UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 15, 2014

Mr. George H. Gellrich, Vice President
Calvert Cliffs Nuclear Power Plant, LLC
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 REQUEST FOR ADDITIONAL INFORMATION REGARDING ENHANCEMENTS TO DIESEL GENERATOR SURVEILLANCE REQUIREMENTS LICENSE AMENDMENT (TAC NOS. ME9832 AND ME9833)

Dear Mr. Gellrich:

By letter dated October 16, 2012, as supplemented by letter dated July 12, 2013, Calvert Cliffs Nuclear Power Plant, LLC, the licensee, submitted a license amendment request (LAR) to revise Surveillance Requirements of Technical Specification 3.8.1, "AC Sources – Operating," for Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2.

The NRC staff is reviewing the LAR and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). The NRC staff is requesting a response to the RAI within 45 days of the date of this letter.

If you have any questions regarding this issue, please contact me at (301) 415-1016.

Sincerely,

Nadiyah S. Morgan, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

REGARDING ENHANCEMENTS TO DIESEL GENERATOR

SURVELLANCE REQUIREMENTS

LICENSE AMENDMENT REQUEST

CALVERT CLIFFS NUCLEAR POWER PLANT, LLC.

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-317 AND 50-318

By letter dated October 16, 2012 (Agencywide Documents Access and Management System Accession No. ML 122910955), as supplemented by letter dated July 12, 2013 (ADAMS Accession No. ML13197A411), Calvert Cliffs Nuclear Power Plant, LLC, the licensee, submitted a license amendment request to revise Surveillance Requirements (SRs) of Technical Specification (TS) 3.8.1, "AC Sources – Operating" for Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (Calvert Cliffs 1 and 2). In order to complete its review, the Nuclear Regulatory Commission (NRC) staff requests the following information:

1. The response to the request for additional information (RAI) question #2 stated that over the last five years, two failures were identified where the sequencers did not perform according to the design requirements. The Calvert Cliffs 1 and 2 Updated Final Safety Analyses Report Section 8.4 states that each of the four emergency diesel generators (EDG) has a loss-of-coolant incident (LOCI) sequencer and a shutdown sequencer. The LOCI sequencer provides the timing for loading the EDG following a safety bus undervoltage in combination with a safety injection actuation signal (SIAS). The shutdown sequencer provides the timing for loading the EDG following a safety bus undervoltage without SIAS. Please confirm that each of the two sequencer circuits was tested on a 31-day frequency in accordance with guidance provided in Generic Letter 96-01 "Testing of Safety-Related Logic Circuits."

2. In response to RAI question #5, related to performing the 2-hour test after the 22-hour test as part of SR 3.8.11, the licensee stated that a higher test load at the end of an endurance run can more closely model the bus loading that could be experienced during an event. The response to RAI question #4 tabulates the loading on the EDGs during a large break loss-of-coolant accident (LBLOCA) and also during a loss-of-offsite power (LOOP) event. The NRC staff notes that the highest loading on EDGs 1A and 2B for LBLOCA and LOOP events occurs within 10 – 75 minutes and for EDGs 1B and 2A after 4 hours during shutdown cooling. The intent of this SR is to partly demonstrate the capability of the EDG to supply safe shutdown loads during the initial conditions of a design-basis event, when the pumps may be operating under run-out conditions and the EDG has to operate in overload range, and during extended steady state conditions for mitigating the consequences of a design-basis accident.

Enclosure

In view of the above observations:

a) Explain how performing the 2-hour overload test at the end of a 22-hour operation more closely models the bus loading that could be experienced during the worst case loading conditions.

b) Confirm that the tabulated loading is considered with the EDG operating at the highest allowable frequency as verified by Technical Specifications, such as SR 3.8.1.9 and the limiting bus voltage.

3. The response to RAI question #3 provides an explanation as to why Calvert Cliffs 1 and 2 does not want to test the power factor (PF) capability of the EDGs. The response indicates that the reasons include:

a) Depending on the 4 kV bus voltage at the time of the test, the DG voltage regulator range may not be sufficient to achieve the required power factor.

b) With the 13.8 kV voltage regulator in manual, the 4 kV bus and associated electrical distribution system can be adversely affected by changes in grid voltages.

c) The 24-hour endurance test is performed when the unit is operating. The associated 4 kV bus remains operable during the test and the impact to the stability of the operable 4 kV bus is increased when the voltage regulator is in the manual mode.

The NRC staff considers PF testing an important parameter to validate the capability of the exciter and the generator systems to generate reactive power and carry the required current (accident condition) for an extended duration. The NRC staff recognizes that in some cases, the grid voltage conditions may not permit EDG operation at the required PF for the total 24-hour period.

Please confirm the following:

a) Prior to EDG testing, Calvert Cliffs 1 and 2 personnel verify grid conditions to ensure that there are no planned outages or grid contingencies that can result in degraded grid conditions.

b) Grid operators provide adequate warning of contingency analyses that indicate that the post trip bus voltage for both units may not be adequate for plant shutdown.

c) During light load stable conditions, the transmission system in the vicinity of the plant maintains a stable voltage.

d) EDG testing is not performed during peak grid loading conditions.

e) The PF testing can be performed with the 13.8 kV voltage regulator in manual mode for a few hours (i.e. less than 24 hours) and can be relatively risk

insignificant or very minor increase in risk with appropriate precautionary measures.

4. On page 3 of Attachment 1 of its October 16, 2012, letter, the licensee stated that placing the voltage regulators in the manual mode of operation puts equipment at a greater risk for being impacted by degraded grid voltage during the surveillance test, and that the probability for this increases for the 24 hour test period. Please provide corroborating data to support these statements.

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/RA/

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ADAMS Accession No: ML14087A060 *See dated memo March 20, 2014

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