

# CLOSURE PLAN

**CFR 257.102(b)**

Stingy Run Flyash Pond

Gavin Plant  
Cheshire, Ohio

October, 2016

Prepared for: AEP Generation Resources – Gavin Plant

Cheshire, Ohio

Prepared by: American Electric Power Service Corporation

1 Riverside Plaza

Columbus, OH 43215



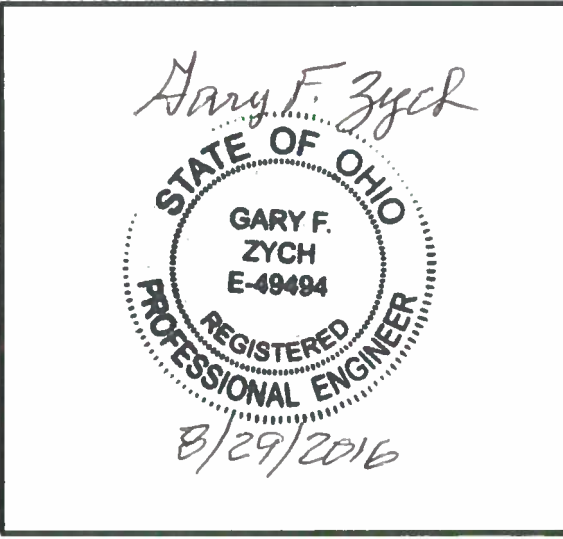
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CFR 257.102(b)  
GAVIN PLANT  
STINGY RUN FLYASH POND

PREPARED BY *Shah Baig* DATE 8-19-2016  
Shah Baig, P.E.

REVIEWED BY *Brett Dreger* DATE 8/19/2016  
Brett Dreger, P.E.

APPROVED BY *Gary F. Zych* DATE 8/29/2016  
Gary F. Zych, P.E.  
Department Manager – AEP Geotechnical Engineering



I certify to the best of my knowledge, information, and belief that the information contained in this closure plan meets the requirements of 40 CFR § 257.102

I certify to the best of my knowledge, information and belief that design of the final cover system as described in this closure plan meets the requirements of 40 CFR § 257.102.

## Table of CONTENTS

<b>1.0 OBJECTIVE.....</b>	<b>4</b>
<b>2.0 DESCRIPTIONS OF CCR UNIT.....</b>	<b>4</b>
<b>3.0 DESCRIPTION OF CLOSURE PLAN 257.102(b)(1)(i) .....</b>	<b>5</b>
<b>4.0 CLOSURE IN PLACE 257.102 (b)(1)(iii).....</b>	<b>5</b>
<b>4.1 CLOSURE PERFORMANCE STANDARDS 257.102 (d)(1).....</b>	<b>5</b>
<b>4.2 DRAINING AND STABILIZING OF THE SURFACE IMPOUNDMENT 257.102(d)(2).....</b>	<b>6</b>
<b>4.3 FINAL COVER SYSTEM 257.102 (d)(3) .....</b>	<b>7</b>
<b>5.0 ESTIMATE OF MAXIMUM CCR VOLUME 257.102 (b)(1)(iv) .....</b>	<b>7</b>
<b>6.0 ESTIMATE OF LARGEST AREA OF CCR REQUIRING COVER 257.102 (b)(1)(v).....</b>	<b>7</b>
<b>7.0 CLOSURE SCHEDULE 257.102(b)(1)(vi).....</b>	<b>8</b>

## **1.0 OBJECTIVE**

This report was prepared by AEP- Geotechnical Engineering Services (GES) section to fulfill requirements of CFR 257.102(b) for Closure Plans of Existing CCR Surface Impoundments

## **2.0 DESCRIPTION OF THE CCR UNIT**

The fly ash pond is located approximately 2.5 miles northwest of the plant on Stingy Run which is a tributary to Kyger Creek. Kyger Creek empties into the Ohio River 3.0 miles downstream of the power plant.

The Stingy Run flyash dam was constructed to retain the fly ash produced by the burning of pulverized coal at the General James M. Gavin Power Plant. The fly ash dam is an earthfill zoned embankment 145 feet high. The crest of the dam varies but is a minimum elevation of 735 feet. Reservoir levels are regulated by the 100-foot high intake tower of the principal spillway.

Although originally constructed for settling fly ash, plant operations changed with the installation of scrubbers, so that the plant ceased all fly ash slurry discharges into the reservoir in 1994. Since that time, only direct precipitation, storm water runoff from upstream areas, and acid mine drainage from mined areas enter the reservoir.

AEP has started pond closure project in 2015 and plan to close the pond with a cover system combined with series of channel for water management. At the end of the project the entire flyash pond will be capped and covered with cover system.

The Gavin plant is currently operated by AEP Generation Resources Inc. In September 2016, AEP announced the sale of the Gavin assets including the Flyash Pond (post closure). Pursuant to the sales agreement, the Gavin plant will be transferred to LightStone Generation (a joint venture between Blackstone and ArcLight Capital Partners, LLC) in 2017 after necessary regularity approvals. During this interim period, AEP is doing project management and engineering support work and also providing transitioning support to LightStone Generation.”

### **3.0 DESCRIPTION OF CLOSURE PLAN 257.102(b)(1)(i)**

*[A narrative description of how the CCR unit will be closed in accordance with this section]*

The flyash pond will be capped and closed in place. The closure will consist of re-grading and backfilling the existing onsite materials and the installation of an impermeable cap with a vegetative cover. The subgrade or contouring fill will be finished to achieve a positive drainage to promote surface water runoff. The regraded surface will be covered with a flexible geomembrane liner and 2-feet of soil fill material that is capable of sustaining native plant growth. Surface runoff will be managed by installing drainage channels over the new cover. The surface soil will be seeded to promote the growth of a vegetative cover.

### **4.0 CLOSURE IN PLACE 257.102 (b)(1)(iii)**

*[If closure of the CCR unit will be accomplished by leaving the CCR in place, a description of the final cover system, designed in accordance with paragraph(d) of this section, and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in paragraph (d) of this section.]*

The final cover system will consist of a liner system (flexible geomembrane, drainage layer, soil cover, and drainage channels). The geomembrane will be installed directly over the graded CCR material and/or contouring fill. The final cover will be seeded to promote growth of a vegetative cover. The final cover slope will be a minimum of 2% and will convey water to a NPDES permitted outfall via drainage channels.

Prior to installation of the final cover system the impoundment will be drained of the free water and soil material will be regraded to provide a stable subgrade.

### **4.1 CLOSURE PERFORMANCE STANDARDS 257.102 (d)(1)**

#### **4.1.1 SECTION 257.102(d)(1)(i)**

*[Control, minimize or eliminate, the maximum extent possible extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere.]*

The final cover system will cover the CCR material and will have a permeability that is less than or equal to the permeability of the natural subsoils and is no greater than  $1 \times 10^{-5}$  cm/sec.

#### **4.1.2 SECTION 257.102(d)(1)(ii)**

*[Preclude the probability of future impoundment of water, sediment, or slurry.]*

The impoundment will consist of a gentle grade to a minimum slope of 2% to prevent the ponding of water sediment or slurry.

#### **4.1.3 SECTION 257.102(d)(1)(iii)**

*[Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period.]*

The final cover system will be gently graded with a minimum of 2% slope. The final configuration of the impoundment will meet the stability requirements to prevent the sloughing or movement of the final cover system during the closure and post-closure care period.

#### **4.1.4 SECTION 257.102(d)(1)(iv)**

*[Minimize the need for further maintenance of the CCR unit.]*

The impoundment will be vegetated to prevent erosion. Maintenance of the final cover system will include mowing.

#### **4.1.5 SECTION 257.102(d)(1)(v)**

*[Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.]*

The CCR unit is under construction for closure and expected to be closed by 2020 per the current schedule.

### **4.2 DRAINING AND STABILIZING OF THE SURFACE IMPOUNDMENT**

#### **257.102(d)(2)**

*[The owner or operator of a CCR surface impoundment of any lateral expansion of a CCR surface impoundment must meet the requirements of paragraph (d)(2)(i) and (ii) of this section prior to installing the final cover system required under paragraph (d)(3) of this section.]*

#### **4.2.1 SECTION 257.102(d)(2)(i)**

*[Free liquids must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residue.]*

As part of closure of the CCR unit, all free water will be removed.

#### **4.2.2 SECTION 257.102(d)(2)(ii)**

*[Remaining waste must be stabilized sufficient to support the final cover system.]*

The remaining waste that make up the subgrade of the final cover system will be stabilized by removal of free liquids and providing bridging as necessary.

#### **4.3 FINAL COVER SYSTEM 257.102 (d)(3)**

*[If a CCR unit is closed by leaving CCR in place, the owner or operator must install a final cover system that is desgined to minimize infiltration and erosion , and at a minimum, meets the requirements of paragraph (d)(3)(i) of this section, or the requirements of the alternative final cover system specified in paragraph (d)(3)(ii) of this section.*

*The final cover system must be designed and constructed to meet the criteria in paragraphs (d)(3)(i)(A) through (D) of this section. The design of the final cover system must be included in the written closure plan.]*

The final cover system will consist of a flexible geomembrane that will have a permeability that is less than or equal to the permeability of the natural subsoils and is no greater than  $1 \times 10^{-5}$  cm/sec. The geomembrane will be installed directly over the graded CCR material and/or contouring fill. Over the geomembrane will be installed an infiltration layer consisting of 24 inch of earthen material. The final cover will be seeded to promote growth of a vegetative cover. The final cover slope will be a minimum of 2% and will covey water to a NPDES permitted outfall. The final cover slope will be a minimum of 2% to accommodate settling and subsidence.

#### **5.0 ESTIMATE OF MAXIMUM CCR VOLUME 257.102 (b)(1)(iv)**

*[An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit.]*

The maximum CCR inventory in the Ash Pond is approximately 19,800 acre-ft at a maximum flyash elevation of 725 feet. Current CCR material in place is approximately 8,316 acre-ft.

#### **6.0 ESTIMATE OF LARGEST AREA OF CCR REQUIRING COVER 257.102 (b)(1)(v)**

*[An estimate of the largest area of CCR unit ever requiring a final cover*

The largest area of the CCR unit requiring a final cover is approximately 250 acres.

## **7.0 CLOSURE SCHEDULE 257.102(b)(1)(vi)**

*[A schedule for completing all activities necessary to satisfy the closure criteria in the section, including an estimate of the year in which all closure activities for the CCR unit will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of the CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of the CCR unit closure.]*

Closure of the pond has already started in 2015. Based on the current closure schedule, the pond should be closed by 2020.