



Submitted to
Southern Indiana
Gas & Electric Company
dba Vectren Power
Supply, Inc. (SIGECO)
One Vectren Square
Evansville, IN 47708

Submitted by
AECOM
9400 Amberglen Boulevard
Austin, Texas 78729

October 13, 2016

CCR Certification:
Initial Written Post-Closure Plan
§257.104 (d)

for the

East Ash Pond

at the

F.B. Culley Generating Station

Revision 0

Table of Contents

Executive Summary ES-1

1 Introduction 1-1

1.1 Purpose of this Report 1-1

1.2 Brief Description of Impoundment 1-1

2 Post-Closure Plan Description 2-1

2.1 Post-Closure Care Maintenance Requirements.....2-1

2.1.1 Maintaining the Integrity and Effectiveness of the Final Cover System2-1

2.1.2 Maintaining the Leachate Collection System2-1

2.1.3 Maintaining the Groundwater Monitoring System2-1

2.2 Post-Closure Care Period 2-2

2.2.1 Length of Post-Closure Care Period2-2

2.2.2 Extended Length of Post-Closure Care Period2-2

2.3 Written Post-Closure Plan.....2-2

2.3.1 Monitoring and Maintenance Activities2-2

2.3.2 Post-Closure Care Contact2-3

2.3.3 Planned Uses of the Property during the Post-Closure Period2-3

2.3.4 Amendment to the Written Post-Closure Plan2-3

3 Certification 3-1

4 Limitations 4-1

Tables

- Table ES-1 Certification Summary**
- Table 1-1 CCR Rule Cross Reference Table**

Appendices

- Appendix A Figures**
- Figure 1 – Location Map
- Figure 2 – Site Map

Executive Summary

This Coal Combustion Residuals (CCR) Initial Written Post-Closure Plan (Post-Closure Plan) for the East Ash Pond at the Southern Indiana Gas & Electric Company dba Vectren Power Supply, Inc., F. B. Culley Generating Station has been prepared in accordance with the requirements specified in the USEPA CCR Rule under 40 Code of Federal Regulations §257.104. These regulations require that the specified documentation, assessments and plans for an existing CCR surface impoundment be prepared by October 17, 2016.

The Post-Closure Plan for the East Ash Pond meets the regulatory requirements as summarized in **Table ES-1**.

Table ES-1 – Certification Summary				
Report Section	CCR Rule Reference	Requirement Summary	Requirement Met?	Comments
2.1	§257.104 (b)	<i>Post-Closure Care Maintenance Requirements</i>	Yes	Description of the post-closure care and maintenance activities that are required for the CCR unit.
2.2	§257.104 (c)	<i>Post-Closure Care Period</i>	Yes	Definition of the post-closure care period.
2.3	§257.104 (d)	<i>Written Post-Closure Plan</i>	Yes	Description of the monitoring and maintenance activities that are required for the CCR unit and the frequency of such activities. Description of how the site will be used while it is in the post-closure period. Description of the planned uses during post-closure.

The East Ash Pond is currently an active surface impoundment. Upon decision to close the surface impoundment and completion of closure activities at this surface impoundment, the Post-Closure Plan will be carried out as required in the CCR Rule.

1 Introduction

1.1 Purpose of this Report

The purpose of the Initial Written Post-Closure Plan (Post-Closure Plan) is to document that the requirements specified in 40 Code of Federal Regulations (CFR) §257.104 have been met to support the certification required under each of the applicable regulatory provisions for the F.B. Culley Generating Station (Culley) East Ash Pond. The Culley East Ash Pond is an existing coal combustion residuals (CCR) surface impoundment as defined by 40 CFR §257.53. The CCR Rule requires that the post-closure plan for an existing CCR surface impoundment be prepared by October 17, 2016.

The following table summarizes the documentation required within the CCR Rule and the sections that specifically respond to those requirements of this plan.

Report Section	Title	CCR Rule Reference
2.1	Post-Closure Care Maintenance Requirements	§257.104 (b)
2.2	Post-Closure Care Period	§257.104 (c)
2.3	Written Post-Closure Plan	§257.104 (d)(1)

1.2 Brief Description of Impoundment

The Culley station is located in Warrick County, Indiana, southeast of Newburgh, Indiana, and is owned and operated by Southern Indiana Gas and Electric Company, dba Vectren Power Supply Inc. (SIGECO). The Culley station is located along the north bank of the Ohio River and the west bank of the Little Pigeon Creek along the southeast portion of the site. Culley has two CCR surface impoundments, identified as the West Ash Pond and the East Ash Pond. Only the East Ash Pond is actively receiving CCR materials. The East Ash Pond is located directly east of the station and is approximately 10 acres in size.

The East Ash Pond was commissioned in or around 1971. Earthen embankments were constructed along the south and east sides of the impoundment. Structural fill used for the original construction of the Culley station in the 1950's borders the impoundment to the west side, and west end of the north side. The east embankment intersects a natural hillside on the east end of the north side of the impoundment. The embankment is approximately 1,200 feet long, 30 feet high, and has 2.4 to 1 (horizontal to vertical) exterior side slopes covered with grassy vegetation. Interior side slopes varied from 2.5 to 1 (horizontal to vertical) to 2 to 1 (horizontal to vertical) for the upper and lower portion of the embankment, respectively. The embankment crest elevation varies from 392.67 feet¹ to 396.42 feet and has a crest width of approximately 15 feet. The surface area of the impoundment is approximately 9.8 acres. Within the pond, there are several small pools that are being utilized for

¹ Unless otherwise noted, all elevations in this report are in the NAVD88 datum.

treatment and separation of CCR material within the pond as part of an ongoing construction project. The ponding water has a surface area of approximately 2.56 acres and has normal operating level of 387 feet.

A site Location Map showing the area surrounding the station is included as **Figure 1 of Appendix A. Figure 2 in Appendix A** presents the Culley Site Map.

2 Post-Closure Plan Description

Regulatory Citation: 40 CFR §257.104 (b); Post-closure care maintenance requirements

- *Following closure of the CCR unit, the owner or operator must conduct post-closure care for the CCR unit, which must consist of at least the following:*

The Post-Closure Plan for the East Ash Pond is described in this section. Information about operational and maintenance procedures was provided by Culley plant personnel. The Culley station follows an established maintenance program that quickly identifies and resolves issues of concern.

2.1 Post-Closure Care Maintenance Requirements

2.1.1 Maintaining the Integrity and Effectiveness of the Final Cover System

Regulatory Citation: 40 CFR §257.104 (b); Post-closure care maintenance requirements

- *(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;*

Throughout the post-closure care period, periodic visual observations of the final cover and stormwater system will be performed at least annually for evidence of settlement, subsidence, erosion, or other damage that may affect the integrity and effectiveness of the final cover system. When practicable, visual observations of the final cover will be implemented concurrently when performing required groundwater monitoring activities.

2.1.2 Maintaining the Leachate Collection System

Regulatory Citation: 40 CFR §257.104 (b); Post-closure care maintenance requirements

- *(2) If the CCR unit is subject to the design criteria under §257.70, maintaining the integrity and effectiveness of the leachate collection and removal system and operating the leachate collection and removal system in accordance with the requirements of §257.70; and*

The East Ash Pond is not a landfill and is therefore not subject to the design criteria of §257.70.

2.1.3 Maintaining the Groundwater Monitoring System

Regulatory Citation: 40 CFR §257.104 (b); Post-closure care maintenance requirements

- *(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 maintained and groundwater will be monitored as required by §257.90 through §257.98 in accordance with the East Ash Pond Groundwater Monitoring Plan. Monitoring wells will be inspected during each groundwater sampling event. Monitoring wells and associated instrumentation will be maintained so that they perform in accordance with the design specifications throughout the life of the monitoring program. Groundwater monitoring frequency will be at least semi-annual, except as provided in §257.94(d).

2.2 Post-Closure Care Period

2.2.1 Length of Post-Closure Care Period

Regulatory Citation: 40 CFR §257.104 (c); Post-closure care period

- (1) *Except as provided by paragraph (c)(2) of this section, the owner or operator of the CCR unit must conduct post-closure care for 30 years.*

Post-closure care will be conducted for a period of 30 years as required by §257.104 (c)(1), except as provided by §257.104 (c)(2).

2.2.2 Extended Length of Post-Closure Care Period

Regulatory Citation: 40 CFR §257.104 (c); Post-closure care period

- (2) *If at the end of the post-closure care period the owner or operator of the CCR unit is operating under assessment monitoring in accordance with §257.95, the owner or operator must continue to conduct post-closure care until the owner or operator returns to detection monitoring in accordance with §257.95.*

If at the end of the post-closure care period the CCR unit is operating under assessment monitoring, the post-closure care as described in this plan will continue until the CCR unit returns to detection monitoring.

2.3 Written Post-Closure Plan

Regulatory Citation: 40 CFR §257.104 (d); Written post-closure plan

- (1) *Content of the plan. The owner or operator of a CCR unit must prepare a written post-closure plan that includes, at a minimum, the information specified in paragraphs (d)(1)(i) through (iii) of this section.*

2.3.1 Monitoring and Maintenance Activities

Regulatory Citation: 40 CFR §257.104 (d); Written post-closure plan

- (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;*

The closed site will be inspected at least annually.

Noted evidence of damage, such as rills, surface cracks and settlement, will be repaired in order to maintain the integrity and effectiveness of the final cover system. Vegetation will be established and maintained on the final cover system, including storm drainage areas, where appropriate, to provide long-term erosion control. Established vegetation and the design slope of the final cover system will prevent potential erosion and damage that may be caused by run-on and run-off.

Repair activities may include, but are not limited to, replacing and compacting soil cover, repairing drainage channels that have been eroded, filling in depressions with soil, regrading, and reseeding areas of sparse vegetation, as necessary.

2.3.2 Post-Closure Care Contact

Regulatory Citation: 40 CFR §257.104 (d); Written post-closure plan

- *(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; and*

The appropriate contact will be determined at the time post-closure care activities commence. An e-mail address will be included when the appropriate contact is identified.

Plant Manager
Vectren Corporation
P.O. Box 209
Evansville, IN, 47702
Phone: 812-491-5000

2.3.3 Planned Uses of the Property during the Post-Closure Period

Regulatory Citation: 40 CFR §257.104 (d); Written post-closure plan

- *(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. Any other disturbance is allowed if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration must be certified by a qualified professional engineer, and notification shall be provided to the State Director that the demonstration has been placed in the operating record and on the owners or operator's publicly accessible Internet site.*

Following closure, no additional planned uses of the property or of the East Ash Pond area have currently been defined or identified. Post-closure use of the property will not disturb the integrity of the final cover or other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements of 40 CFR Part 257, Subpart D. Any other disturbance will be supported by the demonstration required by §257.104 (d)(1)(iii).

Following closure of the CCR unit, a notation on the deed to the property, or some other instrument that is normally examined during title search, will be recorded in accordance with §257.102 (i). The notation will notify potential purchasers of the property that the land has been used as a CCR unit and its use is restricted under the post-closure care requirements per §257.104 (d)(1)(iii). Within 30 days of recording the deed notation, a notification stating that the notation has been recorded will be placed in the facility's operating record. The notification will be placed on the owner or operator's publicly accessible CCR Web site in accordance with §257.107.

2.3.4 Amendment to the Written Post-Closure Plan

This Initial Post-Closure Plan will be amended as required by §257.104 (d)(3).

3 Certification

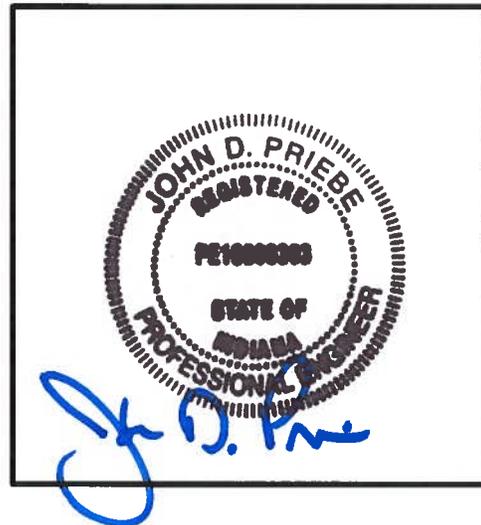
This Certification Statement documents that the East Ash Pond at the F.B. Culley Generating Station meets the Initial Written Post-Closure Plan requirements specified in 40 CFR §257.104 (d). The East Ash Pond is an existing CCR surface impoundment as defined by 40 CFR §257.53. The CCR Rule requires that the Initial Written Post-Closure Plan for an existing CCR surface impoundment be prepared by October 17, 2016.

CCR Unit: Southern Indiana Gas & Electric Company; F.B. Culley Generating Station; East Ash Pond

I, John Priebe, being a Registered Professional Engineer in good standing in the State of Indiana, do hereby certify, to the best of my knowledge, information, and belief that the information contained in this certification has been prepared in accordance with the accepted practice of engineering. I certify, for the above referenced CCR Unit, that the Initial Written Post-Closure Plan dated October 13, 2016 meets the requirements of 40 CFR § 257.104.

JOHN D. PRIEBE
Printed Name

10/13/16
Date



4 Limitations

Background information, design basis, and other data, which AECOM has used in preparation of this report, have been furnished to AECOM by SIGECO. AECOM has relied on this information as furnished, and is not responsible for the accuracy of this information. Our recommendations are based on available information from previous and current investigations. These recommendations may be updated as future investigations are performed.

The conclusions presented in this report are intended only for the purpose, site location, and project indicated. The provisions and recommendations presented in this report should not be used for other projects or purposes. Conclusions or recommendations made from these data by others are their responsibility. The conclusions and recommendations are based on AECOM's understanding of current plant operations, maintenance, stormwater handling, and ash handling procedures at the station, as provided by SIGECO. Changes in any of these operations or procedures may invalidate the findings in this report until AECOM has had the opportunity to review the findings, and revise the report if necessary.

This development of the Post-Closure Plan was performed in accordance with the standard of care commonly used as state-of-practice in our profession. Specifically, our services have been performed in accordance with accepted principles and practices of the engineering profession. The conclusions presented in this report are professional opinions based on the indicated project criteria and data available at the time this report was prepared. Our services were provided in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representation is intended.

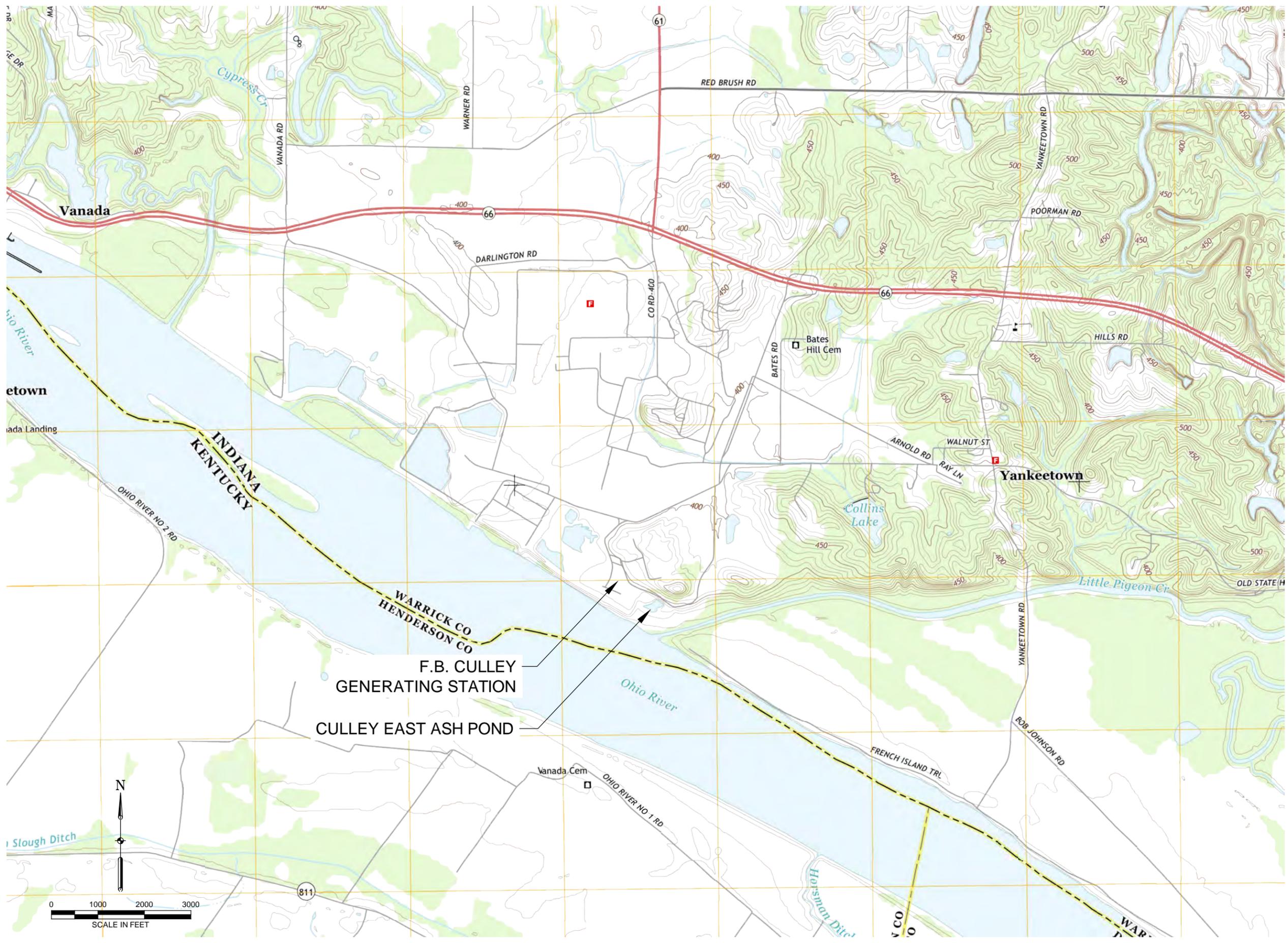
Appendix A Figures

Figure 1 – Location Map

Figure 2 – Site Map

CARLISO, MICHAEL, 10/7/2016 3:12 PM

AECOM DRAWING PATH: P:\Projects\Environmental\60442676_VectrenCOR\7.0_CAD_GIS\7.04_Plan_Sheets\CULLEY-LOCATION_MAP.dwg



9400 Amberglen Boulevard
Austin, TX 78729-1100
512-454-4797 (phone)
512-454-8807 (fax)

**SOUTHERN INDIANA
GAS AND ELECTRIC
COMPANY**
dba VECTREN POWER
SUPPLY, INC.

One Vectren Square
Evansville, IN 47708
1-800-227-1376 (phone)

**F.B. CULLEY
GENERATING STATION
NEWBURGH, IN**

CCR CERTIFICATION
EAST ASH POND

**ISSUED FOR
CERTIFICATION**

ISSUED FOR BIDDING _____ DATE BY _____

ISSUED FOR CONSTRUCTION _____ DATE BY _____

REVISIONS		
NO.	DESCRIPTION	DATE
△		
△		
△		
△		
△		

AECOM PROJECT NO:	60442676
DRAWN BY:	MJC
DESIGNED BY:	MJC
CHECKED BY:	TLE
DATE CREATED:	8/18/2016
PLOT DATE:	4/22/2016
SCALE:	AS SHOWN
ACAD VER:	2014

SHEET TITLE

LOCATION MAP

FIGURE 1



9400 Amberglen Boulevard
 Austin, TX 78729-1100
 512-454-4797 (phone)
 512-454-8807 (fax)

**SOUTHERN INDIANA
 GAS AND ELECTRIC
 COMPANY**
 dba VECTREN POWER
 SUPPLY, INC.

One Vectren Square
 Evansville, IN 47708
 1-800-227-1376 (phone)

**F.B. CULLEY
 GENERATING STATION
 NEWBURGH, IN**

**CCR CERTIFICATION
 EAST ASH POND**

**ISSUED FOR
 CERTIFICATION**

ISSUED FOR BIDDING _____ DATE BY _____

ISSUED FOR CONSTRUCTION _____ DATE BY _____

REVISIONS

NO.	DESCRIPTION	DATE
△		
△		
△		
△		
△		

AECOM PROJECT NO: 60442676

DRAWN BY: MJC

DESIGNED BY: MJC

CHECKED BY: TLE

DATE CREATED: 8/18/2016

PLOT DATE: 4/22/2016

SCALE: AS SHOWN

ACAD VER: 2014

SHEET TITLE

SITE MAP

FIGURE 2

About AECOM

AECOM (NYSE: ACM) is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. With approximately 45,000 employees around the world, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and collaborative technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments. A Fortune 500 company, AECOM serves clients in more than 100 countries and has annual revenue in excess of \$6 billion..

9400 Amberglen Boulevard
Austin, Texas 78729
1-512-454-4797