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TS 3.3.10 and 5.6.7

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

Calvert Cliffs Nuclear Power Plant, Unit No. 2
Renewed Facility Operating License No. DPR-69
NRC Docket No. 50-318

Subject: Reactor Vessel Level Monitoring System Special Report

This special report is submitted in accordance with Calvert Cliffs Nuclear Power Plant Technical Specification 3.3.10. The report is required due to the Unit 2 Reactor Vessel Level Monitoring System having less than the required minimum number of operable channels.

## ACTION TAKEN

On January 1, 2019 at 10:51am, the Calvert Cliffs Unit 2 Reactor Vessel Level Monitoring System (RVLMS), Channel B experienced a total loss of cabinet power. This failure resulted in Channel B being declared inoperable. Calvert Cliffs Technical Specification "Post-Accident Monitoring (PAMS) Instrumentation," Table 3.3.10-1 function 5, requires two channels of RVLMS to be operable. Because of the subject failure, Calvert Cliffs entered Technical Specification 3.3.10, Condition A. When the Completion Time of Condition A expired, Calvert Cliffs entered Technical Specification 3.3.10, Condition B.1, which requires submission of this report in accordance with Technical Specification 5.6.7. As described below, the channel has been returned to operable status.

## PREPLANNED ALTERNATE METHOD OF MONITORING

The RVLMS instrumentation is designated for post-accident monitoring use. It provides the plant operator with information to assess void formation in the reactor vessel head region and the trend of liquid level in the reactor vessel plenum. The RVLMS consists of two redundant channels. Reactor Vessel Level Monitoring Channel A remains operable with all eight of its sensors functioning normally. The removal of Channel B from operable status eliminates a means of redundant indication. However, alternate methods of monitoring for core and Reactor Coolant System voiding, using pressurizer level, Reactor Coolant System subcooling, hot and cold leg temperature, and core exit thermocouple instrumentation, were initiated as required by plant procedures.

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**CAUSES OF INOPERABILITY**

The cause of inoperability is the failure of channel B RVLMS line filter and bulk 300 VDC power distribution module. The most probable cause of these failures is age-related degradation. The affected modules have been removed for refurbishment and a failure analysis report will be generated to determine the failure mechanism. Action Item 04207237-08 has been created to review the failure analysis report.

**PLANS AND SCHEDULES FOR RESTORING THE SYSTEM TO OPERABLE STATUS**

Calvert Cliffs Nuclear Power Plant performed troubleshooting and determined a blown fuse interrupted the source power to the RVLMS cabinet B. The fuse was replaced and blew again. Additional troubleshooting revealed the line filter and bulk 300 VDC power distribution module failed. On 2/1/2019, following module replacement and performance of power checks, RVLMS Channel B was returned to operable status and Operations exited Technical Specification 3.3.10.

There are no regulatory commitments contained in this correspondence.

Should you have questions regarding this matter, please contact me at (410) 495-5219.

Respectfully,

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LDS/PSF

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