grid voltage relays installed on the 4160V safety-related buses may be too low to provide adequate protection for all safety-related equipment. We have subsequently determined that an undervoltage relay setting of  $\geq 3959V \pm 1/2\%$  is necessary to protect equipment while still providing an adequate level of equipment reliability. This voltage setting is consistent with maintaining continuity of off-site power to the safeguards buses. This value for the degraded voltage relay setting is based on worst case assumptions for safeguards bus loading and system configuration and assures the protection of safeguards equipment from degraded voltage conditions. Field measurements and verification will be performed during 1993 to verify and refine the existing calculation inputs, assumptions, and results. These measurements will include quantifying actual relay, calibration, and potential transformer tolerances. Because of the equipment involved, portions of this verification effort will be required to be performed during the 1993 maintenance and refueling outages for both units and is expected to be completed by the end of the Unit 2 refueling outage in November 1993. Following completion of this verification effort additional action, if needed, will be taken to insure this relay setting continues to provide the appropriate level of equipment protection as well as the reliability of off-site power to the safeguards buses. Our planned actions and schedule will be provided to the NRC at that time.

We have determined that operation for an extended period of time with all four of the safety-related 4160V buses supplied from the diesel generators was not consistent with maintaining the minimum level of plant safety. The preferred source of power to the safeguards buses is from off-site sources. By allowing a period of time during which operation may continue with inoperable loss of voltage or degraded voltage protection channels with the preferred,

off-site sources supplying the buses, redundancy of power supplies to the safeguards systems and equipment is maintained. The associated emergency diesel generator is administratively declared inoperable for the affected bus only. This is appropriate since the emergency diesel generators are shared between the two PBNP units. Inoperable degraded voltage or loss of voltage protection on a bus in one unit does not prevent the emergency diesel generator from performing its intended function with respect to a loss of voltage or degraded voltage condition on the unaffected unit's bus or from responding properly to an actuation of the unaffected protective function on the affected bus. Our safety evaluation supporting the proposed changes is included as Attachment 2.

The attached safety evaluation shows that the proposed amendments assure the continued safe and reliable operation of the Point Beach Nuclear Plant. The revised degraded voltage relay setpoint ensures that safeguards systems and equipment are protected from continued operation at less than adequate voltage levels. The present Technical Specification setpoint (3875V) will not provide the appropriate level of protection. The action specified by the existing Technical Specifications, when the required channels of degraded voltage and loss of voltage protection are inoperable, results in the safeguards buses being supplied from the emergency diesel generators rather than from the preferred off-site power source and results in continuous operation of the standby emergency power source for an extended period of time which may result in an increase in an unnecessary challenge to safety-related equipment. The reliability of normal and emergency power systems will be maintained by these changes.

This condition of inadequate degraded voltage protection for the safeguards systems and equipment was discovered as the result of a calculation performed, on our initiative, as part of an overall assessment of the electrical distribution system at PBNP. The calculation was performed using improved methods over those used in the early 1980's to support installation of the degraded voltage protection. Inadequate settings were not suspected prior to this calculation being performed. Therefore, the need for this exigent request, to prohibit the operation of PBNP in a non-conservative condition, could not be avoided, nor did it result from a failure to make a timely application for an amendment.

We have reviewed these proposed changes against the standards in 10 CFR 50.92 and have determined that these changes result in a determination of no significant hazards. Our analysis against the criteria of 10 CFR 50.92 is contained in Attachment 3.

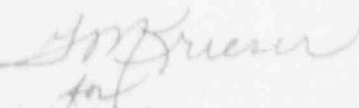
This proposed amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR 20. We have

determined that the proposed amendments involve no significant increase in the amounts of and no significant change in the types of any effluents that may be released off-site. There is no significant increase in individual cumulative occupational radiation exposure. We have determined that the proposed amendments involve no significant hazards consideration. Accordingly, these proposed amendments meet the categorical exclusion requirement of 10 CFR 50.22(c)(9) from environmental reviews. Therefore, we have determined that, in accordance with 10 CFR 50.22(b), no environmental assessment or environmental impact statement need be prepared in connection with these proposed amendments.

We completed the adjustment of the degraded voltage relays to the setpoint proposed in this submittal on January 15, 1993. We understand, that with the resetting of these relays, the compensatory measures stipulated in your January 14, 1993 letter, related to the monitoring of bus voltages and operator actions if certain voltage levels are not maintained, are no longer required. We will continue to test the on-site combustion turbine generator biweekly until these proposed changes are issued, as required by your January 14, 1993 letter.

We request that these proposed amendments be processed as an exigent change in accordance with the requirements of 10 CFR 50.91. If you have any questions or desire additional information, please contact us.

Sincerely,



Bob Link  
Vice President  
Nuclear Power

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Attachments

cc: NRC Regional Administrator, Region III  
NRC Resident Inspector  
Mr. L. L. Smith, PSCW

Subscribed and sworn before me  
this 19<sup>th</sup> day of January, 1993.

  
Notary Public, State of Wisconsin

My commission expires 10-27-96.