

STRUCTURAL STABILITY ASSESSMENT

CFR 257.73(d)

Ash Pond Complex

Conesville Plant
Conesville, Ohio

October, 2016

Prepared for : AEP Generation Resources – Conesville Plant

Conesville, Ohio

Prepared by: American Electric Power Service Corporation

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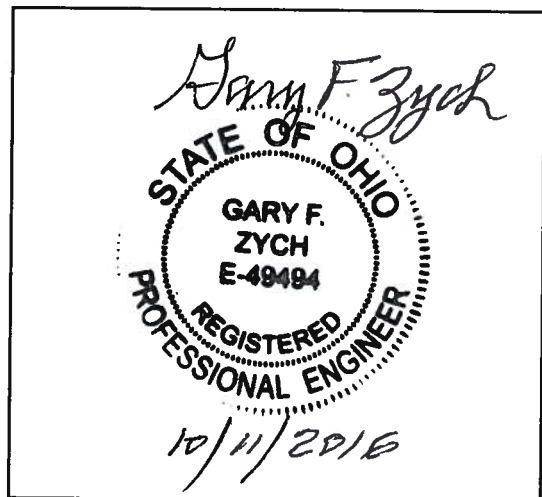
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CONESVILLE PLANT
ASH POND COMPLEX

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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)

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1.0 OBJECTIVE 257.73(d)

This report was prepared by AEP- Geotechnical Engineering Services (GES) section to fulfill requirements of CFR 257.73(d) – document whether the design, construction, operations, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices.

2.0 NAME AND DESCRIPTION OF CCR SURFACE IMPOUNDMENT

The Conesville Generating Station is located near the Village of Conesville, Coshocton County, Ohio. It is owned and operated by AEP Generation Resources. The facility operates one surface impoundment for storing CCR called the Ash Pond Complex.

The Ash Pond Complex is comprised of diked embankments on the north, east, and southwest sides. The west side of the Ash Pond Complex is located adjacent to a closed landfill area. There are three main ponds within the Ash Pond Complex as listed below.

List of Main Ponds within the Ash Pond Complex

Fly Ash Pond
Bottom Ash Pond
Clearwater Pond

3.0 STABLE FOUNDATION AND ABUTMENTS 257.73(d)(1)(i)

[Was the facility designed for and constructed on stable foundations and abutments? Describe any foundation improvements required as part of construction.]

No design report is available for the Conesville Ash Pond Complex. Construction specifications for the 1974 construction are available and indicate that the area was to be cleared and grubbed. The 1974 specifications also indicate that if fly ash or bottom ash were found where the new dikes were to be constructed, then that material was to be excavated and deposited within the existing pond before constructing the new dike.

Based on recent subsurface investigations, the foundation soils under the embankment consist of alluvial silt and clay layer overlying glacial outwash Sand/Gravel. Based on the findings of the subsurface investigations the foundations materials are suitable for supporting the embankment of this CCR unit.

Operation of the impoundment is performed so as to not adversely affect the foundation and abutments. As required by the CCR rules the Ash Pond Complex is inspected at least every 7 days by a qualified person. Also as required by CCR rules, the impoundment is also inspected annually by a professional engineer. Maintenance items are addressed as they are discovered as a part of those inspections.

4.0 SLOPE PROTECTION 257.73(d)(1)(ii)

[Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown.]

The inboard and outboard slopes of the Ash Pond Complex consist of grass vegetation. The current

condition of the grassed slopes is adequate.

Operation and maintenance of the Grassed slopes includes are regular mowing. Any erosion or slips that may occur is repaired within a timely period.

5.0 EMBANKMENT CONSTRUCTION 257.73 (d)(1)(iii)

[Describe the specifications for compaction and/or recent boring to give a relative comparison of density.]

The 1974 Construction Specifications indicate the following:

- Embankment material was to be obtained from three locations; the within the limits of the “new pond”, the removal of the existing dikes, and a designated borrow area.
- Unsuitable materials from within the new dike area were also identified and described as “dark gray silt, some clay, little organic material” or “ Gray silt, little fine sand, little organic material”.
- Embankment material was to be free from rock or stones larger than 6-in, brush, stumps, logs, roots, debris, and organic or other deleterious materials.
- Material was to be placed in maximum 9-in loose lifts and disced and water to proper moisture and compacted to 95 percent maximum density at optimum moisture for cohesive soils or 70 percent relative density for non-cohesive soils.

The 2011 and 2013-2014 dike repairs were constructed with cohesive soils placed in 8-inch loose lifts and compacted to 95% of maximum dry density and +/-2 percent of the optimum moisture based on standard proctor (ASTM 698).

6.0 VEGETATION CONTROL 257.73 (d)(1)(iv)

[Describe the maintenance plan for vegetative cover.]

The vegetative areas are mowed to facilitate inspections and promote the growth of the vegetative layer; and prevent the growth of woody vegetation.

7.0 SPILLWAY SYSTEM 257.73(d)(1)(v)

[Describe the spillway system and its capacity to pass the Inflow Design Flood as per its Hazard Classification.]

The Ash Pond Complex has been determined to be a Significant Hazard potential CCR impoundment. Based on this hazard classification, the design flood was determined by section 257.82(a)(3) to be the 1000-year storm which corresponds to 6.98-in and 9.30-inches for the 6-hr and 24-hr events respectively, for this site. An analysis was performed for the 50% PMF (Probable Maximum Flood) per the state of Ohio, which looks at 50% of the runoff from PMP storm. The 50% PMP event is 9.375-in and 13.25-in for the 6-hr and 24-hr durations. This produces significantly more runoff than the 1000-year storm and therefore exceeds the requirements of section 257.82(a)(3). Results of the analysis show that the impoundment can safely pass these storm events.

All water exits the ash pond complex from a single outlet at the Clearwater Pond. The outlet works consists of a drop inlet spillway structure with stoplogs. The stoplogs are 4 feet in length. A 36-inch outlet pipe conveys the water from the drop structure to an NPDES permitted outfall.

Maintenance of the discharge structures are performed as needed based on periodic 7-day and annual inspections.

8.0 BURIED HYDRAULIC STRUCTURES 257.73 (d)(1)(vi)

[Describe the condition of the sections of any hydraulic structure that in buried beneath and/or in the embankment.]

The discharge pipes did not show signs of excess corrosion or deterioration based on a video inspection conducted in 2015.

9.0 SUDDEN DRAWDOWN 257.73 (d)(1)(vii)

[If the downstream slope is susceptible to inundation, discuss the stability due to a sudden drawdown.]

While the outboard toe of the Ash Pond Complex may be impacted by the backwaters of the Muskingum River during a 100-yr flood it is not anticipated to create an unstable condition due to a sudden drawdown.