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A WISCONSIN ENERGY COMPANY

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U.S. NUCLEAR REGULATORY COMMISSION
Mail Stop P1-137
Washington, DC 20555

Ladies and Gentlemen:

DOCKETS 50-266 AND 50-301
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
AND SUPPLEMENT 1
TECHNICAL SPECIFICATIONS CHANGE REQUEST 201
POINT BEACH NUCLEAR PLANT UNITS 1 AND 2
TAC NOS. MA6846 AND MA6847

By letter dated October 5, 1999, Wisconsin Electric Power Company, licensee, submitted a request for amendments to the Point Beach Nuclear Plant operating licenses to incorporate changes to the Technical Specifications. The requested amendments were submitted to eliminate inconsistencies between various Specifications, principally related to decay heat removal.

By letter dated April 11, 2000, the staff requested additional information related to the proposed changes. Attachment 1 is our response to the staff's information request.

Attachment 2 to this letter contains one change to the proposed Technical Specifications for decay heat removal. The change will require cooldown to less than or equal to 200°F if one RHR loop is the only means of decay heat removal available. This change is consistent with the Standard Technical Specifications for Westinghouse Reactors and was made in response to the staff's request for additional information.

We have reviewed the Safety Evaluation, determination of No Significant Hazards and categorical exclusion from an environmental impact appraisal included with our October 5, 1999, submittal. The determination of no significant hazards and categorical exclusion from environmental impact appraisal included with our October 5, 1999, submittal, apply to this proposal as the bases and conclusions of those evaluations have not changed. The safety evaluation included in Attachment 2 is specific to this change and supercedes the applicable information included with our October 5, 1999 submittal. All other information included with our October 5, 1999 submittal remains applicable.

A001

NRR-057

We believe the information provided is responsive to your request. Please contact us if you have any additional information or have any questions.

Sincerely,

Mark E. Reddemann
Site Vice President
Point Beach Nuclear Plant

JG/tat

Attachments

Subscribed and sworn before me on
this 22nd day of May 2000

Christine K. Pozorski
Notary Public, State of Wisconsin

My commission expires 8/25/2002.

cc: NRC Regional Administrator
NRC Project Manager
NRC Resident Inspector
PSCW

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1. **TS 15.3.1.A.1.b requires that when the reactor is subcritical and Tavg ≥ 350°F (Mode 3), both reactor coolant (RC) loops shall be operable and at least one RC loop shall be in operation. For Mode 3, TS 15.3.1.A.1.b is consistent with STS (Westinghouse Standard Technical Specifications, NUREG-1431, Revision 1) 3.4.5.b that requires RC loops be operable and one RC loop be in operation when the rod control system is not capable for rod withdrawal.**

   STS 3.4.5.a also specifies that two RC loops shall be operable and in operation when the rod control system is capable of rod withdrawal. The staff finds that TS 15.3.1.A.1.b does not include STS 3.4.5.a and associated action items for conditions when the rod control system is capable of rod withdrawal. Provide the technical bases for not including STS 3.4.5.a in the proposed TS.

   Response:

   The intent of the STS 3.4.5.a requirement for loops in operation when the rod control system is capable of rod withdrawal is to ensure an uncontrolled rod withdrawal event from a subcritical condition remains with the bounds of the analysis as provided in the updated Final Safety Analysis Report (FSAR). The analysis of this event for the Point Beach Nuclear Plant, as provided in the updated FSAR, assumes only one loop in operation. Therefore, the proposed change meets the STS intent and it is not necessary to require both RC loops be in operation with Tavg ≥ 350°F when the rod control system is capable of rod withdrawal.

2. **TS 15.3.1.A.1.b(1) specifies that when the reactor is subcritical and Tavg ≥ 350°F (Mode 3), both reactor coolant pumps (RCPs) may be not in operation with certain operating conditions met. This TS is partially compliant with the note to STS 3.4.5 which allows both RCPs to be not in operation for up to 1 hour per 8 hour period. However, TS 15.3.1.A.1.b(1) does not specify the time period to de-energize the RCPs for performing the desired tests. Provide justification for the deviation.**

   Response:

   This restriction is not contained in the current PBNP TS and has not been proposed for addition in this amendment request. The existing provision which allows both RC pumps to be not in operation under specified conditions is retained with only editorial changes. As detailed in the bases for the current TS, natural circulation flow has been demonstrated to be capable of removing decay heat up to an equivalent of 3.5% of rated thermal power

(RTP). Since decay heat removal under natural circulation conditions is sufficient, it is not necessary to modify TS 15.3.1.A.1.b(1) to more completely adopt the provisions of STS 3.4.5 and thus limiting the time that all RCPs may be not in operation. The existing controls, which ensure RC system subcooling is maintained and prohibits operations that would cause a reduction in RC system boron concentration when there is no forced coolant flow, ensure that safety limits related to core cooling and shutdown margin are met.

3. **TS 15.3.1.A.3.a(1) requires for 200°F < Tavg< 350°F, at least two of the residual heat removal (RHR) methods shall be operable and at least one shall be in operation. This TS is consistent with STS 3.4.6. When TS 15.3.1.A.3.a(1) is not met, TS 15.3.1.A.3.a(2), consistent with STS 3.4.6.C, requires corrective actions be taken for conditions with no RHR methods operable or in operation, and TS 15.3.1.A.3.a(3), consistent with STS 3.4.6.A, requires corrective actions be taken for conditions with only one RHR method operable. Following TS 15.3.1.A.3.a(2) and (3), the operator is allowed to continuously operate the plant in a reactor coolant temperature range of 200°F < Tavg < 350°F with the RHR requirements of TS 15.3.1.A.3.a(1) not met.**

However, STS 3.4.6.B requires that the reactor be placed to Mode 5 (Tavg ≤ 200°F) if one RHR loop is inoperable and two RCS loops are inoperable. As stated in STS B3.4.6.B.1, bringing the reactor to Mode 5 is conservative action with respect to RHR. With only one RHR loop operable, redundancy for RHR is lost and, in the event of a loss of the remaining RHR loop, it would be safer to initiate the loss from Mode 5 (Tavg ≤ 200°F) rather that Mode 4 (200°F < Tavg < 350°F). The staff finds that TS 15.3.1.A.3.a does not include 3.4.6.B. Provide the technical bases for not including STS 3.4.6.B in the proposed TS.

Response:

Following additional review and evaluation, including a PSA analysis utilizing a draft PRA model that includes shutdown risk, it was determined that a cooldown to ≤ 200°F with only one RHR loop and no RCS loop operable, provides a clear reduction in risk. Therefore, a proposed change is included as Attachment 2 to this transmittal to adopt this requirement. Attachment 2 contains only that information related to proposed Specification 15.3.1.A.3.b(3) necessary for this specific change. All other information included with our October 5, 1999 submittal remains applicable.

4. **TS 15.3.1.A.3.b(b) requires that for plant conditions with reactor coolant loops filled and reactor coolant temperature of no less than 200°F, a steam generator secondary side water level should maintain at level no less than 30 percent (narrow range) in one steam generator. This requirement is consistent with STS 3.4.7.b. However, 30-percent water level is a plant-specific number and should be supported by the plant-specific analyses.**

Provide the results of the analyses to show that the water level of 30 percent is sufficient to ensure adequate decay heat removal during natural circulation conditions.

The requested information should include a discussion of the acceptability of the methods used for the analyses.

Response:

A minimum 30% SG narrow range level criterion has been provided in order to consider the steam generator operable for decay heat removal in cold shutdown. The basis for this plant specific level is provided in the STS Bases for SR 3.4.5.2. As discussed in STS SR 3.4.5.2 Bases and in our October 5, 1999 submittal, this level was established to ensure the steam generator tubes are covered thus ensuring heat transfer from the primary to secondary system.

During natural circulation cooldown, SG levels are normally maintained at nominal no-load levels (45% to 65% narrow range level). The minimum of 30% is necessary to ensure SG tubes remain covered and thus maximize heat transfer. This level was established consistent with the STS Bases and the minimum level requirements in the Emergency Operating Procedures to ensure a heat sink for decay heat removal.

5. **TS 15.3.1.A.3.b(3) allows all required RHR pumps to be not in operation for up to 1 hour in any 8 hour period when Tavg ≤ 200°F and certain operating conditions are met. This is consistent with STS 3.4.7, Note 1, which is applicable to Mode 5 (Tavg ≤ 200°F) with the RCS filled with water. However, TS 15.3.1.A.3.b(3) is applicable to Mode 5 with the RCS either filled or not filled with water. With the RC loops not filled, Note 1 of STS 3.4.8 allows the required RHR pumps to be not in operation for up to 15 minutes when switching from one loop to another.**

During operation with the reduced RCS inventory, the inadvertent drainage or a loss of RHR capability is more likely to occur because the plant conditions are more likely to be perturbed due to various outage and maintenance activities. STS 3.4.8, Note 1, is to limit the likelihood of a loss of RHR capability for transient mitigation. The staff finds that TS 15.3.1.A.3.b(3) deviates form the STS in that it does not include STS 3.4.8, Note 1. Provide justification for the deviation.

Response:

The guidance proved in STS 3.4.8 Note 1 is not presently included in the current Technical Specifications and is not being proposed for inclusion in this amendment request. In this Mode of operation, the proposed Specification will normally require both RHR loops to be operable and one in operation. An allowance is provided to having no RHR loops in

operation for up to one hour provided other criteria are met; principally, subcooling is maintained and no operations causing a reduction in boron concentration are permitted.

Securing operation of all RHR pumps does not result in an increased potential for the loss of RHR cooling as both RHR loops are otherwise required to be fully operable and the required redundancy is maintained. In addition, the limitations on subcooling are maintained to ensure the core remains cool, and operators have the capability to restore cooling. As all other criteria for securing all RHR flow are maintained and the system is otherwise fully operable, the additional time that RHR may be secured does not appreciably increase the probability of a loss of RHR cooling due to failure.

In addition, procedures are in place which control normal operation in reduced inventory conditions and shutdown emergency procedures are in place for use in the event of a loss of cooling or inventory.

DOCKETS 50-266 AND 50-301
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
SUPPLEMENT 1
TECHNICAL SPECIFICATIONS CHANGE REQUEST 201

Description of change:

In response to Question 3 of the NRC staff's request for additional information, proposed Technical Specification 15.3.1.A.3.a(3) is modified as follows:

(Original changes proposed are indicated by single underline and strikeout. Changes proposed by this submittal are indicated by double underline.)

(~~2~~3) ~~If the conditions of specification (1) above cannot be met~~ With only one decay heat removal method operable, corrective action to return a second decay heat removal method to operable status as soon as possible shall be initiated immediately.

AND

(a) If one required RHR loop is inoperable and both RCS loops are inoperable, then cooldown to ≤ 200°F within 24 hours.

Basis for change:

The purpose of the proposed Technical Specifications 15.3.1.A.3 is to ensure redundancy of decay heat removal during all shutdown modes of operation. The Specification as originally proposed for RCS temperatures between 200°F and 350°F, allows for continued operation with only one RHR loop or one RCS loop operable; and, requires immediate action to return a second means of decay heat removal to an operable condition.

This is appropriate for only one RCS loop operable since cooldown to less than 200° F by only utilizing steam generators is not possible. Therefore, the prescribed action, to return a second decay heat removal method to an operable condition immediately, is appropriate.

With only one RHR loop operable and no RCS loops operable, redundancy of decay heat removal is also not maintained. In this condition, it is also appropriate to initiate action to restore a second decay heat removal method to operable immediately. In addition, since the RHR system relies on forced circulation of subcooled reactor coolant, cooldown to less than 200F is possible and appropriate. Shutdown risk in this condition, with a single RHR loop as the only available means of removing decay heat, is minimized by a cooldown to less than 200°F.

SAFETY EVALUATION

Wisconsin Electric Power Company, licensee for Point Beach Nuclear Plant, Units 1 and 2, submitted a request for amendments on October 5, 1999. The purpose of the proposed amendments was to address and resolve inconsistencies between various sections of the Technical Specifications. One of these inconsistencies was to appropriately coordinate decay heat removal requirements when shutdown.

As part of the proposed change, Technical Specification changes were proposed which required redundancy of decay heat removal when shutdown and where necessary, require appropriate corrective action when redundancy is not maintained. The October 5, 1999, submittal proposed crediting any combination of residual heat removal loops and reactor coolant loops for decay heat removal when reactor coolant system temperature was between 200°F and 350°F. The corrective action specified in proposed Specification 15.3.1.A.3.a(3) would have allowed unlimited time to correct the condition if only one decay heat removal method was operable. This action is allowed by current Technical Specification 15.3.1.A.3.a(2).

The proposed Specification 15.3.1.A.3.a(3) was reviewed against the Standard Technical Specifications for Westinghouse Reactors (STS) detailed in NUREG 1431. The action proposed is consistent with the STS in this temperature range when a lack of redundancy occurs and the operable decay heat removal method is a reactor coolant loop. However, if only one RHR loop is operable and both RCS loops are inoperable, the STS, in addition to taking immediate action to restore a second decay heat removal method to operable, requires cooldown to $\leq$ 200°F. The cooldown is conservative and provides additional margin due to the cooler temperature.

This requirement has been reviewed and determined to be applicable to PBNP. An assessment was performed using a draft probabilistic safety assessment-based shutdown risk monitor for the Point Beach Nuclear Plant to quantify the risk associated with only a single RHR loop available for decay heat removal for temperatures above and below 200°F. A clear reduction in risk was demonstrated for operation with reactor coolant temperatures less than 200°F, as compared to temperatures between 200°F and 350°F, for the change proposed in this supplement. Therefore, proposed TS 15.3.1.A.3.a(3) is revised to be more restrictive by requiring cooldown to less than 200°F when both RCS loops are inoperable and only one RHR loop is operable.

The time specified for the cooldown, 24 hours, is reasonable based on system design and operation to ensure an orderly and controlled cooldown while minimizing the impact on safety.

The proposed specification is conservative and more restrictive when compared to the current Technical Specifications and is consistent with the STS. This change results in an overall reduction in risk and increase in safety and therefore, will not be inimical to the public health and safety.

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Attachment 2

TECHNICAL SPECIFICATIONS

PAGE MARK-UPS

(c) Residual Heat Removal Loop (A)*
(d) Residual Heat Removal Loop (B)*

(~~3~~2) ~~If~~ With no decay heat removal method ~~is~~ operable or in operation, except as permitted by (4) below, all operations causing ~~an increase in the reactor decay heat load or~~ a reduction in reactor coolant system boron concentration shall be suspended. Corrective actions to return ~~a~~ required decay heat removal method(s) to operable and operation shall be initiated immediately.

(~~2~~3) ~~If the conditions of specification (1) above cannot be met~~ With only one decay heat removal method operable, corrective action to return a second decay heat removal method to operable status as soon as possible shall be initiated immediately.

And

(a) If one required RHR loop is inoperable and both RCS loops are inoperable, then cooldown to ≤ 200°F within 24 hours.

(4) ~~At least one of the above decay heat removal methods shall be in operation~~ ~~(a)~~ All reactor coolant pumps and residual heat removal pumps may be ~~deenergized~~ not in operation for up to 1 hour in any 8 hour period provided:
(~~1~~ a) No operations are permitted that would cause ~~dilution of~~ a reduction in the reactor coolant system boron concentration~~, and~~

And

(~~2~~ b) Core outlet temperature is maintained at least 10°F below saturation temperature.

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*Mechanical design provisions of the residual heat removal system afford the necessary flexibility to allow an operable residual heat removal loop to consist of the RHR pump from one loop coupled with the RHR heat exchanger from the other loop. Electrical design provisions of the residual heat removal system afford the necessary flexibility to allow the normal or emergency power source to be inoperable or tied together when the reactor coolant temperature is less than 200°F.

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Attachment 2

TECHNICAL SPECIFICATIONS
CLEAN PAGE

(c) Residual Heat Removal Loop (A)*
(d) Residual Heat Removal Loop (B)*

(2) With no decay heat removal method operable or in operation, except as permitted by (4) below, all operations causing a reduction in reactor coolant system boron concentration shall be suspended. Corrective actions to return decay heat removal method(s) to operable and operation shall be initiated immediately

(3) With only one decay heat removal method operable, corrective action to return a second decay heat removal method to operable status as soon as possible shall be initiated immediately.

And

(a) If one required RHR loop is inoperable and both RCS loops are inoperable, then cooldown to ≤ 200°F within 24 hours.

(4) All reactor coolant pumps and residual heat removal pumps may be not in operation for up to 1 hour in any 8 hour period provided:

(a) No operations are permitted that would cause a reduction in the reactor coolant system boron concentration

And

(b) Core outlet temperature is maintained at least 10°F below saturation temperature.

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*Mechanical design provisions of the residual heat removal system afford the necessary flexibility to allow an operable residual heat removal loop to consist of the RHR pump from one loop coupled with the RHR heat exchanger from the other loop. Electrical design provisions of the residual heat removal system afford the necessary flexibility to allow the normal or emergency power source to be inoperable or tied together when the reactor coolant temperature is less than 200°F.