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 AUTH. NAME AUTHOR AFFILIATION
 PARRISH, J.V. Washington Public Power Supply System
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SUBJECT: Informs NRC of addl info obtained during requested audit
 followup activities oper MSL radiation monitor mod audit by
 NRC on 940606-09, in fulfillment of audit exit meeting
 commitment. No safety or licensing concerns noted.

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P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352-0968 • (509) 372-5000

September 21, 1994
GO2-94-217

Docket No. 50-397

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-37
Washington, D. C. 20555

Gentlemen:

Subject: WNP-2, OPERATING LICENSE NO. NPF-21
 AUDIT OF MAIN STEAM LINE (MSL) RADIATION MONITOR
 MODIFICATION, FULFILLMENT OF COMMITMENT FOR
 ADDITIONAL INFORMATION

Reference: Letter, dated June 2, 1994, L. Mark Padovan (NRC) to JV Parrish (SS),
 "Issuance of Amendment for the Washington Public Power Supply System
 Nuclear Project No. 2 (TAC No. M88329)"

The referenced letter notified the Supply System of the Commission's intent to audit the MSL radiation monitor modification. The audit was to include a review of: (1) our electromagnetic and radio frequency interference site survey, (2) verification and validation plan implementation, and (3) software configuration management plan. This letter fulfills an audit exit meeting commitment to inform the NRC of additional information obtained during requested audit followup activities.

The MSL radiation monitor modification audit was conducted by NRC inspectors Mike Waterman and Suzie Wittenberg during the period of June 6 through June 9, 1994, and resulted in no safety or licensing concerns. However, during a review of the electromagnetic compatibility report prepared by National Technical Systems (NTS), it was noted that NTS recommended obtaining the equipment test data for the low frequency range (30 Hz to 15 kHz) electromagnetic interference (EMI). The NRC inspectors concurred with the Supply System's position that this low frequency range is below the frequencies required for acceptance and is not a safety concern, but may be of some operational concern. As a result, the inspectors

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Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The number of transformed cells was determined by the number of colonies obtained on the selective medium. The results are the mean of three independent experiments. Error bars represent standard deviation.

[illegible]

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The number of transformed cells was determined by the number of colonies growing on the selective medium. The results are the mean of three independent experiments. Error bars represent standard deviation.

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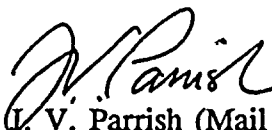
**AUDIT OF MAIN STEAM LINE (MSL) RADIATION MONITOR MODIFICATION,
FULFILLMENT OF COMMITMENT FOR ADDITIONAL INFORMATION**

requested that the Supply System obtain the equipment test data for the low frequency range and verify that it maintains the WNP-2 margin of 6 dB above control room operating conditions. The Supply System committed to inform the NRC of what test data was available at the lower frequencies and the impact of any subsequent EMI susceptibility evaluations on plant operations.

The General Electric Company (GE) was contracted by the Supply System to determine if the MSL radiation monitor, as qualified by GE, will maintain at least a 6 dB margin for the EMI conditions at WNP-2, including the 30 Hz to 15 kHz frequency range. The MSL radiation monitor was not tested for low frequency input EMI susceptibility. However, the MSL radiation monitor is a member of the GE Nuclear Measurement Analysis and Control (NUMAC) family of digital type nuclear instruments, and other instruments from the NUMAC family were tested and have passed low frequency EMI testing. The testing was conducted in accordance with military test CS101 for a frequency range of 120 Hz (twice the fundamental 60 Hz supply frequency) to 50 kHz. The instrument test data showed a low frequency margin of at least 20 dB above the WNP-2 control room operating conditions. The NUMAC power supplies are designed to filter out and isolate input EMI to protect the rest of the instrument circuit. Since the tested instruments contained the same low voltage power supplies as the MSL radiation monitor, it is reasonable to assume that the MSL radiation monitor will also pass the CS101 low frequency EMI tests with similar margin. With a low frequency EMI susceptibility margin of 20 dB, the MSL radiation monitor exceeds the WNP-2 margin of 6 dB. Therefore, the MSL radiation monitor is more than adequate for installation in the WNP-2 control room operational EMI environment, and there is no impact on plant operations..

Should you have any questions or desire additional information regarding this matter, please call me or D. A. Swank at (509) 377-4563.

Sincerely,



J. V. Parrish (Mail Drop 1023)
Assistant Managing Director, Operations

CDM/bk
Attachments

cc: LJ Callan - NRC RIV
KE Perkins, Jr. - NRC RIV, Walnut Creek Field Office
NS Reynolds - Winston & Strawn
JW Clifford - NRC
ME Waterman - NRC/NRR/HICB
DL Williams - BPA/399
NRC Sr. Resident Inspector - 927N

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