2025 First Annual Dam and Dike Inspection Report

Bottom Ash Pond Complex

Kanawha River Plant

Appalachian Power Company

Glasgow, Ohio

August 2025

Prepared for: Appalachian Power Company – Kanawha River Plant

Prepared by: American Electric Power Service Corporation

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AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY

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Dan Murphy, P.E.

APPROVED BY David Anthony Miller DATE 09.05.2025

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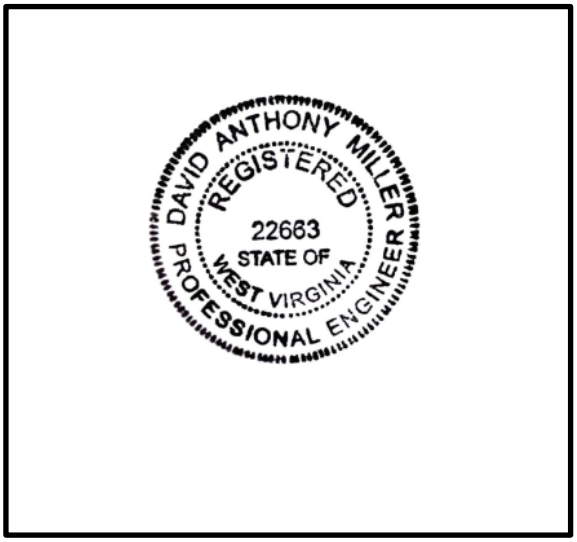
Director – Ash Management Services



I certify to the best of my knowledge, information and belief the information contained in this report meets the requirements of 40 CFR § 257.83(b).

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Attachments

1.0 INTRODUCTION

This report was prepared by AEP- Ash Management Services (AMS) section, to fulfill requirements of 40 CFR 257.83 for the Legacy CCR Surface impoundments. The initial annual inspection report was required to be posted to the CCR website by February 10, 2025 as a result of the EPA's provision to the 40 CFR 257.50(e) in response to the August 21, 2018 USWAG decision. The provision indicates that the Legacy CCR Surface Impoundments are subject to 40 CFR 257 (CCR Rule), where applicable, with an effective date of November 8, 2024. Initially the bottom ash pond complex (BAP) was thought to be incised. After further review, it was determined a portion of the complex was diked and was required to meet 40 CFR 257.83.

American Electric Power Service Corporation's Ash Management Services Division administers the required legacy surface impoundment inspections under the CCR Rule. This report contains the inspection findings, observations, photographic descriptions, conclusions, and maintenance recommendations. This inspection report addresses the North Bottom Ash Pond, the South Bottom Ash Ponds, and the Clearwater Pond at the Kanawha River Plant.

Mr. Bill Cummings, Maintenance Superintendent Senior, was the facility's contact during the inspection. Mr. Blake Arthur , P.E., and Mr. Dan Murphy, P.E. performed the inspection on July 30, 2025. Weather conditions were sunny, and the temperature was near 80°F. There was about 1.8 inches of rainfall recorded over the seven days prior to the inspection.

2.0 DESCRIPTION OF IMPOUNDMENTS

The BAP consists of the North Bottom Ash Pond, the South Bottom Ash Ponds, and the Clearwater Pond (see Figure 1 of Attachment A). The are located Northwest of the plant near Glasgow, WV. The site is bounded by the Kanawha River on the west, the town of Glasgow on the North, and the railroad on the east.

The BAP is generally a below grade facility with only the west portion of the Clearwater Pond contained by a dike. The water level of the complex is operated and maintained below adjacent natural ground levels. The exterior slope of the western clearwater pond dike is 2 Horizontal to 1 Vertical (2H: 1V) with interior slopes of 2.5H: 1V. The remainder of the pond complex is incised, with a surrounding ground elevation of 623 ft-msl.

The BAP was originally constructed around 1951. The pond operated as a single pool of water, without any splitter dikes or treatment cells for approximately 16 years. Around 1977, the Bottom Ash Pond Complex was modified from its original configuration to the present configuration of 3 treatments cells, the North Bottom Ash Pond, the South Bottom Ash Pond and the Clearwater Pond. As part of this modification, the pond bottom was raised from 593 ft-msl to 602 ft-msl using bottom ash material. The North and South Bottom Ash Ponds apparently had a PVC liner installed at approximately elevation 597 ft-msl. The interior splitter dike is approximately 960 feet long and constructed of bottom ash, with a top elevation varying between 620 to 622 ft-msl. The western dike of the clearwater pond is approximately 230 feet long with a top elevation of 623 ft-msl and appears to be constructed of cohesive material from the original plant excavation.

The BAP discharges through a concrete riser in the northwest corner of the clearwater pond that ties into a stormwater sewer which flows under the BAP.

3.0 REVIEW OF AVAILABLE INFORMATION (257.83(b)(1)(i))

In addition to the current visual inspection, a review of available information regarding the status and condition of the BAP, including files available in the operating record, was conducted. Available information consists of design and construction information. Based on the findings of the current visual inspection and the review of the available data, it is concluded that the facility is performing as intended in

the design documents and there were no signs of actual structural weakness or adverse conditions.

4.0 INSPECTION (257.83(b)(1)(ii))

4.1 CHANGES IN GEOMETRY SINCE LAST INSPECTION (257.83(b)(2)(i))

This is the first annual inspection under the legacy CCR rule. No recent geometry changes were noted.

4.2 INSTRUMENTATION (257.83(b)(2)(ii))

There is no instrumentation BAP.

4.3 IMPOUNDMENT CHARACTERISTICS (257.83(b)(2)(iii, iv, v))

Table 1 is a summary of the minimum, maximum, and present depth and elevation of the impounded water & CCR since the previous annual inspection; the storage capacity of the impounding structure at the time of the inspection; and the approximate volume of the impounded water and CCR at the time of the inspection.

The information in this table is based on visual observations made during the inspection.

	BAP Complex – Does not include splitter dikes
Approximate **Minimum** depth (elevation) of impounded water since last annual inspection	n/a. This is the first annual inspection.
Approximate **Maximum** depth (elevation) of impounded water since last annual inspection	n/a. This is the first annual inspection.
Approximate **Present** depth of impounded water at the time of the inspection	1 ft. (613 ft msl)
Approximate **Minimum** depth (elevation) of CCR since last annual inspection	n/a. This is the first annual inspection.
Approximate **Maximum** depth (elevation) of CCR since last annual inspection	n/a. This is the first annual inspection.
Approximate **Present** depth (elevation) of CCR at the time of the inspection	19 ft. (612 ft msl)
Storage Capacity of impounding structure at the time of the inspection [crest el]	162 acre ft
Approximate volume of impounded water at the time of the inspection	12 acre ft
Approximate volume of CCR at the time of the inspection	96 acre ft

4.4 DEFINITIONS OF VISUAL OBSERVATIONS AND DEFICIENCIES

This summary of the visual observations uses terms to describe the general appearance or condition of an observed item, activity or structure. The meaning of these terms is as follows:

Good:	A condition or activity that is generally better or slightly better than what is minimally expected or anticipated from a design or maintenance point of view.
Fair/Satisfactory:	A condition or activity that generally meets what is minimally expected or anticipated from a design or maintenance point of view.
Poor:	A condition or activity that is generally below what is minimally expected or anticipated from a design or maintenance point of view.
Minor:	A reference to an observed item (e.g., erosion, seepage, vegetation, etc.) where the current maintenance condition is below what is normal or desired, but which is not currently causing concern from a structure safety or stability point of view.
Significant:	A reference to an observed item (e.g. erosion, seepage, vegetation, etc.) where the current maintenance program has neglected to improve the condition. Usually conditions that have been identified in the previous inspections, but have not been corrected.
Excessive:	A reference to an observed item (e.g., erosion, seepage, vegetation, etc.) where the current maintenance condition is above or worse than what it is normal or desired, or which may have affected the ability of the observer to properly evaluate the structure or particular area of interest or which may be a concern from a structure's safety or stability point of view.

This document also uses the definition of a "deficiency" as referenced in the CCR rule section §257.83(b)(5) Inspection Requirements for CCR Surface Impoundments. This definition has been assembled using the CCR rule preamble as well as guidance from MSHA, "Qualifications for Impoundment Inspection" CI-31, 2004. These guidance documents further elaborate on the definition of deficiency. Items not identified as a deficiency are considered routine maintenance activities or items to be monitored.

A "deficiency" is some evidence that a dam has developed a condition that could impact the structural integrity of the dam. There are four general categories of deficiencies. These four categories are described below:

1. Uncontrolled Seepage

   Uncontrolled seepage is seepage that is not behaving as the design engineer has intended. An example of uncontrolled seepage is seepage that comes through or around the embankment and is not collected and safely carried off by a drain. Seepage that is collected by a drain can still be uncontrolled if it is not safely transported. Seepage that is not clear and is turbid would also be considered as uncontrolled. Seepage that is unable to be measured and/or observe it is considered uncontrolled seepage. [Wet or soft areas are not considered as uncontrolled seepage but can lead to this type of deficiency. These areas should be monitored more frequently.]

2. Displacement of the Embankment

   Displacement of the embankment is a large scale movement of part of the dam. Common signs of displacement are cracks, scarps, settlement, bulges, depressions, sinkholes and slides.

3. Blockage of Water Control Appurtenances

   Blockage of water Control Appurtenances is the restriction of flow at spillways, decant or pipe spillways, or drains.

4. Erosion

   Erosion is the gradual movement of surface material by water, wind or ice. Erosion is considered a deficiency when it is more than a minor routine maintenance item.

4.5 VISUAL INSPECTION (257.83(b)(2)(i))

A visual inspection of the Bottom Ash Pond Complex was conducted to identify any signs of distress or malfunction of the impoundment and appurtenant structures. Specific items inspected included all structural elements of the dam such as inboard and outboard slopes, crest, and toe; as well as all appurtenances.

Overall, the facility is in good condition. The impoundment is functioning as intended with no visible signs of potential structural weakness or conditions, which are disrupting to the safe operation of the impoundment. Inspection photos are included in Attachment A. Additional pictures taken during the inspection can be made available upon request.

North Bottom Ash Pond

1. The interior and exterior slopes showed no signs of distress such as sloughing, bulges or erosion. The interior slopes are growing vegetation that is being regularly maintained. Vegetation is over 6” high, but is scheduled for weed eating in the fall.
2. No evidence of seepage though the splitter dike separating the North Bottom Ash Pond and South Bottom Ash Pond and Clearwater Pond.
3. The primary discharge structure was in fair condition. The corrugated metal pipe riser showed signs of corrosion, but is not a critical element, as the discharge structure is internal to the pond complex, and discharge pipe inlet is sufficient for water control of the inactive plant.

South Bottom Ash Pond

1. The interior and exterior slopes showed no signs of distress such as sloughing, bulges or erosion. The interior slopes are growing vegetation that is being regularly maintained. Vegetation is over 6” high, but is scheduled for weed eating in the fall.
2. No evidence of seepage though the splitter dike separating the North Bottom Ash Pond and South Bottom Ash Pond and Clearwater Pond.
3. The primary discharge structure was in fair condition. The corrugated metal pipe riser showed signs of corrosion, but is not a critical element, as the discharge structure is internal to the pond complex, and discharge pipe inlet is sufficient for water control of the inactive plant.

Clearwater Pond

1. The interior and exterior slopes showed no signs of distress such as sloughing, bulges or erosion. The interior slopes are growing vegetation that is being regularly maintained. Vegetation is over 6” high, but is scheduled for weed eating in the fall.
2. The western dike had trees removed on the exterior slope, and showed no signs of seepage.

3. The primary discharge structure was in good condition. There was some minor concrete deterioration on the face from previous bolting. The discharge is permitted as NPDES Permit No. WV 0001066 Outfall 001.
4. The discharge structure connects to a stormwater pipe that runs under the BAP. It is recommended to have this visually inspected via robotic camera to determine if there are any issues which could affect the BAP.

4.6 CHANGES THAT EFFECT STABILITY OR OPERATION (257.83(b)(2)(vii))

Based on interviews with plant personnel and field observations there were no changes to the Bottom Ash Pond Complex recently that would affect the stability of the impounding structure.

5.0 SUMMARY OF FINDINGS

5.1 GENERAL OBSERVATIONS

The following general observations were identified during the visual inspection:

1) The outboard slopes, crest and inboard slopes and splitter dikes of the impoundments were generally in good condition. The embankment along the west side of the complex did not show any signs of structural weakness or instability. The crest did not contain any ruts, cracks, depressions or other signs of instability. Specific maintenance items and items to monitor are described in the subsequent sections of this report.

5.2 MAINTENANCE ITEMS

The following maintenance items were identified during the visual inspection:

1) Continue with the vegetation maintenance & mowing efforts at the facility.

5.3 ITEMS TO MONITOR/INVESTIGATE

The following items were identified during the visual inspection as items to be monitored or investigated:

1) Monitor the concrete on the clearwater pond discharge structure for any further deterioration.
2) Investigate the stormwater pipes running under the BAP to determine if their condition could impact the BAP.

5.4 DEFICIENCIES (257.83(b)(2)(vi))

At the Bottom Ash Pond Complex there were no signs of structural weakness or disruptive conditions that were observed at the time of the inspection that would require additional investigation or remedial action. There were no deficiencies noted during this inspection or during any of the periodic 7-day or 30-day inspections. A deficiency is defined as: 1) uncontrolled seepage, 2) displacement of the embankment, 3) blockage of control features, or 4) erosion, more than that requiring minor maintenance.

If any of these conditions occur before the next annual inspection contact, or if you have any questions with regard to this report, please contact Dan Murphy at dsmurphy1@aep.com or David Miller at damiller@aep.com

ATTACHMENT A

Location Map

Kanawha River Plant Bottom Ash Pond Complex

Legend

- BAP_Features
- 2ft
- BAP_Ponds

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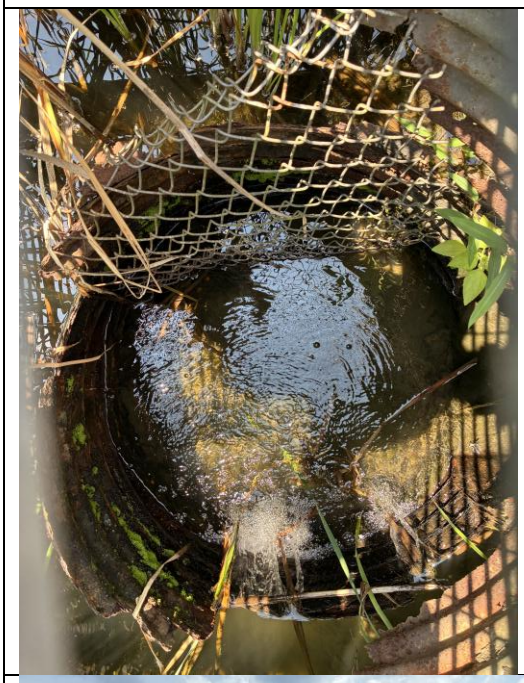
0 62.5 125 250 Feet

N

ATTACHMENT B

Inspection Photos

	Photograph 1: North Bottom Ash Pond – Concrete Riser to Storm Sewer
	Photograph 2: North Bottom Ash Pond – Inlet end looking towards idle plant.
	Photograph 3: North Bottom Ash Pond – Looking towards outlet spillway.

	Photograph 4: North Bottom Ash Pond – Outlet Spillway.
	Photograph 5: North Bottom Ash Pond – Outlet Spillway Riser.
	Photograph 6: North and South Bottom Ash Pond Splitter Dike.

	Photograph 7: South Bottom Ash Pond Spillway Riser.
	Photograph 8: Clearwater Pond – Distribution Weir.
	Photograph 9: Clearwater Pond – Outlet Riser

	Photograph 10: Clearwater Pond - Dike
	Photograph 11: South Bottom Ash Pond – Concrete Riser to Storm Sewer.