



CLOSURE PLAN

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**Bremo Power Station CCR Surface Impoundment:
East Ash Pond**



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1.0 CERTIFICATION

This Closure Plan for the Bremo Power Station's East Ash Pond was prepared by Golder Associates Inc. (Golder). The document and Certification/Statement of Professional Opinion are based on and limited to information that Golder has relied on from Dominion Energy and others, but not independently verified, as well as work products produced by Golder.

On the basis of and subject to the foregoing, it is my professional opinion as a Professional Engineer licensed in the Commonwealth of Virginia that this document has been prepared in accordance with good and accepted engineering practices as exercised by other engineers practicing in the same discipline(s), under similar circumstances, at the same time, and in the same locale. It is my professional opinion that the document was prepared consistent with the requirements in §257.102 of the United States Environmental Protection Agency's (EPA's) "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments" published in the Federal Register on April 17, 2015 with an effective date of October 19, 2015 [40 CFR §257.73(c)], as well as with the requirements in §257.100 resulting from the EPA's "Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Extension of Compliance Deadlines for Certain Inactive Surface Impoundments; Response to Partial Vacatur" published in the Federal Register on August 5, 2016 with an effective date of October 4, 2016 (40 CFR §257.100).

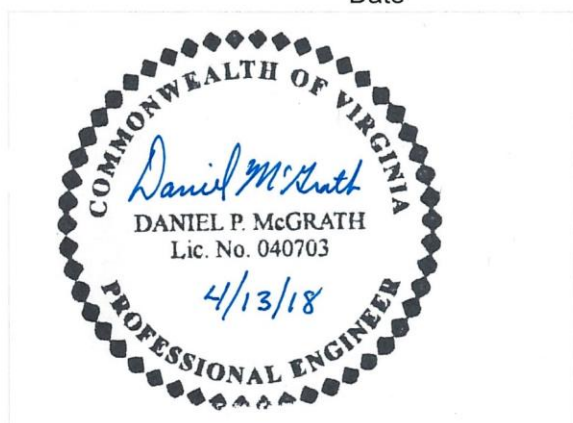
The use of the word "certification" and/or "certify" in this document shall be interpreted and construed as a Statement of Professional Opinion, and is not and shall not be interpreted or construed as a guarantee, warranty, or legal opinion.

Daniel McGrath
Print Name

Associate and Senior Consultant
Title

Daniel McGrath
Signature

4/13/18
Date



2.0 INTRODUCTION

This Closure Plan was prepared for the Bremo Power Station's (Station) inactive Coal Combustion Residuals (CCR) surface impoundment, the East Ash Pond (EAP). This Closure Plan was prepared in accordance with 40 CFR Part §257, Subpart D and is consistent with the requirements of 40 CFR §257.102 for closure of CCR surface impoundments and 40 CFR §257.100(e)(6)(i).

The Station, owned and operated by Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion), is located in Fluvanna County at 1038 Bremo Road, east of Route 15 (James Madison Highway) and north of the James River. The Station includes an inactive CCR surface impoundment, the EAP, as defined by the Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule and Direct Final Rule (40 CFR §257; the CCR rule).

This impoundment is being closed as a CCR surface impoundment under the CCR rule provisions at 40 CFR §257. The EAP will be closed by removal of CCR pursuant to 40 CFR §257.102(c).

2.1 General Impoundment Information

The EAP is an approximately 26.5-acre impoundment used for the storage of CCR from the Bremo Power Station. It started operation in the 1930's and was expanded and raised several times throughout its operational life until capping in the mid 1980's. After capping, the eastern portion of the pond remained wet, allowing pass-through of drainage from the adjacent area to the north. The EAP contained approximately 1,800,000 cubic yards (CY) of CCR prior to the start of excavation activities.

The EAP is regulated under the following permits:

- Virginia Department of Environmental Quality (DEQ) Virginia Pollutant Discharge Elimination System (VPDES) Permit No. VA0004138
- DEQ VPDES Construction General Permit No. VAR10H875
- Virginia Department of Conservation and Recreation (DCR) Operation and Maintenance Certificate, Inventory No. 00815

3.0 CLOSURE IMPLEMENTATION

3.1 Overview of Closure Approach

This plan provides for the closure of the EAP by removal of the CCR material. Closure is considered complete under 40 CFR 257.102 and 9 VAC20-81-810 when:

1. A professional engineer licensed in Virginia certifies all CCR has been removed from the units followed by an over-excavation of approximately 6 inches of soil.
2. The unit's downgradient groundwater monitoring wells do not exhibit levels in excess of a maximum contaminant limit (MCL) or established groundwater protection standard for any CCR Appendix IV constituent for two consecutive monitoring events.

At the time of writing, the majority of CCR in the EAP has been excavated and relocated to the North Ash Pond (NAP). Final CCR removal will either be consolidated in the NAP, or disposed of in a designated off-site facility. After completing the removal of CCR, the embankments will be stabilized and the area will be repurposed as the East Stormwater Management Pond. In addition, a discrete area of CCR has been identified along the southern portion of the EAP embankment. This area will be further characterized and the residual CCR will be removed as part of the EAP closure.

During and after closure, the existing network of groundwater monitoring wells will be sampled and tested to determine the monitored constituent concentrations required in 40 CFR §257 Appendix IV.

4.0 CLOSURE TIMEFRAMES

Table 1 below outlines the estimated sequence of scheduled closure activities.

Table 1: Closure Schedule

Activity	Tentative Date
Completion of CCR Removal	By October 2018
Completion of Closure Construction	By January 2019
Certification of Construction Completion	By April 2019

Closure is considered complete when the elements of this Closure Plan specified above have been performed certified by a Professional Engineer licensed in the Commonwealth of Virginia. This certification will be included as part of a closure certification report. In accordance with 40 CFR §257.102(h), Dominion will prepare a notification of closure of the CCR unit within 30 days of completion of closure and place the notification in the operating record.

5.0 INVENTORY REMOVAL AND DISPOSAL

5.1 Waste Removal, Decontamination and Disposal

The protocol for closure by removal will involve removing accumulated CCR such that no residual materials remain visible, followed by over-excavating the removal footprint by approximately 6 inches. Removed CCR and CCR-mixed soil will either be consolidated in the NAP or taken to an off-site disposal facility. To facilitate stormwater management, construction, and/or structural stabilization of embankments or excavations, closure by removal of areas within the pond may be achieved in phases. Phased closures may be sequenced as necessary to support traffic patterns, stormwater controls, etc.

Removal of fugitive CCR materials discovered outside of the delineated pond area or within the pond embankments (used as historical structural fill) will follow the same removal protocol described above. Documentation of these locations and removal efforts will be included with the certification report.

Material removal against embankments may involve excavation of the upstream embankment face to near-vertical conditions. An evaluation of closure by removal and associated documentation will be promptly executed by a Virginia licensed professional engineer to ensure a removal certification can be made. Immediately after excavation and inspection of these areas for certification, fill soil will be placed and compacted against the embankment to re-establish stable slopes of no steeper than 2 horizontal to 1 vertical (2H:1V). After CCR removal and certification, the pond subgrade will be shaped and modifications will be made to the existing outlet structure. Vegetative stabilization will be established to prevent erosion.

5.2 Sampling and Testing Program

After removal of the 6-inch over-excavation material, the area will be visually inspected to verify the CCR and 6-inch over-excavation have been removed. Verification surveys of the pond closure will be prepared by a Virginia-licensed Land Surveyor and will consist of a survey of the “visually clean” surface and a survey of the “over-excavation” surface to verify the minimum 6-inch removal. Certification of the closure by removal will be provided by a Virginia-licensed Professional Engineer.

6.0 CLOSURE OF SUPPORT PONDS AND BASINS

There are no supporting ponds or basins associated with the EAP.

7.0 CLOSURE IMPLEMENTATION

7.1 Posting

One sign will be posted at the site entrance to the EAP notifying all persons of the final closure and prohibition against further receipt of CCR. Unauthorized access to the site will be controlled by fencing and lockable gates across the access roads.

7.2 Cost Estimate

The estimated cost for closure of the EAP is \$20,105,014.

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