



**CCR COMPLIANCE
FUGITIVE DUST CONTROL PLAN**

FOR

INDIAN RIVER LANDFILL

PREPARED BY:



Aptim Environmental and Infrastructure, Inc.

Revised Plan Date: November 2017

PREPARED FOR:

**Indian River Power, LLC; a subsidiary of NRG
29416 Power Plant Road
Dagsboro, DE 19939**

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Figure 1 – Facility Layout and Potential CCR Fugitive Dust Sources

Attachment A – Recordkeeping Logs

1.0 Introduction

On December 19, 2014, the administrator of the United States 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. 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.

The Indian River Generating Station (Generating Station), operated by Indian River Power, LLC (NRG) a subsidiary of NRG Energy, Inc., is a coal-fired power plant located in Dagsboro, Delaware. The Rule applies to this facility due to the disposal of CCR that is generated from the combustion of coal at the facility. CCR units associated with the station operations include the Indian River Landfill (Landfill).

This Plan has been prepared to comply with the requirements as specified in §257.80(b)(1-7) of the Rule, including certification by a professional engineer as documented in Section 7.0 of this Plan. Additionally, this Plan will be placed in the Indian River facility's operating record per §257.105(g)(1), noticed to the State Director per §257.106(g)(1), and posted to the publicly accessible internet site per §257.107(g)(1).

2.0 Facility Description

2.1 Process Overview

The Generating Station is an electric generating facility located east of Dagsboro, Delaware on the Indian River. The CCR waste deposited at Indian River consists of three major categories: fly ash, bottom ash, and air emissions control wastes and can contain additional permitted material as approved during permit amendments.

2.1.1 Fly Ash

Fly ash is material that is carried by the exhaust gas out of the combustion chamber because it has a low weight compared to its surface area. Fly ash is removed from the flue gas stream by electrostatic precipitators and transported to the fly ash storage silo. When it is unloaded from the storage silo, it will be mixed with water in order to prevent dust emission and also to aid with compacting efforts during landfilling.

2.1.2 Bottom Ash

Bottom ash is material that collects beneath the combustion chamber, as it is too heavy compared to its surface area to be carried by the flue gas. It is directed to water-impounded hoppers underneath the boiler and is transported to dewatering bins. Trucks haul the bottom ash from the dewatering bins to the Landfill for disposal.

2.1.3 Air Emissions Control Wastes and Other Non-Hazardous Facility Generated Wastes

Air emissions control wastes (byproduct) are products of the dry flue gas desulfurization (FGD) process that scrubs the flue gas of sulfur dioxide. Bag filters collect solids from the FGD system and the solids are conveyed to a storage silo. A chute loads haul trucks that bring the FGD waste to the Landfill. Other non-hazardous facility generated wastes identified in the permit, including grit-blasting media and soils and sediment contaminated with ash removed during cleanup, will also be transported to the Landfill with a haul truck or other appropriate vehicle.

2.2 CCR Fugitive Dust Sources

The Rule applies to fugitive dust originating from CCR units, roads, and other CCR management and material handling activities. CCR generated at the Generating Station includes fly ash, bottom ash, and air emissions control wastes. The following sub-sections provide a description of fugitive dust sources from handling each type of CCR. Each of these elements is highlighted on Figure 1 included with this Plan.

2.2.1 Indian River Landfill Ash Disposal Site

The Landfill is owned and operated by NRG and is located within the property limits of the Generating Station. The ash disposal site has been identified as an existing CCR landfill according to the Rule. CCR materials including fly ash, bottom ash, and FGD wastes are transported by trucks from the station to the ash disposal site where they are dumped and then spread and compacted with a bulldozer.

2.2.2 CCR Waste Handling

CCR waste produced at the Generating Station is conditioned to minimize dust emission during transportation to the Landfill. Water is added to the fly ash at the silo at levels ensuring that the fly ash is suitable for compaction. The solids produced by the FGD process are anticipated to have enough moisture from their generation that they should not require conditioning before transportation. At the time of transportation the bottom ash is removed from dewatering bins. Bottom ash solids are wet, and also have a low surface area compared to their mass and therefore should not require conditioning before transportation. Per the facility's NPDES permit, the industrial wastewater treatment plant effluent/leachate may also be used to condition the ash. This utilization of treated wastewater reduces demand from nearby groundwater wells.

2.2.3 Transport Roadways

As described above, trucks transport conditioned fly ash, bottom ash, and air emissions control wastes to the Landfill. Within the limits of the Generating Station, the trucks travel on paved roads. The paved road transitions to an unpaved surface as the trucks approach the actual operating footprint of the ash disposal site. The disposal trucks do not travel on public roadways to reach the Landfill. The internal roadways and haul routes are shown on Figure 1 of this Plan.

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 owner or operator of the CCR unit must prepare and operate in accordance with a CCR fugitive dust control plan. According to §257.80(b), the Plan must include 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 emplace CCR as conditioned CCR at CCR landfills. (Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal but will not result in free liquids.)
- 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.

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

In addition to the fugitive dust control plan, §257.80(c) requires the owner or operator of a CCR unit to file an annual fugitive dust control report.

3.2 Other Fugitive Dust Regulatory Requirements

Prior to the promulgation of the Rule, Generating Station 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 facility is operated according to Title V Operating Permit No. APC-005/000014. The Title V Operating permit incorporates fugitive dust emission controls.

3.2.2 Solid Waste Permit

The Landfill is operated under Solid Waste Permit No. SW-12/01 issued by the Department of Natural Resources and Environmental Control (DNREC). The disposal site is operated according to the terms in this permit and associated permit application which includes a “Fugitive Dust Control Plan” submitted as part of the Operations Manual with the solid waste permit application. The permit and Fugitive Dust Control Plan include the following requirements related to fugitive emissions at the ash disposal site:

- Conditioning of wastes;
- A water tank truck will be used as necessary to suppress dust on active disposal areas, roadways, and parking areas;
- Use of lower fill elevations during high wind periods;
- Coverage of exposed CCR wastes;
- Dust complaint procedures; and
- Vehicle traffic is limited to 15 miles per hour within the ash disposal site.

4.0 Fugitive Dust Control Practices and Procedures

Potential CCR fugitive dust sources have been identified and described in Section 2.0 of this Plan. This section will detail control measures employed at the facility to minimize airborne dust from these sources in accordance with §257.80(b)(1-2) of the Rule.

4.1 Fly Ash Handling

Fly ash is material that is carried by the exhaust gas out of the combustion chamber because it has a low weight compared to its surface area. Fly ash is removed from the flue gas stream by electrostatic precipitators and transported to the fly ash storage silo. When it is unloaded from the storage silo, it will be mixed with water in order to prevent dust emissions and also to aid with compacting efforts during landfilling. Truck unloading occurs inside of an enclosed bay under the silo. The silo entrance and exit are covered by plastic curtains that prevent dust from escaping. Additionally, a water spray curtain is used during the truck loading operation. Haul trucks cover the ash with a tarp as the ash is transported to the Landfill. Routine visible emissions monitoring will be performed to ensure the effectiveness of the water conditioning and dust control measures.

4.2 Bottom Ash Waste Handling

Bottom ash is material that collects beneath the combustion chamber, as it is too heavy compared to its surface area to be carried by the flue gas. It is directed to water-impounded hoppers underneath the boiler and is transported to dewatering bins. Trucks are loaded in an open bay. Dusting is not expected during the loading process; the dewatering procedures allow for the removal of free liquids but do not dry the ash significantly beyond saturation. Trucks haul the bottom ash from the dewatering bins to the Landfill for disposal. Routine visible emissions monitoring will be performed to ensure the effectiveness of the water conditioning and dust control measures.

4.3 Air Emissions Control Wastes Handling

Air emissions control wastes are byproducts of the dry flue gas desulfurization (FGD) process that scrubs the flue gas of sulfur dioxide. Bag filters collect the FGD solids which are then conveyed to a storage silo. Truck unloading occurs via a chute inside of an enclosed bay under the silo. The silo entrance and exit are covered by plastic curtains that prevent dust from escaping. In addition, a water spray system operates during the truck loading operation. Haul trucks cover the byproduct with a tarp as it is transported to the Landfill. Routine visible emissions monitoring will be performed to ensure the effectiveness of the water conditioning and dust control measures.

4.4 Transport Roadways

Paved and unpaved road surfaces internal to the Landfill (refer to Figure 1) are watered 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 station personnel. The amount of water applied varies seasonally. Chemical binders have not been used at this facility; however, chemical binders may be sprayed upon the active areas to help control dust generation if conditions warrant. Any use of chemical dust control agents will conform to manufacturers' recommendations and all SDS sheet information will be maintained at the Landfill scale office.

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 station property.

4.5 Indian River Landfill Ash Disposal Site

Fly ash, bottom ash, and FGD wastes are transported by truck from the station to the Landfill. Fugitive dust is minimized at the ash disposal site by spreading and compacting the materials with a bulldozer as soon as practical after being delivered (i.e., the freshly dumped materials are not left on the Landfill surface for extended periods of time). Additionally, a water truck regularly circulates to spread water on the internal roadways and the open operating areas of the disposal site. To further prevent fugitive dust, no CCR waste will be left exposed for more than 30 days without receiving additional CCR or 6 inches of compacted operational cover material. Vehicle traffic operating within the disposal site is restricted to a 15-mile-per-hour speed limit.

During high winds, the operator will modify daily activity to minimize wind disturbance. This includes using lower elevation lifts during predicted high wind periods so that the operation is shielded. In the event of uncontrollable wind disturbance, operations will shut down until high winds subside. Refuse vehicles disposing of waste should be equipped with covers or tarps to prevent waste from blowing out of the vehicles.

4.6 Monitoring and Recordkeeping

Ash handling monitoring and recordkeeping will be completed by station personnel or approved contractors. A summary of the recordkeeping is provided below:

Visible emission observations of the three CCR (Fly Ash, Bottom Ash and Byproduct) loading areas, transport route and Landfill will be documented on Log VE-1. A blank copy of Log VE-1 is provided in Appendix A.

Log of road dust suppression details (location of watering, volume of water, timing of watering, etc.) will be kept as part of the facility’s operating record.

The facility will comply with the recordkeeping requirements specified in §257.105(g), the notification requirements specified in §257.106(g), and the internet requirements specified in §257.107(g) as summarized below:

Summary Table of Recordingkeeping Requirements for Fugitive Dust Plan (§257.80(d))	
§257.105(g)	The CCR fugitive dust control plan, and any subsequent amendment of the plan, required by §257.80(b), except that only the most recent control plan must be maintained in the facility’s operating record irrespective of the time requirements specified in paragraph (b) of this section.
§257.106(g)	(1) Provide notification of the availability of the CCR fugitive dust control plan, or any subsequent amendment of the plan, specified under §257.105(g)(1). (2) Provide notification of the availability of the annual CCR fugitive dust control report specified under §257.105(g)(2).
§257.107(g)	(1) The CCR fugitive dust control plan, or any subsequent amendment of the plan, specified under §257.105(g)(1). Except that only the most recent plan must be maintained on the CCR Web site irrespective of the time requirement specified in paragraph (c) of this section. (2) The annual CCR fugitive dust control report specified under §257.105(g)(2).

4.7 Annual Reporting

In accordance with §257.80(c), the station must prepare an annual fugitive dust control report that includes the following information:

- A description of actions taken to control CCR fugitive dust
- A record of all citizen complaints
- A summary of any corrective actions taken

The first annual report must be completed no later than 14 months after placing the initial CCR fugitive dust control plan in the Landfill facility’s operating record. Subsequent annual reports will be completed one year after the date of the initial annual report. Additionally, as required, the annual reports will be placed in the Landfill facility’s operating record per §257.105(g)(2), noticed to the State Director per §257.106(g)(2), and posted to the newly established publicly accessible internet site per §257.107(g)(2).

5.0 Procedures for Citizen Complaints

In accordance with §257.80(b)(3) of the Rule, this section outlines the procedure that NRG follows (as contained in NRG's Environmental Policies and Procedures Manual) to log citizen complaints involving fugitive dust events at the station and the ash disposal site. Within 24 hours of receiving a citizen complaint, the station's environmental coordinator will log the complaint in NRG's Environmental Management Information System (EMIS) database. The EMIS database will automatically forward notice of the complaint to the station manager, NRG's regional environmental manager, and NRG's Corporate Environmental Department. NRG 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, NRG 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.

If the Landfill or Plant receives a dust complaint during normal working hours, the Landfill Manager will evaluate the problem promptly, visit the site of complaint, if necessary, and determine whether the complaint is meritorious. A dust complaint is classified as meritorious when sufficient information is available of the circumstances surrounding the complaint so as to indicate a reasonable association with Landfill operations. The potential for high opacity due to Landfill operations, the visible fraction of coal/ash/waste particulates and/or total dust present, meteorological conditions, and the time elapsed before notification shall all be considered in making this determination. If the Landfill or Plant receives a dust complaint after normal operating hours, the Landfill Manager will contact the citizen the next day during the typical hours of operation to investigate the complaint.

Whether the complaint is meritorious or not, the Landfill Manager will fill out a "Complaint Investigation Report". At a minimum the report will contain the following information:

- (1) The complainant's name.
- (2) The date and time that the complaint was received by the Landfill/Plant and the person who received the complaint at the Plant.
- (3) The date and time the incident occurred.
- (4) If the complainant notified DNREC.
- (5) If DNREC inspected the point of complaint.
- (6) If DNREC notified the Generating Station of the complaint.

- (7) The Plant's investigation, including names, dates, time, location, and merit of complaint.
- (8) The Plant's notification to DNREC including names, dates, times, if applicable.
- (9) The date the dusting incident was settled.
- (10) Any corrective action taken by the Landfill/Plant.
- (11) Any additional comments, correspondence, telephone conversations, laboratory analyses.

6.0 Procedures for Plan Assessments and Amendments

Fugitive dust control practices for each source of CCR fugitive dust are described in Section 4.0 of this Plan. Based on current monitoring requirements and observations, these control measures have been determined to be effective. This Plan will be periodically reviewed by the station's environmental coordinator to ensure full compliance with all fugitive dust control, monitoring, and recordkeeping procedures as outlined herein. 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 station operations, CCR unit aspects, or necessary improvements in fugitive dust control protocols.

Accordingly, when new processes or modifications of existing processes are planned, the station's environmental coordinator will evaluate the project for potential changes to this 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 Generating Station'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 newly established publicly accessible internet site per §257.107(g)(1).


A record of Plan reviews/assessments is provided on the first page of this document, immediately following the Table of Contents.

7.0 Professional Engineer Certification

The undersigned registered professional engineer is familiar with the requirements of §257.80 and has visited and examined the Generating Station and Landfill and has supervised examination of the Generating Station and Landfill by appropriately qualified personnel. The undersigned registered professional engineer attests that this CCR Fugitive Dust Control Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and meets the requirements of §257.80, and that this Plan is adequate for the Generating Station and Landfill. This certification was prepared as required by §257.80(b)(7).

Name of Professional Engineer Richard Southorn, PE, PG, CPSWQ

Company Aptim Environmental & Infrastructure, Inc

Signature: 

Date: Nov. 22, 2017

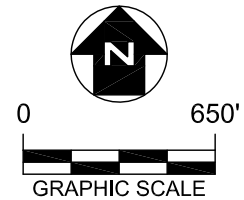
PE Registration State: Delaware

PE Registration Number 20894

Professional Engineer Seal:



Figure



LEGEND

- PAVED TRUCK ROUTE
- UNPAVED TRUCK ROUTE
- TYPICAL ACTIVE FILLING AREA
- CCR WASTE LOADING AREA

NOTES

1. MAXIMUM AREA OF ACTIVE FILLING MAY BE FOUND IN THE FACILITY'S PERMITTED OPERATING PLAN,
2. AREA OF ACTIVE FILLING WILL CHANGE BASED ON INCOMING WASTE VOLUMES AND PERMITTED OPERATIONAL FILL AREAS (I.E. NEWLY DEVELOPED AREAS / EXPANSIONS).
3. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
4. ARIAL PHOTOGRAPH FROM GOOGLE EARTH, IMAGE TAKEN 5/25/2015
5. THE NEED FOR FLEXIBILITY TO ACCOMMODATE ADJUSTMENTS AND MODIFICATIONS IS ANTICIPATED CONSIDERING THE SIZE, COMPLEXITY, AND LIFE OF THE PROJECT.



CB&I Environmental & Infrastructure, Inc.

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**NRG INDIAN RIVER LANDFILL
SUSSEX COUNTY, DE**

**FUGITIVE DUST PLAN
FIGURE 1
CCR TRUCK ROUTES**

DRAWN BY:	KJG	APPROVED BY:	DAM	PROJ. NO.:	1009684058	DATE:	SEPTEMBER 2015
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Attachment A
Recordkeeping Logs

**NRG Indian River Landfill
Complaint Investigation**



1. Complaint Name _____ Date/Time Received _____
Date/Time of Incident _____

2. Received By _____

3. Complaint Notified DNREC YES _____ NO _____ NOT SURE _____

4. DNREC Notified by IRO YES _____ NO _____ Date/Time _____

5. DNREC Inspected Site YES _____ NO _____ Date/Time _____

6. Plant Investigation:
Plant Inspected Site of Complaint YES _____ NO _____ Date/Time _____
Location _____ Meritorious Complaint YES _____ NO _____
Comments _____

7. Plant Notifications:
Plant Environmental Manager: Work Hours 934-3554, On-Call Supervisor (302) 229-4149
Name _____ Date/Time _____

8. Plant's Notification:
DNREC: (302) 739-9403 (Business Hours) / (800) 662-8802 (After Hours)
Name _____ Date/Time _____
Other:
Name _____ Date/Time _____
Date Claim Settled _____

9. Corrective Action _____

Please attach any pertinent correspondence, telecoms, notes, analysis, etc.