COAL COMBUSTION RESIDUAL (CCR) FUGITIVE DUST CONTROL PLAN

for

GRAND RIVER ENERGY CENTER (GREC)

Chouteau, Oklahoma

GRAND RIVER DAM AUTHORITY

March 2025

COAL COMBUSTION RESIDUAL (CCR) FUGITIVE DUST CONTROL PLAN FOR GRAND RIVER ENERGY CENTER CHOUTEAU, OKLAHOMA

TABLE OF CONTENTS

1.0 GENERAL INFORMATION

1.1 Name of Facility: Grand River Energy Center (GREC)
Grand River Dam Authority (GRDA)

1.2 Type of Facility: Coal and Natural Gas Fueled Electric Generating Station

1.3 Location of Facility: 3 Miles East of Chouteau, Oklahoma
on State Highway 412 (See Figure 1.3.1)

1.4 Name and Address of Owner or Operator

Name Grand River Energy Center – Grand River Dam Authority
Address P.O. Box 609, 8142 Highway 412B, Chouteau, Oklahoma 74337
Telephone No. (918) 824-1074

1.5 The GREC Environmental and Operations Managers are the designated entities accountable for CCR Fugitive Dust Control Plan at the facility.

2.0 MANAGEMENT APPROVAL

I have reviewed this CCR Fugitive Dust Control Plan. I hereby direct that this Plan be implemented as described herein.

Signature: _____
Name: Robert Ladd
Title: Vice President Generation Operations

3.0 CERTIFICATION *(40 CFR 257.80 (b)(7))*

I certify I am familiar with the Grand River Energy Center and hereby attest this CCR Fugitive Dust Control Plan meets the requirements for control of fugitive dust coal combustion residue (CCR), and described in 40 CFR, Part 257.80 (b)(7).

Steven R. Jacoby
Printed Name of Registered Professional Engineer

_____
Signature

REGISTERED PROFESSIONAL ENGINEER
STEVEN ROYCE JACOBY
14866
OKLAHOMA

Figure 1.3.1
Location Map- Taken 2023
(GREC CCR Landfill Operations Area outlined in yellow)

4.0 CCR FUGITIVE DUST CONTROL MEASURES
(40 CFR 257.80 (b)(1))

4.1 GENERAL DESCRIPTION OF CCR FACILITY

The Grand River Energy Center (GREC) is located three (3) miles east of Chouteau, Oklahoma on Highway 412. There are two coal fired boilers at GREC, and these are referred to as Unit 1 and Unit 2. As of July 2017, Unit 1 was no longer permitted to burn coal, with the Unit officially retiring in 2020. Most CCR from the facility is sold for beneficial purposes.

The primary CCR produced is called flyash, and flyash from each boiler is collected and then transported to the ash storage silos (illustrated in Figure 4.1) using pneumatic piping.

The secondary CCR produced is called bottom ash, and bottom ash is initially collected at the bottom of each boiler. Bottom ash has a granular and gravel texture and is dampened with water during collection. Fugitive dust is therefore inherently minimized.

Flyash CCR from the Unit 2 boiler is collected after a sulfur dioxide scrubber, and is also sold for beneficial purposes, but not concrete because of the scrubber process. Flyash that is not sold for beneficial purposes is transported to an on-site permitted landfill, illustrated in Figure 1.3.1. Flyash from Unit 2 that needs to be transported to the landfill is conveyed downward from the storage silos to Pin & Paddle Mixers (illustrated in Figure 4.2), which mix water with the flyash CCR to produce Conditioned CCR for fugitive dust control. This Conditioned CCR is loaded into trucks inside a contained loading zone beneath the storage silos. The trucks then transport the Conditioned CCR to the permitted on-site landfill.

Enclosed trucks transporting CCR off-site follow page 3 of 3 of Procedure No. 004-001 for Fugitive Dust Control, which is attached to this Plan in Section 10. Off-site enclosed trucks are rinsed with water as necessary at the Truck Wash Station illustrated in Figure 4.6.

4.2 MEASURES IN PLACE AT GREC

The Grand River Dam Authority GREC facility utilizes the following CCR Fugitive Dust Control measures:

- **Locating CCR inside an enclosure or partial enclosure**
  An appropriate partial enclosure is located underneath the ash storage silos, as illustrated in Figure 4.1. Pin and Paddle Mixers for mixing in water and thus producing Conditioned CCR are located above the partial enclosure as illustrated in Figures 4.2, 4.3, and 4.4.

- **Operating a water spray or fogging system**

An appropriate water spray system is located at the entrance to the partial enclosure beneath the ash silos, as illustrated in Figure 4.5. A water truck is used to produce wide-pattern water sprays for Fugitive Dust Control on roads and landfill operations, as illustrated in Figure 4.7.

- **Reducing fall distances at material drop points**
  Appropriate loading chutes are utilized for loading trucks as illustrated in Figures 4.8 and 4.9. Dry CCR for off-site sale is loaded in covered trucks using a telescoping chute, equipped with vacuum system and baghouse. An extended loading chute with a flexible panel is used for loading conditioned Ash from Pin & Paddle Mixers.

- **Using wind barriers, compaction, or vegetative covers**
  The CCR landfill has sloped sides that have a vegetative cover on the south and west sides, and is appropriate for the prevailing wind direction, as illustrated in Figure 4.10. The Southern 2/3 of the landfill is currently covered.

- **Establishing and enforcing reduced vehicle speed limits**
  The site speed limit is limited to 15 mph as illustrated in Figure 4.11. The site has armed police officers 24 hours/day that provide security and safety oversight.

- **Paving and sweeping roads**
  Site roads are generally paved, and periodically washed with a water truck, as illustrated in Figure 4.7.

- **Covered trucks transporting CCR**
  Trucks are used for transporting Conditioned CCR to the ash landfill, and water is applied in the Pin & Paddle Mixers to reduce fugitive dust, as illustrated in Figures 4.2, 4.3, and 4.4.

- **Reducing or halting operations during high wind events**
  Operation personnel are instructed to curtail ash landfill operations during extreme high wind events.

- **Applying daily cover**
  A water truck is used to minimize fugitive dust, as illustrated in Figure 4.7, and application of a daily cover is not needed for the circumstances.

- **Applying cover according to closure and post closure plan**
  The completed landfill is covered with layers of clay and topsoil per the landfill requirements, as illustrated in Figure 4.10.

Figure 4.1
Ash Storage Silos with Partially Enclosed Truck Loading Bay

Figure 4.2
Pin & Paddle Mixer
(Preparation of Conditioned CCR)

Figure 4.3
Control Panel for Pin & Paddle Mixer
(Preparation of Conditioned CCR)

Figure 4.4
Interior of Pin & Paddle Mixer for Fugitive Dust Control
(Preparation of Conditioned CCR)

Figure 4.5
Spray Nozzle for Water Mist Curtain for Fugitive Dust Control at Ash Storage Silo Truck Loading Bay

Figure 4.6
Truck Wash Station for Fugitive Dust Control

Figure 4.7
Typical Water Truck for Fugitive Dust Control
John Deere Model 300D; 7,000 gallon capacity
(or comparable)

Figure 4.8
Typical Loading Spout in Truck Loading Bay at Ash Silos; Equipped with vacuum system and baghouse for Fugitive Dust Control

Figure 4.9
Truck Loading Spout for Pin & Paddle Mixer Discharge, extended for Fugitive Dust Control

Figure 4.10
View of Vegetative Cover on West Sloped Side of Ash Landfill

Figure 4.11
Example of posted 15 mph speed limit, with ash storage silos in background

5.0 EMPLACEMENT OF CCR AS CONDITIONED CCR
(40 CFR 257.80 (b)(2))

5.1 DESCRIPTION

Emplacing CCR as conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal but will not result in free liquids.

In lieu of water, a chemical dust suppression agent can be used.

5.2 METHODS UTILIZED AT GREC

During weekly inspections of the ash landfill, inspections for freestanding water on landfill ash are made and corrective measures taken if such is observed.

Conditioned CCR is produced with Pin & Paddle Mixers as described in Section 4.0, illustrated in Figures 4.2, 4.3, and 4.4, and also using truck water sprays as illustrated in Figure 4.7. Water is added in sufficient quantities to minimize fugitive dust and not result in free standing liquids at the ash landfill.

6.0 PROCEDURES TO LOG CITIZEN COMPLAINTS
(40 CFR 257.80 (b)(3))

6.1 DESCRIPTION

Any citizen complaint received by GREC involving a CCR fugitive dust event will be evaluated immediately by GREC management. The Complaint Log is maintained to track complaints and record any remedy or action taken to avoid future occurrence. There were no citizen complaints in 2024.

6.2 CITIZEN COMPLAINT LOG PROCEDURE

- Complaints are forwarded immediately to the Vice President Generation Operations or his designee and will be evaluated as a top priority.
- The Vice President Generation Operations will enter the complaint information in the CCR Fugitive Dust Control Plan Complaint Log.
- The complaint information will be forwarded to the Assistant Manager Operations, Senior Manager O&M, and Vice President Generation Operations.
- When a complaint is resolved, the Complaint Log will be updated with remedy information or action taken to avoid future occurrence.

6.3 CITIZEN COMPLAINT LOG

COMPLAINT DETAILS:	
Received Date/Time:	Date/Time of Occurrence:
Complainant Contact Information:	
Description:	
Received By:	Assigned To:
ACTION TAKEN:	
Description:	

COMPLAINT DETAILS:	
Received Date/Time:	Date/Time of Occurrence:
Complainant Contact Information:	
Description:	
Received By:	Assigned To:
ACTION TAKEN:	
Description:	

COMPLAINT DETAILS:	
Received Date/Time:	Date/Time of Occurrence:
Complainant Contact Information:	
Description:	
Received By:	Assigned To:
ACTION TAKEN:	
Description:	

7.0 ASSESSMENT OF THE EFFECTIVENESS OF THE CONTROL PLAN *(40 CFR 257.80 (b)(4))*

7.1 DESCRIPTION

This CCR Fugitive Dust Control Plan will be reviewed annually for effectiveness. If updates are made, they will be recorded in the Amendment Log in Section 9.2 of this Plan.

Appropriate GREC management staff will perform an annual assessment. Prior to the group performing the assessment, the CCR Plan will be reviewed to identify CCR equipment and relevant issues. Equipment is then inspected for operational readiness and good housekeeping. The CCR landfill will also be inspected for proper condition and relevant records examined. GRDA will 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 (as indicated in 257.80 (b) (6)). If the change is editorial in nature only a mark-up of the change will be made without a Professional Engineer certification

8.0 CCR LANDFILL WEEKLY INSPECTIONS
(40 CFR 257.84)

Incorporated into this CCR Fugitive Dust Control Plan are weekly inspections of the on-site CCR landfill. The primary purpose of the inspection is a safety inspection to examine for any appearance of actual or potential structural weaknesses that have the potential to affect the safety of the landfill. Items to inspect for include are surface cracks both transverse or longitudinal; slides, sinkholes, or depressions; missing vegetative cover; vegetation larger than two (2) inches in diameter; accumulated liquid; and surface discoloration indicating ash discharge from the landfill. The Vice President Generation Operations will appoint a qualified person to perform this weekly inspection, who is familiar with these inspection issues, and who has the authority to initiate prompt corrective actions.

During the weekly inspection, the designated inspector will also observe for excessive fugitive dust, and proper operations to minimize fugitive dust. Corrective measures will be initiated and implemented promptly.

The weekly inspection report will be sent to the Corporate Environmental Compliance Department and retained for a period of five (5) years. Note these weekly reports will be reviewed during formal annual assessments that will be performed by a qualified Professional Engineer.

9.0 AMENDMENTS TO THE PLAN
(40 CFR 257.80 (b)(6))

9.1 DESCRIPTION

This plan is reviewed annually. When updates are made, they shall be logged in the Amendment Log with the date of Amendment, along with a description of the plan change.

9.2 AMENDMENT LOG

Updated information provided below:

October 2017	Minimal administrative changes – updated names/titles
January 2019	Minimal administrative changes – updated names/titles. Updated information regarding Unit 1, updated site map.
February 2019	Minimal administrative changes – updated names/titles.
December 2019	Minimal administrative changes – updated names/title
December 13, 2020	No changes
April 2022	Administrative changes updated names/titles, pictures
March 2024	Minimal administrative changes - updated dates, landfill picture. Re-stamped the plan.
March 2025	Minimal administrative changes – updated verbiage, names/titles

10.0 ATTACHMENTS

Plan Attachments are as follows:

- Procedure No. 004-011, Ash Transport Trucking
- Weekly CCR Landfill Inspection Form

GRAND RIVER DAM AUTHORITY COAL FIRED GENERATING COMPLEX COAL HANDLING DEPARTMENT PROCEDURES	PROCEDURE No.: **004-011**	DATE ORIGINALLY EFFECTIVE: 4/20/09
TITLE: **ASH TRANSPORT TRUCKING**	REVISION No.: One	PAGE No.: 3 of 3

4.0 INSTRUCTIONS

4.1 All OTR inbound ash haul trucks are required to check in at truck scales and confirm empty truck weight.

4.2 All ash haul trucks (both fly ash and bottom ash) will be loaded only by GRDA personnel or unless otherwise directed by GRDA.

4.3 All drivers are responsible to assure the load is properly secured for transport within or off GRDA plantsite in a manner which is environmentally sound to prevent indiscriminate release of the product. Items of concern are, but not limited to:

Closing of tank hatches
Proper securing of tarps
Watering of tarped product (when required due to unsealed tarp design)
Rinsing any spilled ash from transport truck
Watering and securing of tailgates
Observing safe vehicle speeds

4.4 All OTR outbound transport trucks are required to check out at the truck scales and confirm loaded truck weight.

4.5 Positively no transport trucks are allowed within the ash basin area without prior GRDA authorization and only at the direction of GRDA personnel.

4.6 Proper precautions must be adhered to by all drivers to in order to prevent spilling of ash load contents. Any on site spillage must be immediately reported by transport truck driver to GRDA scale house or GRDA operations personnel.

4.7 Normal business hours of scale house operation are from 0600 to 1900 hours. All afterhours drivers will check in at main gate security. On duty security personnel will direct driver to truck scales and coordinate the weighing/loading operation with Coal Handling Department.

GRAND River ENERGY Center

Week 53 - December 30th – January 5th

Weekly CCR Landfill Inspection Form

Inspection for Structural Weakness on GREC CCR Landfill: *The inspector shall inspect for: surface cracks both transverse or longitudinal; slides, sinkholes, or depressions; missing vegetative cover; animal burrows; vegetation larger than two (2) inches in diameter; accumulated liquid; and surface discoloration indicating ash discharge from the landfill.*
Inspection Findings:
Action Taken:

Inspection for Excessive Fugitive Dust and Proper Operations to Minimize Fugitive Dust:
Inspection Findings:
Action Taken:

Inspected by: _____ **Date of Inspection:** _____

Signed: _____

Reviewed By: _____