

# CCR Post-Closure Plan La Cygne Generating Station Lower AQC Impoundment

Evergy Metro, Inc.

Project number: 60696120

January 2024  
Revision 2

## Revision History

Revision No.	Revision Date	Author	Section(s) Revised & Summary of Revision(s)
0	October 2016	Jay Martin (Eversource, Inc.)	Original
1	June 4, 2021	Jay Martin (Eversource, Inc.)	Update new company name & contact info, improve alignment with other Eversource post-closure plans, notification requirements, add mowing & inspection frequency, access control requirements, and various minor clarifications.
2	January 10, 2024	Joslyn Townsend (AECOM)	Updates to Section 5 to include additional information on monitoring and maintenance activities, inspection frequencies, method of maintaining integrity and effectiveness of final cover, inspection methods, the level of periodic maintenance warranting more or less frequent inspections.

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# 1. Introduction

AECOM Technical Services, Inc. (AECOM) has prepared the following Post-Closure Plan (Plan) on behalf of Evergy Metro, Inc. (Evergy) for the Upper AQC Impoundment (Unit) located at the La Cygne Generating Station (La Cygne) near La Cygne, Kansas. La Cygne is a coal-fired power plant that has been in operation since 1971.

The Unit has been deemed to be a regulated coal combustion residuals (CCR) unit by the United States Environmental Protection Agency (USEPA) through the Disposal of Coal Combustion Residuals from Electric Utilities Final Rule (CCR Rule) 40 CFR §257 and §261.

This Plan details the post-closure requirements outlined in §257.104, for CCR units closed in place. The criteria for conducting the post-closure care of the Unit are detailed in Section 2. Post-closure care processes have been established to control, minimize, and eliminate infiltration of liquids into waste and release of leachate.

## 2. Regulatory Overview of CCR Post 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 Parts §257 and §261. The purpose of the CCR Rule is to provide a comprehensive set of requirements for the safe disposal of CCR.

Section 257.104(d) of the CCR Rule requires owners or operators of CCR Landfills and surface impoundments to prepare a written Post-Closure Plan describing the monitoring and maintenance activities, contact personnel during the post-closure care period, and the planned use of the unit during post-closure care period. The following citations from the CCR Rule are applicable for the Unit as discussed in this Plan:

§257.104(d)(1) stipulates:

“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

- 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;
- 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
- 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...”

An outline of the post-closure care maintenance requirements is described in §257.104(b) which stipulates:

“Following the 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:

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;
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
3. Maintaining the groundwater monitoring system and monitoring groundwater in accordance with the requirements of §257.90 through §257.98.”

This Plan has been prepared in accordance with the requirements of the CCR Rule and includes a written certification in Section 10 from a qualified Professional Engineer in the State of Kansas.

### 3. Unit Overview

Evergy owns and operates the waste management units at La Cygne Generating Station near La Cygne, Kansas in Linn County. La Cygne is approximately seven miles east of La Cygne, Kansas along Route 152. The Unit is bounded to the east by the La Cygne CCR Landfill, to the south by the La Cygne Generating Station Power Block, to the west by La Cygne Lake, and to the North by the Upper AQC Impoundment.

Evergy was previously granted an Industrial Landfill Permit (Permit No. 0337) at La Cygne by the Kansas Department of Health and Environment – 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 La Cygne. The current Industrial Landfill Permit was approved on September 18, 2020.

Bottom ash, fly ash, economizer ash, and gypsum (CCR material) are disposed of at the facility. The closure of the Unit will be accomplished by consolidation of the in place CCR material and covering the CCR material with an engineered cap. Areas where CCR and CCR impacted soils are removed will not receive final cover, and therefore will not undergo the monitoring and maintenance activities described herein. The final cover design and construction of the Unit is designed to meet 40 CFR §257.102(d) and is discussed in the closure plan for the unit.

### 4. Post-Closure Overview and Planned Use (257.104(d)(1)(iii))

This Plan applies to the proposed site end use for the Unit. The currently proposed end use of the Unit is a natural area of passive open space that will not disturb the integrity of the final cover cap. No waste will remain exposed after completion of the Unit closure. The Unit and/or facility entrance/exit gate will remain locked after Unit and/or facility closure unless needed for

Unit or other site maintenance. The Unit will be closed to the public. Post-closure use of the Unit property will not disturb the integrity of the final cover, containment systems, or the functioning of the monitoring systems, unless necessary to comply with the CCR Rule. Any other disturbance, such as removal of CCR for beneficial use, is allowed if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, or other components of the containment system, will not increase the potential threat to human health or the environment. The demonstration must be certified by a qualified Professional Engineer and a notification will be provided to the KDHE-BWM, that the demonstration has been placed in the operating record and on the Evergy publicly accessible internet site.

## **5. Monitoring and Maintenance Activities (257.104(d)(1)(i) & 257.104(b))**

Post-closure care will be performed for a minimum period of 30 years in accordance with §257.104(c). Post-closure activities include environmental monitoring and maintenance.

### **5.1 Inspection and Monitoring Activities (257.104(d)(1)(i))**

As part of the post-closure care phase for the Unit, periodic inspections will be completed by a Qualified Person trained to recognize specific appearances of structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit by visual observation. Training will enable the Qualified Persons to identify potential maintenance and stability issues including slides, bulges, boils, sloughs, scarps, sinkholes, or depressions; lack of vegetation, excessive woody vegetation, erosion, and stability problems.

Initially, inspections will continue to be completed no less frequently than a seven-day interval through the first year of closure. Inspection frequency will be reduced as final cover conditions are found to be stable and depending on the need for periodic maintenance. Evergy will then reduce the inspection frequency to quarterly for the second year of closure. Again, assuming that the final cover system is found to be stable, the program will shift to annual inspections, which is the actual requirement under KDHE solid waste post-closure requirements. If any signs of instability are observed, additional inspections will be made following repairs until the area is determined to be stable.

The purpose of the visual inspections during the post-closure care phase will be to detect any damage, distress, or malfunctions to the Unit final cover, cover soils, and vegetation, which includes, but is not limited to settlement, seepage, erosion, scarps, sloughs, stormwater ponding, wind erosion, stormwater erosion, and animal burrows. During the post-closure care period, Evergy will maintain the integrity of any monitoring wells, bollards, well surface completions, and sampling equipment for the Unit in secure and proper working condition for the required sampling intervals. The monitoring wells and sampling equipment will be inspected at each sampling event. Monitoring wells will be re-surveyed if surface completions are modified. Any issues found will be corrected as part of maintenance activities discussed in Section 5.2 with the goal of maintaining the integrity of the Unit and its monitoring systems. Evergy's checklist for inspections is provided below:

**Table 1. CCR Inspection Criteria**

General Questions	Assessor Responses	Action Items: Maintenance/Repairs & Comments	Inspection Photo (if needed)
1. Previous Planned work incomplete?			
2. Mowing or tree removal needed?			
3. Cracking/slides/settling bulging in banks or slopes?			
4. Erosion, rills, or lack of vegetation on top or slopes?			
5. Animal burrows on the slope, or seeps from slope that are not designed?			
6. Erosion, standing water, or long grass around monitoring wells, or are wells unlocked, or in need of repair? (Complete for each sampling event in addition to inspection).			
7. Are there any areas where run-on or run-off controls are not function properly?			
8. Limited or excessive sand infill coverage over artificial turf layer?			
9. Exposed or failing welds of synthetic textured geomembrane?			
10. Notable obstructions that would impede surface runoff flow?			

The established CCR groundwater monitoring network will be utilized, inspected, and maintained during the post-closure care period to maintain groundwater monitoring in accordance with §257.90 through §257.98. Groundwater monitoring in accordance with the CCR Rule requirements will be accomplished at least semi-annually throughout the post-closure period.

## 5.2 Final Cover System Maintenance and Repair Plan (257.104(b)(1))

Minimal CCR material consolidation and settlement is anticipated due to material dewatering, the physical characteristics of the bottom ash, fly ash, economizer ash, and gypsum deposited, the CCR material being vibrated/compacted during placement and because most settlement will occur during final cover construction. Any areas needing repair will be identified during the regular inspections. Regrading and repair of the final cover soil may be required in the event that future non-uniform settlement or erosion is observed to be impacting the functional design and/or operation of the Unit and surrounding areas.

As per the closure plan, the final cover system consists of a two-component clay cover and a two-component synthetic cover system. As such, maintenance between the two cover systems will vary. Maintenance of the final clay cover will include periodic mowing as needed but not less than once per year and reseeding as necessary. The grass will be maintained at such a level as to facilitate inspections and maintain the health of desirable vegetation. This will help to discourage the inhabitation of burrowing animals. The erosion layer of the final cover will be inspected and low areas collecting water will be filled in with appropriate soil, re-graded, and re-seeded during the seeding seasons (spring and fall) if significant erosion occurs.

Maintenance of the final synthetic cover will include inspections as needed but not less than once per year. Inspections will monitor the integrity of synthetic textured geomembrane and sand infill coverage of the artificial turf layer. The identified areas are to be corrected in accordance with the ClosureTurf Post-Closure Care Manual (WatershedGEO, November 2019, as revised). These methods of repair may consist of, but are not limited to, redistribution of sand infill to the artificial turf at identified locations with minimal or excess coverage, applying patches of artificial turf to areas with exposed synthetic geomembrane or failing welds, and removal of large obstructions that could impede flow of surface water. Low areas collecting water in synthetic cover areas will be repaired by removing the synthetic cover, infilling with soil, re-grading, and replacing the synthetic cover per the manufacturer's recommended procedures.

Control of public access to the Unit will also assist in maintenance of final clay and synthetic cover by helping to prevent cover damage by utilizing an appropriate combination of site security, fencing, lockable gates, and/or site surface water features.

Routine maintenance of the cap and diversion ditches includes periodic removal of sediment, vegetation, and obstructions to surface water run-off and run-on control features. Repair of surface water channels, if needed, will typically be performed by bringing in equipment such as excavators, dump trucks, loaders, dozers, and/or scrapers; additional rip-rap or other erosion control measures will be added as needed. Materials such as silt fence, straw bales, and soil will be used as needed to implement short-term repairs while waiting for permanent repairs. By controlling site access and maintaining the system of stormwater controls, erosion and damage to the final cover system will be minimized.

## 6. Notice of Completion of Post-Closure Care (257.104(e))

Evergy will complete a Notice of Completion of Post-Closure Care Period within 60 days of completion of post-closure of the Unit. The notification will include the certification by a registered Professional Engineer as required by §257.104(e).

## 7. Key Contact Information

Name: Environmental Services Department

Address: Evergy  
818 South Kansas Avenue  
Topeka, Kansas 66601



Alternate:  
PO Box 418679  
Kansas City, MO 64141-9679

E-mail Address: [EvergyCCR@evergy.com](mailto:EvergyCCR@evergy.com)

Phone Number: 888-471-5275

Alternate:  
(800) 383-1183

## 8. Procedures for Plan Assessments and Amendments (257.104(d)(3))

The Plan will be amended if there is a situation as stated in §257.104(d)(3) (i-iii). The Plan will be amended 60 days prior to a planned change of the La Cygne facility or Unit, or no later than 60 days after an unanticipated event that would necessitate a revision and no later than 30 days after an unanticipated event after post-closure care activities have commenced.

Any amended Plan will be certified by a registered Professional Engineer and will be placed in La Cygne's facility operating record as required per §257.105(i)(12). Amended Plans will supersede and replace any prior versions. Availability of an amended Plan will be noticed to the State Director per §257.106(i) and posted to the publicly accessible internet site per §257.107(i).

## 9. References

WatershedGEO, (November 2019). ClosureTurf Owner's Post-Closure Care Manual.

# 10. Professional Engineer Certification (257.104(d)(4))

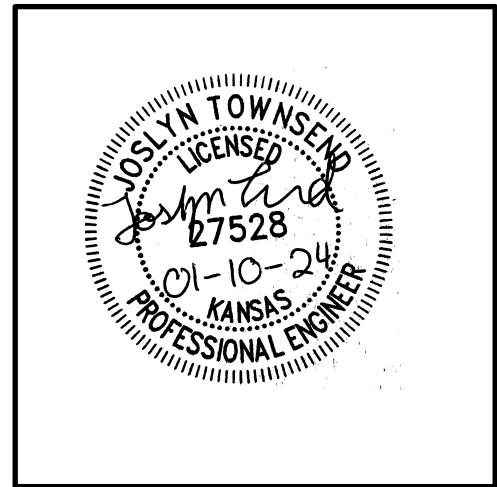
Certification Statement 40 CFR § 257.104(d)(4) – Amended Written Post-Closure Plan - CCR Surface Impoundment

CCR Unit: Evergy Metro, Inc. La Cygne Generating Station, Lower AQC Impoundment

I, Joslyn Townsend, being a Registered Professional Engineer in good standing in the State of Kansas, 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 information contained in the amended written post-closure plan dated January 10, 2024 meets the requirements of 40 CFR § 257.104.

Joslyn Townsend  
Printed Name

January 10, 2024  
Date



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