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SUBJECT: Special Rept 1-SR-88-008:on 881113, loose part detection
 channel inoperable for more than 30 days.

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Arizona Nuclear Power Project

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192-00433-JGH/TDS/DAJ

November 22, 1988

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

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528 (License No. NPF-41)
Special Report 1-SR-88-008
File: 88-020-404

Attached please find Special Report 1-SR-88-008 prepared and submitted pursuant to Technical Specifications 3.3.3.7, ACTION "a" and 6.9.2. This report discusses an inoperable Loose Parts Detection System Channel.

If you have any questions, please contact T. D. Shriver, Compliance Manager at (602) 393-2521.

Very truly yours,



J. G. Haynes
Vice President
Nuclear Production

JGH/TDS/DAJ/kj

Attachment

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Palo Verde Nuclear Generating Station Unit 1

Loose Part Detection Instrumentation

License No. NPF-41

Docket No. 50-528

Special Report No. 1-SR-88-008

This Special Report is being submitted pursuant to Technical Specification 3.3.3.7, ACTION "a" and Technical Specification 6.9.2 addressing a Loose Part Detection channel being inoperable for more than thirty (30) days. The 30 day period for returning the channel to an operable status was exceeded at approximately 2145 MST on November 13, 1988

The Loose Part Detection System consists of eight (8) channels. Each channel consists of a piezoelectric crystal motion sensor and associated amplification, indication, and recording circuitry. The sensors are positioned in the following locations: two (2) mounted on the Reactor Vessel upper head, two (2) mounted on the Reactor Vessel lower incore nozzle, and one (1) on each of the two (2) Steam Generators' inlet and outlet nozzles. The piezoelectric sensors detect the loose parts using acoustic signals which are generated when loose parts impact a Reactor Coolant System component or structure. Signals in excess of the alarm setpoint will result in an alarm condition. The alarms are the "latch-on" type, i.e., the alarm will remain on when the system returns to normal and will not clear until the alarm is manually reset. There is one alarm indicator in the Control Room for the eight channels such that a "latch on" alarm effectively renders the Control Room alarm indication inoperable for the remaining channels upon receipt of an alarm condition. In addition to the alarm in the Control Room, a tape recorder will start. There are two tape recorders; four system channels input into one tape recorder.

On October 14, 1988 Palo Verde Unit 1 was in Mode 1 (POWER OPERATION) at approximately 100 percent power when Loose Part Detection System Channel 5 (Steam Generator 1A inlet) was declared inoperable due to repeated spurious alarms. An approved work document was initiated to troubleshoot the cause of the spurious alarms. As a result of the troubleshooting, it was determined that no component malfunctions existed and that the alarm setpoint being near background noise levels resulted in the spurious alarms.

In order to enable the reflash capability for the visual alarm indication in the Control Room and the automatic recording feature for the other channels sharing the recorder utilized by Channel 5, the Channel 5 setpoint has been raised to prevent false alarms. This renders Channel 5 inoperable; however, it remains functional. During the period of Channel 5 inoperability, Operations Department personnel will audibly monitor the Loose Part Detection System at least once per twenty-four hours. Additionally, ANPP Vibration Group and Engineering personnel will monitor the inoperable channel once per week during the period of inoperability.

An engineering evaluation has been initiated to investigate the problem with the Loose Part Detection System Channel 5 and develop a solution. Based upon the engineering evaluation, appropriate actions will be taken to return the system to an operable status. A supplement to this report will be submitted to describe the corrective actions and schedule for restoring the system to service.

