

Notice of Intent to Close Inactive Surface Impoundment

Richmond Power and Light Company
Whitewater Valley Station
Coal Combustion Residual Surface Impoundment
Richmond, Indiana

GAI Project Number: C151119.01

December 2015



Prepared by: GAI Consultants, Inc.
Murrysville Office
4200 Triangle Lane
Export, Pennsylvania 15632

Prepared for: Richmond Power and Light Company
2000 US Hwy 27 South
Richmond, Indiana 47374

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A. Introduction

The Whitewater Valley Station Impoundment (Impoundment) is an inactive Coal Combustion Residuals (CCR) surface impoundment located at the Whitewater Valley Station (Station). The Impoundment is subject to the United States Environmental Protection Agency's (EPA's) final rule for Disposal of CCRs from Electric Utilities in Title 40 Code of Federal Regulations (CFR) Part 257, Subpart D (CCR rule). Richmond Power & Light intends to initiate closure of the Impoundment under the requirements of §257.100 (b) of the CCR rule.

B. Site Description

The Station is located near Richmond in Wayne County, Indiana. The Station is accessed by U.S. Route 27. The Impoundment covers a total area of approximately 14 acres, which consists primarily of the sluiced CCR disposal area and downstream settling ponds (Ponds P1-P3, which discharge to Pond P4). Based on information provided to GAI, the Impoundment ceased receiving CCR material before the effective date of the rule (October 19, 2015). The Impoundment is currently permitted to discharge to the City of Richmond Indiana Sanitary District Public Owned Treatment Works (RSD POTW) after passing through the P4 Pond.

C. Closure of Surface Impoundment

The Whitewater Valley Station Impoundment will be closed as an inactive CCR surface impoundment. A description of how the Impoundment will be closed is provided below.

C.1 Impoundment Closure Description – CCR Disposal Area

Whitewater Valley Station Impoundment will be closed in place, with a cover system placed over the CCR surface. The cover will be constructed in accordance with 40 CFR §257.100 (b)(1) through (4).

To prepare for closure, ponded areas within the Impoundment will be dewatered to stabilize the CCR and to facilitate providing a surface suitable for construction of the final cover system in accordance with 40 CFR §257.100 (b)(2)(i) and (ii).

Material within the Impoundment will be graded to create a slope for proper drainage. Closure will be accomplished by placing the final cover system, consisting of soil layers and possible geosynthetic materials, over the CCR surface. This will minimize infiltration of water into the CCR and minimize releases of CCR, leachate, or contaminated run-off to the ground or surface waters or atmosphere, as required by 40 CFR §257.100 (b)(1)(i).

Erosion resistant channels will also be constructed at slopes sufficient to prevent future ponding within the Impoundment. These channels will meet the requirements of 40 CFR §257.100 (b)(1)(ii). To prevent sloughing or movement of the slopes for the final cover system, the CCR material will be dewatered to provide a stable surface for the final cover system and by maintaining the existing berms along the edges of the Impoundment.

40 CFR §257.100 (b)(1)(iii) requires that the final cover slope be stable. The slopes of the final cover will range from 2 percent to 33.3 percent (3 horizontal (H) to 1 vertical (V)). A drainage layer may be designed and added (if needed) to reduce the potential for the steeper slopes from becoming saturated during large precipitation events. Stability analyses will verify that each final cover system material and interface will achieve the required factors of safety for static and seismic conditions. Material interfaces will be tested prior to construction to document that the required shear strength will be achieved.

40 CFR §257.100 (b)(1)(iv) requires the proposed closure design to minimize the need for further maintenance of the surface impoundment. The design reduces the need for further maintenance by

providing a permanent cover system that will be protected with a minimum of 12 inches of soil. The soil cover will be vegetated to reduce erosion and the grades of the cover will be designed to promote drainage with minimal erosion. The drainage channels will be constructed with turf reinforcement mats, hard armoring or other permanent lining to reduce maintenance needs.

The final cover design will be in accordance with 40 CFR §257.100 (b)(3)(i) for the closure of inactive CCR surface impoundments. The proposed layers of the final cover system to be installed are described below (from bottom to top).

- **Barrier Layer.** This layer reduces water from infiltrating into the CCRs. The barrier layer will consist of a minimum of 18 inches of soil with a permeability of 1×10^{-5} cm/s or a geosynthetic clay liner (GCL). This layer will meet the requirements of 40 CFR §257.100 (b)(3)(i)(A)-(B) or 40 CFR §257.100 (b)(3)(ii)(A).
- **Drainage Layer.** The drainage layer will be used if the GCL is used for the barrier layer. The drainage layer will consist of a geocomposite drainage net, which is a synthetic drainage net sandwiched between two pieces of geotextile fabric. This layer provides lateral drainage over the barrier layer. The geotextile filter fabric on the top of the geocomposite drainage net will facilitate the flow into the net while filtering out fine soil particles from the cover soil layer.
- **Protective Cover Soil Layer.** The protective cover soil layer will be used if the drainage layer is part of the cover system. This will consist of a minimum six-inch-thick soil layer. The protective cover soil layer will store moisture and support vegetation. It will also act as a protective layer for the drainage layer.
- **Vegetative Support Layer.** This layer will consist of six inches of soil that can sustain vegetation. The soil will be topsoil or site soil amended with appropriate nutrients to facilitate vegetative growth. This layer will meet the requirements of 40 CFR §257.100 (b)(3)(i)(C) or 40 CFR §257.100 (b)(3)(ii)(B).
- **Vegetation.** This layer will consist of a combination of quick-cover vegetation, such as annual ryegrass, and easily maintained perennial grasses and legumes intended to provide a healthy, dense stand of low growing grass or similar vegetative cover.

The CCR in the Impoundment will be analyzed to evaluate the stability and settlement of the final cover system and assess that positive slopes will be maintained. This post-settlement slope is intended to meet the requirements of 40 CFR §257.100 (b)(3)(i)(D) and 40 CFR §257.100 (b)(3)(ii)(C).

C.2 Impoundment Closure Description – P Ponds

Ponds P1, P2, and P3 are situated within the footprint of the Impoundment. These ponds may be clean closed through the removal of CCR, thus meeting the requirements of 40 CFR §257.100 (b)(5). CCR that is remaining in the P Ponds would be excavated and used to achieve final cover system grades in other parts of the Impoundment.

Should Ponds P1, P2, and P3 be clean closed, a registered professional engineer will visually examine the bottom of the P Ponds for the purpose of visually verifying that all CCR in the Impoundment has been effectively removed per regulatory requirements. It is understood that the CCR in the P Ponds will be removed no later than April 17, 2018, in accordance with 40 CFR §257.100 (b). The P Ponds do not have bottom liners, so there is no requirement to remove the bottom liner from the Ponds, as described in 40 CFR §257.100 (b)(5). After removal of CCR from the P Ponds, the pond areas will be regraded for positive drainage and stabilized with vegetation.

In lieu of a clean closure, the P Ponds will be closed using the same methodology as the CCR Disposal Area of the Impoundment. After closure, the P Ponds may be utilized as a post-construction detention

pond. No permanent pool will be maintained within the P Ponds. Any cover material within the P Ponds will be protected from any effects of detained water.

C.3 Water Handling During Closure

Water that comes in contact with the CCR during closure activities, or is generated by dewatering activities, will be managed through erosion and sedimentation best management practices, which will be designed and permitted as required by state and county regulatory agencies prior to discharge to RSD POTW.

D. Closure Schedule

Table 1 below provides a schedule for the closure of the Impoundment. The Impoundment ceased receiving CCRs before October 19, 2015. Construction activities related to the closure of the surface impoundments will be completed by April 17, 2018, in accordance with 40 CFR §257.100 (b).

Table 1.
Impoundment Construction Schedule

Construction Activity	Approximate Start Date	Approximate End Date
Decant surface water from Impoundment and dewater CCR to provide a structurally stable surface for the installation of the final cover system.	3rd Quarter 2016	4th Quarter 2016
Earthwork operations of the CCR in the Impoundment establish subgrade.	4th Quarter 2016	2nd Quarter 2017
Construct final cover system and surface water drainage channels.	2nd Quarter 2017	1st Quarter 2018
Closure complete.	-	April 17, 2018

E. Recordkeeping and Notification Requirements

This notification shall be placed in the Station’s operating record no later than December 17, 2015. This notification will also be available on the Richmond Power & Light CCR internet site as required by §257.107 (i)(1) of the CCR rule. Richmond Power & Light will notify the relevant State Director when this notice has been placed in the Station’s operating record and on the Richmond Power & Light CCR internet site, as required by §257.106 (i)(1) of the CCR rule. The relevant State Director will be notified before the close of business on December 17, 2015.

F. Professional Engineer’s Certification

I, the under signed Indiana Professional Engineer, hereby certify that I am familiar with the technical requirements of 40 CFR §257.100. I also state that it is my professional opinion that, to the best of my knowledge, information, and belief, the final cover system for the Impoundment has been designed by GAI pursuant to its Scope of Services in accordance with current good and accepted engineering practice(s) and standard(s) appropriate to the nature of the project and the technical requirements of 40 CFR §257.100 (b)(3)(i). In addition, I do hereby certify that it is my professional opinion that, to the best of my present knowledge, information, and belief that the closure activities associated with the

closure of the Impoundment as described in this notification are technically feasible to be completed by no later than April 17, 2018.

For purposes of this document, "certify" and "certification" shall be interpreted and construed to be a "statement of professional opinion". The certification is understood and intended to be an expression of my professional opinion as an Indiana Registered Professional Engineer, based upon knowledge, information and belief. The statement(s) of professional opinion are not and shall not be interpreted or construed to be a guarantee nor a warranty of the closure activities.

Charles F. Straley, P.E., P.S.
Printed Name of Professional Engineer

PE10708581
State of Indiana License Number

Charles Straley
Signature of Professional Engineer

Dec. 16, 2015
Date

