Coal Combustion Residuals
Fugitive Dust Control Plan

Revision 0

Prepared for
Montana-Dakota Utilities Company
Lewis & Clark Station

October 2015

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Certifications

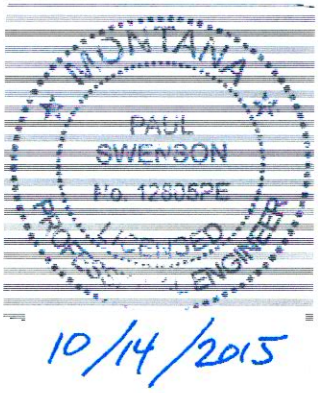
I certify that this Coal Combustion Residuals Fugitive Dust Control Plan meets the requirements of 40 CFR 257 §257.80.

Paul T. Swenson

October 14, 2015

Paul T. Swenson
PE #: 12805PE

Date



Revision	Date	Summary of Revisions
0	10/19/2015	Original Plan

1.0 Introduction

The process of coal combustion residual (CCR) management and CCR disposal at the Lewis & Clark Station (Lewis & Clark) of Montana-Dakota Utilities (MDU) is subject to Federal Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments per 40 CFR 257 Subpart D. CCR is defined in 40 CFR §257.53, Definitions as follows:

> *"...CCR means fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers..."*

CCR Units are defined in 40 CFR §257.53, as follows:

> *"CCR unit means any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit, or a combination of more than one of these units, based on the context of the paragraph(s) in which it is used. This term includes both new and existing units, unless otherwise specified."*

This CCR Fugitive Dust Control Plan (FDCP) has been developed to satisfy the requirements described in 40 CFR §257.80, Air Criteria, as they apply to CCR units, roads, and other CCR management and materials-handling activities at Lewis & Clark. If the processes for controlling fugitive dust from the stated operations are modified, or if CCR Units at Lewis & Clark are modified, this plan will be updated according to the procedures established in the CCR Rule and described in this document.

CCRs generated by Lewis & Clark and regulated by 40 CFR 257 Subpart D are fly ash and flue gas desulfurization material.

2.0 Facility Location

Lewis & Clark is a 50 MW tangential coal-fired power plant that is located on the north bank of the Yellowstone River, approximately 2.5 miles south of Sidney in Richland County, Montana. The facility is located in Section 9 of Township 22 N, Range 59 E. Locations of paved and unpaved roads, parking lots, and locations of CCR Units are shown in Figure 1.

3.0 Objective

This CCR FDCP identifies the control measures and operating practices that MDU will implement at Lewis & Clark on a continual basis to effectively minimize CCR fugitive dust emissions from the CCR impoundments and ash storage areas, as well as loading, hauling, and placement activities.

The CCR Rules § 257.80 air criteria requires that *"the owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit must adopt measures that will effectively minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from CCR units, roads, and other CCR management and material handling activities."*

In order to fulfill this objective, the plan must:

- Identify and describe the CCR fugitive dust control measures most appropriate for site conditions to minimize CCR becoming airborne
- Identify the procedures to log citizen complaints
- Describe the procedures the owner or operator will follow to periodically assess the effectiveness of the control plan
- Identify recordkeeping requirements
- Identify annual reporting requirements
- Be certified by a qualified professional engineer

4.0 CCR Fugitive Dust Emission Sources

This CCR FDCP addresses the possible emissions occurring in the process of transporting multiple types of CCR resulting from power generation at the facility. The CCR that is currently generated is stored or handled in two areas at the facility:

- **Scrubber Ponds:** The Scrubber Ponds refers to the two main scrubber ash ponds, referred to as the East and West Scrubber Ponds, located near the generating plant. The ponds are used as settling basins for flue-gas desulfurization (FGD) ash and operate independently of each other. Typically one pond is in operation while the other is out of operations for maintenance. Maintenance includes, but is not limited to, such things as dewatering and removal of ash.

- **Temporary CCR Storage Pad:** The FGD ash is excavated from the Scrubber Pond and stockpiled temporarily on the Temporary CCR Storage Pad northeast of the scrubber ponds. As operations permit the FGD ash is loaded into a truck positioned on one of the two dedicated and managed load out pads, and then is transported to an abandoned coal mine.

Potential CCR fugitive dust sources at Lewis & Clark include loading and hauling operations for fly/bottom ash at non-CCR units such as the fly ash silo, and the bottom ash basin, or loading and hauling operations from CCR units such as FGD ash at the scrubber ponds; and FGD ash loading and hauling at the storage pad and load out pads. Potential CCR fugitive dust sources will utilize controls described in Section 5.0 of this plan.

Haul Truck Loading Operations: Haul trucks transport CCR from the fly ash silo, the bottom ash basin, and the Temporary CCR Storage Pad site to an abandoned coal mine, or containerized trucks for beneficial reuse. The hauling schedule may vary based on CCR generation and operational needs. Potential for generation of CCR fugitive dust during haul truck loading operations exists at the following locations:

- **Haul Roads:** The haul trucks transport CCR along unpaved gravel haul roads at the facility. As all CCR spills are cleaned, dusting from the haul roads is expected to be from the gravel. Truck loading occurs on the load out pads within the facility, depending on the type of CCR as previously described; locations are shown on Figure 1.

- **Placement:** CCR emissions can occur when CCR is removed from the scrubber ponds and placed onto the Temporary CCR Storage Pad.

5.0 CCR Fugitive Dust Emission Control Strategies

CCR Rule 40 CFR §257.80 Air Criteria, paragraphs (b)(1) and (b)(2), describe regulations applicable to CCR fugitive dust emissions control strategies for this CCR FDCP. Relevant segments are cited below.

CCR Rule 40 CFR §257.80 (b)(1) states,

> *"The owner or operator must select, and include in the CCR fugitive dust control plan, the CCR fugitive dust control measures that are most appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions."*

Additionally 40 CFR §257.80 (b)(2) states,

> *"If the owner or operator operates a CCR landfill or any lateral expansion of a CCR landfill, the CCR fugitive dust control plan must include procedures to emplace CCR as conditioned CCR. Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids."*

MDU will implement multiple types of CCR fugitive dust emission control strategies to minimize CCR from becoming airborne. The following best management practices and procedures are most applicable and appropriate for site conditions at Lewis & Clark:

- Water will be used to stabilize CCR piles, access and haul roads and load out areas. Truck traffic, sun exposure, and wind conditions can increase the mobility of dust. Watering reduces potential for dust agitation caused by these factors. Watering frequencies may be adjusted according to meteorological conditions and as determined by Lewis & Clark staff.
- CCR piles maintenance activities will include watering and/or reducing drop distance between discharge/loading points and top of CCR piles.
- Hauling operations will be delayed to avoid periods of high wind conditions. The fly ash silo and the CCR storage pad have capacity to store CCR for more than one day. This control method is applicable because the region around the site occasionally experiences high wind conditions. High wind accelerates drying of moisture-conditioned CCR and can cause increased CCR fugitive dust transport. Emissions that can occur during CCR haul trucks loading will be avoided if hauling operations are suspended during periods of high wind conditions.
- CCR will be conditioned by adding water to the CCR and trucked to an abandoned coal mine. If not conditioned it will be contained in a loading system and a covered truck as it leaves the Ash Silo for beneficial use. The water to ash ratio is manually adjusted by MDU personnel to account for varying weather conditions. The water conditioned CCR is heavier and more likely to aggregate, decreasing the likelihood of fugitive dust emissions.

- Procedures to place CCR on the Temporary CCR Storage Pad will be conducted to minimize CCR fugitive dust emissions. The CCR placement will progress upwind to the extent feasible within the geometric constraints of the Temporary CCR Storage Pad and current wind direction. The upwind progression will act to mitigate CCR fugitive dust by creating a wind break for CCR placement, which increases the opportunity for dust to settle, reducing the potential for CCR transport by air currents.
- CCR spills will be cleaned up by the end of the day that they occur.
- Equipment to be used for dry CCR placement and loading of trucks will be selected based on availability and ability to control CCR dust. Components of the equipment that handle CCR will be able to contain the CCR and significantly reduces the amount of CCR that become airborne.
- Loading operators will observe loading operations to prevent the haul truck from being overfilled, thereby minimizing the potential for ash spillage from haul trucks.
- Dedicated load out pads are one option that may be used to contain and enable cleaning of CCR that may be spilled during the loading of haul trucks.
- Windbreaks (vegetative control, embankment construction, or topographic controls, etc.) may be used as appropriate.

6.0 CCR Fugitive Dust Emission Monitoring

CCR Rule 40 CFR §257.80 Air Criteria, paragraph (b)(3) and (b)(4), describe regulations applicable to procedures the owner or operator will follow for this CCR FDCP. Relevant segments are cited below.

CCR Rule 40 CFR §257.80 (b)(3) states,

> *"The CCR fugitive dust control plan must include procedures to log citizen complaints received by the owner or operator involving CCR fugitive dust events at the facility."*

MDU has a history of positive communication with the community. As required by 40 CFR §257.80 (b)(3), a log will be kept of any citizen complaints regarding CCR fugitive dust events at the facility. An example complaint log is located in Appendix A. A record of the citizen complaints and corrective measures implemented to address these complaints will be included in the annual CCR fugitive dust control report as required by 40 CFR §257.80 (c), which is described in Section 7.0.

Additionally, 40 CFR §257.80 (b)(4) states,

> *"The CCR fugitive dust control plan must include a description of the procedures the owner or operator will follow to periodically assess the effectiveness of the control plan."*

In order to ensure that operations are in accordance with this CCR FDCP, MDU employees who are directly involved with the control of CCR fugitive dust from the CCR units, roads and other CCR management and material handling activities will assess the effectiveness of dust control measures at least annually. MDU personnel will include a summary of the assessments in each annual report as well as any recommendations for plan revisions.

MDU personnel will monitor and document meteorological conditions as it applies to site CCR fugitive dust emissions. In the event operations are suspended or idled, it may not be necessary to monitor factors that are not in operation.

7.0 Recordkeeping

CCR Rule 40 CFR §257.80 Air Criteria, paragraphs (b)(5), (b)(6), and (b)(7), describe regulations applicable to CCR fugitive dust record keeping requirements for this CCR FDCP. Relevant segments are cited below.

CCR Rule 40 CFR §257.80 (b)(5) states,

> *"The owner or operator of a CCR unit must prepare an initial CCR fugitive dust control plan for the facility no later than October 19, 2015, or by initial receipt of CCR in any CCR unit at the facility if the owner or operator becomes subject to this subpart after October 19, 2015. The owner or operator has completed this initial CCR fugitive dust control plan when the plan has been placed in the facility's operating record as required by § 257.105(g)(1)."*

Additionally, 40 CFR §257.80 (b)(6) and (b)(7) states,

> *"Amendment of the plan. The owner or operator of a CCR unit subject to the requirements of this section may amend the written CCR fugitive dust control plan at any time provided the revised plan is placed in the facility's operating record as required by 257.105(g)(1). The owner or operator must amend the written plan whenever there is a change in conditions that would substantially affect the written plan in effect, such as the construction and operation of a new CCR unit."*
>
> *"The owner or operator must obtain a certification from a qualified professional engineer that the initial CCR fugitive dust control plan, or any subsequent amendment of it, meets the requirements of this section."*

If the plan is updated, the new version of the CCR fugitive dust control plan will be put in the operating record *"as it becomes available"* in accordance with 40 CFR §257.105 (g). After a qualified professional engineer has certified the most recent revision of the CCR FDCP, a person other than a professional engineer may put the most recent version in the facilities operating record.

When the initial plan, and successive amendments to the plan, are placed in the operating record they will be made publicly available on the MDU CCR web site in compliance with 40 CFR §257.107 (g)(1), Publicly Accessible Internet Site Requirements. Additionally, to comply with 40 CFR §257.106 (g)(1), Notification Requirements, MDU will *"notify the State Director... when [the fugitive dust control plan] has been placed in the operating record and on the owner or operator's publicly accessible internet site."* Notification to the State Director shall be made to:" using the contact information listed below:

Montana Department of Environmental Quality
Attn: Director, Solid Waste Section
PO Box 200901
Helena, MT 59620-0901
P: (406) 444-5345
F: (406) 444-1374

After a qualified professional engineer has certified the most recent revision of the CCR FDCP, and it has been placed in the facility's operating record, a person other than a professional engineer may put the most recent version on the MDU CCR website and notify the State Director. The most recent revision of the CCR FDCP must be posted to the MDU CCR website and the State Director notified within 30 days of placing it in the facility's operating record.

8.0 Reporting

MDU will compile an annual report on CCR fugitive dust control in accordance with 40 CFR §257.80 (c). The annual report will include *"a description of the actions taken by the owner or operator to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken."* As stated in 40 CFR §257.80 (c), this report will be *"completed no later than 14 months after placing the initial CCR fugitive dust control plan in the facility's operating record,"* and subsequent reports will be completed *"one year after the date of completing the previous report."* As specified in 40 CFR §257.105 (g), the report will be added to the facility's operating record *"as it becomes available."* A person other than a professional engineer may compile the annual report on CCR fugitive dust control, and add the report to the facility's operating record.

Within 30 days of placing the report in the operating record, the report will be made publicly available by posting it on the MDU CCR website in compliance with 40 CFR §257.107 (g)(2), Publicly Accessible Internet Site Requirements. In accordance with 40 CFR §257.107 (g)(2), Notification Requirements, MDU will also, within 30 days of placing the report in the operating record, *"notify the State Director... when [the annual CCR fugitive dust control report] has been placed in the operating record and on the owner or operator's publicly accessible internet site"* using the previously stated contact information for the Solid Waste Section of the Montana Department of Environmental Quality. A person other than a professional engineer may notify the State Director of the annual CCR fugitive dust control report's availability in the facility operating record and CCR website.

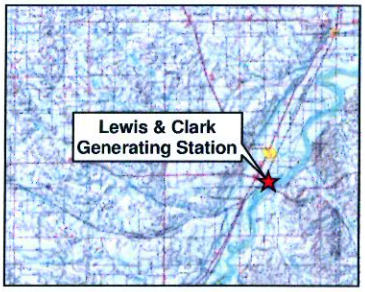
A summary of the monitoring, recordkeeping, and reporting requirements is shown in Table 8-1.

Table 8-1 Monitoring, Recordkeeping, and Reporting Summary

Requirement	Performed By	Place in Operating Record	Post to Website	Notification to State
CCR Fugitive Dust Control Plan	Professional Engineer / MDU Personnel	Yes	Yes	Yes
CCR Fugitive Dust Control Plan Amendment	Professional Engineer / MDU Personnel	Yes	Yes	Yes
CCR Fugitive Dust Routine Monitoring	MDU Personnel	No	No	No
Annual CCR Fugitive Dust Control Report	MDU Personnel	Yes	Yes	Yes

Figures

Figure 1



Fly Ash Silo/Loading

Temporary CCR Storage Pad

Active CCR Surface Impoundment

Feet

400 0 400

BARR

Figure 1

Site Plan
Lewis & Clark Generating Station
Montana Dakota Utilities
Richland County, Montana

Barr Footer: ArcGIS 10.3.1, 2015-08-04 15:09 File: I:\Projects\26\41\1002\Maps\Reports\Task 2\Fig01 Site Location Monitoring Wells Map_update.mxd User: MRQ

Appendix A

Example Citizen Complaint Log

CCR FDCP Complaint Log
Montana-Dakota Utilities Co.
Lewis & Clark Station

MONTANA-DAKOTA UTILITIES CO.

Date Notified	Time Notified	Summary of Complainant	Location of Fugitive Dust Issue	Complaint Received By	Complaint Relayed to	Date and Time Corrective Measures Taken	Change to FDCP Required	Description of Implemented Corrective Measures