# Periodic Hazard Potential Classification Assessment

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

Submitted to:

**Bremo Power Station**

1038 Bremo Road

Bremo Bluff, VA 23022

Submitted by:

**Golder Associates Inc.**

2108 West Laburnum Ave., Suite 200,

Richmond, VA 23227

+1 804 358-7900

Project No. 21466315

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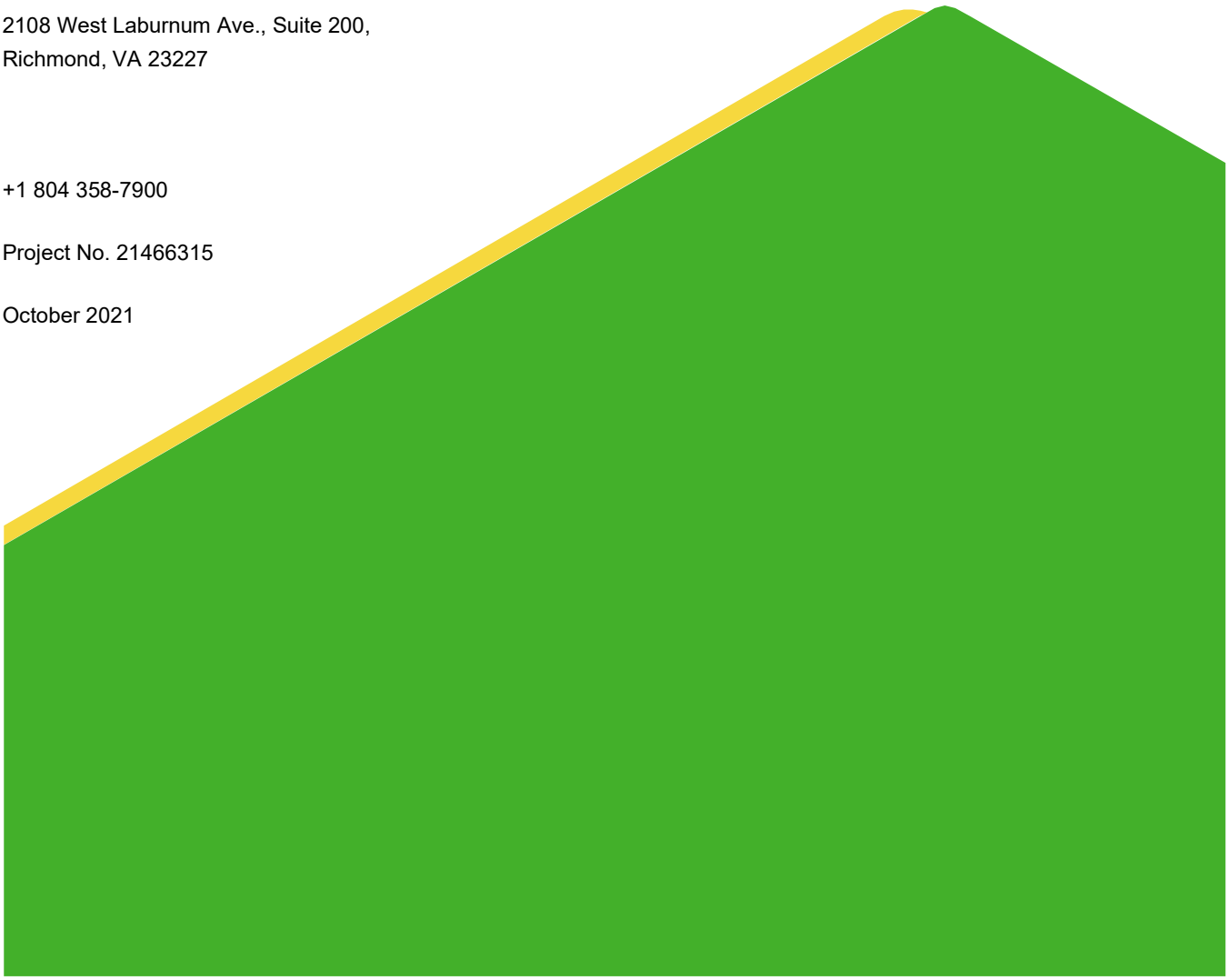

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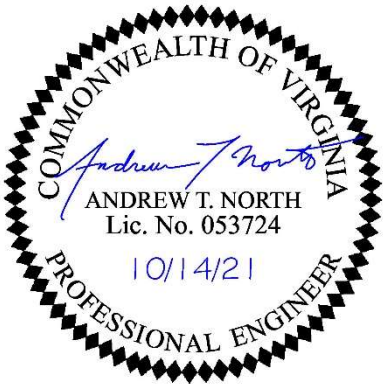
# 1.0 CERTIFICATION

This Periodic Hazard Potential Classification Assessment for the Bremo Power Station's North 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 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 § 257.73(a)(2) of the United States Environmental Protection Agency'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(a)(2)].

The use of the word "Certification" 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.

| Andrew T. North, PE | Senior Civil Engineer |
|---|---|
| Print Name | Title |
| Signature | 10/14/2021 |
| | Date |



# 2.0 INTRODUCTION

This Periodic Hazard Potential Classification Assessment was prepared for the Bremo Power Station's (Station) existing Coal Combustion Residuals (CCR) surface impoundment known as the North Ash Pond (NAP). This Periodic Hazard Potential Classification Assessment (Assessment) was prepared in accordance with 40 CFR Part §257, Subpart D and is consistent with the requirements of 40 CFR §257.73(a)(2).

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 existing CCR surface impoundment, the NAP, as defined by the Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule (40 CFR §257; the CCR rule). The NAP is also regulated as a dam by the Virginia Department of Conservation and Recreation (DCR) with Inventory Number 065020 (DCR Dam Permit).

# 3.0 PURPOSE

This certification and assessment is required under 40 CFR §257.73(a)(2), Periodic Hazard Potential Classification Assessments, regarding the hazard potential classification assessment of the NAP at the Bremo Power Station. The initial hazard potential classification was completed on October 17, 2016. The Periodic Hazard Potential Classification Assessments are to be updated every five (5) years pursuant to 40 CFR §257.73(f)(3).

# 4.0 HAZARD POTENTIAL CLASSIFICATION

According to § 257.53 of the CCR Rule [40 CFR § 257.53], the hazard potential classifications are:

- Low hazard potential - "failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment owner's property."
- Significant hazard potential - "failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns."
- High hazard potential - "failure or mis-operation operation will probably cause loss of human life."

The NAP was assigned an initial hazard potential classification of "significant hazard potential CCR surface impoundment" [40 CFR § 257.53, 40 CFR § 257.73(a)(2)]. The NAP is assigned a hazard potential rating of "significant hazard potential CCR surface impoundment" [40 CFR § 257.53, 40 CFR § 257.73(a)(2)] in this periodic Assessment.

# 5.0 PERIODIC HAZARD POTENTIAL CLASSIFICATION ASSESSMENT

The references listed in Section 6.0 of this Assessment were used as the basis to make this periodic "significant hazard" potential classification. The following items are noted:

1. The NAP is located within close proximity of the James River, a CSX railroad, and agricultural fields.
2. Golder's August 2012 and March 2017 Virginia Department of Conservation and Recreation (DCR) Inundation Studies for the North Ash Pond Dam evaluated the predicted inundation from the NAP for the following scenarios:
    - "Sunny day" breach scenario;
    - Structure breach during the Spillway Design Flood (SDF);

- Baseline outflow of the SDF with no structure breach; and
- Structure breach with Probable Maximum Flood (PMF).

3. Pursuant to DCR regulations at 4VAC50-20-40(B)(1), the dam associated with the NAP is currently listed as a High Hazard Potential classification.

Golder's 2017 report concluded, "a breach of the North Ash Pond Dam during a PMF storm event will not affect any roads or occupied structures downstream; however, the CSX Railroad embankment will be overtopped by shallow flow under both non-breach and breach events of PMF magnitude" (Golder, 2017). The report also concluded that no loss of life is expected due to failure of the structure.

Golder's 2012 report also showed that the three embankment failure scenarios overtopped the CSX railroad and that no loss of life is expected. The 2012 report modeled the NAP with its current spillway condition.

Although changes in the configuration of the impounded CCR material and downstream topography differ from the 2012 and 2017 inundation studies, it is concluded that these configuration changes do not materially affect the inundation impacts from the modeled breach scenarios. Therefore, reliance can be made on the previous inundation studies and existing known site conditions to make a current determination.

There is a potential for environmental damage and economic loss due to release of CCR material through a breach into the James River, as well as economic loss due to the impacts to the CSX railroad, however loss of human life is not probable. These criteria correspond to a Significant Hazard Potential designation per the CCR Rule [40 CFR § 257.53].

# 6.0 REFERENCES

Code of Virginia, 4VAC50-20-40. Hazard potential classifications of impounding structures; effective November 8, 2012.

Golder Associates. Inundation Study, Bremo Power Station, North Ash Pond Dam. August 2012.

Golder Associates. Periodic Hazard Potential Classification Assessment, Bremo Power Station CCR Surface Impoundment: North Ash Pond. October 2016.

Golder Associates. Inundation Study, Bremo Power Station, North Ash Pond Dam. March 2017.

Virginia DCR Dam Permit. Inventory No. 065020.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