Exelon Generation®

**Larry D. Smith**
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August 11, 2016

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

Calvert Cliffs Nuclear Power Plant; Unit Nos. 1 & 2;
Renewed Facility Operating License Nos. DPR-53 and DPR-69
Docket Nos. 50-317 & 50-318

Subject: Noncompliance with Effluent Limitations

References: 1. Calvert Cliffs Nuclear Power Plant Environmental Technical Specification 3.2.1

In accordance with Reference 1, Calvert Cliffs Nuclear Power Plant is submitting copies of noncompliance reports previously submitted to the state permitting agency.

There are no regulatory commitments contained in this correspondence.

Should you have questions regarding this matter, please contact me at (410) 495-5219 or Ms. Brittney O'Connor at (410) 495-4913.

Respectfully,

Larry D. Smith
Manager-Regulatory Assurance

LDS/PSF/bjm

Attachment: (1) Letters to the Maryland Department of the Environment, dated May 20, 2014, May 23, 2015 and December 30, 2015

cc: NRC Project Manager, Calvert Cliffs
NRC Regional Administrator, Region I
NRC Resident Inspector, Calvert Cliffs
S. Gray, MD-DNR

CDD1
NRR

# ATTACHMENT (1)

## Letters to the Maryland Department of the Environment, dated May 20, 2014, May 23, 2015 and December 30, 2015

Exelon Generation

**Douglas E. Lauver**
Director-Licensing

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May 20, 2014

Maryland Department of the Environment
ATTN: Compliance Program
Water Management Administration
1800 Washington Boulevard
Baltimore, MD 21230

Subject: Calvert Cliffs Nuclear Power Plant
Noncompliance with Effluent Limitations

Reference: 1. State Discharge Permit No. 08-DP-0187, NPDES MD0002399

In accordance with Section II.B.2 of Reference 1, the following non-compliance report is made.

On May 16, 2014 at 2:00 p.m., Calvert Cliffs Nuclear Power Plant personnel identified that the daily maximum limit for pH at Monitoring Point 103A was exceeded. Section I.A.3 of Reference 1 identifies 9.0 Standard Units (S.U.) as the daily maximum concentration for pH at Monitoring Point 103A. The annual pH sample concentration at Monitoring Point 103A was 9.32 S.U., and the duplicate pH sample was 9.34 S.U. Section 1.A.3 of Reference 1 notes that "compliance with the pH limit may alternatively be demonstrated if the pH level at Outfall 001 is within these limits." This alternative sample was not collected to demonstrate compliance with pH limits on April 17, 2014. There were no observed impacts to the environment since no fish or aquatic organisms were found dead in the area.

The cause of the noncompliance was identified as lack of technical human performance. At the time the annual sample was taken on April 17, 2014, the sample collector did not acknowledge the need to collect an alternative sample at Outfall 001 to demonstrate compliance with the pH limits of the permit.

To prevent recurrence of this noncompliance, a procedure change has been initiated and human performance training will be conducted for the entire Chemistry/Environmental staff.

Compliance with the pH limits of Section I.A.3 of Reference 1 was demonstrated with additional monitoring samples of Outfall 001 that were collected on May 18, 2014 during a discharge of the Auxiliary Boiler Blowdown Tank at 1:58 and 2:07 p.m. The pHs of these additional monitoring samples from Outfall 001 were 8.2 and 8.3, respectively.

Should you have questions regarding this matter, please contact Mr. Richard L. Szoch at (410) 495-5210 or Mr. C. David Merryman at (410) 495-4913.

Respectfully,

Douglas E. Lauver
Director – Licensing

DEL/PSF/bjd

Exelon Generation.

C. David Merryman
Supervisor - Environmental & Radwaste

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1650 Calvert Cliffs Parkway
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410 495-4913 Office
David.Merryman@exeloncorp com

May 23, 2015

Maryland Department of the Environment
ATTN: Compliance Program
Water Management Administration
1800 Washington Boulevard
Baltimore, MD 21230

Subject: Calvert Cliffs Nuclear Power Plant
Circulating Water Chemical Addition Project

Reference: 1. Request for Authorization to Use ActiBrom 1338 and Nalco 7408; Letter dated October 29, 2014

On May 20, 2015 at 8:42 p.m., Calvert Cliffs Nuclear Power Plant personnel discovered residual oxidant, by way of screen wash water, had an unintended pathway to Outfalls 003 and 004 for approved chemicals used during the implementation of the Circulating Water Chemical Addition project as described to Maryland Department of the Environment (Reference 1). Outfalls 003 and 004 are associated with the screen wash water from Units 1 and 2, respectively. Upon confirmation of residual oxidant in these outfalls, Operations administered the immediate shutdown of the circulating water chemical addition project at 8:43 p.m. on May 20, 2015.

After securing the screen wash pumps, Total Residual Oxidant (TRO) samples from Outfalls 003 and 004 were < 0.1 ppm. Station personnel inspected the area surrounding the permitted screen wash water at Outfalls 003 and 004, and no impacts to the aquatic environment have been observed.

The cause of residual oxidant in the 003 and 004 outfalls was identified as a lack of design engineering to identify the potential for screen wash water to become chlorinated during the implementation of this project. Over the first two weeks of the project implementation from May 7 – May 20, 2015, less than a gallon per day of approved oxidants were released from the circulating water systems project via these outfalls. A total of 11.6 gallons were released over this period.

To eliminate and prevent recurrence, temporary process changes have been implemented to eliminate the possibility of chlorinated water being pumped through the screen wash system. These changes include the shutdown of screen wash pumps on the unit being chlorinated, and the coordinated sequencing of the circulating water chemical addition injections and the screen wash pump cycles. Additional permanent project design changes are under development for implementation to prevent recurrence of this condition.

Upon restart of the circulating water chemical addition project on May 21, 2015 at 8:00 p.m., six additional samples were collected from tunnels 16 and 21 to verify that TRO was < 0.1 ppm in the circulating water tunnels after the hourly injection ceased. This sampling was performed 10, 20, and 30 minutes after circulating water chemical injection stopped in that respective circulating water tunnel. As previously stated screen wash pumps and circulating water chemical injection now occur only on the opposite units, thus TRO sampling confirmed that the implemented process changes do eliminate the potential for recurrence of these unidentified pathways for both Units 1 and 2. Furthermore, an additional TRO sample collected from Outfall 003 at 2:24 a.m. on May 22, 2015 confirmed that TRO was < 0.1 ppm during the operation of the circulating water chemical addition project on Unit 2 and the screen wash pumps on Unit 1.

Should you have questions regarding this matter, please contact Mr. C. David Merryman at (410) 495-4913 or Mr. Richard L. Szoch at (410) 495-5210.

Respectfully,

C. David Merryman

Supervisor – Environmental & Radwaste

CDM/lmk

**Calvert Cliffs Nuclear Power Plant**

1650 Calvert Cliffs Parkway

Lusby, Maryland 20657

Exelon Generation

December 30, 2015

Maryland Department of the Environment
Water Management Administration-Compliance Program
1800 Washington Boulevard, Suite 425
Baltimore, MD 21230-1708

**ATTENTION:** Discharge Monitoring Reports
**SUBJECT:** Calvert Cliffs Nuclear Power Plant
Potential Noncompliance with Effluent Limitations
**REFERENCE:** (a) NPDES Discharge Permit 08-DP-0187, Calvert Cliffs Nuclear Power Plant

In accordance with Section II.B.2 of Reference (a), Calvert Cliff's NPDES permit, we are submitting this letter that documents the facts as we know them.

On December 28, 2015 at approximately 15:00, Calvert Cliffs Nuclear Power Plant personnel received laboratory analytical results indicating that the daily maximum limit for biological oxygen demand ($BOD_5$) at Outfall 101A had been exceeded. Section I.A.2 of Reference (a) establishes 45 mg/l as the daily maximum concentration for $BOD_5$ at Outfall 101A. The weekly $BOD_5$ analytical data from the Outfall 101A sample indicated concentrations of 55.7 mg/l. There were no impacts to the Chesapeake Bay.

The cause of the elevated $BOD_5$ will be confirmed through additional sampling but is believed to be due to sustained low-flow conditions through the sewage treatment Plant in late December. At the time the weekly sample was composited, the station experienced the second lowest flow in the last four years, due to lower than normal station population. Station population and flow are expected to return to normal during the first week of January 2016. Alternatively, there is a potential for the sample quality to have been impacted during sample collection or analysis which should also become evident through the subsequent sampling efforts.

To prevent recurrence, the Returned Activated Sludge was increased by 10%, the soda ash feed rate to the Oxidation Ditch was maximized, and the building heaters were turned off to improve temperature conditions in the Oxidation Ditch. Sample collection techniques and process were reviewed and confirmed to be consistent with MDE guidance. Finally, Calvert Cliffs will begin testing for ammonia, nitrate, and alkalinity to enhance our in process monitoring program. This additional data will be used to predict and avoid potential upsets. We anticipate that the new equipment will be installed by February 1, 2016.

A back-up BOD sample was collected on Monday, December 28, 2015 and the final results will be known on Saturday, January 2, 2016. The following weekly $BOD_5$ sample at Outfall 101A was collected in accordance with the Reference (a) sampling frequency requirement on December 30, 2015. The results of this weekly sample will be available on January 4, 2016.

Should you have questions regarding this matter, please contact Jason Prowinski at (410) 495-2502.

Sincerely,

Richard L. Szoch
Manager- Chemistry