

Fugitive Dust Control Plan - J.M. Stuart Station

The Dayton Power and Light Company

This document has been prepared to meet the requirements of 40 CFR Part 257, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule April 17, 2015



October 19, 2015



Professional Engineer Certification

I certify that I have personally reviewed the CCR Fugitive Dust Control Plan for J.M. Stuart Station dated 10/19/2015 and according to my knowledge, information and belief, the plan is complete and meets the requirements of 40 CFR §257.80(b).

John C. Hendrix

Printed Name of Registered Professional Engineer

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Introduction

J.M. Stuart Station (Stuart) is located in a rural area between U.S. Route 52 and the Ohio River in Adams County, Ohio. Stuart has a capacity of approximately 2,300 megawatts and has been in operation since 1970. There are four coal-fired boilers that are equipped with flue gas desulfurization (FGD) systems to control sulfur dioxide and selective catalytic reduction (SCR) systems to control nitrogen oxides.

Coal ash and gypsum are the coal combustion residuals (CCR) managed at the site. The plant currently has five CCR ponds and two active landfill disposal areas for CCR.

Stuart mixes the fly ash (ash that is removed from the air stream by the electrostatic precipitator), with water and wet sluices it to one of three fly ash ponds: Pond 3A; Pond 7; or Pond 10. The fly ash ponds are rotated such that during normal operations, one pond is filling with sluiced fly ash, while another pond is dewatering and the third pond is excavated. Ash that has been dewatered and excavated is moved by truck a short distance to one of two on-site landfills, Landfill 9 or 11.

The wastewater from the fly ash ponds and other wastewater flows through Pond 6 prior to ultimate discharge into the Ohio River.

Stuart also wet sluices the bottom ash (ash from the bottom of the boiler which contains boiler slag and other non-combustible material) to Pond 5, and the wastewater is ultimately discharged to the Ohio River. The bottom ash is dewatered and excavated for use on-site or disposal.

In the FGD systems, the combustion gases containing sulfur dioxide mix with limestone slurry in a reaction vessel. The limestone reacts with the sulfur dioxide creating gypsum (calcium sulfate). The gypsum is dewatered and conveyed to a stack out area. If the gypsum is to be reused, it is then loaded onto a conveyor to be transported to a river barge or it is loaded into trucks. Gypsum that is slated for disposal is loaded into trucks or barges and transported to a landfill. The FGD vessels also generate wastewater that contains residual gypsum which is discharged into an area of Pond 5 that is segregated from the ash. This gypsum material is excavated and landfilled.

Stuart also markets cenospheres which are harvested from the water surface of Pond 6. This material is typically trucked off-site as it is harvested and processed.

Carter Hollow Landfill, which began construction in 2012, is permitted for gypsum and ash disposal. It is anticipated that DP&L will begin using Carter Hollow Landfill in late 2016.

The fugitive dust control measures included in this plan were primarily selected in accordance to the measures contained in the Stuart Title V Permit, air permits-to-install (PTI), and the Carter Hollow Landfill solid waste permit.

On-Site Roadways and Parking Areas

The site shall employ the most appropriate control measures on roadways and parking areas that are sufficient to minimize visible particulate of fugitive dust¹. On-site roadways are roadways within the fence line of Stuart Station located south of U.S. 52, including the roads for truck movement and material hauling around the CCR landfills and impoundments.

CONTROL MEASURES

The Stuart Title V Permit includes measures for the control of fugitive dust from roadways and parking lots generated during operations. These same control measures, included below, are also applicable and appropriate to minimize dust generated during transportation of coal combustion residuals.

Appropriate control measures for paved roads and parking areas include the following best management practices: the use of reduced speed limits, sweeping, watering, chemical stabilization and good housekeeping. The appropriate control measures shall be administered at sufficient frequencies to minimize visible fugitive dust as determined by the site's inspections.

Unpaved roads will be treated using water and the use of chemical stabilization if necessary. The needed frequencies for implementation of the control measures shall be determined by the site's inspections.

If water spray is used to control dust, application rates should be optimized to an amount adequate for controlling the fugitive dust, but not in excessive amounts. A water truck with a spray bar is recommended.

If materials that could generate fugitive dusts are inadvertently deposited onto roadways and/or parking areas from earth moving equipment, erosion, or other means, Stuart shall promptly remove such materials.

During transportation, trucks hauling materials that are likely to become airborne shall be wetted or such materials will be covered.

MONITORING AND RECORDKEEPING REQUIREMENTS

Except as noted below, Stuart will inspect each roadway section (paved and unpaved), and parking area daily during normal operations to determine if control measures are needed. Inspections are not required for a roadway or parking area that is covered in snow and/or ice, or if precipitation is sufficient to prevent visible fugitive dust.

Stuart will maintain inspection records that include the following:

¹ Reference the DP&L J.M. Stuart Generating Station Title V Permit, Minor Modification issued 09/01/05 and Ohio EPA Permit to Install P0107967, effective 8/16/2011.

- the date and reason any required inspection was not performed, including those that were not performed due to snow and/or ice cover or precipitation,
- the date of each inspection where it was determined that a control measure was necessary,
- the dates that control measures were implemented, and
- on a calendar quarter basis, the number of days a control measure was implemented and the total number of days where snow and/or ice cover or precipitation was the reason an inspection was not conducted.

Carter Hollow Landfill Roadways

CONTROL MEASURES

The Stuart air permit-to-install, P0106503, includes requirements to minimize fugitive dust on Carter Hollow Landfill roadways. These control measures are appropriate and applicable to the J.M. Stuart CCR Fugitive Dust Control Plan and are included below.

During periods of active use following completion of construction, Stuart will control fugitive dust from Carter Hollow Landfill (paved) roads through the use of reduced speed limits, sweeping, and/or watering². The appropriate control measures shall be administered at sufficient frequencies to minimize visible fugitive dust as determined by the site's inspections.

If water spray is used to control dust, application rates should be optimized to an amount adequate for controlling the fugitive dust, but not be in excessive amounts. A water truck with a spray bar is recommended.

If materials that could generate fugitive dusts are inadvertently deposited onto roadways from earth moving equipment, erosion, or other means, Stuart shall promptly remove such materials.

During transportation, trucks hauling materials that are likely to become airborne shall be wetted or such materials will be covered.

MONITORING AND RECORDKEEPING REQUIREMENTS

Except as noted below, Stuart will inspect each roadway section daily during periods of active use to determine if control measures are needed. Inspections are not required for a roadway that is covered in snow and/or ice, or if precipitation is sufficient to prevent visible fugitive dust.

Stuart will maintain inspection records for the Carter Hollow Landfill that include the following:

- the date and reason any required inspection was not performed, including those that were not performed due to snow and/or ice cover or precipitation,
- the date of each inspection where it was determined that a control measure was necessary,
- the dates that control measures were implemented, and
- on a calendar quarter basis, the number of days a control measure was implemented; and the total number of days where snow and/or ice cover or precipitation was the reason an inspection was not conducted.

² Reference Ohio EPA Permit to Install P0106503, effective 8/16/2011

Ash Impoundment Fugitive Dust Control Measures

CONTROL MEASURES

At Stuart, fly ash and bottom ash is wet sluiced into an ash pond. There is potential for fugitive dust when the ash is excavated from the pond for landfilling, as well as during periods when the pond water level is lowered and ash is exposed to wind erosion; and winter freezing results in desiccation of any exposed ash and wind generated fugitive dust. The most appropriate control applicable to impoundments is to maintain a sufficient water level to keep ash submerged; however, there will be periods when this is not possible due to maintenance or other repairs. There are few options to control fugitive dust from exposed ash in the ash ponds due to the large surface area of the pond and the limited ability to apply water sprays or chemical suppressants from the roads and other areas surrounding the ponds. When practicable, exposed ash will be wetted, or treated chemically during periods of low pond water level. Additional control measures may be considered if warranted as evidenced by the site's inspections. During winter freezing periods, water levels will be maintained high enough to avoid ash exposure.

If materials that could generate fugitive dusts are inadvertently deposited onto roadways from truck movement, excavating equipment, erosion, or other means, Stuart shall promptly remove such materials.

The implementation of additional control measures for wind erosion shall be determined by the site's inspections.

MONITORING AND RECORDKEEPING REQUIREMENTS

For wind erosion, Stuart will conduct daily inspections of the ash impoundments to determine if additional control measures are needed. Inspections are not required if the areas are covered in snow and/or ice, or if precipitation is sufficient to prevent visible fugitive dust.

Stuart will maintain inspection records for each impoundment that include the following:

- the date and reason any inspection was not performed, including those that were not performed due to snow and/or ice or precipitation
- the date of each inspection where it was determined that a control measure was necessary,
- the dates that control measures were implemented, and
- on a calendar quarter basis, the number of days a control measure was implemented; and the total number of days where snow and/or ice cover or precipitation was the reason an inspection was not conducted.

On-Site Landfill Operations, Landfills 9 and 11

CONTROL MEASURES

The Stuart air permit-to-install, P0106503, includes requirements to minimize fugitive dust generated during operations at Carter Hollow Landfill. Stuart's other landfill operations; Landfill 9 and Landfill 11, are used for the disposal of fly ash. The fly ash, similar to the gypsum waste material disposed of at Carter Hollow Landfill, normally contains sufficient moisture such that dust is minimal. Therefore, the control measures identified in the Carter Hollow Landfill permit, as described below, are appropriate and applicable to Landfills 9 and 11.

Stuart will control fugitive dust from on-site operations through the use of speed reductions and the inherent high moisture content of material. Stuart shall ensure that the material has sufficient moisture content to prevent visible fugitive dust, and will employ reasonably available control measures on all load-in and load-out operations and wind erosion from the surfaces of the landfills when necessary. Examples of wind erosion control measures include: compaction of the material and watering or chemical treatment if necessary, and application of soils for winter cover. If the material needs additional moisture conditioning, moisture should be added at levels to control dust and not impact material compaction.

The implementation of additional control measures for wind erosion shall be determined by the site's inspections.

MONITORING AND RECORDKEEPING REQUIREMENTS

For wind erosion, Stuart will conduct daily inspections of the active areas of the landfills to determine if additional control measures are needed. Inspections are not required if the areas are covered in snow and/or ice, or if precipitation is sufficient to prevent visible fugitive dust.

Stuart will maintain inspection records for each landfill that include the following:

- the date and reason any required inspection was not performed, including those that were not performed due to snow and/or ice or precipitation,
- the date of each inspection where it was determined that a control measure was necessary,
- the dates that control measures were implemented, and
- on a calendar quarter basis, the number of days a landfill was in active use; the number of days a control measure was implemented; and for wind erosion, the total number of days where snow and/or ice cover or precipitation was the reason an inspection was not conducted.

Carter Hollow Landfill Operations

CONTROL MEASURES

The Stuart air permit-to-install, P0106503, includes requirements to minimize fugitive dust generated during operations at Carter Hollow Landfill. These control measures are appropriate and applicable to the J.M. Stuart CCR Fugitive Dust Control Plan and are included below.

During periods of active use following completion of construction, Stuart will control fugitive dust from Carter Hollow Landfill load-in and load-out operations through the use of speed reductions, watering, and natural wind breaks.³ Stuart shall ensure that the material has sufficient moisture content to prevent visible fugitive dust. If the material needs additional moisture conditioning, moisture should be added at levels to control dust and not impact material compaction.

Stuart will also employ reasonably available control measures for wind erosion from the surfaces of the landfill, such as compaction of the material, natural wind breaks, wetting, or chemical treatment, as necessary. No material will be loaded-in or loaded-out during high-wind events.

The needed frequencies of implementation of the control measures shall be determined by the site's inspections.

MONITORING AND RECORDKEEPING REQUIREMENTS

Except as noted below, Stuart will conduct daily inspections of each load-in operation, each load-out operation, and the wind erosion to determine if control measures are needed. Inspections are not required for wind erosion if the landfill surface is covered in snow and/or ice, or if precipitation is sufficient to prevent visible fugitive dust. Inspections of load-in and load-out operations are not necessary if precipitation is sufficient to prevent visible fugitive dust. A required inspection that is not completed due to any of the above mentioned reasons shall be performed as soon as such events have ended.

Stuart will maintain inspection records for the Carter Hollow Landfill that include the following:

- the date and reason any required inspection was not performed, including those that were not performed due to snow and/or ice or precipitation,
- the date of each inspection where it was determined that a control measure was necessary,
- the dates that control measures were implemented, and
- on a calendar quarter basis, the number of days a control measure was implemented; and for wind erosion, the total number of days where snow and/or ice cover or precipitation was the reason an inspection was not conducted. This information is to be maintained separately for load-in operations, load-out operations, and wind erosion.

³ Reference Ohio EPA Permit to Install P0106503, effective 8/16/2011.

Gypsum Material Handling and Storage Piles

The FGD systems at Stuart produce wallboard-quality gypsum as well as gypsum that is used in other reuse applications. Lower quality gypsum or unneeded gypsum becomes waste and is disposed of in a landfill.

The gypsum material from the FGD is dewatered with vacuum filter belts before being conveyed to the stack-out area. The gypsum is stored in temporary active piles until transported for reuse or disposal. If the gypsum is to be reused, it is then loaded onto a conveyor to be transported to a river barge or loaded into trucks. Gypsum that is slated for disposal is loaded into trucks or barges and transported to a landfill.

CONTROL MEASURES

Ohio EPA Permit PTI 07-00567 includes precautionary measures to address fugitive dusts generated by the gypsum material handling system and storage piles. Those measures are applicable and appropriate to include in the J.M. Stuart CCR Fugitive Dust Control Plan.

The gypsum material handling system includes conveyors, a reclaim hopper, shuttle conveyor, and barge loading. Gypsum normally contains enough moisture to minimize dusting; however, there is partial enclosure of the conveyor, and telescoping chutes are used to minimize wind generated dust. If additional dust control measures are necessary, wetting will be used.

During load-in and load-out operations, the following control measures will be used: telescoping chute and maintaining sufficient material moisture content. If additional measures are needed, the drop height will be reduced or the material will be wetted.

To control wind erosion from storage piles, sufficient moisture content will be maintained and the pile height will be controlled.

MONITORING AND RECORDKEEPING REQUIREMENTS

Except as noted below, Stuart will conduct daily inspections of the gypsum handling system and storage piles (load-in and load-out and wind erosion) to determine if control measures are needed. Inspections are not required for wind erosion or for any storage pile activity if the storage pile is covered in snow and/or ice, or if precipitation is sufficient to prevent visible fugitive dust. Inspections of load-in and load-out operations are not necessary if precipitation is sufficient to prevent visible fugitive dust. A required inspection that is not completed due to any of the above mentioned reasons shall be performed as soon as such events have ended.

Stuart will maintain inspection records for the gypsum material handling and storage piles that include the following:

- the date and reason any required inspection was not performed, including those that were not performed due to snow and/or ice or precipitation,
- the date of each inspection where it was determined that a control measure was necessary,
- the dates that control measures were implemented, and
- on a calendar quarter basis, the number of days a control measure was implemented; and for wind erosion, the total number of days where snow and/or ice cover or precipitation was the reason an inspection was not conducted.

Procedure to Log Citizen Complaints

Most citizen complaints are expected to come directly to the station from the citizen. However, a government agency or the media may also make an inquiry to the station on behalf of or as a follow up to a citizen complaint. A complaint may also be made to another office (e.g., Environmental Policy, Corporate Communications, etc.). The following procedure outlines the actions to be taken and the individuals responsible.

1. Complaint received by station personnel:
 - a. The name and contact information of the person or agency making the complaint is to be logged by the environmental air specialist, or other individual as designated by the Plant Manager, along with the date of the complaint, date of the incident that is the source of the complaint and the concern. The J.M. Stuart Station CCR Citizen Complaint Log, Appendix A, may be used for this purpose.
 - b. The complaint is to be forwarded to the most senior environmental air specialist at the site with copies to the Plant Manager and the Director of Strategic Capital Investment.
 - c. The Director of Strategic Capital Investment, with the assistance of the air specialist for the site, will determine what response is to be taken, who will be responsible for completion of any action items, and who will respond to the citizen who made the complaint.
 - d. If appropriate due to the severity or complexity of the complaint, the Director of Strategic Capital Investment will contact the Environmental Policy team for guidance. Media relations and the legal team shall also be notified if the incident could result in media involvement.
 - e. The response to the incident shall be documented in a report along with the date of completion of any mitigation or corrective/preventative actions, and date that the response was communicated to the complainant. The senior environmental air specialist at the site will maintain this documentation for a minimum of five years.
2. Complaint received by another office:
 - a. The individual receiving the complaint is to forward the name and contact information of the person or agency making the complaint to the Plant Manager's office. The Plant Manager will forward the information to the environmental air specialist, or other individual designated by the Plant Manager, in order to maintain the complaint log including the date of the complaint, date of the incident that is the source of the complaint, and the concern. This information is to be documented on the complaint log along with the name of the individual who received the complaint.
 - b. Continue with 1.b., c., d., and e., above.

Periodic Assessments of the Control Plan Effectiveness

At least annually, the senior environmental air specialist will meet with plant management to review the inspection records, citizen or agency complaints including any controls implemented in response to those complaints, and determine if additional control measures or inspections are necessary.

The discussion will also include any work or projects planned or anticipated in the upcoming year that could substantially increase fugitive dust emissions and/or the need to implement additional controls or inspections.

Amendments to the Plan

An amendment of this plan is required 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 amendment must be certified by a professional engineer who certifies that the amendment meets the requirements of §257.80(b).

Annual CCR Fugitive Dust Control Report

Stuart will prepare an annual CCR fugitive dust control report that includes a description of the actions taken by the station to control CCR fugitive dust, a record of all citizen complaints and a summary of any corrective measures taken. Each report will be completed, as defined by §257.80(c) as being placed in the operating record, no later than one year after the date of completing the previous report.⁴

⁴ The first report is to be completed no later than 14 months after placing the initial CCR Fugitive Dust Control Plan in the operating record. The deadline for completing a subsequent report is one year after the date of completing the previous report. The owner or operator has completed the annual CCR fugitive dust control report when it has been placed in the facility's operating record.

Appendix A

J. M. Stuart Station CCR Citizen Complaint Log

Date Received	Date of Incident	Name of Person Receiving Complaint	Name of Complainant	Description of Incident, including Unit(s) Involved	Complainant Contact Information	Name Responsibility Assigned*

*Document response in a separate report. Report to include the following: action items completed; other individuals or agency personnel outside of the company contacted; copy of response to complainant; date(s) response provided to complainant and any other communications to complainant; and any other pertinent information. If a root cause analysis completed, this report could meet this obligation.