



Written Post-Closure Plan

Pawnee Station - Active CCR Landfill

*Public Service Company of Colorado
Denver Colorado*

October 17, 2016





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Table of Abbreviations and Acronyms

| Abbreviation | Definition |
|--------------|------------------------------------|
| amsl | above mean sea level |
| CCR | Coal Combustion Residuals |
| CFR | Code of Federal Regulation |
| PSCo | Public Service Company of Colorado |

1.0 General Information

The Pawnee Station Power Plant is located at 14940 Morgan County Road 24, Brush, Colorado approximately 4 miles southwest of Brush, Colorado. Pawnee Station operates a Coal Combustion Residuals (CCR) landfill located on the plant property approximately one-half mile southwest of the main power plant building. The Pawnee Station CCR landfill is subject to 40 Code of Federal Regulations (CFR) §257 Disposal of Coal Combustion Residuals From Electrical Utilities (CCR Rule).

The Morgan County Commissioners approved construction and operation of the landfill for ash and raw water treatment solids in 1976 as part of the Special Use Permit issued for construction of Pawnee Station. The landfill has been in continuous use since 1981 when the plant started operations, with ash disposal in the northern half and lime sludge disposal in the southern half. The landfill is operated under an Engineering Design and Operations Plan developed pursuant to Colorado Department of Public Health and Environment Solid Waste Regulations. The CCR landfill subject to the CCR Rule is limited to the northern portion of the landfill, and encompasses an area of approximately 22 acres. **Figure 1** shows the location of the CCR landfill.

In accordance with 40 CFR §257.104(d), Public Service Company of Colorado (PSCo), an Xcel Energy company, is required to publish a written post closure plan that describes the maintenance and monitoring for the landfill throughout the 30-year post closure care period.

This plan fulfills 40 CFR §257.104(d) that requires:

- (i) A description of the required monitoring and maintenance activities and the frequency at which activities will be performed;
- (ii) The name address, telephone number and e-mail 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.

2.0 Monitoring and Maintenance – §257.104(d)(1)

The landfill will be monitored and maintained as a single unit. The post-closure monitoring and maintenance will be conducted for a minimum of 30 years after the closure of the landfill. During the post-closure period, semi-annual facility inspections will be conducted. The inspections will include observations for cover integrity (e.g., erosion or problems with vegetative quality), surface-water drainage, and site security features. Deficiencies identified during the inspections will be corrected as soon as practical.



Figure 1. Pawnee Power Station

2.1 Integrity of Final Cover – §257.104(b)(1)

The final cover will be reviewed during the semi-annual inspections. Looking for evidence of the following items:

- Settlement and subsidence;
- Surface erosion;
- Vegetative damage;
- Cracks or desiccation; and
- Biotic intrusion of the cap (burrowing rodents or animals).

Visual inspections for subsidence can include walking the cover after a major rainstorm or the beginning of snowmelt and thaw and looking for puddles or ponding.

Repair of the capping system in damaged areas should include:

- Replacing soils by type;
- Replacing cover soil; and
- Reestablishing vegetation.

Visual inspection of the stormwater/drainage system should include the following areas:

- Culverts;
- Ditches;
- Monitoring/discharge structures; and
- Other drainage control structures

Inspection will identify any accelerated erosion in a particular area and differential settling of drainage control structures. Inspections will also look for sedimentation, clogs or obstructions, deterioration, and vegetative intrusion.

Damaged drainage control structures will be repaired, replaced, or restored to original conditions. When drainage structures become plugged or silt filled, they will be cleaned by water jetting or similar means. Silt-filled drainage channels will be cleaned, re-graded and vegetated, as necessary to maintain drainage capacity.

Annual maintenance requirements may be affected by weather, the maturity of vegetation and other variables. The level of maintenance should decrease with time and the stability of the waste and vegetative support system.

2.2 Integrity of Leachate Collection and Removal System – §257.104(b)(2)

The landfill does not have a leachate collection system.

2.3 Integrity of Groundwater Monitoring System – §257.104(b)(3)

The groundwater monitoring wells should be visually inspected for the following at each post-closure sampling event:

- Erosion or biotic intrusion around the base;
- Damage to locking well caps;
- Integrity of well seals; and
- Integrity of any well markers or protective structures.

Areas of erosion at groundwater monitoring wells will be filled with compatible soil materials graded to drain and covered with vegetative growth. Damaged well caps, concrete pads, and well seals should be repaired and/or replaced. Wells damaged below grade levels may need to be evaluated further and possibly replaced.

At the conclusion of the post-closure monitoring period, all monitoring wells will be properly abandoned in accordance with the applicable regulatory requirements.

2.4 Post-Closure Groundwater Monitoring – §257.104(b)(3)

Consistent with the requirements of 40 CFR §257.90 through 257.98, PSCo has prepared a site specific groundwater monitoring system and plan. The groundwater monitoring system, sampling, analytical analysis, and reporting procedures are described in the Groundwater Monitoring System Certification as posted to the facility Operating Record.

All sampling, packaging, shipping, testing, and reporting during the post-closure care period will be in accordance with the facilities Groundwater Monitoring System Certification prepared pursuant to 40 CFR §257.91(f).

3.0 Post-Closure Site Contact – §257.104(d)(1)(ii)

Pawnee Station is owned and operated by PSCo, 1800 Larimer Street, Denver, Colorado 80202.

Table 1 lists personnel associated with this site with the responsibility for post-closure care monitoring and maintenance.

| Table 1. Current Personnel Responsibilities | | | |
|---|--------------|------------------------|----------------------------------|
| Name | Telephone | Department | E-mail |
| Jennifer McCarter | 303-294-2228 | Environmental Services | Jennifer.McCarter@xcelenergy.com |

4.0 Post-Closure Use – §257.104(d)(1)(iii)

In accordance with 40 CFR §257.104(d)(iii) the post-closure plan must provide a description of the planned uses of the property during the post-closure period.

There is no current post-closure use planned for the Pawnee landfill. The stabilized capped landfill will be open range for wildlife and other passive uses. The landfill is located entirely on the fenced and secured property owned by PSCo.

5.0 Schedule of Closure Activities

Closure will be conducted in a phased manner that follows the phased construction and operation of the cells (see **Table 2**).

| Table 2. Schedule of Closure Activities | | |
|---|------------------|--|
| Task | Start Date | Finish Date (Initiation of Closure) |
| Written Closure Plan | October 17, 2016 | October 17, 2016 |
| Written Post-Closure Plan | October 17, 2016 | October 17, 2016 |
| Last Receipt of CCR | On-going | Year 2018 |
| Landfill Closure | Year 2018 | Year 2018 |
| Annual Inspections | Annually | Year 2018 |
| Fugitive Dust Plan Updates | Annually | Year 2018 |
| Post Closure Maintenance | Year 2018 | Year 2048 (minimum) |

6.0 Qualified Professional Engineer Certification – §257.104(d)(4)

In accordance with 40 CFR §257.104(d)(4), the owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the initial and any amendment of the written post closure plan meets the requirements of this section.

I, Douglas T. DeCesare, hereby certify that this Written Plan of Post Closure meets the requirements of 40 CFR §257.104(d)(4) and that I am a duly registered Professional Engineer under the laws of the State of Colorado.

SIGNATURE:



Colorado PE 0051341

DATE:

October 14, 2016