Fugitive Dust Control Plan for CCR Rule

Pawnee Station

Date: November 29, 2018
Revision: 2

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Appendices

Revision Log

Revision No.	Revision Date	Revised Sections	Notes
0	October 19, 2015	NA	Original Publication
1	April 18, 2017	Section 2 Appendix A	EPA's 'Direct Final Rule', published August 5, 2016 contained an extended deadline of April 18, 2017 for inclusion of inactive CCR impoundments in the Fugitive Dust Plan The Pawnee Station has two inactive impoundments referred to as the Bottom Ash Storage Pond and the Ash Water Recovery Pond.
2	November 29, 2018	Section 1 Section 2 Appendix A	Revised to provide clarification to the CCR handling process and inclusion of an additional CCR landfill. Revisions to the site map.

Certification of Report

The report shall be prepared, signed and sealed by a professional engineer.

"I hereby certify that this plan meets the requirements of the Coal Combustion Residual Rule (40 CFR 257.80(b)(7))."

Print name: Sara Lubchenco

Signature: Sara Lubchenco

Date: 11/29/18

License #: 044344

1 Introduction

On April 17, 2015 the U.S. Environmental Protection Agency (EPA) published regulations under subtitle D of the Resource Conservation and Recovery Act (RCRA) meant to control the disposal of coal combustion residuals (CCR) generated by coal fired power plants. The rule defines a set of requirements for the management of CCR in landfills and surface impoundments. 40 CFR 257.80(a) specifies that an owner or operator of a CCR landfill, surface impoundment, or lateral expansion of a CCR unit must develop a Fugitive Dust Plan by October 19, 2015 that will effectively mitigate the transport of CCR fugitive dust from the facility. Controlling fugitive dust associated with CCR at Pawnee Station (Pawnee) is addressed through a fugitive dust control program. Pawnee is required to establish a Fugitive Dust Control Plan (Plan) and follow it at all times. This Plan has been specifically designed to outline measures that will minimize airborne dust at the plant under the CCR rule.

CCR sources are the loading and unloading of the fly ash silo, bottom ash from the boiler, transport of fly ash from the silo and bottom ash from the bunker to either of the two on-site landfills or offsite, emplacement of the fly ash and bottom ash in the landfills, and fugitive dust emissions from unpaved roads.

The Plan includes activities such as conditioning CCRs for handling, controlling vehicle speeds, watering of roads and work areas, observing changes in meteorological conditions, and following processes and procedures intended to minimize dust. Pawnee employs the services of a CCR contractor for all ash unloading, transportation to and placement in the on-site landfills. The contractor is also responsible for control of fugitive dust emissions associated with all ash handling, transport and placement activities and landfill operations. Because the facility is currently required to manage and monitor fugitive dust emissions as required by the Title V permit, the Pawnee staff and CCR contractor are actively engaged in dust control on a continuous basis. This Plan is a formal statement of the activities and the methods specifically designed to minimize the creation of airborne dust, meeting all of the applicable requirements of the CCR Rule.

Based on implementation of the Title V fugitive dust plan, all of the control measures in place have proven to be effective in the prevention or control of airborne fugitive dust. Each measure has been carefully planned and executed based on site-specific operating conditions in order to achieve the intended control. The dust control measures are outlined in the sections below. Watering is the main process used to control fugitive dust from CCR storage areas, haul roads, and landfill disposal areas. Additional control measures are also in place for these areas and are described in the sections below.

2 Fugitive Dust Control

2.1 Overview

The primary control for fugitive dust is the wetting of CCR during unloading from storage areas (conditioning in the fly ash silos and dewatering in the bottom ash bunker). If needed, additional wetting can be conducted during placement/management of CCRs in the landfills which can be exposed to varied weather, specifically during dry and windy conditions. Watering is also employed on plant haul roads to control the generation of fugitive dust, as needed. Weather conditions are visually observed/monitored by Pawnee staff and the CCR contractor and watering needs are adjusted to meet operational criteria and site conditions. The following sections explain the process of controlling dust in these areas by the use of water and other control methods. The attached site map illustrates all of these areas of the facility.

2.2 CCR Dust Control Areas

Generally speaking, the process of keeping CCRs, haul roads, and other areas watered sufficiently is the most appropriate method of dust control since the equipment and materials used are reliable, cost effective, and easily adjusted to site conditions. The following sections specifically identify CCR generation areas, CCR handling operations, and the preferred control measures to reduce dusting.

2.2.1 Plant Roads (40 CFR 257.80(b)(1))

All of the CCR haul roads are unpaved roads at Pawnee. All unpaved roads are surfaced with aggregate material and treated with chemical stabilizers periodically to reduce dusting. Chemical stabilizers on unpaved roads bind the road material better than watering alone. In addition, haul roads have a posted speed limit of 10 mph to reduce dusting. By limiting speed, the fugitive dust generation is reduced, especially from some of the heavier equipment used at the facility. Finally, the unpaved haul roads are watered as needed to eliminate any residual dusting. The use of reduced speed, chemical stabilizers, and water application are appropriate methods for dust control because they meet the suggested control options defined in *AP-42 Chapter 13.2 .2 Unpaved Roads* and they have met the requirements of the Title V fugitive dust plan.

2.2.2 Unit 1 Submerged Flight Conveyor (40 CFR 227.80 (b)(1) and (2))

Pawnee utilizes a submerged-flight conveyor system to remove bottom ash from the boiler bottom to an adjacent bunker in a damp condition. Unit 1 bottom ash is removed via a mechanical conveyor system and placed into the bunker that is emptied by a wheeled loader and placed into trucks for transport to the on-site landfills or off site for beneficial use. The bottom ash drains freely, but has residual moisture content due to the submerged conveyer system operation and is a large enough particle size that it is inherently not subject to dusting.

2.2.3 Fly Ash Silo (40 CFR 227.80 (b)(1) and (2))

Fly ash is pneumatically transferred from the baghouse to a temporary ash storage silo, from which it is unloaded into trucks for transport to the landfills. The ash silo is equipped with a high efficiency ventilation system connected to a dedicated baghouse that collects the majority of any dust created during the loading or unloading process. The use of silo venting to the baghouse is an effective way to mitigate CCR from becoming airborne during the loading and unloading process. The baghouse inspections are performed as needed based on differential pressure readings and a preventative maintenance schedule is followed to ensure the baghouse is operating correctly.

The fly ash silo is also equipped with a pug mill to condition the ash prior to loading into trucks for transport to the onsite landfills. The pug mill is operated by the CCR contractor to add water and condition the ash on the outlet side of the silo as it is being placed in the transport trucks. The CCR contractor visually monitors the unloading process and adjusts the pug mill as needed to control fugitive emissions. Sufficient water is used to stabilize the ash, but not result in free liquids. The pug mill is inspected on a set schedule and a preventative maintenance schedule is followed to ensure the pug mill is operating correctly.

The conditioned CCR is transported by trucks directly from the silo to emplacement in the on-site landfills. Because there is no intermediate storage or transfer step, the CCR is still in its conditioned state from the pug mill as it is transferred and placed in the landfills. No additional dust control measures are currently considered for the emplacement of conditioned CCR in the landfills.

The site may also perform dry unloading into enclosed pneumatic trucks using the same enclosure and venting controls listed above. The equipment used for dry unloading is inspected on a set schedule and a preventative maintenance schedule is followed to ensure it is operating correctly.

2.2.4 Ash Hauling (40 CFR 227.80 (b)(1) and (2))

CCR dusting can occur from the unpaved roads as trucks haul CCR from loading points to the landfills. Another source of CCR dusting can originate from the material as it is being transported.

Pawnee employs the services of a CCR contractor for transporting the ash from the plant to the on-site landfills and for placement in the landfills. The contractor owns a water truck equipped with spray bar/ nozzles and a hand line for dust control on plant roads and other areas, as described in this Plan.

As previously discussed, the bottom ash is not subject to dusting and no further dust suppression technologies are considered for the transport of the bottom ash. Similarly, the transport of the conditioned fly ash does not require additional dust suppression technologies as the CCR maintains a water content that prevents dusting as the material is moved.

The process of keeping CCRs, haul roads, and other areas watered sufficiently is the most appropriate method of dust control since the equipment and materials used are reliable, cost effective, and easily adjusted to changing site conditions.

2.2.5 CCR Landfills (40 CFR 227.80 (b)(1) and (2))

There are two CCR landfills at Pawnee Station, both of which are located to the south of the electrical generating unit and connected by unpaved roads. The North CCR landfill was constructed at the same time as Pawnee station, and is expected to continue receiving ash through 2021, at which time it will be capped and closed. The East CCR landfill was constructed in 2018, and will begin receiving ash in early 2019. Therefore, ash may be hauled to either or both on-site landfills for a period of approximately three years. After closure of the North landfill, CCR will be hauled only to the East landfill. CCR transport to either landfill follows a common road for a distance of approximately 0.6 miles. From that point, the distance to the North landfill is approximately 0.3 miles and to the East landfill approximately 0.2 miles. CCR is transported by trucks and hauled to the landfills. The CCR is emplaced in the landfills in a moist, conditioned state and is not subject to dusting upon placement. This moisture content will prevent dusting but not result in any free liquids during transportation and disposal. Once placed in the active landfill cell, the conditioned CCR is wheel rolled/tracked by the CCR contractor equipment to meet the landfill compaction specifications. If needed to stabilize the CCR until covered by soil, the CCR may be

watered to form a crust on the surface and prevent dusting. Intermediate or final cover is placed according to the landfill solid waste Engineering Design and Operations Plan upon completion of a lift. The CCR contractor observations determine the level of stabilization needed to control dusting and no issues with free liquid or dusting have been noted.

2.2.6 Inactive Impoundments (40 CFR 227.80 (b)(1) and (2))

The Pawnee station had two (2) inactive CCR impoundments, the Bottom Ash Storage Pond and the Ash Water Recovery Pond. During active operation, the Bottom Ash Storage Pond received sluiced bottom ash from the boiler. CCR solids were retained in the Bottom Ash Storage Pond and the sluice water was reclaimed to the station via the Ash Water Recovery Pond for reuse in the boiler ash system. Pawnee has dewatered, removed the CCR, and pulled the liner from both ponds. Confirmation sampling has been completed to verify that all CCR has been removed and there is no residual CCR present. Therefore, no controls are required for the impoundments, as the CCR has been removed. The East CCR landfill has been constructed in the footprint of the former Bottom Ash Storage Pond, and is discussed in Section 2.2.5. The former Ash Water Recovery Pond has been repurposed as a non-contact stormwater pond.

2.3 Watering Procedure

Watering for fugitive dust control is conducted throughout the year. It is governed primarily by the current and anticipated meteorological and site conditions. The control of the watering program is given to the CCR contractor who estimates the dust generation potential based on current observed conditions and their past experience. Watering is accomplished by using a water truck equipped with a watering bar and hand line.

2.4 Recordkeeping

The Pawnee CCR contractor can identify the time spent by its staff on watering. Also, maintenance records are kept on the water truck to assure proper operation. Record keeping on watering is maintained in a contractor log. Maintenance records on the CCR storage and handling systems are also maintained at the facility.

3 CCR Areas Inspection (40 CFR 257.80(b)(4))

In order to assure that all measures outlined in this Plan are in place, being followed and working effectively, they will be assessed in the weekly inspection that is done as part of the Title V permit compliance program. The weekly inspection will include verification that all fugitive dust control measures, as outlined in the plan, are being followed effectively. Documentation of weekly inspections will be through the company's environmental management software system. If there is anything to address, a maintenance work order will be initiated and tracked through the company's work management system. In addition, plant personnel are trained in opacity visual observations that are used to determine compliance with the facility Title V air permit and therefore, the effectiveness of point source controls under this Plan.

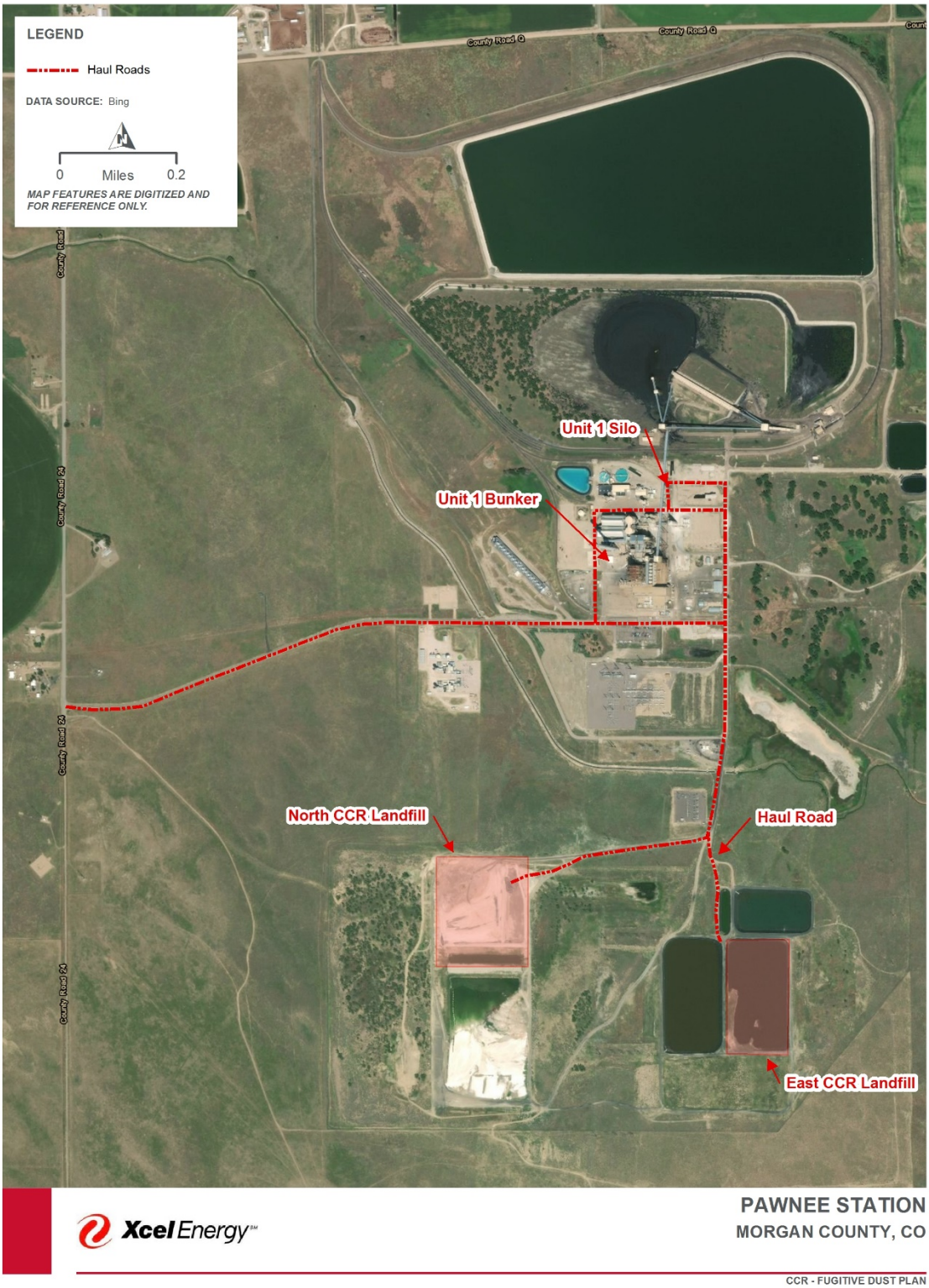
4 Fugitive Dust Complaint Log (40 CFR 257.80(b)(3))

Fugitive dust complaints received from citizens via the dedicated email account (PSCoCCRInquiries@xcelenergy.com) published on our CCR Rule Compliance Data and Information public website or to the Plant Environmental Analyst will be reviewed and investigated. Any citizen complaints of fugitive dust appearing to originate from the plant will be investigated immediately. A log will be kept to record all occurrences of confirmed fugitive dust from CCR areas. If the fugitive dust is found to have originated from the CCR areas, follow-up and corrective actions will be taken as needed. The template for this log is included as an attachment to this Plan.

5 Plan Updates (40 CFR 257.80(b)(6))

This Fugitive Dust Control Plan will be assessed annually unless a need is identified during the weekly inspection or upon analysis of a citizen complaint. As part of the assessment, all processes and procedures will be reviewed for their effectiveness and efficiency at minimizing or eliminating the generation of fugitive dust. The plan will be updated if any new dust control measures are implemented at Pawnee or new CCR unit is constructed. Lastly, the facility map will be updated with any changes to CCR management areas.

Appendix A – Facility Site Map


LEGEND
Haul Roads
DATA SOURCE: Bing
0
Miles
0.2
MAP FEATURES ARE DIGITIZED AND FOR REFERENCE ONLY.
County Road Q
County Road 1
County Road 24
Unit 1 Silo
Unit 1 Bunker
North CCR Landfill
Haul Road
East CCR Landfill
Xcel Energy
PAWNEE STATION
MORGAN COUNTY, CO
CCR - FUGITIVE DUST PLAN

Appendix B – Complaint Log

Fugitive Dust Complaint Log									
Reported			Alleged Event Information				Incident Evaluation		
Date	Time	Complainant	Date	Time	Location	Description	Type	Response	Follow Up