J.H. Campbell Electric Generating Complex
17000 Croswell
West Olive, MI
SRN: B2835

Fugitive Dust Control Plan
For
Coal Combustion Residuals (CCR)

Date: 12/15/16
Rev: 01

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1.0 INTRODUCTION

The purpose of this Fugitive Dust Control Plan (FDCP) is to describe the measures adopted at the J.H. Campbell (JHC) electric generating complex for minimizing fugitive dust emissions from coal combustion residual (CCR) handling operations (also known as ash handling operations). The JHC facility is located at 17000 Croswell in West Olive, Michigan and is a coal fired electric generating power plant consisting of three boilers, Units 1, 2, and 3. This plan has been developed in accordance with the CCR regulations stipulated in 40 CFR Part 257.80. The scope of this plan includes active CCR units as well as their corresponding roads, handling and control equipment, and associated activities therein. A site Fugitive Dust Plan Coordinator (FDPC) has been appointed and is responsible for ensuring adequate resources are provided for controlling fugitive dust, as well as implementing the monitoring and recordkeeping requirements of this plan. This FDCP has been certified by a qualified professional engineer and is placed in the facility's CCR operating record and on the Consumers Energy website. The initial FDCP was posted and made available to the public on October 19, 2015. All revisions of this document shall be posted to the operating record and public website, with a notification sent to the Michigan Department of Environmental Quality (MDEQ) within thirty (30) days of that posting.

The CCR facility consists of separate dry and wet ash handling systems and the CCR disposal area is divided into two primary components:

- Wet ash ponds
    - Wet ash, comprised of bottom ash from the main burner area of the boilers, is sluiced by water into the bottom ash ponds
    - Wet ash, comprised of particulate matter (PM) that falls out from the economizer and air heater portions of the Unit 1 and 2 boilers is sluiced to a channel that leads to A-Pond
- Dry ash disposal facility (i.e. landfill).
    - Dry fly ash (DFA) from Units 1, 2, and 3 and Economizer ash from Unit 3 is conveyed to the dry ash silos
    - DFA consists of coal ash that has been collected from the pulse jet fabric filters (PJFF) from each boiler, which are used as the PM control devices for the boiler units
    - DFA is either sold for beneficial re-use (dependent upon ash characteristics) or disposed of in the on-site landfill.
    - The dry ash disposal facility is a permitted landfill and includes two (2) leachate contact water retention ponds that cover an area of approximately five (5) acres.

The appropriate control activities selected for the site are based on good engineering practices that were developed in accordance with Michigan's Fugitive Dust Regulations under Act 451 of 1994, Rule 324.5524, as required by the site's Renewable Operating Permit and the Engineering Plans for ponds A-K (2015, operating license 9446) and landfill cells 1-7 (1996, construction permit 0299) as required for solid waste disposal licensing under MDEQ. The following sections outline the FDCP.

2.0 CCR OPERATIONS

2.1 DFA HANDLING SYSTEM

The DFA handling system consists of a pneumatic collection system that transfers the DFA from the collection hoppers to storage silos. The ash handling system is comprised of four (4) transfer tanks,

vacuum and pressure conveying systems, three (3) ash disposal silos (A,B, and C) and three (3) ash sales silos (operated by a third party). From the PJFF dust collection hoppers, the DFA is pneumatically conveyed through hard piping under vacuum through filter separators to transfer tanks. The DFA is then pneumatically pressure transferred to either the disposal silos (A, B, or C) or the ash sales silos. PM emissions from the transfer process and tank displacement are controlled by bin vent filters. The DFA is held in the disposal storage silos until transferred to the on-site licensed landfill, or in the ash sales silos until shipped off-site for beneficial re-use. Silo B or A may also be used as a sales silo. The DFA evacuation system is not operated unless the equipment and control systems are installed and operating properly.

2.2 Dry Fly Ash Landfill Operations

2.2.1 *SILO OPERATION/TRUCK LOADING*

From disposal Silos A, B, or C, the DFA is conditioned with water and/or other approved suppressant. Silos A and B are equipped with a fogging system that may be utilized during the truck loading as needed to control fugitive PM. Proper conditioning of the DFA with water and/or suppressant is to achieve a moisture content that will prevent wind dispersal and provide proper stability characteristics for the landfill, but will not result in free liquids. A vacuum fan is located on the mixer floor of the silos, which draws PM from the mixing activity as well near the loading chute. The air/dust mix is discharged back into the controlled storage silo. The truck loading station shall not be operated unless adequate PM emission controls are employed. Any ash spillage shall be cleaned up and disposed of properly to minimize track-out. The following operational controls are also in place:

- The appropriate moisture characteristics shall be maintained during the truck loading process.
- Transport truck bodies will be maintained in good condition and properly closed to prevent leakage.
- Truck bodies will be filled in a manner that minimizes fugitive emissions during transport (minimize exposed peaks from top of truck bed rail).
- Transport operations will be suspended if the current conditions indicate that operations cannot be conducted in a controlled manner.

DFA may also be hauled off-site for beneficial re-use from Silo B, A, and the ash sales facility silos. The haul trucks are pneumatically loaded from the silos through a chute that is gasket sealed to the truck hatch, which is equipped with a vacuum fan to recover displacement air and send back into the silo. The contractor is responsible for cleaning up any spills that may occur during the loading process.

2.2.2 *ASH - PLACEMENT AND STORAGE*

Conditioned ash is placed in the active landfill cell by haul trucks and further wetted as required to minimize dusting during spreading by bulldozer. The conditioned ash piles are to be flattened and compacted as they are deposited, utilizing water as necessary. A bulldozer may also be used for shaping the piles/slopes. All dumping, dozing, and excavating activities are visually monitored for dusting and

activities are suspended if there is excessive dusting or when there are exceptionally high wind speeds. The following operational controls are utilized for ash placement and storage:

- Active areas will be limited to approximately five (5) acres in size. When a work area expands beyond this limit, the procedures for inactive work areas will be implemented.

- Water application will be the primary means of fugitive dust control on active areas. Water may be applied by water truck, water cannon, or irrigation system.

- Commercial dust control additives may be used subject to review and approval by Consumers Energy and the MDEQ.

- Ash dozing, loading, unloading and placement will be suspended when the current conditions indicate that such activities cannot be conducted in a controlled manner.

- Where possible, active areas will be located to take advantage of protective berms to reduce wind velocity over the active area.

- Bottom ash may be applied over compacted fly ash as a temporary measure to control fugitive dust.

The following general procedures are in place for fugitive dust control of inactive cell areas:

- Inactive areas are formerly active areas that will be inactive for three (3) months or more.

- Fugitive dust control will be provided for inactive areas through means such as irrigation, bottom ash, straw mat, or vegetative cover installation, stabilization and maintenance.

- After an area becomes inactive, then the entire area is wetted and covered with straw matting which is then staked into the surface. When dry, the area then forms a crust which lowers potential for wind erosion and fugitive emissions.

2.3 *Wet Ash - Bottom Ash Handling*

The wet ash handling system consists of a conveying system and the active ash ponds labeled "A," "Units 1-2 Bottom Ash Ponds," and "Unit 3 Bottom Ash Ponds." Bottom ash from all three boilers is water sluiced to the corresponding bottom ash pond. Ash from the Units 1 and 2 economizers and air heaters is pulled from the associated hoppers and is discharged to a ditch that leads to A-Pond. The overflow of the bottom ash ponds discharges into A-Pond. From A-Pond, the effluent water travels through a channel, the recirculation pond, and then eventually is discharged through an NPDES permitted outfall (002A) into the Pigeon River. The ash ponds are generally in a wet condition and do not usually require active fugitive dust control; however, the plant has the ability to switch which ponds the wet CCR is sent to as a fugitive dust control measure in the event that one of the ponds is dry. The Units 1 and 2 bottom ash ponds do have irrigation control available for wetting if necessary.

Solids from the bottom ash ponds are sold for beneficial reuse or are placed in the licensed landfill (can be used for cover). These solids may be pushed out of the pond with a bulldozer, or removed using a long-armed excavator, into a pile for de-watering prior to transferring into haul trucks for transport to

landfill or re-use destination. The ash is kept in a wet condition during this transfer activity. Activities may be suspended in high wind conditions and the site will wet the material if it becomes dry. Measures to control fugitive dust from the roads surrounding the ponds are addressed in the next section.

2.4 ROADS

Fugitive PM emissions may be generated from trucks and other heavy equipment traveling on the site haul roads and entering/exiting the site. A water truck is used to wet roads as needed to minimize fugitive PM emissions from truck travel on the site roadways. Routinely accessed un-paved roadways have been improved with an aggregate cover (21AA) in order to minimize dusting and track-out. There is a site wide speed limit of 25 mph on non-paved roads to minimize PM generation.

3.0 MONITORING/RECORDKEEPING

3.1 MONITORING

The entire CCR system is monitored through visual checks of process equipment and the corresponding particulate matter control devices. The following monitoring is conducted to ensure conformance to the previously stated operational controls:

- All alarms from the dry fly ash collection system bin vent filters shall be responded to promptly.

- Daily:
    - The transfer tank bin vent filter exhaust and the vacuum pump exhaust breather shall be inspected for signs of dust and the ash equipment building and the transfer tanks shall be inspected for signs of fly ash leaks
    - With the DFA system in operation, all pressure piping from the transfer tanks to the valve located on the Unit 3 and Units 1&2 ash trestle shall be inspected
    - With the DFA system in operation, the vacuum piping from the PM control devices to the transfer tanks shall be inspected
    - With the DFA system in operation, all pressure piping from the point at which the piping exits the Unit 3 and Units 1&2 ash trestle to the point it enters the ash silos shall be inspected
    - All PM control device exhaust stacks shall be monitored for visible emissions

- Twice per week, all pressure piping from the transfer tank to the ash sales facility shall be inspected.

- Weekly, pressure gauge differential readings for the particulate matter control devices shall be recorded.

- Results of all inspections shall be recorded. If PM is visible from any vacuum or pressure piping, the maintenance department shall be promptly notified and a maintenance request notification shall be submitted and the FDPC shall be notified. The site maintains spare parts for routine repairs of the control and monitoring equipment.

The following control measures are utilized for the landfill operations:

- Active landfill cell areas will be visually inspected daily to determine if the ash surface requires moisture to prevent fugitive dust formation.
- Records of all dust inspections will be retained.
- If water application is indicated by the inspection, water will be applied at a rate sufficient to control dust emissions.
- A fugitive dust record is maintained that includes events of visible emissions that are observed reaching the landfill or site boundary, as well as of suspended activities. The date, cause and corrective action taken shall be logged relative to suspended activities.
- Fugitive dust control techniques and/or activities which are used for any of the various site activities to control fugitive dust are documented.

3.2 RECORDKEEPING

The following records will be retained for a period of at least five (5) years:

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

4.0 CITIZEN COMPLAINTS

All complaints, concerns and/or inquires that result in an action being taken shall be documented in the site External Communication Log. Any complaint will be acted upon through internal communication procedures. Environmental Services and Legal shall be notified of any citizen complaint regarding CCR fugitive dust. In accordance with the CCR regulation, the complaint log and resultant actions will be summarized in the annual report.

5.0 PLAN ASSESSMENTS/AMENDMENTS

The FDCP will be audited utilizing Consumers Energy Compliance Assurance guidance once per year, coordinated by the site FDPC in order to periodically assess the effectiveness of the control plan. Results of the audit shall be reported to site management, Environmental Services, and legal counsel as necessary.

This FDCP may be amended at any time provided that revisions are logged and the revised plan is placed in the facility's operating record. The FDPC is responsible for amending the written plan whenever there is a change in site conditions that would substantially affect the written plan in effect. All amendments to the fugitive dust control plan must be certified by a qualified professional engineer. A notice shall be sent to the MDEQ (Waste Division) within 30 days of when the plan is revised.

6.0 ANNUAL REPORTING

The FDPC will prepare an annual CCR fugitive dust control report that includes a description of the actions taken by plant personnel or contractors to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective actions taken. The report shall be reviewed by site management, Environmental Services, and Legal prior to posting to the operating record. The first annual report is due no later than 14 months after placing the plan in the facility's operating record and

subsequent plans shall be completed one year after the date of posting the previous report. A notice will be sent to MDEQ (Waste Division) within 30 days of posting the annual report.

7.0 CERTIFICATIONS

CCR Fugitive Dust Plan, Professional Engineer Certification:
By means of this certification, I attest that I am familiar with the requirements of provisions of 40 CFR Part 257.80, that I or my designated agent have visited and examined the facility, that this CCR FDP has been prepared in accordance with good engineering practices, including consideration of applicable industry standards, and with the requirements of this Part, that procedures for required fugitive dust minimization activities, monitoring, and reporting have been established and that the Plan is adequate for the facility.

Kathryn M. Cunningham — 44447
Professional Engineer — Registration Number (MI)

Professional Engineer (Signature) — 12/15/16 — Date of Plan Certification:

CCR Fugitive Dust Plan Management Approval:
This Plan is certified as being prepared in accordance with good engineering practices. Thus, this Plan has the full approval of Consumers Energy Company Management. I am at a level of sufficient authority to commit the necessary resources to implement this Plan as described. I have appointed the following representative as the Fugitive Dust Plan Coordinator: Kevin D. Starken

Neil J. Dziedzic — 15 DEC 2016 — Date
Plant Business Manager

8.0 REVISION HISTORY

Revision Number	Date of Revision	Reason(s) for Revision
0	10/13/15	Original Edition
1	12/15/16	Updated after AQCS on-line and BC Cobb Plant closure