

September 4, 2003

U S Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

**PALISADES NUCLEAR PLANT**  
**DOCKET 50-255**  
**LICENSE No. DPR-20**  
**SPECIAL REPORT OF INOPERABILITY OF ONE CHANNEL OF STACK GAS**  
**EFFLUENT SYSTEM**

Palisades Offsite Dose Calculation Manual, Appendix A, Table A-1, Action 4, requires that a Special Report be submitted to the NRC within 30 days when the Hi Range Noble Gas Monitor, RIA-2327, is inoperable and not restored to operable status within 7 days. The report is to outline the actions taken, the cause of the inoperability, and the plans and schedule for restoring the channel to operable status. The required report is attached.

This letter contains no new commitments and no revisions to existing commitments.



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Sr. Vice-President - Group Operations

CC Regional Administrator, USNRC, Region III  
Project Manager, Palisades Nuclear Plant, USNRC, NRR  
NRC Resident Inspector – Palisades Nuclear Plant

Attachment

**ATTACHMENT**

**NUCLEAR MANAGEMENT COMPANY, LLC  
PALISADES NUCLEAR PLANT  
DOCKET 50-255**

**September 4, 2003**

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STACK GAS EFFLUENT SYSTEM**

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## **SPECIAL REPORT OF INOPERABILITY OF ONE CHANNEL OF STACK GAS EFFLUENT SYSTEM**

### **HI RANGE NOBLE GAS MONITOR RIA-2327**

The Hi Range Noble Gas Monitor, RIA-2327, is one of four instruments associated with the Stack Gas Effluent System. RIA-2327 is a post-accident monitor used to monitor noble gasses. This channel is activated and placed into service in the event of a high alarm signal from the normal range noble gas monitor, RIA-2326.

### **CAUSE OF INOPERABILITY**

On August 6, 2003, at 2120 hours, the Radioactive Gas Effluent Monitoring (RGEM) System was declared inoperable when the indication on stack gas flow recorder FR-2318 lowered, tripping the RGEM sample pumps. Actual stack flow rate was not affected.

The RGEM system is designed to obtain an isokinetic sample. The system receives a reference signal, which is proportional to the stack flow rate. When the stack flow rate on recorder FR-2318 indicated a zero stack flow rate, the RGEM sample flow rate also went to zero, which initiates a low flow signal and trips the system.

### **ACTIONS TAKEN**

On August 7, 2003, the sensing lines were purged. Work order history showed that purging the sensing lines (condensation build up) had corrected low flow indications on FR-2318 in the past. This effort did not resolve the problem. FR-2318 continued to periodically spike downward from the normal stack flow rate of 72,000 cfm to zero cfm.

On August 8, 2003, monitoring of the outputs from stack flow transmitter FT-1818 and the square root extractor was initiated to determine the source of the failure. A current source was used to simulate a 1.5 cfm sampling flow rate and the RGEM unit was again functional. Stack flow rate indications on FR-2318 returned to normal, and remained normal during a 10-day monitoring period.

On August 18, 2003, the loop for FT-1818 to RGEM was restored to normal configuration and the monitoring equipment was removed, however, RGEM remained inoperable.

On August 19, 2003, at 1600 hours, recorder FR-2318 spiked low numerous times causing the RGEM system to again shut down.

On August 20, 2003, it was identified that when the terminal connections on the rear of stack effluent gas flow monitor, FM-1818, were pressed, the output of FM-1818 would spike low, duplicating the observed spiking phenomena. The bus bar that connects terminal 11 to terminal 6 was removed, cleaned, and reinstalled.

## **SPECIAL REPORT OF INOPERABILITY OF ONE CHANNEL OF STACK GAS EFFLUENT SYSTEM**

### **SCHEDULE FOR RETURN TO SERVICE**

Monitoring continued until August 22, 2003. No further problems with the flow loop occurred. The RGEM system was returned to operable status on August 22, 2003, at 1035 hours.