INITIAL STRUCTURAL STABILITY ASSESSMENT

40 CFR 257.73 (d)

Ash Pond

Poston Site

Athens, Ohio

May, 2026

Prepared for: Ohio Franklin Realty

Prepared by: American Electric Power Service Corporation

1 Riverside Plaza

Columbus, OH 43215

Poston Ash Pond

Initial Structural Stability Assessment

PREPARED BY Dan Murphy DATE _____

Digitally signed by Dan Murphy
DN: cn=Dan Murphy, c=US, email=dsmurphy1@aep.com
Date: 2026.04.23 15:02:43 -04'00'

Dan Murphy, P.E.

REVIEWED BY Blake Arthur, PE DATE _____

Digitally signed by Blake Arthur, PE
DN: cn=Blake Arthur, PE, c=US, email=barthur@aep.com
Date: 2026.04.23 15:36:17 -04'00'

Blake Arthur, P.E.

APPROVED BY David A. Miller DATE 04.23.2026

David A. Miller, P.E.

Director- Ash Management Services

I certify to the best of my knowledge, information, and belief that the information contained in this structural stability assessment meets the requirements of 40 CFR § 257.73(d)

Table of CONTENTS

1.0 OBJECTIVE 4

2.0 DESCRIPTION OF THE CCR UNIT 4

3.0 STRUCTURAL STABILITY ASSESSMENT 257.73(d) 4

Attachment A: Initial Structural Stability Assessment Report

1.0 OBJECTIVE

The "Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Legacy CCR Surface Impoundments", 89 Fed. Reg. 38950 (May 8, 2024) (amending 40 C.F.R. §257) requires owners and operators of facilities with a legacy coal combustion residual (CCR) surface impoundment to prepare an initial structural stability assessment document for each legacy CCR surface impoundment at the facility.

The Ash Pond at the Poston Site is subjected to this rule.

2.0 DESCRIPTION OF THE CCR UNIT

The Former Poston Site is located approximately 2 miles west of The Plains, Ohio. The latitude/longitude of the facility is: 39°23'10" N / 82°10'39" W. The Poston Plant was placed in service in 1949 and subsequently retired in 1987. The Ash Pond Dam was designed by Burgess and Niple, Limited in 1956. The Ash Pond Dam was constructed by H.R. Holderman, Inc. and construction inspection performed by Burgess and Niple, Limited.

The Ash Pond is located north of the former plant. The Ash Pond is formed by cross valley embankment dam and saddle dam. The embankment dam is 100 foot tall and 950 feet in length and the saddle dam is approximately 15 feet tall and 900 feet long. The embankment dam is located on the east side of the reservoir and the saddle dam to the south side of the reservoir. The Ash Pond is approximately 23 acres in surface area.

The crest width of the embankment is 20 feet wide; the upstream slope is 3 Horizontal on 1 Vertical (3H:1V) and the downstream slope varies between 2.5H:1V to 3H:1V. The embankment is zoned with an impervious core with a cutoff trench and a blanket/toe drain.

The spillway is a rectangular concrete chute that discharges into a stilling basin and subsequently to an excavated earthen channel left of the abutment. The stilling basin has a catch basin with an 18-inch pipe to discharge low flow events. The decant water from the Ash Pond discharged into Hamley Run before flowing into the Hocking River.

The pond was graded to drain to the spillway and capped with 2 feet of clay in the 1980s when the Poston Power Plant was closed.

3.0 STRUCTURAL STABILITY ASSESSMENT 257.73(d)

The Initial Structural Stability Assessment was prepared by S&ME, Inc. and is included as Attachment A.

Based on the findings and general assessment in the Initial Structural Stability Assessment, the Poston Ash Pond meets the requirements of 40 CFR 257.73 (d).

ATTACHMENT A

Initial Structural Stability Assessment Report

Poston Legacy CCR Impoundment
Periodic Structural Stability Assessment
Poston Power Plant
York Township – Athens County, Ohio
S&ME Project No. 25170078

PREPARED FOR:

American Electric Power
1 Riverside Plaza
Columbus, Ohio 43215

PREPARED BY:

S&ME, Inc.
6190 Enterprise Court
Dublin, OH 43016

April 6, 2025

April 13, 2026

American Electric Power
1 Riverside Plaza
Columbus, OH 43215

Attention: Mr. Blake Arthur

Reference: **Periodic Structural Stability Assessment**
Poston Legacy CCR Impoundment
Poston Power Plant (former), York Township – Athens County, Ohio
S&ME Project No. 25170078

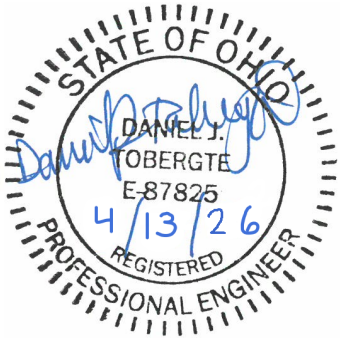
Dear Mr. Arthur:

S&ME, Inc. (S&ME) has completed a Periodic Structural Stability Assessment for the Legacy CCR Impoundment at the former Poston Power Plant in York Township – Athens County, Ohio. This assessment was performed to fulfill the requirements of the Code of Federal Regulations CFR §257.73 (d). Concurrently with the preparation of this assessment, S&ME prepared the Safety Factor Assessment for this CCR unit, which is referenced in this assessment report.

We appreciate the opportunity to be of service to you for this project. If you have any questions, please feel free to contact us.

Sincerely,

S&ME, Inc.



Daniel J. Tobergte, PE
Project Engineer

Jason S. Reeves, PE (TN)
Technical Principal

Table of Contents

1.0 Introduction 1
1.1 Background 1
1.2 Location and Description of CCR Unit 1
2.0 Scope 2
3.0 Information Review and Site Visit 3
4.0 Assessments 4
4.1 Stable Foundations and Abutments 4
4.2 Adequate Slope Protection Against Erosion, Wave Action, and Drawdown 5
4.3 Dikes Compacted Sufficient to Withstand the Range of Loading Conditions 5
4.4 Presence of Vegetated Slopes or Other Forms of Protection 6
4.5 Spillway Capacity to Manage Flow During and Following Design Flood 7
4.6 Structural Integrity of Hydraulic Structures Passing Through CCR Unit 7
4.7 Integrity of Outboard Slopes During External Flood Event 7
5.0 Certification 8
6.0 Closure 8

List of Figures

Figure 1-1 – Former Poston Plant 2

List of Tables

Table 4-1: Summary of Index Values – Embankment Fill 6

1.0 Introduction

1.1 Background

S&ME, Inc. (S&ME) has completed a Periodic Structural Stability Assessment of the coal combustion residuals (CCR) impoundment at the former Poston Power Plant located in York Township – Athens County, Ohio. This assessment was carried out to fulfill the requirements of the Code of Federal Regulations CFR §257.73 (d), *Periodic Structural Stability Assessments*.

1.2 Location and Description of CCR Unit

The former Poston Power Plant is located along a tributary to Hamley Run which drains into the Hocking River, approximately 2.5 miles west of The Plains, Ohio as shown in Figure 1-1. The CCR impoundment, which was put into service in 1957, is located immediately north of the former generating plant. The impoundment was created by construction of two saddle embankments with one embankment situated along the east side and one situated along the south side of the impoundment. Natural hills and ridges surround the remainder of the impoundment.

The east embankment is approximately 950 linear feet in length and approximately 100 feet tall at its maximum height. The south embankment is also approximately 950 feet in length with a maximum height of approximately 15 feet. The impoundment covers a footprint of approximately 59 acres.

Based on available information and topographic data, the eastern embankment inboard slope was constructed at approximately 3H:1V, and the outboard slope was constructed at approximately 2.5H:1V within the upper portion of the slope and about 3H:1V within the lower portion of the slope. The inboard and outboard slopes of the south embankment are both approximately 3H:1V.

Record drawings prepared by Burgess and Niple dated 1956 indicate that the embankments were generally constructed of a homogenous cohesive fill overlying the natural colluvium. A sand blanket drain is situated within the outer quarter of the embankment section. An embankment keyway was constructed into the underlying bedrock along the embankment alignment which was constructed using the same embankment material. Grouting of the bedrock was performed at both abutments.

The spillway is situated at the northeast corner of the impoundment and consists of a 30-foot wide by 5-foot tall rectangular concrete chute with 2H:1V side slopes above the chute. The concrete chute is approximately 100 feet in length above which flows from high flow events are transported by a channel excavated into the hillside. The excavated channel appears to be generally trapezoidal in cross-section. During low flow events, the storm water is carried by an 18-inch corrugated metal pipe (CMP) which is situated generally southeast of the spillway channel. Flow is directed to the 18-inch CMP by a 1.5-foot tall rectangular concrete sill located at the downstream end of the concrete chute. The 18-inch CMP discharges onto a concrete apron with energy dissipators located near the base of the hill.

A 30-inch CMP, used to divert water during construction of the east embankment, is located transverse to the lowest portion of the embankment. This drainage pipe is currently plugged at the discharge end by a steel plate

with rubber gasket. The pipe was reported to have been plugged with concrete for the majority of its length as indicated on the record drawings.

The CCR impoundment was classified by the Ohio Department of Natural Resources (ODNR) as a Class I dam per Ohio Revised Code Section 1521.062; however, the impoundment has been reclaimed and no longer falls under the code according to a letter dated October 31, 1989 from ODNR addressed to Columbus Southern Power Company, the owner of the impoundment at that time. Although no longer a part of the ODNR dam inventory, this impoundment, formerly classified as a Class I dam, has been classified as a "High hazard potential CCR surface impoundment" in accordance with CFR §257.53.

Figure 1-1 – Former Poston Plant

2.0 Scope

A Periodic Structural Stability Assessment for CCR Surface Impoundments, as defined by CFR §257.73 (d), is intended to assess whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR

wastewater which can be impounded therein. To this end, the assessment requires that the pond design, construction, operation, and maintenance be evaluated for seven specific items of the impoundment, as summarized below:

i. Stable foundations and abutments;
ii. Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown;
iii. Dikes (hereinafter referred to as embankments throughout this report) mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit;
iv. Slope vegetation for embankments and surrounding areas shall not exceed a height of six inches above the slope of the dike, except for slopes which have an alternate form or forms of slope protection;
v. Adequate management of flow during and following peak discharge from the design storm event for the single spillway or spillway configuration (for this impoundment, the Probable Maximum Flood (PMF) is considered the design storm event since the impoundment is classified as a Class I dam);
vi. Structural integrity is maintained of hydraulic structures underlying the base or passing through the embankment, and that these structures are free of significant deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation of the hydraulic structure; and,
vii. Structural stability is maintained for downstream slopes which can be inundated by the pool of an adjacent body of water, such as a river, stream or lake, during low pool or sudden drawdown of the adjacent body of water.

3.0 Information Review and Site Visit

S&ME has completed subsurface investigations and stability analyses of the embankments for this CCR impoundment. Additionally, S&ME has completed the Safety Factor Assessment, issued under separate cover. In preparation of this Structural Stability Assessment, S&ME conducted a cursory review of documents relating to the construction of the CCR impoundment embankments and conducted a site visit at the facility. S&ME has the following documents in our files:

- Phase 1 Inspection Report prepared by GAI Consultants, Inc. dated September 1978
  - Provides a summary the characteristics of the embankments and an inspection of the embankments and spillway, and provides recommendations for improvements.
  - Includes as-built drawings (plans and cross-sections of both embankments, geologic profile of both embankments, test boring information of foundation and abutments for east embankment, plan, profile, and cross-sections of spillway, and details of blanket drainage system for the east embankment and spillway features) prepared by Burgess & Niple dated 1956.
- Poston Fly Ash Dam Field Check letter prepared by ODNR dated October 31, 1989
  - Indicates that the dam has been reclaimed and no longer falls under the Ohio Revised Code Section 1521.062.
- Ash Pond Complex Closure History/Summary prepared by AEP dated September 2013
  - Includes four borings within the CCR impoundment extending to foundation soils.
- Transmittal Letter Report – Geotechnical Engineering Services prepared by Terracon dated September 27, 2017

- Includes two borings performed within the CCR impoundment extending to foundation soils.
- Revised as-built drawing Sheet 3 of 21 titled "General Plan", includes addition of 18" CMP spillway extension dated December 15, 1983.
- Ash Pond – Initial Dam and Dike Inspection Report prepared by GEI Consultants dated January 2025
  - Summarizes observations made during a site visit by GEI Consultants performed on October 15, 2024.

On July 8, 2025, Mr. Mike Rowland, Mr. Jason Reeves, and Mr. Dan Tobergte of S&ME met with Mr. Blake Arthur and Mr. Dan Murphy of AEP at the former Poston Plant and conducted a site visit at the CCR impoundment. The group walked the length of the embankments and inspected/assessed the features per the requirements of CFR §257.73 (d). At the time of this site visit, the east embankment and spillway areas were overgrown with grass and woody vegetation. These areas have since been cleared with the exception of the wetland areas. On September 19, 2025 (after clearing was completed), Mr. Dan Tobergte with S&ME visited the site to inspect and assess the embankments and spillways after clearing. A summary of the observations made during both site visits are included in the following section.

4.0 Assessments

The remainder of this report addresses each of the seven items identified in CFR §257.73 (d), *Periodic Structural Stability Assessments*. In several cases, the results of the concurrently performed Periodic Safety Factor Assessment are referenced.

4.1 Stable Foundations and Abutments

The east and south embankments were designed and constructed as saddle embankments, such that both abutments for the embankments consist of the natural hillsides. The foundation of the east embankment consists of the natural soils and bedrock within the valley between the hillsides. The foundation of the south embankment appears to consist of a pass between sets of smaller hills. The condition of the foundation and abutment soils and bedrock was based on the record drawings, the historical geotechnical borings performed within the impoundment area, and the recently completed geotechnical borings performed by S&ME within the embankments.

According to the historical borings performed within the impoundment, approximately 5 feet of natural cohesive soils generally with stiff consistency were encountered overlying weathered and interbedded shale, siltstone, and sandstone bedrock beneath the CCR materials. Rock coring performed at the two borings performed by Terracon indicated 95 to 100 percent recoveries with RQD values ranging from 25 to 54 percent.

Based on the recently completed borings, the embankments are supported on approximately 5 to 20 feet of natural soils overlying shale bedrock. A cutoff trench beneath the east embankment extends into the shale bedrock based on the record drawings. The natural soils encountered at the boring locations consisted predominantly of lean clay with varying amounts of sand and gravel. On occasion, granular soils were encountered consisting of poorly graded sand with clay and clayey gravel. Pocket penetrometer measurements within the cohesive soils ranged from 0.2 to 4.0 tons per square foot (tsf) with an average of 2.1 tsf. Field SPT N-values for the cohesive and granular soils ranged from 6 to 34 blows per foot (bpf). SPT N-values (corrected for 60% energy, drill rod length, diameter of borehole, and the use of split-spoon without liners) for these soils

ranged from 11 to 70 bpf with an average of 31 bpf. The cohesive soils classified as lean clay (CL) according to the Unified Soil Classification System (USCS) and exhibited a firm to very stiff consistency. The granular soils classified as poorly graded sand with clay (SP-SC) and clayey gravel (GC) and exhibited a medium dense relative density. Within the context of the slope stability analyses, this layer is hereafter referred to as the 'Natural Soils' layer.

Bedrock encountered beneath the embankments at the boring locations consisted of weathered shale interbedded with claystone. The bedrock was cored at each of the boring locations performed by S&ME for 5 to 20 feet upon encountering refusal conditions. Core recoveries ranged from 36 to 100 percent, and RQD values ranged from 0 to 100 percent, both generally increasing with depth.

The stability of the foundation soils to support the embankments was evaluated as part of the Safety Factor Assessment. This evaluation demonstrates that the foundation soils are stable under all load cases evaluated.

4.2 Adequate Slope Protection Against Erosion, Wave Action, and Drawdown

Closure of the CCR impoundment was completed in 1988 by placing roughly 6 to 8 feet of fill across the surface of the CCR material to act as a subgrade for installation of a 2-foot-thick clay cover. The current ground surface of this clay cover is at or near the elevation of the embankment crests and free water is no longer stored within the impoundment. As such, protection from wave action and drawdown along the upstream face of the embankments is not applicable for this CCR impoundment.

Erosion protection along the slopes of the embankments consists of vegetation. The Phase 1 Report (GAI, 1978) indicated the presence of an erosion gully along the right embankment-abutment junction, erosion along the downstream slope in places, and swampy surface conditions below the dam toe.

During the site visits on July 8, 2025 (prior to clearing of vegetation) and September 19, 2025 (after clearing of vegetation), along with the GEI Consultants report dated January 2025, indications of significant erosion (i.e. rills, gullies, buildup of sediment) were not observed along the embankments or at the embankment-abutment interfaces. As such, it appears that the erosion gully indicated in the Phase 1 Report (GAI, 1978) has since been repaired.

For these reasons we believe the embankments do have adequate protection against erosion, wave action and sudden drawdown.

4.3 Dikes Compacted Sufficient to Withstand the Range of Loading Conditions

The embankments were constructed in the late 1950's with compacted cohesive soils. It is understood that the project specifications required the fill to be compacted to 95 percent of the materials' maximum dry density as determined by standard Proctor testing. Such a specification is consistent with current typical practices for dam construction. Note, no in-place testing records are available for the fill.

S&ME performed a total of seven borings through the embankments – two were performed through the crest of the east embankment, four were performed upstream of the toe of the east embankment, and one was performed through the crest of the south embankment. These borings encountered approximately 3 to 12 inches of root mat at the ground surface overlying the embankment fill. The embankment fill consisted of soft to very stiff lean clay (CL) and fat clay (CH). Sand drain material was encountered in the four borings performed upstream of the toe of

the east embankment with a thicknesses ranging from approximately 1.0 to 1.5 feet, and consisted of very loose to medium dense well-graded sand (SW) with varying amounts of fines and gravel size particles and clayey sand with gravel (SC). These fill materials were encountered overlying the natural soils or bedrock. Pocket penetrometer measurements within this layer ranged from 0.2 to 4.2 tons per square foot (tsf) with an average of 1.9 tsf. Field SPT N-values ranged from 3 to 27 blows per foot (bpf). SPT N-values (corrected for 60% energy) ranged from 5 to 58 bpf with an average of 21 bpf. Index testing results, including plasticity testing and grain-size analyses of samples were performed on samples of the embankment soils and are summarized in Table 4-1.

Table 4-1: Summary of Index Values – Embankment Fill

Statistic	Moisture Content (%)	Liquid Limit (LL)	Plastic Limit (PL)	Plasticity Index (PI)	Clay Fraction, CF (%)
Sample Size	73	25	25	25	7
Minimum	9	30	15	11	14
Maximum	26	54	26	31	40
Mean	19	41	21	20	30
Median	19	40	21	19	36
Mode	20	44	19	21	38
Standard Deviation	3.2	6.7	2.4	5.4	9.9

The information above suggests that the embankments were well compacted and were comprised of soils suitable for dam construction. The ability of the embankments to resist the various load combinations was evaluated as part of the Periodic Safety Factor Assessment. This evaluation demonstrates that the embankments are stable under all the loading cases evaluated. Furthermore, liquefaction screening analyses also suggest that the embankment soils will not liquefy under a credible earthquake scenario.

4.4 Presence of Vegetated Slopes or Other Forms of Protection

At the time of our site visit on July 8, 2025, woody growth consisting of saplings and brush was observed along the east and south embankment slopes. At the east embankment, trees, brush, and other plants were present along the toe of the embankment near the upstream side of the crest, generally within the limits of wetland habitats. At the time of our September 19, 2025 site visit, the downstream slope and crest of the east embankment had been cleared and mulched, and hydroseeding had been performed. AEP is reportedly currently waiting for a wetland remediation approval from the State of Ohio for clearing of the trees and brush within these wetland areas. The installation of mulch and grass seed will be an appropriate cover for the embankment slopes to prevent erosion.

4.5 Spillway Capacity to Manage Flow During and Following Design Flood

The capacity of the spillway to manage flow during and following design flood was analyzed by others.

The concrete walls of the spillway were generally in good condition. The concrete floor of the spillway was generally in poor condition due to spalling along the majority of the surface; however, no significant cracking within the slab was apparent.

At the time of our site visit on September 19, 2025, after clearing was performed around the concrete chute spillway, the trapezoidal channel began approximately 20 feet downstream of the end of the concrete chute spillway. It is unclear whether this was the original start of the channel or if gully erosion has occurred. Regardless of whether gully erosion has occurred or not, the trapezoidal channel appears to be stable. If the design flood indicates a substantial amount of flow occurs into the trapezoidal channel, S&ME recommends that channel protection be placed to help prevent erosion of the channel (i.e. rip rap, flexible concrete revetment, etc.).

4.6 Structural Integrity of Hydraulic Structures Passing Through CCR Unit

The CCR impoundment has one hydraulic structure passing through its embankments. The structure is a 30-inch, 8-gauge CMP, and is generally situated along the base of the east embankment. The structure is reportedly currently plugged with concrete for its full length and capped at its downstream end with a steel plate and rubber gasket. The pipe was used as a stream diversion during construction of the east embankment. According to the record drawings, a concrete cradle was installed below the pipe which extended up both sides of the pipe to just below the spring line. Additionally, corrugated metal fin seepage collars were reported to be installed at 30 feet intervals along the drain pipe, generally within the middle half of the embankment cross-section.

The inlet and outlet structures consist of cast-in-place reinforced concrete and have since been buried. The outlet structure was buried during improvements made to the operation of the impoundment runoff – specifically, approximately 6 feet of additional fill was placed along the toe based on historical notes. Drainage from the outlet structure was maintained via a drainage channel; however, this was not confirmed during the site visits due to overgrown vegetation in this area.

Prior to the construction of the embankment, two buried water lines were present generally running east-west within the left (north) portion of the east embankment. These water lines consisted of a 16-inch cast iron pipe and a 16-inch steel pipe. The record drawings indicate that these water pipes were encased in concrete with concrete seepage collars placed every 30 feet along the pipe length within the limits of the embankment.

Indications of instability of these structures (i.e. settlement of the ground surface, seepage flows, sediment deposition, etc.) were not observed at the time of our site visits.

4.7 Integrity of Outboard Slopes During External Flood Event

The east embankment is situated near Hamley Run, a tributary to the Hocking River; however, the limits of the CCR impoundment are not situated within the Special Hazard Flood Area of Hamley Run (per FEMA's National Flood Hazard Layer (NFHL) Viewer website application) which is located approximately 750 feet east of the toe of the east embankment. As such, inundation and a rapid drawdown condition along the downstream slope of the embankments of this CCR impoundment are not expected to occur.

5.0 Certification

Based on our recent site observations and investigation, review of historical construction records, and previous assessment/investigation records for the CCR impoundment at the former Poston Plant facility, S&ME certifies that this assessment meets the requirements of CFR §257.73 (d).

6.0 Closure

We appreciate having been given the opportunity to be of service on this project. If you have any questions, please do not hesitate to contact this office.