



# Closure Plan Lawrence Energy Center Area 2 Pond, Area 3 Pond, and Area 4 Pond (inactive)

Prepared for:

Evergy Kansas Central, Inc.

Lawrence Energy Center

Lawrence, Kansas

Prepared by:

APTIM Environmental & Infrastructure, LLC

Revision 0 - April 17, 2018

Revision 1 - April 5, 2021



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## Plan Review/Amendment Log §257.102(b)(3)

Date of Review	Reviewer Name	Amendment Required (YES/NO)	Sections Amended and Reason
April 18, 2018 (original version)	APTIM Environmental & Infrastructure, LLC	N/A	Original
April 5, 2021	APTIM Environmental & Infrastructure, LLC	YES	Revised company name, updated regulatory references, closure schedule, corrected CCR unit names, and various revisions for better alignment with other Evergy closure plans.  Note that no triggering event has necessitated this revision.



## 1.0 INTRODUCTION

APTIM Environmental and Infrastructure, LLC (APTIM) has revised the following Closure Plan (Plan) at the request of Evergy Kansas Central, Inc. (Evergy) for the inactive Area 2 Pond, Area 3 Pond, and Area 4 Pond (collectively, Area Ponds) located at Lawrence Energy Center (LEC) in Lawrence, Kansas.

The Area Ponds have been deemed to be regulated, inactive coal combustion residual (CCR) units under the United States Environmental Protection Agency (USEPA) Disposal of Coal Combustion Residuals from Electric Utilities Final Rule (CCR Rule) 40 CFR §257 and §261. On July 26, 2016 the USEPA extended the CCR Rule requirements for certain inactive CCR surface impoundments. Evergy provided closure notification of the Area Ponds within the timeframes of §257.100(e). Evergy is in the process of completing closure by removal of the Area Ponds in accordance with §257.102(c). Facility water containing CCR material is now managed in settling tanks. CCR material from the Area Ponds is being disposed of in Industrial Landfill No. 847.

This Plan details the closure requirements outlined in §257.102(b), for CCR units closed by removal of CCR. The criteria for conducting the closure or retrofit of CCR units for the Area Ponds are detailed in Section 2.0. Additionally, this Plan details the necessary steps to close the Area Ponds based on recognized and good engineering practices.



## 2.0 REGULATORY OVERVIEW OF CCR CLOSURE PLAN REQUIREMENTS

On April 17, 2015, USEPA published the CCR Rule under Subtitle D of the Resource Conservation and Recovery Act (RCRA) as 40 CFR Part §257 and §261. The purpose of the CCR Rule is to regulate the management of CCR in regulated CCR units for landfill and surface impoundments. The Area Ponds have been deemed to be regulated inactive CCR units at LEC.

Section 257.102(b) of the CCR Rule requires owners or operators of CCR landfills and surface impoundments to prepare a Plan describing the closure of the unit and schedule for implementation of the Plan. The following citations from the CCR Rule are applicable for the Area Ponds as discussed in this Plan:

§257.102(b)(1) stipulates:

*(b) Written closure plan – (1) Content of the plan. The owner or operator of a CCR unit must prepare a written closure plan that describes the steps necessary to close the CCR unit at any point during the active life of the CCR unit consistent with recognized and generally accepted good engineering practices. The written closure plan must include, at a minimum, the information specified in paragraphs (b)(1)(i) through (vi) of this section*

- (i) A narrative description that discusses how the CCR unit will be closed in accordance with this section. (See Section 4.1)*
- (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 paragraph (c) of this section. (See Section 4.1)*
- (iii) If closure of the CCR unit will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with paragraph (d) of this section, and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in paragraph (d) of this section. (N/A)*
- (iv) An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit. (See Section 3.4)*
- (v) An estimate of the largest area of the CCR unit ever requiring a final cover as required by paragraph (d) of this section at any time during the CCR unit's active life. (N/A)*
- (vi) A 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 identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR unit closure. When preparing the written closure plan, if the owner or operator of a CCR unit estimates that the time required to complete closure will exceed the timeframes specified in paragraph (f)(1) of this section, the written closure plan must include the site-specific information, factors and considerations that would support any time extension sought under paragraph (f)(2) of this section. (See Section 5.0)*

An outline of the closure performance standards for closure of units where CCR will be removed is described in §257.102(c), which stipulates:

*“An owner or operator may elect to close a CCR unit by removing and decontaminating all areas affected by releases from the CCR unit. CCR removal and decontamination of the CCR unit are complete when constituent concentrations throughout the CCR unit and any areas affected by releases from the CCR unit have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to §257.95(h) for constituents listed in appendix IV to this part.”*

In accordance with §257.102(b)(4), a written certification is provided in Section 7.0 from a qualified professional engineer in the State of Kansas, to certify that this Plan meets the requirements of the CCR Rule.



### 3.0 LEC AREA PONDS OVERVIEW

#### 3.1 Location, Topography, and Description

CCR material, plant process water from the plant, stormwater runoff and decant water were disposed within the Area Ponds. The closure of the Area Ponds will be accomplished by removal of the CCR material. The following Plan was developed to satisfy the CCR Rule requirements for closure by removal per §257.102(b)(1)(ii).

The ponds are separated into three “areas”, termed Areas 2, 3, and 4 with “sub-units” within the Area 2 and Area 3 ponds. The CCR has been removed from the sub-units.

##### Area 2 Ponds

- Pond 501
- Pond 502
- Pond 503
- Clear Pond (a.k.a. West Pond)
- Laydown Area (incorporated into the Storm Water Settling Pond)
- Storm Water Settling Pond

##### Area 3 Ponds

- Pond 401
- Pond 402
- Pond 403
- Pond 404

##### Area 4 Pond – Scrubber Supply Pond

Following the adoption and establishment of the CCR Rule, the Area Ponds were renamed and reconfigured for surface water and plant use in accordance with the facility NPDES permit. As each sub-unit was progressively filled, the sub-units were dewatered and the CCR material was excavated and placed in the on-site Industrial Landfill, under KDHE Solid Waste Permit No. 0847. The three areas are monitored by one multi-unit groundwater monitoring system.

#### 3.2 Existing Solid Waste Regulatory Permits and Consents

Evergry was previously granted an Industrial Landfill permit (Permit No. 0847) at LEC by Kansas Department of Health and Environmental - Bureau of Waste Management (KDHE-BWM), in accordance with Kansas Statutes Annotated (KSA) 65-3407. KDHE modified the solid waste permit, per K.A.R. 28-29-6a, in response to the CCR Rule to include all on-site CCR waste materials management units as disposal areas under the existing solid waste permit for LEC. The current permit was approved on October 15, 2015.

#### 3.3 CCR Material Generation, Recycling, and Disposal

The Area Ponds have not received CCR material since October 2015 and are in the closure process. The Area Ponds are no longer used for plant processes and closure by removal is ongoing.



### **3.4 Maximum Volume Estimate (§257.102(b)(1)(iv))**

The maximum volume ever on site is unknown, however, APTIM expects the maximum amount of CCR ever in the units would not have exceeded the unit capacity, which was estimated to be approximately 273 acre-ft (Area 2 Pond), 185 acre-ft (Area 3 Pond), and 70.5 acre-ft (Area 4 Pond), based on a 2009 survey. CCR material will no longer be placed or stored in the Area Ponds.



#### **4.0 CLOSURE PLAN (§257.102(b)(1))**

This Plan has been prepared in accordance with requirements of the CCR Rule and includes a written certification in Section 7.0 from a qualified Professional Engineer in the State of Kansas.

#### **4.1 Narrative Description (§257.102(b)(1)(i) and (ii))**

Closure will be accomplished through removal of CCR. The CCR material contained in the sub-units will be dewatered as necessary, removed, and either beneficially used or disposed in the on-site CCR landfill. CCR in the berms between the sub-units will then be removed. CCR will be removed primarily by mechanical excavation using earth-moving equipment. CCR will be allowed to dewater by gravity drainage and evaporation. During and/or after closure, the Area Ponds will be graded and vegetated and re-surfaced as appropriate for surface water retention and drainage.



## 5.0 CLOSURE ACTIVITY SCHEDULE (§257.102(b)(1)(vi))

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.

### 5.1 Commencement of Closure

Commencement of final closure has occurred if placement of waste in the Area Ponds has ceased and any of the following actions or activities has been completed (40 CFR 257.102(e)(3)):

- (i) Steps necessary to implement this Plan;
- (ii) Submittal of a completed application for any required state or agency permit or permit modification; or
- (iii) 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.

### 5.2 Closure Schedule

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

**Table 1: Estimated Closure Schedule**

Notification of Intent to Close Placed in Operating Record	December 10, 2015 <sup>1</sup>
Initiation of Closure	January 2016 (year 1)
Written Closure Plan and Updated Closure Notification of Intent to Close Placed in Operating Record	April 17, 2018 <sup>1</sup>
Coordinating with and obtaining necessary approvals and permits from other agencies	2016 - 2020
Mobilization	2016
Dewater and remove CCR	2016 - 2021
Final berm site grading and vegetation	2021 - 2022
Year all closure activities for the CCR unit will be completed	2022 <sup>2</sup>
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)). A demonstration was placed in the facility operating record in January 2021.	

## **6.0 AMENDMENT OF CCR CLOSURE PLAN (§257.102(b)(1))**

The owner or operator may amend the initial or any subsequent written Plan developed pursuant to §257.102(b)(1) at any time.

The written 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 Plan. If a written Plan is revised after closure activities have commenced for a CCR unit, the current written 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 Plan meets the requirements of §257.102(b) must be obtained.

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



**7.0 PROFESSIONAL ENGINEER CERTIFICATION (§257.102(b)(4))**

The undersigned registered professional engineer is familiar with the requirements of CCR Rule requirements of §257.102 of the CCR Rule and has visited and examined LEC or has supervised examination of LEC by appropriately qualified personnel. The undersigned registered professional engineer attests that this Closure Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and meets the requirements of §257.102, and that this Plan is adequate for LEC's facility. This certification was prepared as required by §257.102(b)(4).

Name of Professional Engineer: Richard Southorn

Company: APTIM

Professional Engineer Seal:

