Fugitive Dust Control Plan for CCR Rule

Comanche Station

Date: May 18, 2018
Revision: 1

Table of Contents

Appendices

Revision Log

Revision No.	Revision Date	Revised Sections	Notes
0	October 19, 2015	NA	Original Publication
1	May 18, 2018	Section 2 and Appendix A	Xcel expanded their landfill to "cell 2". Xcel expanded the haul roads to gain access to "cell 2". Addition of dry ash handling.

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:

Date: 5/18/18

License #: 44344

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 coal combustion residuals at Comanche Station (Comanche) is addressed through a fugitive dust control program. Comanche 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 fly ash and Flue Gas Desulfurization (FGD) silos, bottom ash from the boilers, transport of CCR from the silos to the landfill or offsite, transport of the bottom ash from the bunker to the landfill, emplacement of the fly and bottom ash in the landfill, fugitive emissions from paved roads, and fugitive 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. Because the facility is currently required to manage and monitor fugitive dust emissions as required by the Title V permit, the Comanche 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 bunkers). If needed, additional wetting can be conducted during placement/management of CCRs in the landfill 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 Comanche 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 Comanche. 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 Units 1 and 2 Bottom Ash Pond/Bunker (40 CFR 227.80 (b)(1) and (2))

Comanche has two systems for managing bottom ash. Units 1 and 2 utilize a slurry system to sluice ash from the boiler bottoms to an incised impoundment in a wet condition. The bottom ash is dewatered in a bunker and direct loaded into dump trucks for transport. The bottom ash is emptied by a wheeled loader and placed into trucks for transport to the on-site landfill or directly off site for beneficial use. The bottom ash drains freely, but has a slight water content due to the sluicing operation and is a large enough particle size that it is inherently not subject to dusting. Because the bottom ash is not subject to dusting the material is considered conditioned when it is landfilled and does not require additional control measures as the product is transferred from the bunker and emplaced in the landfill.

2.2.3 Unit 3 Submerged Flight Conveyor (40 CFR 227.80 (b)(1) and (2))

Unit 3 utilizes a submerged-flight conveyor system to remove ash from the boiler bottom to an adjacent bunker in a damp condition. Unit 3 bottom ash is removed via a mechanical conveyor system and placed into a bunker that is emptied by a wheeled loader and placed into trucks for transport to the on-site landfill or off site for beneficial use. The bottom ash drains freely, but has a slight water content due to the water quench operation and is a large enough particle size that it is inherently not subject to dusting. Because the bottom ash is not subject to dusting the material is considered conditioned when it is landfilled and does not require additional control measures as the product is transferred from the bunker and emplaced in the landfill.

2.2.4 Fly Ash and FGD Silos (40 CFR 227.80 (b)(1) and (2))

The loading and unloading of fly and FGD materials takes place in partially enclosed buildings to minimize the generation of fugitive dust. In addition to the building enclosures, the silos are vented to the boiler baghouse that collects a large majority of any dust created during the loading or unloading process. The use of a partial enclosure and silo venting to the baghouse is an effective way to mitigate CCR from becoming airborne during the loading and unloading process. The baghouse is inspected on a set schedule and a preventative maintenance schedule is followed to ensure the baghouse is operating correctly.

The fly ash and FGD materials are stored in silos. These silos are equipped with pug mills to condition the ash prior to loading into haul trucks for transport to the onsite CCR landfill or off site for beneficial

use. The mills add water and condition the ash on the outlet side of the silo and prior to being placed in the transport trucks. Sufficient water is used to stabilize the ash, but not result in free liquids. The pug mills are inspected on a set schedule and a preventative maintenance schedule is followed to ensure the pug mills are operating correctly.

The conditioned CCR is transferred directly from the silos to emplacement in the on-site landfill. 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 landfill. No additional dust control measures are currently considered for the emplacement of conditioned CCR in the landfill.

The site may also perform dry unloading from Units 1, 2, or 3 into fully 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.

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

CCR dusting can occur from the unpaved roads as equipment hauls CCR from generation points to the landfill. Another source of CCR dusting can originate from the material as it is being transferred.

Comanche employs the services of a CCR contractor for transporting the ash from the plant to the on-site landfill and for placement in the landfill. The contractor owns a water truck equipped with side and rear spray 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 CCR (Fly Ash and FGD material) also 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.

2.2.6 CCR Landfill Cells 1 and 2 (40 CFR 227.80 (b)(1) and (2))

The landfill is located to the southwest of the generating units, currently divided into two cells, with Cell 2 located to the west of Cell 1. The landfill is connected by unpaved roads that are less than a mile in total travel distance. CCR from all three Units is transported by trucks and hauled to the landfill. The CCR is emplaced in the landfill in a moist, conditioned state and is not subject to dusting upon placement. The moisture content percentage of the conditioned CCR is fixed at a predetermined set point. 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 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. 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. Transport activities, landfill maintenance and control measures are identical for both landfill cells.

2.2.6.1 Modification of Operations During High Wind Events

If suspected, the CCR contractor can determine if high wind events over 40 mph continuous wind or 55 mph wind gusts are present at the facility by contacting the plant Control Room for readings. The CCR contractor can then reduce or halt landfill operations to further reduce the potential for dust generation, if needed.

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 Comanche 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, as well as hours of daily use. 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 Comanche 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
0.15
MAP FEATURES ARE DIGITIZED AND FOR REFERENCE ONLY.
Unit 3 Bunker
Unit 3 Silo
Unit 2 Silo
Unit 1 Silo
Cell 2 East
CCR Landfill
Cell 1
Unit 1 & 2 Bunker
Lime Rd
Lime Rd
Lime Rd
St Charles Rd
Xcel Energy
COMANCHE STATION
PUEBLO 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