CCR COMPLIANCE

ANNUAL FUGITIVE DUST CONTROL REPORT

Prepared for:

Louisiana Generating LLC, a subsidiary of NRG
Big Cajun II
10431 Cajun II Road
New Roads, LA 70760

Prepared by:

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Baton Rouge, LA 70809

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1.0 Introduction

On December 19, 2014, the administrator of the U.S. Environmental Protection Agency signed the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities final rule (the Rule). The Rule was published in the Federal Register on April 17, 2015 and became effective on October 19, 2015. The Rule establishes a comprehensive set of requirements for the disposal of CCR in landfills and surface impoundments at coal-fired power plants under Subtitle D of the Resource Conservation and Recovery Act. These requirements include compliance with location restrictions, design criteria, operating criteria, groundwater monitoring and corrective action, and closure and post-closure care aspects. The operating criteria include air criteria specified in Title 40 of the Code of Federal Regulations (CFR) §257.80 to address the potential pollution caused by windblown dust from CCR units.

The Big Cajun II Power Plant (Big Cajun II Plant), operated by Louisiana Generating, LLC (LaGen), a subsidiary of NRG Energy, Inc., is a coal-fired and natural gas fired power plant located in New Roads, Louisiana. The Rule applies to this facility due to the management of CCR that is generated from the combustion of coal at the site. Impoundment units associated with the facility operations include the Fly Ash Basin and Bottom Ash Basin.

According to the Rule, owners or operators of CCR units must adopt measures that will effectively minimize CCR from becoming airborne at the facility by developing and operating in accordance with a Fugitive Dust Control Plan (Plan) with adequate dust control measures. In this regard, a Plan was prepared for the Big Cajun II Plant to comply with the requirements as specified in §257.80(b)(1-7) of the Rule and the Plan was placed in the facility's operating record on October 14, 2015.

As part of the dust control requirements of the CCR Rule, §257.80(c) requires that an Annual Fugitive Dust Control Report be completed that includes the following:

- Description of actions taken to control CCR fugitive dust
- Record of all citizen complaints
- Summary of any corrective actions taken

This document represents the initial Annual Fugitive Dust Control Report for the Big Cajun II Plant.

2.0 Facility Description

2.1 Process Overview

The Big Cajun II Plant is a coal and natural gas fueled electric generating facility located at 10431 Cajun II Road in New Roads, Louisiana. Coal is brought to the Plant via barge on the Mississippi River. Coal is loaded from barges at a dock located to the east of the Plant onto a conveyor belt where it is transported to the coal storage area located just north of the Plant. The coal is used as the primary source of fuel in the facility's Unit 1 and Unit 3. Unit 2 has been converted to natural gas and no longer generates CCR material.

Generally, fly ash and the coarser sand-like bottom ash are removed from the two coal boiler units' combustion exhausts during power generation. Fly ash and bottom ash are transported to the Fly Ash and Bottom Ash Basins. Surface water that accumulates in the Basins is treated through a series of wastewater treatment ponds. Once water has been treated, a pump station moves water from the Secondary Treatment Pond to a permitted Mississippi River discharge point.

Depending on the market demand, fly ash may be sold and hauled offsite for beneficial reuse purposes. The Big Cajun II Plant does not accept waste generated from off-site locations for treatment, storage, or disposal.

2.2 Fugitive Dust Sources

The CCR Rule applies to fugitive dust originating from CCR units, roads, and other CCR management and material handling activities. CCR generated at the Big Cajun II Plant includes fly ash and bottom ash. The following sub-sections provide a description of fugitive dust sources from handling CCR at the Plant. Each of these elements is depicted on **Figure 1**.

2.2.1 Fly Ash Handling

Fly ash is a residue produced by the burning of finely pulverized coal in a high efficiency boiler. Particles of fly ash are fine enough to remain entrained in the flue gas. Fly ash is composed primarily of oxides of silicon, aluminum, calcium, sulfur, and iron. Fly ash is a tan color when it is collected from stack gas and consists of a fine powdery substance with the consistency of talcum powder.

When fly ash mixes with water, the silicon oxide and aluminum oxide components react with its calcium fraction to form a slow hardening cement. The result of the reaction is a hard, structurally stable compound with very low permeability. It is this characteristic that makes fly ash a marketable resource as a cement substitute or additive for a variety of purposes. The Big Cajun II Plant sells a portion of the fly ash generated at its facility for beneficial reuse as a cement additive.

The ash is removed from the flue gas by electrostatic precipitators and is pneumatically transported to two storage silos. From there it can be sold as a pozzolanic material and shipped off site or transported to the Fly Ash Basin for disposal. Each storage silo has a capacity of 3,870 tons and is equipped with a closed system for loading the ash into trucks to be transported. During peak power-generating periods, the production of fly ash may exceed the market demand. During such times, the excess fly ash is hauled by closed trucks to the Fly Ash Basin. At a later date, when the demand for ash exceeds production, the fly ash in the Basin may be removed and sold.

2.2.2 Bottom Ash Handling

Bottom ash is another residue of coal combustion which is generated in the boilers of the power plant. Bottom ash is generated concurrently with fly ash during the combustion of coal. It is formed in the boilers when particles of ash fuse together. The fused particles become too large to remain entrained in the rising flue gas and fall to the bottom of the boilers. Due to their similar origins, bottom ash and fly ash have approximately the same chemical makeup. Bottom ash is medium brown in color and has a sandy texture. Particles of bottom ash vary in diameter, but are approximately the size of coarse sand. The bottom ash from Unit 1 is collected in hoppers at the base of the boiler of Unit 1 and then transported hydraulically (sluiced) through a pipe directly to the Bottom Ash Basin. Bottom ash from Unit 3 is collected in hoppers at the base of the boiler and trucked in a hydrated state to the southwest corner of the Bottom Ash Basin for disposal.

2.2.3 Surface Impoundments

The Fly Ash and Bottom Ash Basins are primarily used for the storage and disposal of CCR at the Big Cajun II Plant. **Figure 1** depicts the layout of the Basins and surrounding area.

Surface water from the Fly Ash Basin is directed by an interior drainage swale to a pipe connection into the Bottom Ash Basin. The Bottom Ash Basin process water and surface water combined with water from the Fly Ash Basin are directed by an interior swale to a weir located at the northeast corner of the Bottom Ash Basin. A 30-inch diameter pipe carries the combined water by gravity flow to the Rainfall Surge Pond. There is a flow control valve between the Bottom Ash Basin and the Rainfall Surge Pond. This pond is the collection point for all the rainfall runoff and wastewater from the facility, coal storage areas, and ash disposal areas. Water from the Rainfall Surge Pond is pumped into the Primary Treatment Pond. Water flows by gravity from the Primary Treatment Pond to the Secondary Treatment Pond. Treated water is pumped from the Secondary Treatment Pond to Louisiana Pollutant Discharge Elimination System (LPDES) Outfall 001 on the Mississippi River. Runoff is removed on a routine basis; however, there will always be some rainfall and transport water in the basins.

2.2.4 Transport Roadways

As described above, trucks transport fly ash and some bottom ash to their respective basins. Within the limits of the Big Cajun II Plant, the trucks travel on paved and unpaved roads. The roadways and haul routes are shown on **Figure 1**.

3.0 Fugitive Dust Control Regulatory Requirements

3.1 CCR Rule Air Criteria

Under the Rule, the owner or operator of a CCR unit must adopt measures that will effectively minimize CCR from becoming airborne at the facility, including fugitive dust originating from CCR units, roads, and other CCR management and material handling activities.

In order to document these measures, the Big Cajun II Plant prepared a Fugitive Dust Control Plan. According to the provisions of §257.80(b) that are applicable to the Big Cajun II Plant, the Plan included the following elements:

- Identification and description of the CCR fugitive dust control measures that will be used to minimize CCR from becoming airborne at the facility, along with an explanation of how the measures selected are applicable and appropriate for site conditions.
- Description of procedures used to log citizen complaints received by the facility involving CCR fugitive dust events.
- Description of procedures to periodically assess the effectiveness of the Plan.

§257.80(b) also has a provision for providing a description of procedures used to emplace CCR as conditioned CCR at CCR landfills. However, since the Big Cajun II Plant's ash basins do not meet the definition of landfills, the provision does not apply.

The Plan will be updated anytime there is a change in conditions that would substantially affect the written Plan.

As part of the dust control requirements of CCR Rule, §257.80(c) requires the owner or operator of a CCR unit to file an Annual Fugitive Dust Control Report. This document represents the initial Annual Fugitive Dust Control Report.

3.2 Other Fugitive Dust Regulatory Requirements

Prior to the promulgation of the Rule, the Big Cajun II Plant has been required by other regulations and permits to minimize and monitor fugitive dust from the site.

3.2.1 Title V Operating Permit

The Big Cajun II Plant is operated according to Title V Operating Permit No. 2260-00012-V5 issued by the Louisiana Department of Environmental Quality. The permit incorporates fugitive dust emission requirements as codified in Louisiana Administrative Code (LAC) 33.III.Chapter 13. The following citations are relevant to fugitive emission restrictions:

- Emissions of particulate matter shall be controlled so that the shade or appearance of the emission is not denser than 20% average opacity, except the emissions may have an average opacity in excess of 20% for not more than one 6 minute period in any 60 consecutive minutes. (§1311.C) All reasonable precautions shall be taken to prevent particulate matter from becoming airborne. (§1305)

3.2.2 Solid Waste Permit

The site operates under Louisiana Department of Environmental Quality (LDEQ) Solid Waste Permit No. P-0108. Based on the nature of the solid waste generated at the Plant, there are no specific applicable provisions for controlling fugitive dust emissions established in the permit.

4.0 Annual Reporting

In accordance with §257.80(c), this Annual Fugitive Dust Control Report includes the following information:

- A description of actions taken to control CCR fugitive dust (Section 5.0)
- A record of all citizen complaints (Section 6.0)
- A summary of any corrective actions taken (Section 7.0)

Subsequent annual reports will be completed one year after the date of the previous annual report. Additionally, as required, each annual report will be placed in the Big Cajun II Plant's operating record per §257.105(g)(2), noticed to the State Director per §257.106(g)(2), and posted to the established publicly accessible internet site per §257.107(g)(2).

5.0 Fugitive Dust Control Practices and Procedures

This section details control measures employed at the Big Cajun II Plant to minimize airborne dust from these sources in accordance with §257.80(b)(1-2) of the CCR Rule.

5.1 Fly Ash Handling

The storage silos are equipped with baghouses to capture dust associated with the transfer of fly ash to the silos in Units 1 and 3. Most of the fly ash is transported using fully enclosed pneumatic tank trucks. A delivery chute is lowered from the base of the silos into the fill opening of the tanker truck. During loading of trucks, the fly ash unloading blower captures dust during the transfer. Emissions from open top trucks are reduced by keeping a light load in the bed of untarped trucks that is not equal to the full capacity of the truck. This allows for available freeboard on the truck bed walls, reducing the amount of dust that is likely to escape out of the bed prior to tarping. After loading is complete, the truck is covered and travels along Plant haul roads to the Fly Ash Basin.

5.2 Bottom Ash Handling

The bottom ash from Unit 1 is collected in hoppers at the base of the boiler of Unit 1 and then transported hydraulically (sluiced) through a pipe directly to the south part of the Bottom Ash Basin. Bottom ash from Unit 3 is collected in hoppers at the base of the boiler and trucked in a hydrated state to the southwest corner of the Bottom Ash Basin for disposal. Sluicing and/or trucking of the bottom ash directly to the Bottom Ash Basin will have virtually no fugitive dust emissions due to the high moisture content of the material.

5.3 Transport Roadways

Paved and unpaved road surfaces internal to the Big Cajun II Plant (refer to **Figure 1**) are watered as necessary to reduce fugitive dust emissions. The amount of time dedicated to watering the roads is a function of the dryness of the surface and is determined through daily observations by facility personnel. The amount of water applied varies seasonally. Roads and parking lots are also periodically swept to reduce potential entrainment of dust. Fugitive dust emissions are further controlled by posting and maintaining a maximum vehicle speed limit of 15 miles per hour within the boundaries of the Plant property.

5.4 Surface Impoundments

Fly ash and occasionally some bottom ash are transported by covered trucks from the facility to the Fly Ash Basin and Bottom Ash Basin, respectively. Fugitive dust is minimized at the ash

disposal Basins by spreading the material as soon as practical after being delivered. Additionally, a water truck regularly circulates to spread water on the internal roadways.

6.0 Record of Citizen Complaints

In accordance with §257.80(b)(3) of the Rule, the Plan outlines the procedure that LaGen follows (as contained in LaGen's Environmental Policies and Procedures Manual) to log citizen complaints involving fugitive dust events at the Big Cajun II Plant and the ash disposal sites. A copy of the complaint form is included in **Attachment A**. Within 24 hours of receiving a citizen complaint, the Plant's environmental coordinator will log the complaint in LaGen's Environmental Management Information System (EMIS) database. The EMIS database will automatically forward notice of the complaint to the Plant manager, LaGen's regional environmental manager, and LaGen's Corporate Environmental Department. LaGen will then conduct a thorough investigation. The results of the investigation will be recorded, entered into the EMIS database, and communicated to the appropriate parties. If the investigation confirms a fugitive dust emission event, LaGen will undertake a root cause analysis to address the source of the excess fugitive dust and will develop a plan to mitigate future occurrences and remediate impacts, as necessary.

Since the Fugitive Dust Control Plan was placed in the facility's operating record in October 2015, no citizen complaints have been received.

7.0 Summary of Corrective Actions

The Big Cajun II Plant is regularly monitored for fugitive dust conditions. Should fugitive dust conditions occur, the date, time, and location of the incident will be recorded on a log, as provided in **Attachment B**. The log will also include the corrective actions taken to reduce the fugitive dust. Copies of the log will be made available to all appropriate supervisors and will be included in the Annual Fugitive Dust Control Report as described in the proceeding section.

Since the Fugitive Dust Control Plan was placed in the Big Cajun II Plant's operating record in October 2015, no actions, outside of the normal dust control measures employed at the Plant, have been required to reduce airborne dust.

8.0 Procedures for Plan Assessments and Amendments

Fugitive dust control practices for each source of CCR fugitive dust are described in the Plan. Based on current monitoring requirements and observations, these control measures have been determined to be effective. The Plan will be periodically reviewed by the Plant's environmental coordinator to ensure full compliance with all fugitive dust control, monitoring, and recordkeeping procedures. During this review, the Plan's effectiveness will be assessed as required per §257.80(b)(4) of the Rule. This review will serve to either confirm the continuing effectiveness of the Plan or will identify sections which require revision/upgrade to reflect any relevant changes in Plant operations, CCR unit aspects, or necessary improvements in fugitive dust control protocols.

Accordingly, when new processes or modifications of existing processes are planned, the Plant's environmental coordinator will evaluate the project for potential changes to the Plan. In accordance with §257.80(b)(6) of the Rule, the Plan will be amended to add any new CCR units or to update any modifications in the operation of existing fugitive dust sources. The amended Plan will be reviewed and recertified by a registered professional engineer and will be placed in the Big Cajun II Plant's operating record as required per §257.105(g)(1). The amended Plan will supersede and replace any prior versions. Availability of the amended Plan will be noticed to the State Director per §257.106(g)(1) and posted to the established publicly accessible internet site per §257.107(g)(1).

A record of Plan reviews/assessments is provided on the first page of the Fugitive Dust Control Plan placed in the facility's operating record in 2015.

Figure

RAINFALL SURGE POND

PRIMARY TREATMENT POND

FLY ASH UNIT

BOTTOM ASH UNIT

STORAGE SILOS

COAL STORAGE

MISSISSIPPI RIVER

CONVEYOR BELT

ACCESS ROAD

SECONDARY TREATMENT POND

BARGE UNLOADING

BOILER NO. 3

BOILER NO. 1

BOILER NO. 2

N

0 800'

GRAPHIC SCALE

REV. NO.	DATE	DESCRIPTION

CB&I Environmental & Infrastructure, Inc.

STATE OF ILLINOIS LICENSED DESIGN FIRM #184004093

BIG CAJUN II
NEW ROADS, LA

FIGURE 1
SITE LAYOUT

DRAWN BY:	BWM	APPROVED BY:	DAM	PROJ. NO.:	1005494026	DATE:	SEPTEMBER 2015

T:\AutoCAD\Projects\BigCajunII\Figures\BCII-SiteLayout.dwg, 11x17

Attachment A

Citizen Complaint Form

Big Cajun II
Dust Complaint Log

Date of complaint:_____ Wind Speed/ Direction:_____/_____
Time of complaint:_____ Weather Conditions:_____

Complainant's name: _____
Complainant's phone number: _____
Complainant's email address: _____

Person filling out complaint log: _____

Description of complaint:

Description of site activities during the time specified in the complaint:

Corrective Actions taken:

Follow-Up:

Attachment B

Corrective Action Log

Big Cajun II
Fugitive Dust Log

Date	Location of Fugitive Dust	Wind Direction	Wind Speed	Corrective Action(s) Taken	Personnel Performing Corrective Action