Calvert Cliffs Nuclear Power Plant

1650 Calvert Cliffs Parkway
Lusby, Maryland 20657

CENG
a joint venture of
Constellation Energy · EDF

CALVERT CLIFFS
NUCLEAR POWER PLANT

August 27, 2010

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit No. 1; Docket No. 50-317
Reactor Vessel Water Level Monitoring System Special Report

The attached 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 1 Reactor Vessel Water Level Monitoring System having less than the required minimum number of operable channels.

Should you have questions regarding this matter, please contact Mr. Douglas E. Lauver at (410) 495-5219.

Very truly yours,

Thomas E. Trepanier
Plant General Manager

TET/RDW/bjd

Attachment: (1) Unit 1 Reactor Vessel Water Level Monitoring System Special Report

cc: D. V. Pickett, NRC
M. L. Dapas, NRC
Resident Inspector, NRC
S. Gray, DNR

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NRR

ATTACHMENT (1)

UNIT 1

REACTOR VESSEL WATER LEVEL MONITORING SYSTEM

SPECIAL REPORT

Calvert Cliffs Nuclear Power Plant, LLC
August 27, 2010

ATTACHMENT (1)

UNIT 1 REACTOR VESSEL WATER LEVEL MONITORING SYSTEM SPECIAL REPORT

Calvert Cliffs Nuclear Power Plant, LLC (CCNPP) submits this Special Report concerning an inoperable Unit 1 Reactor Vessel Water Level Monitoring System channel. This Special Report is required by Technical Specification 3.3.10, Condition B, Required Action B.1.

ACTION TAKEN

On July 17, 2010 the CCNPP Unit 1 Reactor Vessel Water Level Monitoring System, Channel B experienced a failure of three level position sensors in the reactor vessel plenum region. These failures resulted in Channel B being declared inoperable. Calvert Cliffs Technical Specification Bases Section B3.3.10, "Post-Accident Monitoring (PAMS) Instrumentation," requires one of the upper three (vessel head region) and three of the lower five (plenum region) sensors for operability of each Reactor Vessel Water Level Monitor Channel. As a result of the subject failures, CCNPP entered Technical Specification 3.3.10, Condition A. When the Completion Time of Condition A expired, CCNPP entered Technical Specification 3.3.10, Condition B.1, which requires submission of this report in accordance with Technical Specification 5.6.7.

EFFECT ON OPERATION

The Reactor Vessel Water Level Monitoring System 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 Reactor Vessel Water Level Monitoring System consists of two redundant channels. Reactor Vessel Water 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, have been initiated as required by plant procedures.

CAUSES OF INOPERABILITY

The cause of inoperability is the failure of three of the lower five (plenum region) sensors. The most probable cause of these failures is water intrusion into the probe assembly with leakage into the position sensors.

PLANS AND SCHEDULES FOR RESTORING THE SYSTEM TO OPERABLE STATUS

Calvert Cliffs Nuclear Power Plant will troubleshoot and repair (including replacement of the Channel B Reactor Vessel Water Level sensors, if required) during the scheduled Unit 1 2012 refueling outage or during a forced outage of sufficient duration and scope. Following this maintenance, it is expected that the Reactor Vessel Water Level Monitor Channel B will be returned to operable status.