

Coal Combustion Residuals Fugitive Dust Control Plan

Virginia Electric and Power Company
Virginia City Hybrid Energy Center and
Curley Hollow Solid Waste Management Facility
St. Paul, Wise County, Virginia

GAI Project Number: C151269.00, Task 001
October 2015



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Prepared for: Dominion Power
5000 Dominion Boulevard
Glen Allen, Virginia 23060-3308

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1.0 Plan Overview

The Curley Hollow Solid Waste Management Facility is a coal combustion residual (CCR) disposal facility (landfill) located at the Virginia City Hybrid Energy Center. Virginia City Hybrid Energy Center is a combination coal, coal refuse, and biofuel fired power generating station (Station) located at 3425 Russell Creek Road in the Town of St. Paul, Wise County, Virginia (VA). The Station is owned and operated by Virginia Electric and Power Company, d/b/a Dominion Virginia Power (Dominion), and can process coal and biomass to generate up to 610 megawatts of electricity per year. The landfill is located immediately adjacent to the power generating facility and is used to dispose of all CCRs produced by the Station.

1.1 Introduction

The United States Environmental Protection Agency's (EPA) CCR rule, which was published on April 17, 2015, and codified in 40 Code of Federal Regulations (CFR) Part 257, Subpart D, requires the development and implementation of a CCR Fugitive Dust Control Plan (Plan) for facilities that own or operate a CCR landfill.

1.2 Plan Description

1.2.1 Purpose and Need

As part of the CCR Rule, facilities managing CCRs are required to create a Plan documenting the measures taken to control fugitive dust emissions from CCRs. This Plan has been prepared to satisfy the EPA requirement of 40 CFR 257.80 and addresses fugitive dust control from all portions of the CCR management process at the Facility, including material handling, transportation, and disposal.

1.2.2 Location and Description of Facilities

CCRs at the Facility are in the form of fly and bed or bottom ash and are produced by the combustion of coal, coal refuse and biofuel in two circulating fluidized bed (CFB) boilers. The fly ash is captured by fabric filter baghouses at each boiler, while bottom ash is collected from the bottom of each boiler. All ash is transported to a single silo that serves both boilers. From here, the fly ash and bottom ash are transported in fully enclosed piping to the ash silos. The CCRs are then mixed with water (conditioned) via a pug mill inside each of the silos. The conditioned CCRs are then loaded into dump trucks and transported from the silos to the landfill for placement and management.

Dominion is committed to the continued implementation of the procedures outlined in this Plan and the prevention of offsite migration of fugitive CCR dust. A copy of this Plan shall be maintained at the Facility or readily accessible at all times and will be available on the Dominion CCR internet site as required by Section 257.107 (g) (1) of the CCR rule. This Plan will also be placed in the Facility's operating record as required by Section 257.105 (g) (1) of the CCR rule.

2.0 CCR Fugitive Dust Sources and Control Measures

2.1 Circulating Fluidized Bed Boilers

The CFB boilers at the station are used to produce steam for electric power generation. Coal is one of the fuel sources used by the boilers. CCRs are a by-product of the steam production.

2.1.1 Fugitive Dust Control Measures at Boilers

CCRs are produced in the boiler in the form of fly ash and bottom ash and are deposited by gravity in a hopper at the boiler. CCRs in the flue gas streams of boiler operations are captured by one of two baghouses which are filtered to reduce emissions into the air. CCRs collected in the baghouse and boiler bottom hoppers are transported via enclosed piping to one of three ash silos.

2.1.2 Rationale for Selected Control Measures

Baghouses are an industry accepted method of capturing CCR fugitive dust from flue gases. The enclosed hoppers and piping used to collect and transfer the CCRs from the boilers to the ash silos virtually eliminate potential for CCR fugitive dust emissions during transfer from the boilers to the ash silos.

2.2 Fly and Bottom Ash Silos

Silos are used at the Station to store CCRs until disposal. It is also here that CCRs are mixed with water to become "conditioned CCRs".

2.2.1 Fugitive Dust Control Measures at Silos

CCR material is contained and fully enclosed within the silos prior to truck loading. Baghouses are located at the vents of the silos to reduce CCR fugitive dust from being emitted to the air. Additionally, the CCRs are wetted and mixed in a pug mill (wet suppression) inside the silos, prior to being loaded into trucks for transportation to the landfill, further reducing potential for CCR fugitive emissions during truck loading.

2.2.2 Rationale for Selected Control Measures

Baghouses are an industry accepted method of capturing CCR fugitive dust from silos vents. The wetting of CCRs with water, as well as their mixing within a pug mill, is an industry and agency accepted practice for suppressing CCR fugitive dust emissions.

2.3 CCR Hauling Operations

CCRs are hauled from the storage silos to the landfill for final placement. The CCRs are hauled over roads that are made of both paved asphalt and finely crushed gravel. Speed limits onsite are restricted to 22 miles per hour and are displayed via appropriate signage. Vehicular traffic on the haul road is restricted within the landfill.

2.3.1 Fugitive Dust Control Measures for Ash Hauling

All loading of dump trucks takes place within a pull-through area at the base of the storage silos, after the CCRs have been conditioned by wet suppression. This combination of loading within a partial enclosure and loading conditioned CCRs significantly reduces the potential for CCR fugitive dust emissions during the loading and hauling process.

A water truck is maintained onsite by the contracted landfill operator. All CCR haul roads are watered daily, except in wet and freezing conditions, to reduce potential for CCR fugitive dust emissions. In addition, open channels along the roadways drain either to the Station's leachate collection pond or stormwater collection system, for treatment of CCRs that might reach the road surface and be washed off by the watering operation.

Speed limits enforced on the premises further reduce potential for CCR fugitive dust emissions. Additionally, trucks leaving the landfill travel through a tire wash station, to trap CCRs that may otherwise be tracked out of the landfill area.

2.3.2 Rationale for Selected Control Measures

The use of partial enclosures and tire washes, the conditioning of CCRs, and the enforcement of speed limits are industry accepted methods of controlling CCR fugitive dust emissions at loading areas.

The use and watering of haul roads are industry accepted methods of controlling fugitive CCR emissions.

2.4 CCR Management in the Landfill

Conditioned CCRs are transferred to and placed in the landfill. The Facility maintains and implements an Operations Manual that includes detailed requirements for CCR placement and compaction as well as landfill cover.

2.4.1 Procedures to Emplace CCR as Conditioned CCR

CCRs are wetted and mixed via pug mills at the storage silos for conditioning, prior to transport and placement in the landfill. CCRs being placed in the landfill are placed as conditioned CCR.

2.4.2 Fugitive Dust Control Measures for Ash Placement in the Landfill

Operations within the landfill are sequenced in such a way that no CCRs are exposed for over 30 days. If at any time an active area of the landfill is expected to be exposed for more than 30 days, temporary soil cover or a crusting agent will be applied to that area as outlined in the Operations Manual and the Virginia Solid Waste Management Regulations. CCRs are also compacted regularly by heavy equipment, in lifts, in accordance with the landfill Operations Manual and the Virginia Solid Waste Management Regulations.

Additionally, trucks leaving the landfill after unloading CCRs first travel through a tire wash, to trap CCRs that may otherwise be tracked offsite.

2.4.3 Rationale for Selected Control Measures

Conditioning CCRs before disposal, compacting CCRs after placement, limiting active landfill surface at any time, applying temporary soil cover to CCRs, and the use of a tire wash are all industry accepted methods of proper CCR disposal. Several of these methods are also described in detail in the landfill's Operating Manual, which also provides for use of crusting agents or watering the exposed faces within the landfill, should it be deemed beneficial.

3.0 Procedure for Citizen Complaints

3.1 Recording Complaints

The Station will maintain a log of citizen complaints related to fugitive CCR dust. A sample of the log form is in Appendix A. A copy of the updated log form will also be included in the Station's Annual CCR Fugitive Dust Control Report.

3.2 Addressing Complaints

The Station's Environmental Representative (or designee) will address citizen complaints as needed. The log form in Appendix A includes a section to document any corrective measures taken to address citizen complaints. A copy of the updated log form for the previous year will also be placed in the Station's Annual CCR Fugitive Dust Control Report.

4.0 Assessment of Plan Effectiveness

The Station will periodically evaluate the effectiveness of its current CCR Fugitive Dust Control Plan. This evaluation will be based on the number and type of citizen complaints received (if any), the effectiveness of the responses to those complaints, as well as any fugitive dust issues observed and recorded during regular weekly general inspections of the CCR facilities. The Plan will be amended if necessary, based on the results of that evaluation.

5.0 Annual CCR Fugitive Dust Control Report

The Facility will compile an Annual CCR Fugitive Dust Control Report as required by 40 CFR 257, Subpart D. This report will include a description of methods taken to control fugitive CCR dust, as well as a record of all citizen complaints and any corrective measures taken. The Virginia Department of Environmental Quality (DEQ) shall be notified about the completion of the annual CCR Fugitive Dust Control Report and the final report placed on Dominion's publicly accessible internet site in accordance with the CCR rule.

6.0 Plan Amendments

This Plan may be amended at any time and the revised Plan will be placed in the Facility's operating record and the Dominion CCR internet site. The Plan must be amended if there is a change in conditions that would substantially affect the written Plan in effect, such as construction and operation of a new CCR unit. Minor alterations to the Plan that do not involve the addition or modification of new CCR sources or controls will not require re-certification by a licensed professional engineer. Any other significant revisions to the Plan will require the Plan to be re-certified. A Plan Revision History for tracking revisions is included in Appendix B.

7.0 Professional Engineer's Plan Certification

I hereby certify that I am familiar with the requirements of 40 CFR 257.80, that the Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and that the Plan meets the requirements of 40 CFR 257.80. This certification does not relieve the owner or operator of the Facility from preparing and fully implementing this Plan in accordance with the requirements 40 CRF 257.80.

Donald J. Spaeder

Printed Name of Professional Engineer

Donald J. Spaeder
Signature of Professional Engineer

048710

Commonwealth of Virginia License Number

10/13/2015

Date



APPENDIX A

Sample Citizen Complaint and Corrective Action Log Form

Sample Citizen Complaint and Corrective Action Log Form					
Date of Complaint	Complainant's Name	Complainant Contact Number/Email	Description of the Complaint	Explanation of Corrective Measure	Date Complaint was Resolved

APPENDIX B

Plan Amendment Log Form

Plan Amendment Log Form	
Date of Amendment	Description of Amendment