

POST CLOSURE PLAN

CFR 257.104(d)

Bottom Ash Pond Complex

Cardinal Plant

Brilliant, Ohio

September, 2016

Prepared for: Cardinal Operating Company - Cardinal Plant

Brilliant, Ohio

Prepared by: Geotechnical Engineering Services

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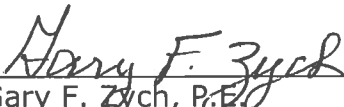


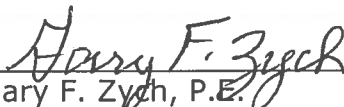
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POST CLOSURE PLAN
CFR 257.104(d)
BOTTOM ASH POND COMPLEX
CARDINAL PLANT

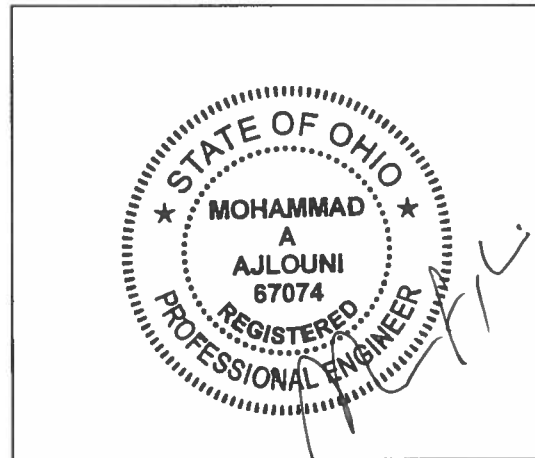
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I certify to the best of my knowledge, information, and belief that the information contained in this post closure plan meets the requirements of 40 CFR § 257.104.

TABLE OF CONTENTS

1.0 OBJECTIVE	1
2.0 DESCRIPTION OF THE CCR IMPOUNDMENT	1
3.0 DESCRIPTION OF POST CLOSURE PLAN 257.104(d)(1)(i)	1
3.1 SECTION 257.104(b)(1)	1
3.2 SECTION 257.104(b)(3)	2
5.0 POST-CLOSURE PLANNED USE 257.104 (d)(1)(iii)	3

1.0 OBJECTIVE

This report was prepared by AEP- Geotechnical Engineering Services (GES) section to fulfill requirements of CFR 257.104(d) for Post Closure Plans of Existing CCR Surface Impoundments.

2.0 DESCRIPTION OF THE CCR IMPOUNDMENT

The Cardinal Power Plant in Wells Township, Jefferson County, near the town of Brilliant in eastern Ohio.

The Cardinal Power Plant is owned by Buckeye Power and AEP Generation Resources (GENCO) a unit of American Electric Power, is operated by Cardinal Operating Company. The facility operates two surface impoundments for storing CCR; the Bottom Ash Complex and Cardinal Fly Ash Reservoir 2 (FAR 2) Dam. The focus of this report is the Bottom Ash Complex.

The BAP complex is comprised of diked embankments on the east and west sides while the north and south sides of the BAP are incised. The complex consists of two separate ponds, the larger bottom ash pond and the smaller recirculation pond. The surface areas of the ponds and is approximately 24.3 acres. The entire crest length is just over a mile, and the nominal crest width is 20 feet. The north end of the pond has been partially filled in with ash and the exact limits of the pond are poorly defined.

The pond complex was originally developed as part of the construction of Units 1 and 2 in the 1960s. The crest of the dikes forming the original pond was at El. 658.0. However, the pond complex was raised to a crest elevation of 970.0 and extensively modified in 1974 as part of the construction of Unit 3.

3.0 DESCRIPTION OF POST CLOSURE PLAN 257.104(d)(1)(i)

[A description of the monitoring and maintenance activities required in paragraph (b) of this section for the CCR unit, and the frequency at which these activities will be performed.]

3.1 SECTION 257.104(b)(1)

[Maintaining the integrity and effectiveness of the final cover system including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover.]

Inspections are performed for the items noted below. The inspection frequencies are scheduled to properly detect any issues so that repairs can be performed before significant harm occurs.

- Soil Dike: The soil dike will be inspected for slides, displacement, seepage, and erosion.
- Cover: The final cover will be inspected for erosion and for the condition of the vegetated cover, i.e., gaps in vegetation or presence of undesirable trees or brush. The integrity of the cover drainage system will also be inspected.
- Final Cover Surface: The Final Cover surface will be inspected for any ponding of water or flat areas. Due to the design contours required to achieve the final cap grade, special attention will be focused to ensure that no settlement, subsidence, erosion, depressions or flat areas exist and that no water is allowed to pond above the cap system.

- Surface Drainage System: The surface drainage system, including channels, culverts, slope drains, etc., will be inspected for erosion, integrity of channel lining, ponding, and accumulated sediment.

Maintenance during the post-closure care period will be performed as discussed below, based upon the facility inspections described above.

- Erosion Damage Repair: Any areas exhibiting erosion will be repaired by replacing and compacting the material in-kind to design grade/specifications, and reseeding the area to the specifications. Applications of additional fertilizer, selective herbicides, rodent control measures, etc. will be implemented as necessary. In the selection of fertilizers and herbicides, ensure their use will not impact the groundwater negatively. Follow-up monitoring of the repaired area will be conducted to ascertain the integrity of the repair.
- Settlement, Subsidence, Displacement: Any areas at the closed site exhibiting evidence of settlement, subsidence, or displacement will be examined to determine the cause of the movement. If backfilling or placing additional fill material is needed to maintain the integrity of the closed structure, it will be performed in accordance with the site/closure specifications, including seeding. If the condition reoccurs or persists, or if the severity of the condition initially is judged to warrant it, a detailed investigation of the cause will be performed and remedial action will be performed. Similarly, any areas of the soil dike exhibiting sliding, displacement, or seepage will be investigated. Repairs will be made as necessary. Follow-up monitoring of the area will be performed to ascertain that the problem has been corrected.
- Closure Cap Surface: Any areas that show signs of ponding water or flat contours will be examined and rectified. Due to the design contours required to achieve the final cap grade, special attention will be focused on the cap surface to ensure that any areas that hold water are re-graded to promote drainage, re-seeded to promote vegetative growth, and maintained to ensure that the ponding of water does not persist.
- Surface Water Drainage System: The channel linings are designed to withstand the design velocities. Maintenance of the surface water drainage system will consist of removing sediment and/or undesirable vegetation from the surface water runoff control system (channels and culverts) as required. Eroded areas will be repaired by back-filling and reseeding according to the specifications. Damage to culverts will be repaired; structure replacement will be performed if needed.

3.2 SECTION 257.104(b)(3)

[Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of §257.90 through 257.98.]

The groundwater monitoring system will be inspected for the general integrity of the wells, well casings and well protective casings. Any damaged portions of the monitoring wells and/or their protective casings will be replaced in-kind.

Monitoring the groundwater will be in accordance with the groundwater monitoring plan for this facility and in accordance with the requirements of §§257.90 through 257.98.

4.0 POST-CLOSURE CONTACT 257.104 (d)(1)(ii)

[The name, address, telephone number and email address of the person or office to contact about the facility during the post-closure care period.]

The name, address, and telephone number of the person to contact about the Facility during the post-closure period shall be provided upon notice of closure.

5.0 POST-CLOSURE PLANNED USE 257.104 (d)(1)(iii)

[A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this subpart...]

The post-closure use of the property will be undisturbed vacant land space. The only activities occurring on the closed CCR unit will be related to the Post-Closure care activities. All other activities will be prohibited.