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# Coal Combustion Residuals Unit Liner Documentation

Virginia Electric and Power Company  
Chesterfield Power Station  
Upper (East) Pond  
Chesterfield County, Virginia

GAI Project Number: C150035.00

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**Dominion**<sup>SM</sup>

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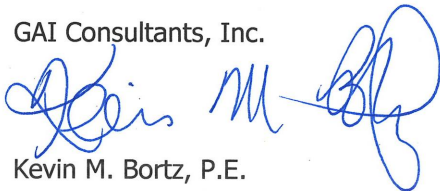
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## Certification/Statement of Professional Opinion

The Coal Combustion Residuals Liner Documentation Report (Report) for the Chesterfield Power Station Upper (East) Pond was prepared by GAI Consultants, Inc. (GAI). The Report was based on certain information that, other than for information GAI originally prepared, GAI has relied on, but not independently verified. This Certification/Statement of Professional Opinion is therefore limited to the information available to GAI at the time the Report was written. 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 the Report 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 Assessment is accurate and has been prepared consistent with the requirements of § 257.71(a)(1) 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 Subpart D).

The use of the words "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.

GAI Consultants, Inc.



Kevin M. Bortz, P.E.

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Date 10/13/2016



## Acronyms

CCR	Coal Combustion Residuals
CCR Rule	"Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments" 40 CFR 257 Subpart D (2015)
CFR	Code of Federal Regulations
Dominion	Virginia Electric and Power Company d/b/a Dominion
EPA	United States Environmental Protection Agency
GAI	GAI Consultants, Inc.
Report	Coal Combustion Residuals Liner Documentation Report
Station	Dominion Chesterfield Power Station
UEP	Upper (East) Pond

## 1.0 Introduction

The Chesterfield Power Station (Station) is owned by Virginia Electric and Power Company d/b/a Dominion Virginia Power (Dominion) and is located in Chesterfield, VA. The station includes the Upper (East) Pond (UEP) impoundment, which is used for the long term storage of coal combustion residuals (CCR).

The UEP is located on Dominion property at the Chesterfield Power Station in Chesterfield County, Virginia (coordinates 37° 22' 15.2" North and 77° 22' 8.3" West) and is bounded by the Old Channel of the James River on the south, Henricus Historical Park on the east, and Aiken Swamp on the north.

The UEP is regulated as an existing CCR surface impoundment under the United States Environmental Protection Agency's (EPA's) "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments" [40 CFR 257 Subpart D] published in the Federal Register on April 17, 2015 with an effective date of October 19, 2015 (CCR Rule).

## 2.0 Purpose

This Liner Documentation Report is prepared pursuant to the requirements in the CCR Rule. Specifically, § 257.71(a)(1) of the CCR Rule states that the owner or operator of an existing CCR unit must document whether or not the existing CCR unit was constructed with a liner meeting the requirements set forth in that section.

## 3.0 Liner Documentation

The references listed in Section 5.0 of this Report were reviewed to determine whether or not the UEP was constructed with a liner meeting the requirements of § 257.71(a)(1). Information from GAI's documentation review used to reach this determination includes the following:

1. - The *Dam Safety Assessment of CCW Impoundments, Chesterfield Power Station*; June 10, 2010 (prepared by O'Brien & Gere for the EPA) noted that "the Upper [East] Pond was not designed with a liner," and "no liner or cutoff wall was constructed for the Upper [East] Pond dikes."
2. - The *Geotechnical Engineering and Groundwater Hydrology Services, Ash Disposal Pond, Chesterfield Power Station*; December 20, 1982 (prepared by Schnabel Engineering Associates) report noted that the existing in-situ soils to be excavated are generally granular coarse-grained soils, which were used to construct the UEP embankments. The in-situ soils obtained "a compacted permeability of  $0.75 \times 10^{-5}$  cm/sec." This hydraulic conductivity is greater than the maximum hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec required by CCR Rule § 257.71(a)(1) for an impoundment liner. No other soils listed in the Schnabel report had a conductivity equal to or less than  $1 \times 10^{-7}$  cm/sec.
3. - The construction and as-built drawings for the UEP (Timmons and Associates, 1985) do not show a constructed liner beneath the UEP.

## 4.0 Conclusion

Based on the information in this Report, it is GAI's determination that the UEP was not constructed with a liner meeting the requirements of CCR Rule § 257.71(a)(1).

## 5.0 References

O'Brien & Gere (for the EPA). 2010. *Dam Safety Assessment of CCW Impoundments, Chesterfield Power Station*. June 10, 2010. Found at <http://fliphtml5.com/ihys/fuxi>.

Schnabel Engineering Associates. 1982. *Geotechnical Engineering and Groundwater Hydrology Services, Ash Disposal Pond, Chesterfield Power Station*.

Timmons and Associates, Inc. 1985. *Drawings, Ash Disposal Pond*. Prepared in 1983, as-built revisions 1985.