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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266 and 50-301
License Nos. DPR-24 and DPR-27
Response to Request for Additional Information Regarding License Amendment Request 231, Technical Specification SR 3.1.4.1, Rod Group Alignment Limits

References: 1) Letter from Nuclear Management Company, LLC, to NRC, License Amendment Request 231, dated March 27, 2003 (NRC 2003-0027).

2) Letter from Nuclear Management Company, LLC, to NRC, Response to Request for Additional Information Regarding License Amendment Request 231," dated November 3, 2003 (NRC 2003-0101).

In Reference 1, Nuclear Management Company, LLC, (NMC) submitted a request for an amendment to the Technical Specifications (TS) for Point Beach Nuclear Plant (PBNP), Units 1 and 2. The proposed amendment would revise TS Surveillance Requirement (SR) 3.1.4.1, Rod Group Alignment Limits, to change the allowable alignment limits of individual rods in Mode 1 when greater than 85% power. In Reference 2, NMC provided additional information in support of this amendment request. The Nuclear Regulatory Commission (NRC) issued Amendments 200 and 205 for PBNP Units 1 and 2, respectively, on May 8, 2001. These related amendments increased the allowable alignment limits of individual rods for operation at less than or equal to 85% power.

During a conference call between NRC staff and NMC representatives on January 6, 2004, the NRC requested additional information in support of their review of Reference 1.

Enclosure 1 of this letter contains the NMC's response to the staff's questions.

No changes to the initially proposed license amendment request result from this additional information.

This letter contains no new commitments or changes to existing commitments.

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I declare under penalty of perjury that the foregoing is true and correct.
Executed on January 28, 2004.

Gary D. Van Middlesworth

Gary D. Van Middlesworth
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

ENCLOSURE 1

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING LICENSE AMENDMENT REQUEST 231, TECHNICAL SPECIFICATION SR 3.1.4.1, ROD GROUP ALIGNMENT LIMITS

The following information is provided in response to the Nuclear Regulatory Commission (NRC) staff's request for additional information (RAI) regarding the proposed amendment. The NRC staff's questions are restated below, with the NMC response following.

NRC Question Regarding Response Number 5 Included in NMC Letter Dated November 3, 2003:

The response mentions the application of a V(z) term to the measured FQ(z). The staff is not clear on what the V(z) term is, or how it is determined and applied. Is this term the same as the W(z) term used in the RAOC methodology? The response also mentions possible application of an additional burnup correction term. Please discuss the V(z) term and the additional burnup correction term, including descriptions of how these terms are determined and applied, and providing references to appropriate methodologies.

NMC Response:

In the original response to NRC question 5 included in NMC letter dated November 3, 2003, the term V(z) was used instead of the term W(z). Westinghouse uses both terms interchangeably. Although the two terms have the same meaning, V(z) is not used at PBNP. The following revision to the original response replaces V(z) with W(z) and clarifies the use and application of W(z).

The basis for and details of the standard Westinghouse peaking factor measurement uncertainties is defined in WCAP-7308-L-P-A. From this reference, the F_Q measurement uncertainty measurement is 3.9%, which has been rounded to the Technical Specifications (TS) value of 5% and the $F_{\Delta H}$ measurement uncertainty is 3.6%, which has been rounded to the TS value of 4%. These uncertainties include such factors as detector calibration and drift.

In addition to the standard F_Q measurement uncertainty of 5% PBNP is also required to apply a W(z) term to the measured $F_Q(z)$. The W(z) function accounts for the maximum possible change that can occur as part of the permitted RAOC operation during the maximum surveillance interval (31 EFPD). The application of this term is described in the PBNP Core Operating Limits Report, section 2.6. The $F_Q(z)$, as modified by the W(z) term, is $F^W_Q(z)$. $F^W_Q(z)$ represents the maximum peaking factor conservatively calculated to occur as a result of normal operational maneuvers not present in the steady state flux map data.

If the maximum $F_Q(z)$ is projected to increase during the surveillance interval, an additional burnup correction term is also required. This additional term, which for PBNP is typically 2%, is described in and required by TS Surveillance Requirement 3.2.1.2. The additional requirement prevents $F_Q(z)$ from exceeding its limit between surveillance intervals.

The final maximum $F_Q(z)$ is then used to determine the amount of margin available to offset an increase in the permissible indicated rod misalignment.

In the NMC responses to NRC questions 5 and 13 included in NMC letter dated November 3, 2003 and in the referenced WCAPs, the maximum surveillance interval between flux maps is referred to as 30 EFPD. This is the value that was typically used at PBNP for a monthly surveillance prior to the implementation of Improved Standard Tech Specs. Since the WCAPs were written before implementation of Improved Technical Specifications (ITS), Westinghouse used 30 EFPD as the surveillance interval. The actual maximum surveillance interval at PBNP under ITS is 31 EFPD. Westinghouse has confirmed that this parameter is not an input to any analysis performed by them and that reference to 30 or 31 EFPD does not change the results and conclusions documented in WCAP-15432 and the subsequent RAIs.

Accordingly, the NMC response to NRC question 13, provided November 3, 2003, is hereby revised to replace the term "30 EFPD" with "31 EFPD", as follows.

Original NRC Question 13

Assuming the proposed TS changes are implemented, the licensee could find itself in a position where the rod alignment exceeds the current TS limit of ±12 steps at HFP. In accordance with the proposed TS changes, the licensee would then need to verify that the $F_{\Delta H}$ and F_Q margins do not exceed the values in the proposed TS Tables. Should the licensee find that an adequate peaking factor margin does not exist, what is an acceptable amount of time to be in this condition? Please justify that the 12 hour surveillance frequency to verify rod position is acceptable.

Revised NMC Response:

As discussed in the response to question 5, the licensee is required to perform an incore flux map surveillance at least once every 31 EFPD. The peaking factor results from the flux maps are modified by applying the appropriate measurement uncertainties. In addition, a V(z) term is applied to the measured $F_Q(z)$ to account for the maximum possible change from the steady state reference $F_Q(z)$ of the flux map to the load follow $F_Q(z)$ that can occur as part of the permitted RAOC operation during the maximum surveillance interval (31 EFPD). Also, if the maximum steady state $F_Q(z)$ is projected to increase during the surveillance interval, then an additional burnup correction term is also required.

The resulting peaking factors are then used to determine the amount of margin available to offset an increase in the permissible indicated rod misalignment. Once the margin is determined, then the allowable amount of rod misalignment is set. Therefore, the licensee will not find itself in a situation of intentionally operating with rod misalignment beyond the permissible amount determined at each surveillance interval. If a rod or group of rods were to misalign beyond the amount permissible during the surveillance interval, then action will be taken to correct the situation in accordance with the current TS.

This is a question about the implementation of the proposed changes. The increased uncertainty allowed by the proposed changes will not be applied until after the monthly flux maps are completed and analyzed. At that point, reactor engineering will communicate the allowed uncertainty to operations. This will remain in effect until the next flux map is performed and analyzed. If a situation arises where the next flux map reduces the allowed uncertainty and an RPI becomes outside of the allowed range, the LCO will be considered to not be met, and the associated action conditions will be entered. This will be done regardless of when the 12-hour surveillance is due. In other words, the requirement to maintain the RPIs within the specified limits is in effect at all times. Appropriate actions will be taken when a condition is discovered, due to either an equipment problem or a change to the limits as a result of a new flux map analysis, which indicates an RPI has exceeded the alignment limits.