December 17, 2015

State Director
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102

Re: Sikeston Power Station CCR Rule Notification to Initiate Closure of an Inactive CCR Surface Impoundment

Dear State Director:

In accordance with USEPA 40 CFR Part 257, Section 106 – Notification Requirements, Sikeston Power Station submits this notification to initiate closure of our Fly Ash Pond, a CCR surface impoundment, to the Missouri State Director, as defined under 257.53. The inactive Fly Ash Pond is one of two CCR surface impoundments at the Sikeston Power Station (SPS). The other CCR surface impoundment, referred to as the Bottom Ash/Scrubber Sludge Pond, will remain an active CCR surface impoundment. As an inactive CCR surface impoundment, the inactive Fly Ash Pond will be closed under the requirements of 40 CFR 257.100, paragraph (b).

Attached to this notification is a document titled ***Sikeston Power Station Fly Ash Pond, Report in Support of Notification to Initiate Closure of an Inactive CCR Surface Impoundment*** prepared by GREDELL Engineering Resources, Inc., dated December 17, 2015. This document was prepared by Gredell Engineering at SPS' request specifically for the purposes of supporting this notification and complying with 40 CFR Part 257. This document includes a narrative description of how the inactive CCR surface impoundment will be closed, a schedule for completing closure activities and the required certifications required under Part 257.100 (b)(4) and (b)(6).

This notification and the attached report have been placed in SPS' on-site operating record and on SPS' publicly accessible internet site, as required by 257.105(i) and 257.107(i).

This letter has been electronically transmitted before the end of business on December 17, 2015, in accordance with applicable timeframes specified in 40 CFR Part 257. If you have any questions, please contact me at 573-475-3131.

Sincerely,

Mark E. McGill

Mark McGill
Results Engineer/Plant Chemist

Attachment: Report titled ***Sikeston Power Station Fly Ash Pond, Report in Support of Notification to Initiate Closure of an Inactive CCR Surface Impoundment,*** dated December 17, 2015.

C: Mr. Don Miller, Plant Manager, Sikeston Power Station w/o attachment

GREDELL Engineering Resources, Inc.

ENVIRONMENTAL ENGINEERING LAND - AIR - WATER

Offices in Jefferson City, Kansas City, and Springfield, Missouri

December 17, 2015

Mark McGill
Results Engineer/Plant Chemist
Sikeston Power Station
Sikeston Board of Municipal Utilities
P.O. Box 370
Sikeston, Missouri 63801

RE: Report in Support of Notification to Initiate Closure, Fly Ash Pond
Sikeston Power Station, Sikeston, Missouri

Dear Mr. McGill:

GREDELL Engineering Resources, Inc. submits the enclosed document ***Sikeston Power Station Fly Ash Pond, Report in Support of Notification to Initiate Closure of an Inactive CCR Surface Impoundment*** (Notification) for the Sikeston Power Station's Fly Ash Pond. The attached Report was prepared to provide technical information in support of Sikeston Power Station's decision to declare the Fly Ash Pond an inactive coal combustion residual (CCR) surface impoundment, as allowed by USEPA 40 CFR Part 257 – Criteria for Classification of Solid Waste Disposal Facilities and Practices, Subpart D – Standards for the Disposal of Coal Combustion Residuals (CCR) in Landfills and Surface Impoundments (40 CFR 257).

Specifically, this report has been prepared to comply with 40 CFR 257, Section 100 – Inactive CCR Surface Impoundments. SPS has determined to complete closure by leaving CCR in place. The requirements for closure by leaving CCR in place are provided in 40 CFR 257.100(b)(1). The requirements for notices and progress reports are provided in 40 CFR 257.100(c)(1).

It is Gredell Engineering's understanding that this documentation must be placed in Sikeston Power Station's on-site operating record within the applicable timeframes specified under 40 CFR Part 257.105(i). As required by 40 CFR 257.107(i), this documentation also must be posted to Sikeston Power Station's publically accessible internet site, as well as be sent to the Missouri State Director, as defined under 40 CFR 257.105(i).

If you have any questions or require additional information, please contact me at (573) 659-9078.

Sincerely,

Thomas R. Gredell, P.E.
President

Enclosure: ***Sikeston Power Station Fly Ash Pond, Report in Support of Notification to Initiate Closure of an Inactive CCR Surface Impoundment,*** dated December 17, 2015

1505 E. High Street
Jefferson City, Missouri 65101-4826

Telephone - (573) 659-9078
Fax - (573) 659-9079

1505 East High Street
Jefferson City, Missouri 65101
Telephone (573) 659-9078
Facsimile (573) 659-9079

GREDELL Engineering Resources, Inc.

Sikeston Board of Municipal Utilities Fly Ash Pond Report in Support of Notification to Initiate Closure of an Inactive CCR Surface Impoundment

Prepared for:

Mr. Mark McGill
Sikeston Power Station
Board of Municipal Utilities
1551 West Wakefield St.
Sikeston, MO 63801

December 17, 2015

Sikeston Board of Municipal Utilities Fly Ash Pond
Report in Support of
Notification to Initiate Closure
of an Inactive CCR Surface Impoundment

December 17, 2015

Table of Contents

List of Appendices

1.0 Introduction

Sikeston Board of Municipal Utilities (SBMU) Sikeston Power Station (SPS) has determined that it will declare their Fly Ash Pond to be an inactive coal combustion residual (CCR) surface impoundment and initiate closure of the inactive CCR surface impoundment. SPS has determined to complete closure by leaving CCR in place, with closure completion on or before April 17, 2018. The requirements for closure by leaving CCR in place are provided in 40 CFR 257.100(b)(1). The requirements for notices and progress reports are provided in 40 CFR 257.100(c)(1).

GREDELL Engineering Resources, Inc. (Gredell Engineering) prepared this report to provide technical information in support of Sikeston Power Station's decision to declare the Fly Ash Pond an inactive CCR surface impoundment, as allowed by USEPA 40 CFR Part 257 – Criteria for Classification of Solid Waste Disposal Facilities and Practices, Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments (40 CFR 257). Specifically, this report has been prepared to comply with 40 CFR 257, Section 100 – Inactive CCR Surface Impoundments.

SPS currently operates two CCR surface impoundments – the Fly Ash Pond and the Bottom Ash/Scrubber Sludge Pond. Prior to October 19, 2015, SPS suspended the placement of CCR in the Fly Ash Pond, thereby allowing SPS to declare the Fly Ash Pond an inactive CCR surface impoundment and initiate closure under the requirements of 40 CFR 257.100(b)(1) through (4) (Closure and Post Closure Care, Inactive CCR Surface Impoundments). SBMU has determined that it will close the Fly Ash Pond with CCR in place by dewatering and stabilizing the CCR, grading and compacting the CCR, and constructing a final cover system over the course of three consecutive construction seasons, beginning in 2016 and completing closure by April 17, 2018.

Per 40 CFR 257.100(c)(1), SPS' notification of intent to initiate closure of an inactive CCR surface impoundment must contain the following:

- A statement that the CCR surface impoundment is inactive and is closing under 40 CFR 257.100(b).
- A narrative description indicating how the inactive CCR surface impoundment will be closed.
- A schedule for completing closure activities.
- The certifications required under 40 CFR 257.100(b)(4) and (b)(6), ***if applicable*** (emphasis added). These must be written certifications from a qualified professional engineering stating:
    - That the design of the final cover system meets the requirements of 40 CFR 257.100(b)(3)(i) or (ii).

- That closure of the CCR surface impoundment is technically feasible by April 17, 2018.

The first bulleted item above will be provided by letter from SBMU, SPS staff to the Missouri State Director, as defined under 40 CFR Part 257.53. The other three bulleted items above are provided by this report.

2.0 Existing Site Conditions

The Fly Ash Pond was constructed in 1980, as documented by SPS records. Additional records indicate that the Fly Ash Pond was constructed with a 2-foot thick compacted clay liner reportedly having a permeability of 3.2 $x10^{-7}$ cm/s (centimeters per second). The construction plans for the Fly Ash Pond indicate a uniform, flat bottom at approximate elevation 302 feet and an approximate, uniform elevation of the top of berms of 322 feet. The depth of CCR material within the Fly Ash Pond is estimated to vary across the site from an estimated 21 feet in the south and east sections to an estimated 15 feet at the northwest corner of the pond.

No process waters of any kind currently discharge into the Fly Ash Pond. The only water that enters the pond is rainfall that falls directly on the pond and the limited drainage area that exists around the perimeter of the Fly Ash Pond. Surface water currently accumulates on top of the CCR materials in the west-central part of the pond. A site map identifying the two existing CCR surface impoundments at SPS can be found in Appendix A.

3.0 Preliminary Closure Plan

A preliminary closure design and implementation plan has been prepared to meet the requirement of 40 CFR 257.100(c)(1) that the notification must include "…a narrative description of how the CCR surface impoundment will be closed…". Closure of the inactive Fly Ash Pond will be sequenced over three calendar years (2016, 2017 and the first part of 2018). This timeframe will also span all or portions of three consecutive construction seasons. The following general sequence and timing of closure activities identified below will be applied to the closure of the inactive Fly Ash Pond:

- Season 1 (2016): Prepare a final engineering design; begin dewatering CCR materials; remove existing surface vegetation; begin initial grading and compaction of the CCR materials.
- Season 2 (2017): Complete regrading of the southern and eastern sections of the inactive Fly Ash Pond by mid-2017; Begin construction of the final cover system in mid-2017, completing the final cover by November 2017 (including seeding and the application of fertilizer and mulch).
- Season 3 (2018 [through April 17, 2018]): Complete construction of the final cover system

(if necessary); repair or rebuild the existing outfall structure to allow clean stormwater to discharge directly to the north end of the property.

3.1 CCR Material Dewatering

Free liquids within the inactive Fly Ash Pond will be removed to control, minimize, or eliminate, to the maximum extent feasible, releases of leachate or CCR contaminated run-off to the ground, surface water, or groundwater. Free liquids will be removed utilizing one or more of the following methods:

- Excavation of trenches to facilitate draining of free liquids.
- Excavation of one or more sumps within the CCR material to collect free liquids. Accumulated free liquids would be temporarily pumped to the active Bottom Ash/Scrubber Sludge Pond and discharged through the existing NPDES permit outfall.
- Installation of wick drains (this method is not likely to be used).
- Other options that may be determined at a later date.

Actual dewatering methods will be further evaluated and determined during the final engineering design and modified in the field, as required, to account for any changes in site conditions during the closure process.

3.2 CCR Material Stabilization

CCR materials within the inactive Fly Ash Pond will be stabilized by draining free liquids, grading and compacting to minimize the probability of future impoundment of water or sediment. Draining free liquids, grading and compacting the CCR materials will also provide slope stability to prevent sloughing or movement of the final cover system. Grading design plans and compaction specifications for CCR material stabilization will be developed during the final engineering design, but will likely include a minimum slope of one to two percent to promote surface drainage.

3.3 Final Cover System

The preliminary design of the final cover system for the inactive Fly Ash Pond will meet the requirements of 40 CFR 257.100(b)(3)(i). Specifically, the final cover design will meet the following requirements:

- The permeability of the final cover system will be less than or equal to the permeability of the bottom liner system, which is reported to be 3.2×10^{-7} cm/s. This will be accomplished by locating and identifying a suitable clay borrow source within an approximate 30 mile radius of the site.
- Infiltration of liquids through the CCR unit will be minimized by constructing a minimum 18-inch thick layer of earthen materials with a permeability equal to or less than 3.2×10^{-7}

cm/s.

- Erosion of the final cover system will be minimized by placing a minimum of six inches of earthen materials that are capable of sustaining plant growth.
- Disruption of the integrity of the final cover system will be minimized through the development of a final grading design that accommodates the anticipated amount of settling and/or subsidence of the relatively shallow CCR materials.

In lieu of the design of a final cover system with minimum parameters as stated above, the final cover system design may consider an alternative final cover design that meets the the following minimum requirements of 40 CFR 257.100(b)(3)(ii):

- An infiltration layer that achieves an equivalent reduction in infiltration as the design described above.
- An erosion layer that provides equivalent protection from wind or water erosion as the erosion layer described above.
- Disruption of the integrity of the final cover system will be evaluated to assure the alternate design is equivalent with regard to accomodating settling and subsidence.

An alternative final cover system which meets the requirements of 40 CFR 257.100(b)(3)(ii) will be evaluated during the engineering design phase. Examples of the components of an alternative final cover system include, but are not limited to, the following:

- A geomembrane (HDPE or PVC) at least 30 mils thick with an overlying two-foot thick soil erosion layer.
- A granular clay liner with an overlying two-foot thick soil erosion layer.

4.0 Closure Schedule

A project schedule outlining the anticipated timeline necessary to complete closure was developed to verify that closure activities of the inactive Fly Ash Pond could be completed by April 17, 2018. The project schedule for closure of the inactive Fly Ash Pond is spread out over the entire allowable time to minimize the fiscal impact on SBMU. Closure of the inactive Fly Ash Pond will be completed following the approximate timeline indicated below:

- Engineering Design (01/04/16 to 04/01/16).
- Dewater CCR materials (04/04/16 to 09/29/17).
- Grade and Compact CCR materials (10/03/16 to 06/30/17).
- Infiltration Layer Construction (05/01/17 to 07/28/17).
- Erosion Layer Construction (07/31/17 to 10/27/17).
- Seed, Fertilize and Mulch (10/30/17 to 12/01/17).
- Final Maintenance and/or Repair Erosion Layer (if needed) (02/12/18 to 03/10/18).
- Improve Or Rebuild the Outlet Structure (03/30/18 to 04/13/18).

- Project Completion (04/13/18).

A Gantt chart style project schedule is provided in Appendix B. Based on the project schedule, the completion of closure for the inactive Fly Ash Pond prior to April 17, 2018 is technically feasible.

5.0 Closure Notices and Progress Reports

In accordance with 40 CFR 257.100(c), the following closure documentation will be completed and placed in SPS's CCR operating record and on the CCR website:

- Notification of Intent to Close (Deadline: December 17, 2015).
- Annual closure progress reports detailing closure progress and projected closure activities for the following year:
    - First annual progress report required 13 months after completing the notification of intent to close document (January 17, 2017).
    - Second annual progress report required 12 months after completing the first annual progress report (January 17, 2018).
- Notification of completion of closure (60 days after the completion of closure activities).

Notification of the availability of closure documentation in SPS's operating record and on the CCR website will be sent to the State Director of the Missouri Department of Natural Resources before close of business on the respective compliance dates.

6.0 Qualified Professional Engineer's Certification

Certifications by a qualified professional engineer stating that the final cover system design meets the minimum requirements in 40 CFR 257.100(b)(1) and closure of the of the inactive Fly Ash Pond is technically feasible by April 17, 2018 are included with this notification of intent to initiate closure of SPS's inactive Fly Ash Pond in accordance with 40 CFR 257.100(b)(4) and (6).

I, Thomas R. Gredell, P.E., a professional engineer licensed in the State of Missouri, hereby certify in accordance with 40 CFR 257.100(b)(4) that the preliminary final cover system design for the Sikeston Board of Municipal Utilities, Sikeston Power Station, inactive Fly Ash Pond as described in this report, has been designed in accordance with applicable federal requirements promulgated under 40 CFR 257, Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments and good engineering and environmental practices.

I, Thomas R. Gredell, P.E., a professional engineer licensed in the State of Missouri, hereby certify in accordance with 40 CFR 257.100(b)(6) that closure of Sikeston Board of Municipal

Utilities, Sikeston Power Station, inactive Fly Ash Pond is technically feasibly by April 17, 2018 in accordance with applicable federal requirements promulgated under 40 CFR 257, Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments and good engineering and environmental practices.

Name: Thomas R. Gredell, P.E.

Signature: _____

Date: 12-17-2015

Registration Number: PE-021137
State of Registration: Missouri

Appendix A

Site Location Map

SIKESTON BOARD OF MUNICIPAL UTILITIES
FLY ASH POND
NOTIFICATION TO INITIATE CLOSURE

SITE LOCATION MAP

GREDELL Engineering Resources, Inc.

ENVIRONMENTAL ENGINEERING LAND - AIR - WATER

1505 East High Street
Jefferson City, Missouri

Telephone: (573) 659-9078
Facsimile: (573) 659-9079

MO CORP. ENGINEERING LICENSE NO. E-2001001669-D

DATE	SCALE	PROJECT NAME	REVISION
12/2015	AS NOTED	SIKESTON	
DRAWN	**APPROVED**	**FILE NAME**	**SHEET #**
AJK	AR	SITE LOCATION	1 OF 1

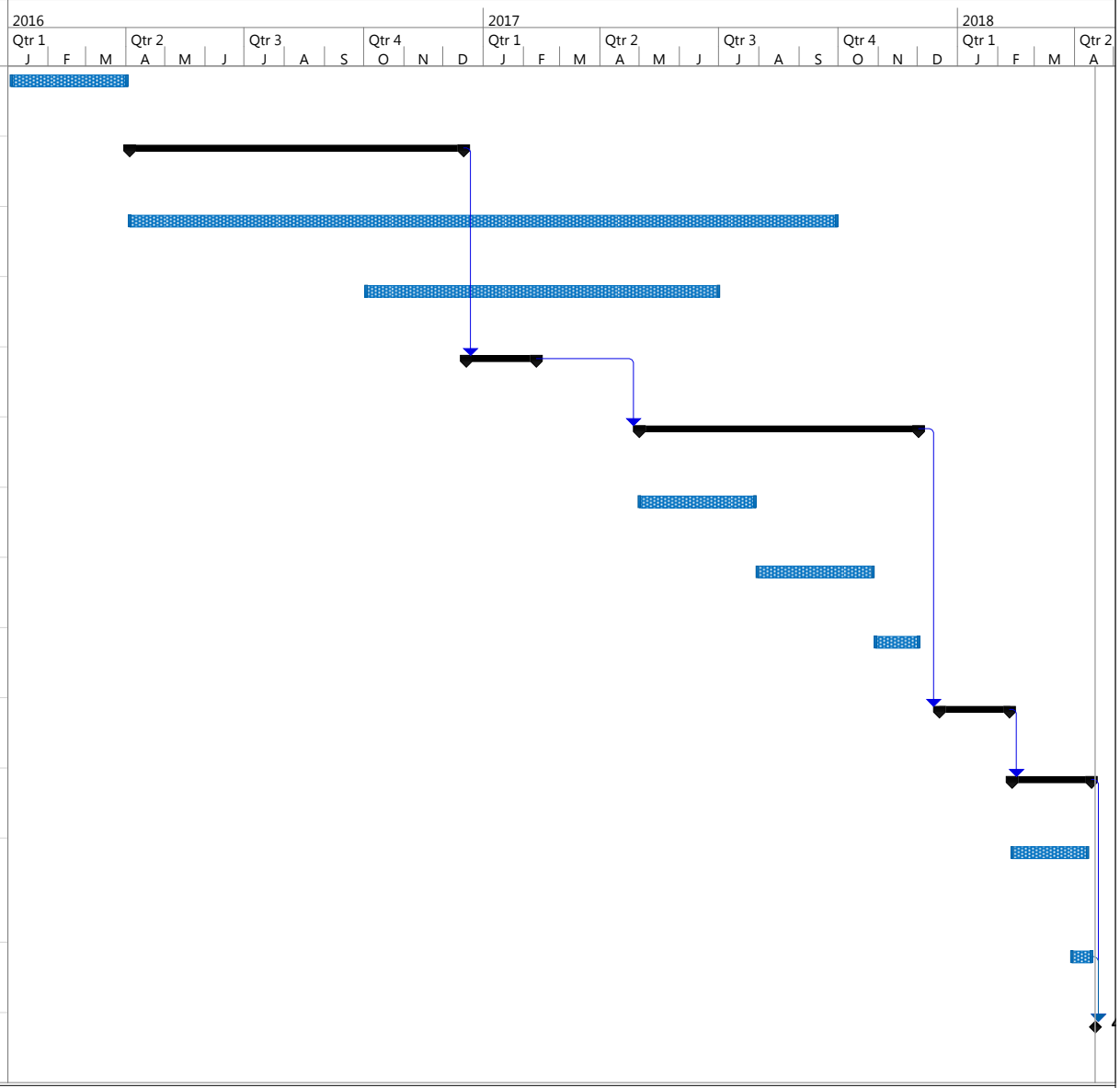
M:\Share\CADDFiles\SIKESTON\SITE LOCATION.dwg, SITE LOCATION MAP, 12/17/2015 3:16:07 PM

Appendix B

Project Schedule

PROJECT SCHEDULE

ID	Task Name	Duration	Start	Finish
1	Engineering Design	65 days	Mon 1/4/16	Fri 4/1/16
2	**General Construction Season 1**	**185 days**	**Mon 4/4/16**	**Fri 12/16/16**
3	Dewater CCR Materials	390 days	Mon 4/4/16	Fri 9/29/17
4	Grade and Compact CCR Materials	195 days	Mon 10/3/16	Fri 6/30/17
5	**Winter Construction Shutdown 1**	**40 days**	**Mon 12/19/16**	**Fri 2/10/17**
7	**General Construction Season 2**	**155 days**	**Mon 5/1/17**	**Fri 12/1/17**
8	Construct Infiltration Layer	65 days	Mon 5/1/17	Fri 7/28/17
9	Construct Erosion Layer	65 days	Mon 7/31/17	Fri 10/27/17
10	Seed, Fertilize and Mulch	25 days	Mon 10/30/17	Fri 12/1/17
11	**Winter Construction Shutdown 2**	**40 days**	**Mon 12/18/17**	**Fri 2/9/18**
13	**General Construction Season 3**	**45 days**	**Mon 2/12/18**	**Fri 4/13/18**
14	Final Maintenance and/or Repair Erosion Layer (if needed)	42 days	Mon 2/12/18	Tue 4/10/18
15	Improve or Rebuild Outlet Structure	11 days	Fri 3/30/18	Fri 4/13/18
16	Project Completion	1 day	Mon 4/16/18	Mon 4/16/18



Project: SBMU Fly Ash Pond Closure
Prepared by Gredell Engineering
Date: Thu 12/17/15

Task	Inactive Task	Manual Summary Rollup	External Milestone
Split	Inactive Milestone	Manual Summary	Deadline
Milestone	Inactive Summary	Start-only	Progress
Summary	Manual Task	Finish-only	Manual Progress
Project Summary	Duration-only	External Tasks	