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NPL 98-0766

10 CFR 50.4

10 CFR 50.90

October 7, 1998

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

Ladies/Gentlemen:

DOCKETS 50-266 AND 50-301  
TECHNICAL SPECIFICATIONS CHANGE REQUEST 207  
LIMITING CONDITIONS FOR OPERATION  
UNDERVOLTAGE REACTOR TRIP  
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

In accordance with the requirements of 10 CFR 50.4 and 10 CFR 50.90, Wisconsin Electric Power Company (Licensee), hereby requests amendments to Facility Operating Licenses DPR-24 and DPR-27 for Point Beach Nuclear Plant, Units 1 and 2, respectively. The purpose of the proposed amendments is to incorporate changes to the Technical Specifications to ensure the 4 kV bus undervoltage input to reactor trip is controlled in accordance with the design and licensing basis for the facility.

During a review of the Technical Specifications, a Wisconsin Electric (WE) engineer, identified that the Limiting Condition of Operation for the 4 kV undervoltage protection function, did not require placing an inoperable channel in trip, and allowed operation indefinitely in that condition. By not placing an inoperable channel in trip, a single failure within this function could prohibit a reactor trip. This trip is the primary protective function for the complete loss of flow analysis as documented in the PBNP Final Safety Analysis Report and therefore, is required to meet the single failure criteria specified in IEEE 279.

These amendments to the Technical Specifications will require placing an inoperable channel in trip, thus the Technical Specifications for this function will ensure that PBNP Units are operated in accordance with their design bases.

One additional administrative change is requested which removes the footnote related to the definition of Rated Power in Technical Specifications 15.1.j. This footnote should have been deleted with the issuance of Amendments 173 and 177 for Point Beach Nuclear Plant Units 1 and 2, respectively. These amendments approved operation of PBNP following replacement of the

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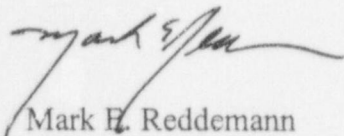
PBNP Unit 2 steam generators. The footnote supported operation with increased steam generator tube plugging levels being experienced in the Unit 2 steam generators prior to replacement. The power level restrictions contained in this footnote are no longer supported by the analyses performed for Amendments 173 and 177.

It has been determined that the proposed amendments do not involve a significant hazards consideration, authorize a significant change in the types or total amounts of any effluent release, or result in any significant increase in individual or cumulative occupational exposure. Therefore, the proposed amendments meet the requirements of 10 CFR 51.22(c)(9) and an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared.

A description of changes, safety evaluation, determination of no significant hazards, and edited Technical Specification pages are attached.

Please contact us if you have any questions or require additional information.

Sincerely,



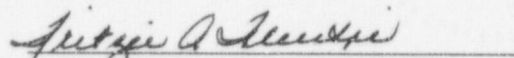
Mark E. Reddemann  
Site Vice President  
Point Beach Nuclear Plant

JG/dms

Attachments

cc: NRC Regional Administrator  
NRC Resident Inspector  
Public Service Commission of Wisconsin

Subscribed and sworn before me on  
this 8<sup>th</sup> day of October 1998.

  
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Notary Public, State of Wisconsin

My commission expires September 14, 2001

DESCRIPTION AND BASIS FOR CHANGES  
TECHNICAL SPECIFICATION CHANGE REQUEST 207  
LIMITING CONDITIONS FOR OPERATION  
UNDERVOLTAGE REACTOR TRIP  
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

**Introduction**

Wisconsin Electric Power Company, licensee for the Point Beach Nuclear Plant, Units 1 and 2, requests amendments to Facility Operating Licenses DPR-24 and DPR-27 to incorporate changes to the Technical Specifications. These changes are being made to accurately reflect the PBNP design and licensing basis.

The proposed changes remove a footnote related to the definition of Rated Power that is no longer supported by PBNP analyses and should have been removed by Amendment 173 and 177 for Units 1 and 2, respectively. Also proposed is the addition of a requirement to place an inoperable Undervoltage Reactor Trip channel in trip, thus ensuring this protective function continues to meet single-failure criteria during reactor operation in this condition.

**Definition of Rated Power**

The following changes are proposed to Technical Specification 15.1.j:

j. Rated Power

Rated Power is here defined as a steady state reactor core output of 1518.5 MWT.\*

The footnote indicated by \* located at the bottom of Technical Specifications page 15.1-4 is deleted.

Basis for Change

This footnote was approved with Amendments 165 and 169 for PBNP Units 1 and 2, respectively, on November 17, 1995. The amendments supported operation of PBNP Unit 2 at reduced reactor coolant system flows as a result of increased steam generator tube plugging levels. Subsequently, the Unit 2 steam generators were replaced and operation with the new steam generators approved by Amendments 173 and 177 for Units 1 and 2, respectively, on July 1, 1997.

The analyses supporting the latter amendments were performed at a reactor coolant system total flow rate of 181,800 gpm based on an assumed measurement uncertainty of 2.1 percent over thermal design flow (178,000 gpm) as reflected in Technical Specification 15.3.1.G.

Therefore, this footnote is no longer applicable and should have been deleted with the approval of the July 1, 1997 amendments. Thus, this change is administrative only.

**Undervoltage Reactor Trip**

Technical Specifications Table 15.3.5-2, Instrument Conditions For Reactor Trip, contains the operability requirements and limiting conditions for operation (LCO) for reactor trip system instrumentation. Proposed changes to Item 14.a of this table are as follows.

<u>NO.</u>	<u>FUNCTIONAL UNIT</u>	<u>1</u> TOTAL NO. OF CHANNELS	<u>2</u> NO. OF CHANNELS TO TRIP	<u>3</u> MINIMUM OPERABLE CHANNELS	<u>4</u> PERMISSIBLE BYPASS CONDITIONS	<u>OPERATOR ACTION IF CONDITIONS OF COLUMN 3 CANNOT BE MET</u>
14.	4 kV Bus (A01/A02)					
a.	Undervoltage (input to reactor trip)	2/each bus	1/each bus	1/each bus **		Be in hot shutdown in 8 hours

The existing table footnote, designated \*\*, is proposed to be made applicable to this line item. This footnote states:

\*\* If a channel is determined to be inoperable, resulting in one less than the total number of channels being operable, power operation may continue if the following conditions are met:

1. The minimum number of operable channels is still satisfied.
2. The affected channel is placed in trip within 1 hour.

Basis for Change

As discussed in the PBNP Final Safety Analysis Report, Section 14.1.8, the undervoltage reactor trip is the primary protective function credited in the complete loss of reactor coolant flow analysis. Primary protective functions are designed to meet the criteria of proposed IEEE 279-1968 including protection against single failures as referenced in FSAR Section 7.2. This function satisfies a "one out of two, taken twice" logic. That is, at least one channel on each bus must sense an undervoltage condition to initiate a reactor trip.

The present Technical Specification for this function allows an inoperable channel to exist indefinitely with no action required. If one channel on a bus is failed in the un-tripped condition and the remaining channel would fail to trip during an undervoltage condition, reactor trip would be prevented. Thus, the single failure criteria of IEEE 279 is not satisfied for this primary protective function under the provisions of the existing Technical Specification allowed condition.

Placing an inoperable channel in trip will ensure the protective function will be fulfilled assuming a single failure of an operable channel as long as both channels on at least one of the buses are operable; thus satisfying the design criteria defined in the FSAR.

This proposed change is essentially identical to the provisions in NUREG 1431, Standard Technical Specifications, Westinghouse Reactors.

SAFETY EVALUATION  
TECHNICAL SPECIFICATION CHANGE REQUEST 207  
LIMITING CONDITIONS FOR OPERATION  
UNDERVOLTAGE REACTOR TRIP  
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

Wisconsin Electric Power Company, licensee for the Point Beach Nuclear Plant, requests amendments to Facility Operating Licenses DPR-24 and DPR-27, to effect changes to the plant Technical Specifications. These changes are necessary to ensure the facility is operated in accordance with its design and licensing basis as approved by the Nuclear Regulatory Commission.

Technical Specifications 15.1.j definition of Rated Power, presently contains a footnote designated \*. This footnote states:

For Unit 2: If the Reactor Coolant System raw measured total flow rate is <174,000 gpm but  $\geq$ 169,500 gpm, Unit 2 shall be limited to  $\leq$  98% rated power.

This footnote was approved with Amendments 165 and 169 for PBNP Units 1 and 2, respectively, on November 17, 1995. The amendments supported operation of PBNP Unit 2 at reduced reactor coolant system flows as a result of increased steam generator tube plugging levels. Subsequently, the Unit 2 steam generators were replaced and operation with the new steam generators approved by Amendments 173 and 177 for Units 1 and 2, respectively, on July 1, 1997.

The analyses supporting the latter amendments were performed at a reactor coolant system total flow rate of 181,800 gpm based on an assumed measurement uncertainty of 2.1 percent over thermal design flow (178,000 gpm) as reflected in Technical Specification 15.3.1.G. Therefore, this footnote is no longer applicable and no longer supported by the approved analyses. The footnote should have been deleted with the approval of the July 1, 1997 amendments. As this proposed change is supported by previously reviewed and approved analyses, this change is administrative only, reflecting the present approved operation of the facility.

Technical Specifications Table 15.3.5-2, Instrument Conditions For Reactor Trip, contains the operability requirements and limiting conditions for operation (LCO) for reactor trip system instrumentation. Item 14.a provides the LCO for the undervoltage reactor trip protection function.

As discussed in the PBNP Final Safety Analysis Report (FSAR), Section 14.1.8, the undervoltage reactor trip is the primary protective function credited in the complete loss of

reactor coolant flow analysis. FSAR Section 7.2 stipulates that primary protective functions are designed to meet the criteria of proposed IEEE 279-1968 including protection against single failures.

4 kV buses A01 and A02 each supply one reactor coolant pump. An undervoltage on a bus will result in the loss of power to the associated reactor coolant pump. Loss of power to both buses will result in a complete loss of reactor coolant flow.

The undervoltage reactor trip protection function is made up of a "one out of two taken twice" channel logic. That is, there are two channels sensing undervoltage on each 4 kV bus, A01 and A02 (four channels total). One channel on each bus must sense an undervoltage to make up the trip logic. The trip setting for this function is specified in Technical Specification 15.2.3.1.B(6).

The present Technical Specification for this function allows an inoperable channel to exist on each bus indefinitely with no limit on reactor operation. If one channel on a bus is failed in the un-tripped condition and the remaining channel on that bus fails, an undervoltage on that bus would not be sensed. Since the logic would only "see" an undervoltage on the bus with the two operable channels, the trip logic would not be satisfied and reactor trip would be prevented. Thus, the single failure criteria of proposed IEEE 279-1968 is not satisfied for this primary protective function under the provisions of the existing Technical Specifications.

Therefore, it is proposed that existing table note designated \*\* be made applicable to this line item. The \*\* will be added to the column 3, "Minimum Operable Channels" requirement of 1/each bus. This new table note states:

"If a channel is determined to be inoperable, resulting in one less than the total number of channels being inoperable, power operation may continue if the following conditions are met:

1. The minimum number of operable channels is still satisfied.
2. The affected channel is placed in trip within 1 hour."

With the logic for this function, placing one channel on a single bus in trip results in that half of the trip logic being satisfied. Therefore, the response of one or both channels on the other bus to an undervoltage condition will result in a reactor trip. Since one operable channel can fail and the protective function still be satisfied with an inoperable channel in trip, this proposed criteria ensures single failure criteria required by proposed IEEE 279-1968 and documented in the FSAR is met.

Placing inoperable channel on a single bus in trip will ensure the protective function will be fulfilled assuming a single failure in the remaining channels, thus satisfying the single failure

design criteria defined in the FSAR. When failures occur within the function that will prevent the protective function assuming a single failure to occur, action is required to place the affected Unit in a hot shutdown condition. In this condition, the protective function is not required. If a complete loss of coolant flow were to occur shortly after reaching hot shutdown conditions, natural circulation flow is capable of removing the required decay heat. The Technical Specifications as modified will ensure that applicable safety limits are met for the complete loss of reactor coolant flow event as analyzed in the FSAR, ensuring PBNP is operated in accordance with its design and licensing basis.

This change is essentially identical to the provisions contained in the improved Standard Technical Specification for Westinghouse Reactors, NUREG 1431.



NO SIGNIFICANT HAZARDS DETERMINATION  
TECHNICAL SPECIFICATION CHANGE REQUEST 207  
LIMITING CONDITIONS FOR OPERATION  
UNDERVOLTAGE REACTOR TRIP  
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

Wisconsin Electric Power Company, licensee for the Point Beach Nuclear Plant, requests amendments to Facility Operating Licenses DPR-24 and DPR-27 to incorporate changes to the Technical Specifications. The proposed changes correct an administrative discrepancy associated with previously approved amendments related to the definition of Rated Power, and revise the Limiting Conditions for Operation for the undervoltage reactor trip function to ensure operation in accordance with approved analyses for a complete loss of reactor coolant flow event.

The proposed changes have been evaluated in accordance with the requirements of 10 CFR 50.91 against the standards in 10 CFR 50.92. We have determined that the operation of the Point Beach Nuclear Plant in accordance with the proposed amendments does not result in a significant hazards consideration. The evaluation against each of the criteria of 10 CFR 50.92 follows.

1. Operation of the Point Beach Nuclear Plant in accordance with the proposed amendments will not create a significant increase in the probability or consequences of an accident previously evaluated.

The changes proposed ensure the Point Beach Nuclear Plant continues to be operated in accordance with the design and licensing basis for the facility.

The first change removes a footnote qualifying the definition of Rated Power as applied to PBNP Unit 2. This restriction was eliminated with the replacement of Unit 2 steam generators as approved by Amendments 173 and 177, dated July 1, 1997. The analyses for those amendments were performed based on the minimum flow requirements specified in Technical Specification 15.3.1.G.3. The note should have been deleted from the Technical Specifications at that time. Elimination of this note does not result in a change in the operation of PBNP from that analyzed and approved in Amendments 173 and 177. Therefore, this change is administrative and cannot result in an increase in probability or consequences of an accident previously evaluated.

The second change modifies the Limiting Condition For Operation for the undervoltage reactor trip protection function. This trip function is the primary protective function credited in the complete loss of flow event analysis in the Final Safety Analysis Report (FSAR) Section 14.1.8. As a primary protective function, this trip is required to be single failure proof as stipulated in proposed IEEE 279-1968 documented in FSAR

Section 7.2. This change ensures that this protective feature is maintained in a condition where single failure considerations are satisfied. When single failure criteria cannot be met, appropriate action is stipulated to shutdown the unit placing it in a condition where the protective function is no longer required. Therefore, this change ensures PBNP is operated in accordance with its design and licensing basis and cannot result in an increase in the probability or consequences of an accident previously evaluated.

2. Operation of the Point Beach Nuclear Plant in accordance with the proposed amendments will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The changes proposed by this request remove a footnote qualifying the definition of rated power as it applies to PBNP Unit 2 operation, and modify the LCO related to the undervoltage reactor trip protective function to ensure this function is maintained as required by the PBNP design and licensing basis. These changes are in agreement with approved analyses. These changes do not introduce any new accident initiators or alter the response of the PBNP Units to previously analyzed accidents. Therefore, operation of PBNP in accordance with the proposed changes cannot result in a new or different kind of accident from any accident previously evaluated.

3. Operation of the Point Beach Nuclear Plant in accordance with the proposed amendments does not create a significant reduction in a margin of safety.

Operation of the PBNP in accordance with the proposed amendments is within the bounds of approved design and licensing basis of the facility. The design and licensing basis establish appropriate margins of safety. Since operation of the PBNP remains within the approved design and licensing basis of the facility, a reduction in a margin of safety cannot result.

### Conclusion

Operation of the Point Beach Nuclear Plant in accordance with the proposed amendments does not result in a significant increase in the probability or consequence of any accident previously evaluated; does not result in a new or different type of accident than any accident previously evaluated; and, cannot result in a decrease in a margin of safety. Therefore, operation of the Point Beach Nuclear Plant in accordance with the proposed amendments does not result in significant hazards consideration.