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AUTH.NAME AUTHOR AFFILIATION
PARRISH,J.V. Washington Public Power Supply System
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SUBJECT: Informs NRC of change to plant reactor satability long term solution from Option I-A to Option III & to provide update to implementation schedule.

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October 30, 1997
GO2-97-197

Docket No. 50-397

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

Gentlemen:

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

References: 1) Letter, dated January 12, 1995, JV Parrish (SS) to NRC, "Response to NRC Generic Letter 94-02, Action No. 2"

2) Letter, dated December 17, 1996, JV Parrish (SS) to NRC, "Response to NRC Generic Letter 94-02, Action No. 2"

The purpose of this letter is to inform you of a change to the WNP-2 reactor stability long term solution from Option I-A to Option III and to provide an update to the implementation schedule. In Reference 1 the Supply System elected to proceed with the Option I-A concept in response to generic letter 94-02. The Reference 2 letter provided an updated schedule for implementation of Option I-A.

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The Supply System has proceeded with work on the Option I-A solution. These efforts have taken the Supply System closer to final implementation but have brought up questions about the complexity of the change and its impact on plant operation. There is a concern that reduced operating margin required by Option I-A implementation would challenge the ability of the plant to meet WNP-2 FSAR commitments to withstand single feedwater and recirculation pump trips without a reactor scram. In addition, there are complexities associated with eliminating or modifying Technical Specification 3.2.4, Average Power Range Monitor (APRM) Gain and Setpoint to assure it does not conflict with Option I-A. These complexities have led to the conclusion that an Option III solution would be in the best interests of WNP-2 at this time.

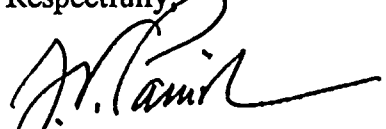
The work scope needed to implement Option III has been evaluated and found to require a more extensive design change. It entails either adding Oscillation Power Range Monitor (OPRM) equipment or changing out the entire Average Power Range Monitoring System. Costs and hardware/software schedules need to be evaluated to determine which Option III vendor to choose. In order to obtain the proper choice of vendor and a quality design and installation package, the existing schedule is being modified. The installation of Option III will take place during the R-14 refueling outage in the Spring of 1999. The Supply System anticipates operating for one refueling cycle with the system unarmed to allow for post-installation testing consistent with industry practice. The Option III solution will be fully implemented with an armed trip function following the R-15 refueling outage in the Spring of 2000. We anticipate submitting a Technical Specification change for Option III prior to January 1, 1999.

During the period of time prior to full implementation, the Supply System will continue controls which are presently in place to avoid power oscillations and to detect and suppress them if they occur. We believe the methods that we use are extensive and consistent with the upgraded BWROG Interim Operating Recommendations as described in Attachment I.

In summary, the Supply System is changing its method of implementing the long term reactor stability solution from Option 1A to Option III. The schedule for final implementation will be delayed by one year to June 2000 and extensive interim stability control measures are in place.

Should you have any questions or desire additional information regarding this matter, please call me or Mr. P.J Inserra at (509) 377-4147.

Respectfully,



JV. Parrish
Chief Executive Officer
Mail Drop 1023

cc: EW Merschoff - NRC RIV
KE Perkins, Jr. - NRC RIV, Walnut Creek Field Office
TG Colburn - NRR
NRC Sr. Resident Inspector - 927N
DL Williams - BPA/399
PD Robinson - Winston & Strawn

REACTOR STABILITY INTERIM OPERATING MEASURES

Attachment I

Regional exclusion calculations are used to define the power-to-flow region where instabilities can occur at WNP-2. The power-to-flow operating region limits are defined in the Core Operating Limit Report (COLR), Figure 5.1. An Exclusion Region (Region A) is defined to assure it bounds a decay ratio of 0.9. Technical Specification 3.4.1, Reactor Coolant System, requires plant shutdown if the reactor is operating in Region A. A Restricted Region is defined to bound a decay ratio of 0.80. In this region there is a potential for thermal-hydraulic oscillations and monitoring of the decay ratio is required by Technical Specification 3.4.1.

Decay ratio monitoring is performed utilizing the Advanced Neutron Noise Analysis (ANNA) System. This system uses a total of eighteen Local Power Range Monitors (LPRMs) in each of the nine core regions. Four Average Power Range Monitors (APRMs) are also tracked to assure both global (in-phase) and regional (out-of-phase) oscillations can be detected. The plant must be shutdown if the ANNA system cannot verify the decay ratio is < 0.75 and the Restricted Region cannot be exited. Plant Procedure TSP-SMS-C701, Stability Monitoring System Operability, verifies the operability of the ANNA system. In addition, Plant Procedure TSP-SMS-C101, Core Stability Monitoring, defines how ANNA is to be used when operating the plant in the Restricted Region. In practice, the ANNA system is operating when the plant is at power with a display of its status on the Plant Overview computer screen in the control room.

WNP-2 has also defined an Area of Increased Awareness (AIA) on the power-to-flow map. This area establishes operating restrictions to increase stability margins near Regions A, B, and C. Attachment 8.4 to Plant Procedure 9.3.12, Power Plant Maneuvering, requires a detailed plan for entry into the AIA. This procedure includes a stability analysis of the proposed target rod pattern to be used for entry into the region. The analysis is to be performed using the STAIF computer code which is to indicate a decay ratio less than 0.5.

The Supply System believes these interim monitoring measures are effective and provide adequate protection against reactor core instability events until the long term solution is implemented.