



CCR CLOSURE PLAN
Sibley Fly Ash Impoundment
Sibley Generating Station

33200 East Johnson Rd
Sibley, Missouri

KCP&L Greater Missouri Operations Company

October 14, 2016

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**SIBLEY GENERATING STATION
 FLY ASH IMPOUNDMENT
 CCR CLOSURE PLAN
 REVISION HISTORY**

Revision Number	Revision Date	Section Revised	Summary of Revisions

Revisions are accomplished in accordance with Section 3.

SECTION 1

BACKGROUND

The purpose of this CCR Closure Plan (Plan) is to identify and describe the Coal Combustion Residuals Rule (CCR Rule) measures needed to close the Sibley Generating Station (Sibley) Fly Ash Impoundment consistent with recognized and generally accepted good engineering practices and in accordance with the CCR Rule. The following sections provide background information on the facility and related regulatory requirements.

1.1 Facility Information

Name of Facility: Sibley Generating Station
Name of CCR Unit: Fly Ash Impoundment
Facility Mailing Address: 33200 East Johnson Rd., Sibley, MO 64088
Name of Operator: Kansas City Power & Light Company (KCP&L)
Location: East of and adjacent to Sibley, Missouri
Facility Description: The Sibley Generating Station consists of three coal-fired units. CCR produced at the facility include fly ash, bottom ash as slag, and economizer ash. CCR is sluiced from the plant or ash silo into the impoundment. The impoundment also receives non-CCR wastewater streams. Related facilities include a groundwater monitoring system, storm water management system, and haul/access roads.

1.2 Regulatory Requirements

This plan has been developed for the Sibley Generating Station Fly Ash Impoundment in accordance with 40 CFR 257.102 (b). The CCR Rule requires preparation of a Closure Plan for all existing CCR landfills and surface impoundments in operation as of October 19, 2015, the effective date of the rule.

The owner or operator of a CCR unit must prepare a written closure plan that includes, at a minimum, the information specified in 40 CFR 257.102 (b) (1) (i) through (vi). These items and the section of this plan responsive to each follows:

40 CFR 257.102 (b) Written Closure Plan

(1) Content of the Plan

- (i) Narrative description of how the CCR unit will be closed in accordance with 40 CFR 257.102 (Section 2.1).
- (ii) If closure of the CCR unit will be accomplished through removal of CCR from the CCR unit, a description of the procedures to remove the CCR and decontaminate the CCR unit in accordance with 40 CFR 257.102 (c). (Section 2.1).
- (iii) If closure of the CCR unit will be accomplished by leaving CCR in place, a description of the final cover system and methods and procedures used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in 40 CFR 102 (d) (N/A).
- (iv) Estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit (Section 2.2).
- (v) Estimate of the largest area of the CCR unit ever requiring a final cover (N/A).
- (vi) Schedule for completing all activities necessary to satisfy the closure criteria in this 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 major milestones and the estimated timeframes to complete each step or phase of CCR unit closure (Section 2.3).

Selected definitions from the CCR Rule are provided below.

Closed means placement of CCR in a CCR unit has ceased, and the owner or operator has completed closure of the CCR unit in accordance with § 257.102 and has initiated post-closure care in accordance with § 257.104.

CCR (coal combustion residuals) means fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers.

Fly Ash Impoundment means an area of land or an excavation that receives CCR and which is not a surface impoundment, an underground injection well, a

salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of this subpart, a Fly Ash Impoundment also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR.

CCR surface impoundment means a natural topographic depression, manmade excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.

CCR Unit means any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit, or a combination of more than one of these units, based on the context of the paragraph(s) in which it is used. This term includes both new and existing units, unless otherwise specified.

Qualified Professional Engineer means an individual who is licensed by a state as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make the specific technical certifications required under this subpart. Professional engineers making these certifications must be currently licensed in the state where the CCR unit(s) is located.

SECTION 2

CLOSURE DESCRIPTION

This Plan describes the steps needed to close the Sibley Fly Ash Impoundment at any point during the active life of the unit in accordance with the CCR Rule and recognized and generally accepted good engineering practices. Plan items required under the CCR Rule described in this section fall into the general categories of Closure Description, Volume Estimates, and Closure Schedule. This initial or any subsequent Plan may be amended pursuant to 40 CFR 257.102 (b) (3) at any time as discussed in Section 5. The current plan is to close the unit by removal of CCR.

2.1 Closure Description

2.1.1 Description

The Sibley Fly Ash Impoundment was constructed as an embanked impoundment. The embankment was constructed using two types of earthen materials: clay, and native soils from within the footprint of the impoundment. Closure will be accomplished through removal of CCR. The CCR material contained in the unit will be dewatered as necessary, removed, and either beneficially used or disposed in the on-site CCR landfill.

2.1.2 Construction Procedures

CCR will be removed primarily by mechanical excavation using earth-moving equipment. CCR will be allowed to dewater by gravity drainage and evaporation. The impoundment will be decontaminated by removal of the CCR and will be considered complete when constituent concentrations throughout the CCR unit, if detected, have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard for constituents listed in Appendix IV to 40 CFR 257.

2.2 Volume Estimates

The estimated maximum inventory of CCR and impounded water ever planned on-site over the active life of the CCR unit is approximately 380,000 cubic yards.

2.3 Closure Schedule

The size of area and time of year closure construction takes place will vary, therefore closure construction schedules will vary. The schedule provided in this section is therefore a general estimation.

2.3.1 Commencement of Closure

Commencement of final closure has occurred if placement of waste in the surface impoundment has ceased and any of the following actions or activities has been completed (40 CFR 102 (e) (3)):

- (i) Steps necessary to implement this closure plan;
- (ii) Submittal of a completed application for any required state or agency permit or permit modification; or
- (i) Steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure.

There are three regulatory timeframes within which a unit may be required to close:

- (i) In accordance with 40 CFR 257.102 (e) (1), a surface impoundment has 30 days after the date the unit receives the *known* final receipt of waste, either CCR or non-CCR waste stream; or removes the *known* final volume of CCR from the CCR unit for the purpose of beneficial use of CCR.
- (ii) In accordance with 40 CFR 257.102 (e) (2), for idled units with additional capacity that expect to resume CCR or non-CCR waste disposal operations, or CCR removal operations for beneficial use, closure must be initiated within two years unless a written demonstration prepared in accordance with 40 CFR 257.102 (e) (2) (ii) is placed in the unit's operating record, which would provide an additional two year extension(s).
- (iii) In accordance with 40 CFR 257.102 (e) (4) surface impoundment closures due to groundwater exceedances or technical siting criteria (i.e. location in an unstable area), closure must be initiated within six months.

Extensions to complete the closure activity may be allowed under 40 CFR 257.102 (f) (2).

2.3.2 Closure Schedule

The milestones and the associated timeframes in this section are initial estimates. Some of the activities associated with the milestones will overlap.

Estimated Closure Schedule

Written Closure Plan	October 17, 2016
Notification of Intent to Close Placed in Operating Record	No later than the date closure of the CCR unit is initiated. Closure will commence per applicable timeframes in 40 CFR 257.102 (e). ¹
Initiation of Closure / Coordinating with and obtaining necessary approvals and permits from other agencies	Year 1 – 5
Mobilization	Year 1
Dewater and remove CCR	Year 1 - 5
Year all closure activities for the CCR unit will be completed	Year 1 - 5 ²

Notes

1. Initiation of Closure may be extended for multiple two year periods in accordance with 40 CFR 257.102 (e) (2) (ii) and (iii).
2. Final closure of Surface Impoundments must be completed within five years of commencing closure unless a demonstration is placed in the operating record document (40 CFR 257.102 (f) (2)).

SECTION 3

AMENDMENT OF CCR CLOSURE PLAN

The owner or operator may amend the initial or any subsequent written closure plan developed pursuant to 40 CFR 257.102 (b) (1) at any time.

The Plan must be amended whenever:

- There is a change in the operation of the CCR unit that would substantially affect the written closure plan in effect; or
- Before or after closure activities have commenced, unanticipated events necessitate a revision of the written closure plan.

The written closure plan must be amended at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written closure plan. If a written closure plan is revised after closure activities have commenced for a CCR unit, the current closure plan must be amended no later than 30 days following the triggering event.

A written certification from a qualified professional engineer that the initial and any amendment of the written closure plan meets the requirements of § 257.102 (b) must be obtained.

Plan changes will be documented using the Revision History which prefaces this Plan. Substantial changes to this plan will be certified by a Qualified Professional Engineer.

SECTION 4

ENGINEERING CERTIFICATION

Pursuant to 40 CFR 257.102 (b) (4) and by means of this certification, I attest that:

- (i) I am a Qualified Professional Engineer licensed in the State of Missouri;
- (ii) I am familiar with the requirements of the CCR Rule (40 CFR 257);
- (iii) I, or my agent, have visited and examined the Sibley Generating Station Fly Ash Impoundment;
- (iv) I do hereby certify to the best of my knowledge, information, and belief that this Closure Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of the CCR Rule;
- (v) this CCR Closure Plan meets the requirements of 40 CFR 257.102 (b); and
- (vi) the pages certified herein include Pages i, ii, 1 through 7, altogether a total of 9 pages in a protected Adobe™ document.

Walter J. Martin, P.E.

Printed Name of Qualified Professional Engineer
1200 Main St, Kansas City, MO 64105, 816-556-2200

P.E. SEAL, STATE OF MISSOURI

