



## Coal Combustion Residuals Impoundment Retrofit Completion and Liner Completion Certifications

Keystone-Conemaugh Projects, LLC  
Keystone Generating Station  
Ash Filter Pond A (No. 0386201)  
Shelocta, Pennsylvania

GAI Project Number: C141273.14  
December 2019

Prepared by: GAI Consultants, Inc.  
Murrysville Office  
4200 Triangle Lane  
Export, Pennsylvania 15632-1358

Prepared for: Keystone-Conemaugh Projects, LLC  
Keystone Generating Station  
313 Keystone Drive  
Shelocta, Pennsylvania 15774

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## Professional Engineer's Certification

I, the undersigned Professional Engineer, hereby certify that I am familiar with the technical requirements of 40 Code of Federal Regulations (CFR) Section 257.102. It is my professional opinion, as a Professional Engineer licensed in the Commonwealth of Pennsylvania, that the activities outlined in the Retrofit Plan for Ash Filter Pond A (GAI, 2017) have been completed in accordance with good and accepted construction and engineering practices as exercised by others 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 alternative composite liner has been constructed in accordance with the requirements of 40 CFR Section 257.72.

40 CFR Section 257.102 is from the United States Environmental Protection Agency's "Disposal of Coal Combustion Residuals from Electric Utilities," published in the Federal Register on April 17, 2015, with an effective date of October 19, 2015.

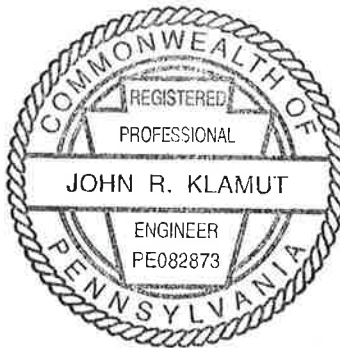
This Professional Engineer's Certification is limited to the information available to GAI at the time this report was prepared. The use of the words "certification" and/or "certify" in this document shall be interpreted and construed as a Statement of Professional Opinion and is not and shall not be interpreted or construed as a guarantee, warranty or legal opinion.

John R. Klamut, P.E.  
Printed Name of Professional Engineer

PE082873  
Commonwealth of Pennsylvania License Number

  
Signature of Professional Engineer

12/11/2019  
Date



## 1.0 Introduction

The Keystone Generating Station is a steam electric generating station located along Crooked Creek in Plumcreek Township, Shelocta, Pennsylvania (PA). The station consists of two 900-megawatt coal-fired units.

Three ash filter ponds are located at the Keystone Generating Station site and are operated and maintained under the PA Department of Environmental Protection (PADEP) Water Quality Management Permit No. 0386201. The ash filter ponds consist of Ash Filter Ponds A, B, and C. During station operations, bottom ash is sluiced from the ash hoppers to the hydrobins where the ash particles are allowed to settle. The hydrobin overflow gravity-flows to a distribution box, which controls the water's routing to the individual ash filter ponds. The hydrobin underflow also gravity-flows to the ash filter ponds when it is periodically drained. The dewatered Coal Combustion Residuals (CCR) are loaded onto trucks for disposal at the Keystone Station Disposal Site. During normal operations, two ponds are in service to handle the hydrobin overflow, and the remaining pond is drained, cleaned, and prepared for service. Ash Filter Pond C retrofit to meet the alternative composite liner requirements of §257.72 was completed in 2017, and Ash Filter Pond B retrofit was completed in 2018.

Ash Filter Pond A (Pond A) was retrofitted in accordance with the written Retrofit Plan (GAI, 2017) and 40 Code of Federal Regulations (CFR) §257.102(k)(1). Retrofitting consisted of raising the pond bottom, side slopes, crest, and inlet and outlet structures, and constructing a PADEP Class I liner that meets the alternative composite liner requirements of §257.72. Retrofitting was initiated in May 2019 and was substantially complete on November 14, 2019.

## 2.0 Retrofit Activities

The retrofit activities first included the removal of all CCR from Pond A, including any contaminated soils and sediments per the requirements of 257.102(k)(1)(i) and as described in the Retrofit Plan (GAI, 2017). The retrofit also included placement and compaction of earthen fill to raise the base and crest of Pond A, installation of new inlet and outlet structures, and the installation of a PADEP Class I liner system.

The PADEP Class I liner system includes a composite liner that meets the alternative composite liner requirements of §257.72. The Class I liner system was constructed in accordance with the requirements of §257.72 and Title 25 of the Pennsylvania Code (Pa Code) for Residual Waste Impoundments as follows, from bottom to top:

- ▶ Subbase [contaminant resistant (enhanced) geocomposite clay liner (EGCL)].
- ▶ Secondary liner [60-mil textured high-density polyethylene (HDPE) geomembrane].
- ▶ Geocomposite drainage net and perforated pipe collection system.
- ▶ Composite primary liner (EGCL and 60-mil textured HDPE geomembrane).
- ▶ 16 ounce per square yard non-woven cushion geotextile.
- ▶ Protective cover consisting of a reinforced concrete slab on the pond bottom and a concrete uniform section mat on the pond side slopes.

Ash Filter Pond A has been retrofitted in accordance with the Retrofit Plan (GAI, 2017) and §257.102 (k)(1). Construction was substantially complete on November 14, 2019.

### 3.0 References

GAI Consultants, Inc. (GAI), 2017. *Coal Combustion Residuals Impoundment, Liner Design Certification and Retrofit Plan*, GenOn Northeast Management Company, Keystone Generating Station, Ash Filter Ponds A, B, and C (No. 0386201), Shelocta, Pennsylvania. Prepared for NRG. March.

United States Environmental Protection Agency (EPA), 2015. *40 CFR Parts 257 and 261 Hazardous and Solid Waste Management Disposal System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, April 17.