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ACCESSION NBR: 9401190007 DOC. DATE: 93/12/17 NOTARIZED: NO DOCKET #
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 AUTH. NAME AUTHOR AFFILIATION
 PARRISH, J.V. Washington Public Power Supply System
 RECIPIENT NAME RECIPIENT AFFILIATION
 FAULKENBERRY, B. Region. 5 (Post 820201)

SUBJECT: Special rept: on 931116, loose parts detection sys channel 5
 did not pass daily channel surveillance. Exact cause not
 determined.

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December 17, 1993
G02-93-293

Docket No. 50-397

Mr. B. H. Faulkenberry
Regional Administrator
US Nuclear Regulatory Commission
Region V
1450 Maria Lane
Walnut Creek, Ca. 94596

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NRC
REGION V
93 DEC 27 AM 11:04

Dear Mr. Faulkenberry:

Subject: **WNP-2, OPERATING LICENSE NO. NPF-21
SPECIAL REPORT: LOOSE-PART DETECTION INSTRUMENTATION**

This special report is submitted pursuant to the requirements of WNP-2 Technical Specification Section 3.3.7.2 "Loose-Part Detection Instrumentation" which requires the instruments to be operable at all times. The action statement for this specification requires that "with one or more Loose-Part Detection System (LPDS) channels inoperable for more than 30 days, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status."

The Loose-Part Detection System has been designed and installed to detect the presence of internal loose parts in the Reactor Pressure Vessel (RPV). This system is dedicated to monitor the RPV via the use of ten permanently-mounted sensors in various locations around the Reactor Vessel. A signal of twice the general background noise for each sensor will generate an alarm. The alarm would alert the Shift Technical Advisor to listen to the signals with head phones and try to determine the cause of the alarm. The signals causing the alarm are automatically recorded and are available for analysis.

On November 16, 1993, LPDS channel #5 did not pass its daily channel check surveillance. The channel was observed to periodically drift in and out of operation. On December 1, 1993, the channel remained out of operation for a period of time sufficient for personnel to troubleshoot the problem. The system engineer worked with the technicians to isolate the problem. It was determined that the channel #5 problem was with its associated equipment in the Drywell, and because of its location, the exact cause of the failure cannot presently be determined.

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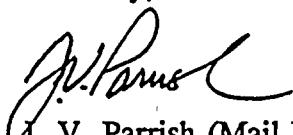
Page Two

SPECIAL REPORT: LOOSE-PART DETECTION INSTRUMENTATION

Channel #5 is located on the Reactor Recirculation System B Suction in the Drywell. Analysis of the signal relationship from the 10 channels is used to determine the location of the suspected loose part. There is one sensor located on each Reactor Recirculation line to monitor this portion of the Vessel. Therefore determining the location of suspected loose parts at this region of the vessel will be impacted with the loss of channel #5. The alarm logic is determined by the relationship of the background noise level (long time constant RMS average) of a channel versus the signal noise level (short time constant RMS average) of the same channel and is independent of the number of channels in service. The system output is an annunciator on Board S in the Main Control Room and a magnetic tape recording of all ten signals at the time of the alarm. There are no automatic actuations produced by this instrument.

While the Technical Specifications require the system to be declared inoperable, the loose parts monitor system design allows the system to be functional when less than the full ten channels are operational. The failed equipment is located in the Drywell and is not accessible during reactor operation. An MWR has been initiated to repair the failed channel the next time the Drywell is accessible. With the LPDS System now not operable, the Supply System does not believe that there is a requirement to provide additional notifications should other channels become inoperable while the LPDS System is still inoperable.

Sincerely,



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

DLO/bk

cc: BH Faulkenberry - NRC RV
NS Reynolds - Winston & Strawn
JW Clifford - NRC
DL Williams - BPA/399
NRC Site Inspector - 927N