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**SUBJECT:** Informs NRC of change in schedule pertaining to final implementation of reactor stability long-term solution for WNP-2.

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# ENERGY NORTHWEST

P.O. Box 968 ■ Richland, Washington 99352-0968

September 24, 1999  
GO2-99-174

Docket No. 50-397

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21  
REACTOR STABILITY LONG TERM SOLUTION  
SCHEDULE CHANGE**

Reference: Letter GO2-97-197, dated October 30, 1997, JV Parrish (SS) to NRC, "Change of Reactor Stability Long Term Solution"

The purpose of this letter is to inform you of a change in the schedule pertaining to final implementation of the reactor stability long-term solution for WNP-2. In the referenced letter, we stated that the installation of ABB Combustion Engineering Stability Option III would take place during the R-14 refueling outage in Spring 1999, with final implementation occurring in June 2000 following the R-15 refueling outage. This plan was based upon a previously established 12-month refueling outage schedule.

Although installation was completed during Spring 1999 as scheduled, final implementation (arming the trip functions) may be delayed. The reason for the possible delay is that we are transitioning to a 24-month fuel cycle this year. The transition to a 24-month fuel cycle means that the R-14 refueling outage was rescheduled from Spring 1999 to Fall 1999, which will begin the next full operating cycle. As part of the transition process, an arrangement was reached with the Bonneville Power Administration, customer for WNP-2 electricity, that WNP-2 would also be in a shutdown condition for fuel savings dispatch (non-outage reserve status) during Spring 1999. As a result, we took the opportunity to install the reactor core stability modification during that time.

The Oscillation Power Range Monitor (OPRM) trip capabilities are currently deactivated, but the OPRM alarms and indications are operational to enhance operator ability to recognize and respond to an instability event. As part of this initial surveillance phase, the OPRM functions are being monitored to ensure that the OPRM algorithms perform according to design specifications and the system is measured under a variety of operating conditions.

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## REACTOR STABILITY LONG TERM SOLUTION SCHEDULE CHANGE

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The generic topical report for the OPRM<sup>1</sup> recommends that the OPRM function be monitored for six months during the first fuel cycle prior to arming to ensure that the OPRM algorithms perform according to design functions. There was insufficient operating history to allow for arming of the system during the short time frame between our June 30, 1999 startup and when we shutdown for the R-14 refueling outage on September 18, 1999. Therefore, we plan to continue the monitoring period into the next full operating cycle to ensure that system performance is adequately evaluated and operational characteristics are fully understood. During the monitoring period, in addition to ensuring that the OPRM algorithms perform according to design specifications, we will be evaluating other contributing parameters that could impact the sensitivity of the OPRM system. These parameters include varied operating conditions and a spectrum of flux profiles, which potentially may be encountered during a complete operating cycle.

Continuation of the monitoring period into the next full operating cycle will also allow us to appropriately resolve issues associated with discovery of an OPRM defect that was recently reported to the staff by ABB pursuant to the requirements of 10 CFR 21.<sup>2</sup> The defect involves the random resetting of the slave OPRM module. This problem has the potential for causing the OPRM trip channel to be out of service for a short period of time (typically less than one minute).

The start of the next full operating cycle is scheduled for October 1999, which is the planned startup time frame following the R-14 refueling outage. Accordingly, arming of the OPRM trip functions will occur either prior to but not later than startup from the R-15 refueling outage. The R-15 refueling outage is presently scheduled for Spring 2001, with the subsequent startup planned for June 2001.

During the period of time prior to full implementation, we will continue controls which are currently in place to avoid power oscillations and to detect and suppress them if they occur. The methods we use are extensive and consistent with the Boiling Water Reactor Owners' Group interim operating recommendations and are discussed in detail in the attachment to the referenced letter. For ease of reference, these methods are briefly discussed again as follows:

- Power-to-Flow Regions

Regional exclusion calculations are used to define the power-to-flow regions where instabilities can occur at WNP-2. The power-to-flow operating regions are defined in the core operating limits report. The Technical Specifications and plant procedures prescribe the actions to be taken in the event there is a potential for thermal-hydraulic oscillations to occur.

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<sup>1</sup> ABB Report CENPD-400-P-A, Revision 01, "Generic Topical Report for the ABB Option III Oscillation Power Range Monitor (OPRM)," May 1995

<sup>2</sup> ABB Letter LD-99-036, dated June 29, 1999, IC Rickard (ABB) to NRC, "Report of a Defect Pursuant to 10 CFR 21 Concerning ABB Oscillation Power Range Monitors for BWRs"



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**REACTOR STABILITY LONG TERM SOLUTION  
SCHEDULE CHANGE**

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- **Decay Ratio Monitoring**

Decay ratio monitoring is performed using the Advanced Neutron Noise Analysis (ANNA) system. The ANNA system uses several local power range monitors and average power range monitors for verifying decay ratios and detecting oscillations. Plant procedures govern the use of the ANNA system.

- **Area of Increased Awareness**

An area of increased awareness has been defined on the power-to-flow map. This area establishes operating restrictions to increase stability margins near the power-to-flow regions where instabilities can occur at WNP-2. Entry into the area of increased awareness is governed by plant procedures.

We believe that these interim monitoring measures, in addition to the operational alarms and indications, are effective and provide adequate protection against reactor core instability events until the long-term solution is implemented.

In the referenced letter, we also anticipated submitting a Technical Specification change for Stability Option III prior to January 1, 1999. However, that proposed date was impacted by the transition to the 24-month fuel cycle. Based upon the change to the refueling outage and follow-up system testing schedules, the statement is revised to read that the associated Technical Specification amendment request will be submitted with adequate lead time to assure that the Technical Specification change is received prior to the scheduled arming of the system.

Should you have any questions or desire additional information pertaining to this letter, please call PJ Inserra at (509) 377-4147.

Respectfully,



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