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Whitewater Valley Station Surface Impoundment Coal Combustion Residual Annual Report

Richmond Power and Light
Whitewater Valley Station
Wayne County, Indiana

GAI Project Number: C151119.07
July 2017

Prepared by: GAI Consultants, Inc.
Murrysville Office
4200 Triangle Lane
Export, Pennsylvania 15632-1358

Prepared for: Richmond Power and Light
2000 U.S. 27 South
Richmond, Indiana 47374

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Certification/Statement of Professional Opinion

The Annual Inspection of the Surface Impoundment was performed by GAI Consultants, Inc. (GAI) on Tuesday, April 11, 2015. The Inspection was based on certain information identified in Section 3.0 that GAI has relied on but not independently verified and the visual observations made by GAI personnel at the Site during specific site visits. Therefore this Certification/Statement of Professional Opinion is limited to the information available to GAI at the time the Inspection was performed. On the basis of and subject to the foregoing it is my professional opinion as a Professional Engineer licensed in the State of Indiana that the Inspection has been performed in accordance with good and accepted engineering practices as exercised by other engineers practicing in the same discipline(s), under similar circumstances and at the time and in the same locale. It is my professional opinion that the Annual Inspection Report was prepared consistent with the requirements of the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," published in the Federal Register on April 17, 2015 with an effective date of October 19, 2015 and the United States Environmental Protection Agency Title 40 of the Code of Federal Regulations Part 257; Hazardous and Solid Waste Management Disposal System and Disposal of Coal Combustion Residuals from Electric Utilities; Extension of Compliance Deadlines for Certain Inactive Surface Impoundments; Response to Partial Vacatur, Final Rule October 4, 2016.

The use of the words "certification" and/or "certify" in this document shall be interpreted and construed as a Statement of Professional Opinion and is not and shall not to be interpreted or construed as a guarantee, warranty or legal opinion.

Charles F. Straley, P.E., P.S.



1.0 Purpose

Pursuant to the Federal Coal Combustion Residuals (CCR) Rule 40 CFR 257.83, each CCR unit is to have an annual inspection and report prepared by a qualified professional engineer. The inspection is to include:

- ▶ A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files in the operating record;
- ▶ A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit; and
- ▶ A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.

The Inspection Report is to include:

- ▶ Any changes in geometry of the impounding structure since the previous annual inspection;
- ▶ The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;
- ▶ The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;
- ▶ The storage capacity of the impounding structure at the time of the inspection;
- ▶ The approximate volume of the impounded water and CCR at the time of the inspection;
- ▶ Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and
- ▶ Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

2.0 Introduction

The Whitewater Valley Station is a coal-fired electric generating station located in the city of Richmond, Wayne County, Indiana. The Impoundment was built in the 1950s to store sluiced CCR material produced at the Whitewater Valley Station. From discussion with existing station personnel, sluicing of fly ash and bottom ash to the Impoundment was reduced significantly during the mid-1970s. There were rare instances when the Impoundment received sluiced fly ash as a backup option until October 19, 2015. From the mid-1970s to October 19, 2015, the Surface Impoundment also received Bottom Ash Hydrobin overflow and drain water on days the Station operated, as reported by Station personnel. Starting in 2012, the Station began operating as a peaking station and typically operates on the order of 20 to 30 days per year. Currently, the Impoundment receives localized site stormwater runoff and coal pile area stormwater runoff. The size of the Impoundment is approximately 14 acres.

A polishing pond known as Pond P1-P3 is situated just north of the Impoundment. The Impoundment currently discharges to Pond P1-P3 via a series of gravel drains. Some CCR material has been observed in Pond P1-P3. Water can eventually drain through Pond P-4 to the Richmond Sanitary District sewer line on the north side of the property, as part of a Non-Categorical Industrial Wastewater Discharge Permit.

3.0 Information Review

CCR Rule §257.83(b)(1)(i) states that an inspection includes “a review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., CCR unit design and construction information required by §257.73(c)(1) and §257.74(c)(1), previous periodic structural stability assessments required under §257.73(d) and §257.74(d), the results of inspections by a qualified person, and results of previous annual inspections).”

GAI Consultants, Inc. (GAI) reviewed the following available information prior to performing the inspection:

- ▶ Site record drawings (limited to plan view drawings of the Impoundment).

Conversations were held with the Impoundment operators before the inspection to obtain additional information such as operation and maintenance procedures, and current state of the Impoundment.

4.0 Visual Inspection

4.1 General Information

The inspection was performed on Tuesday April 11, 2017. The weather conditions were clear with temperatures ranging from 60 to 69 degrees Fahrenheit. Charles Straley, P.E., P.S. and Trent Muraoka, P.E., of GAI performed the inspection.

4.2 Inspection Strategy and Route

The GAI team inspected the Impoundment and its facilities by making visual observations, recording site conditions, and talking to plant personnel.

The inspection started at the crest of the berm between the Surface Impoundment and Pond P1-P3. We then proceeded across the crest to the west and walked the crest of the embankment to the south. At the southwest corner of the Surface Impoundment, the inspection continued to the east. We then walked along the crest of the Pond P1-P3 embankment from east to west.

4.3 Facility Conditions

The crest of the embankment and the upstream slope were examined. No cracking or slumping were observed. No visual signs of slope instability were observed. The crest alignment was straight with no visual indication of lateral or vertical movement. A small animal burrow was observed on the crest of the embankment on the west side of the Surface Impoundment. Two approximate six-inch deep erosion rills were identified in the berm between the Surface Impoundment and Pond P1-P3. The downstream slope of the embankment was observed while walking the crest. No cracking or slumping of the downstream slope was observed.

4.4 Geometry

Pursuant to §257.83(b)(2)(i), “any changes in the geometry of the impounding structure since the previous annual inspection” are reported.

Based on visual inspection and a review of the record drawings, no changes to the geometry of the Impoundment were observed.

4.5 Instrumentation

Pursuant to CFR §257.83(b)(2)(ii), “the location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection” are reported.

Currently, there is no instrumentation present.

4.6 Depth and Elevation of Impounded Water and CCR

Pursuant to CFR §257.83(b)(2)(iii), "the approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection" are reported.

There is no impounded water within the Surface Impoundment.

The approximate minimum elevation of CCR was El. 952 feet with a depth of six feet. The approximate maximum elevation of the CCR was El. 987 feet with a depth of 24 feet. The average elevation of the CCR the day of the inspection was 970 feet with a depth of 18 feet.

4.7 Storage Capacity

Pursuant to CFR §257.83(b)(2)(iv), "the storage capacity of the impounding structure at the time of the inspection" is reported.

Based on a review of the boring logs and topography of the Surface Impoundment, the approximate storage capacity of the Surface Impoundment is 441,900 cubic yards.

4.8 Volume of Impounded Water and CCR

Pursuant to CFR §257.83(b)(2)(v), "the approximate volume of the impounded water and CCR at the time of the inspection" is reported.

As stated in Section 4.6, there is no impounded water within the Surface Impoundment.

The approximate volume of the CCR in the Impoundment at the time of the inspection was 395,700 cubic yards.

4.9 Structural Appearance

Pursuant to CFR §257.83(b)(2)(vi), "any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures" are reported.

Based on visual inspection, the Impoundment appeared to have no structural weaknesses. No existing conditions that are disrupting or that have the potential to disrupt the operation and safety of the CCR unit were observed.

4.10 Unit Performance

Pursuant to CFR §257.83(b)(2)(vii), "any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection" are reported.

Based on a visual inspection, there did not appear to be any changes that would affect the stability or operation of the Impoundment.

5.0 Conclusions and Recommendations

During the April 11, 2017 visual inspection of the Impoundment, GAI did not identify any signs of distress or malfunction that would affect the structural condition of the Impoundment. No releases of CCR were observed during the 2017 inspection.

The following are GAI's recommendations to be completed during normal maintenance activities:

1. Animal burrow and erosion rills are maintenance issues that will be addressed by the Impoundment operator.
2. Trees located in the embankment and within the limits of the Impoundment should be removed.

6.0 References

Environmental Protection Agency, *40 CFR Parts 257 and 261, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities*, April 17, 2015.

APPENDIX A

Annual Inspection Checklist

CCR Surface Impoundment Annual Inspection Checklist

Project Name RP-L CCR Rule Compliance
 Project No. C151119.07
 Inspector Name(s) Charles Straley and Trent Muraoka
 Time 8AM-11AM

Impoundment No. WWVS Surface Impoundment
 Date. 4/11/2017
 Weather Conditions Clear
 Temperature 60s

Current Storage Capacity 441,900 cy
 Volume of Impounded CCR and Water¹ 395,700 cy

Annual Depths and Elevations of Impounded Water and CCR¹

Depth			Elevation		
Min.	Max.	Present	Min.	Max.	Present
6 ft	24 ft	18 ft	952 ft	987 ft	970 ft

1 - No water is impounded.

Mark "Yes" or "No" if the condition is observed.

Review Available Information (Preamble and 257.83)	Yes	No	Comments
Status and condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Operating record	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Design drawings	<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A
Previous inspection forms	<input type="checkbox"/>	<input checked="" type="checkbox"/>	This is the Initial Inspection
Previous structural stability assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The structural stability assessment has not been performed.
Signage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A
Visual Inspection (Preamble and 257.83)			
Weakness or malfunction of CCR of appurtenant structure	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hydraulic structure under base or dike of CCR unit safe and reliable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Changes in geometry	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Surface erosion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Two approximate 6-inch deep gullies in berm between Impoundment and Pond P1-P3
Contingency Plan (Preamble)			
Plan in place to correct an deficiencies identified during the inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Other Issues (257.83)			
Other issues identified during the inspection which are disrupting or have the potential to disrupt the operation or safety of the impoundment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Location of Instrumentation and Maximum Reading (257.83)			
Comments: There is no instrumentation system present.			