

MONROE PLANT ORDER	Subject: Control of Fugitive Dust and Petroleum Coke Handling Malfunction Abatement Plan	Page 1 of 10	Number: EV-20
	Written: K. Johnson – Environmental Engineer <i>Kelly Johnson</i>	Date: <i>11/7/13</i>	Original Date: 08/13/07
	Approved: B. Rice – Plant Director <i>B. Rice</i>	Date: <i>11/24/13</i>	Rev: 7

VERIFY CURRENT VERSION ON MONROE WEBSITE PRIOR TO USE – UNCONTROLLED WHEN PRINTED

1.0 Purpose

The purpose of this order is to specify the requirements and to assign responsibility for fugitive dust control and reporting procedures at Monroe Power Plant.

2.0 Scope

This order applies to all potential sources of fugitive dust, including roads and lots, open areas, storage piles, construction, demolition, material handling operations, including vessel unloading, and rail and vehicle traffic at the site.

3.0 Definitions

Fugitive Dust – Particulate matter which is generated from indoor processes, activities, or operations, and which is emitted in the outer air through building openings and general exhaust ventilation, except stacks. The term also means particulate matter which is emitted into the outer air from outdoor processes, activities, or operations due to forces of the wind or humans' activities.

Uncontrolled Fugitive Dust – Emissions that would occur prior to the application of any emission control devices or measures.

4.0 Requirements

Section 5524 of MI Public Act 451, as amended, requires that fugitive dust be controlled so that any fugitive dust source regulated under this section shall not cause or allow the emission of fugitive dust from any road, lot, or storage pile, including any material handling activity at a storage pile, that has an opacity greater than 5%, or from any other fugitive dust source that has an opacity greater than 20%. Opacity is determined by Observation Method 9(d), as performed by a Qualified Observer. The rule, further, requires that each facility significantly reduce uncontrolled fugitive dust emissions by application of reasonably available control technology.

5.0 Responsibilities

5.1 The Plant Director is responsible for air quality control and for meeting the requirements of Section 5524 of MI Public Act 451, as amended.

- 5.2 The Fuel Systems Manager is responsible for implementing the fugitive dust control and reporting procedures that apply to the coal, limestone, petroleum coke (PetCoke) and other bulk materials piles outside and open to the weather, the Monroe Power Plant (see Figure 1) and the Monroe On-site Ash Disposal Facility (see Figure 1), and unpaved areas in the portions of the plant under Fuel Systems' control, as specified in this order. In addition, Fuel Systems is responsible for providing water wagons for the remainder of the plant, upon request, and for providing and applying dust suppressant on unpaved plant and On-site Fly Ash Basin roads as the need is identified. Fuel Systems is also responsible for maintaining dust control on paved roads & parking lots.
- 5.3 The Environmental Projects Plant Manager is responsible for implementing the Fugitive Dust Control Program as it pertains to areas under, or directly impacted by, construction of the FGD systems, and other construction projects under his control, and traffic related thereto.
- 5.4 The Reduced Emissions Fuel (REF) Plant Manager is responsible for implementing the Fugitive Dust Control Program as it pertains to the area and equipment related to the REF facility & process. This includes the provisions contained in Permit-to-Install (PTI) 27-13.
- 5.5 The Flue Gas Desulfurization (FGD) Supervising Operator is responsible for monitoring the operation of the wheel wash water circulating system. This includes monitoring and responding to system alarms.

6.0 Control Procedures

All control measures in this section shall be applied at least at the stated frequencies, application rates, and dilution ratios, where appropriate except when freezing conditions exist or as otherwise specified. All controls employed will be logged in Fuel Systems Daily Shift Log in PlantView.

6.1 Paved Travel Surfaces

- 6.1.1 The speed limit on all paved travel surfaces shall be posted and enforced at 15 mph, or less as posted.
- 6.1.2 All paved roads and parking lots shall be water-flushed, vacuum-swept, or wet broom swept at monthly intervals, at a minimum, when freezing is not of concern. Water-flushing will be accomplished by using wash down hoses with nozzles set to high-volume droplet spray or the plant's water wagon using copious amounts of water. Additional control measures shall be taken as necessary to control fugitive dust emissions.

6.2 Unpaved Travel Surfaces

- 6.2.1 The speed limit on all unpaved travel surfaces shall be posted, and enforced, at 15 mph, or less as posted.
- 6.2.2 All unpaved roads shall be sprayed with suppressants at least four times per year, or as needed at a greater frequency. Unpaved roads are typically treated with *Dustabate* dust suppressant.
- 6.2.3 Unpaved lots shall be sprayed with suppressants at a rate and intensity equivalent to unpaved roads.
- 6.2.4 Additional control measures shall be taken as necessary to control fugitive dust emissions. Water sprays are to be used on unpaved surfaces as needed.

6.3 Exposed Areas and Storage Piles

This will apply to all storage piles and other material piles as they are developed, as well as unpaved and paved surfaces.

6.3.1 The following shall be utilized:

- 1. To best insure the efficient use of dust suppressant, water and other dust control measures, Monroe Power Plant makes use of DTE's Environmental Management and Resources staff meteorologist to provide wind and precipitation data and forecasts.
- 2. All storage piles (inactive piles) shall be configured and sealed with dust suppressant as necessary to minimize fugitive dust emissions.
- 3. To maintain a surface-moisture content on coal piles, they shall be watered daily by use of the plant's water spray system and/or the plant's water wagon when freezing conditions are not present, AND expected rainfall for the day is less than 0.01 inch, and operator observation indicates a potential for generation of dust. A water wagon and a water truck are provided for this purpose. The spray system includes 16 water cannons. This system is designed to deliver 600 gpm at 200 psi. Each cannon will be operated for no less than two minutes per day. This will result in an average daily equivalent of rainfall on the coal piles which level agrees with EPA's consultants' recommended level of rainfall necessary to preclude fugitive emissions.

4. To maintain a surface-moisture content on the PetCoke storage pile, it shall be watered daily by use of the PetCoke water cannons and/or the plant's water wagon when freezing conditions are not present AND expected rainfall for the day is less than 0.01 inch. Cannons will be operated for no less than two minutes per day. During daily observation, if operator observes conditions with a potential for generation of dust, cannons will be operated more frequently. If water addition does not achieve adequate dust control, Dustabate can be applied manually using the Dustabate tanker truck to seal the pile. Benetech BT-668 can also be administered manually as a dust suppressant.
5. All mobile equipment exhaust shall be directed upward, to preclude creation of fugitive dust by blowing exhaust gas into or across dust-containing materials (e.g., coal, PetCoke, limestone, fly ash, etc.)
6. All excessive spillage around the perimeter of transfer houses will be removed within 48 hours.
7. The On-site fly ash basin filled areas and other open areas will be controlled by vegetation. On-site driving surfaces will be sprayed with dust suppressant as described in 6.2.3, above.
8. The dry flyash handling facility shall also be treated with water and dust suppressant as described in 6.2.3, above.
9. Other open areas identified on the site plan will be vegetated or sprayed with dust suppressant.

6.3.2 Additional control measures shall be taken as necessary to control fugitive dust emissions.

6.4 Materials Handling

6.4.1 Belt surfactant sprays (including *BeneTech BT-668* & *FoamKleen*) and other water spray systems will be utilized to minimize material exposure to wind during loading operations. This includes coal, limestone & gypsum handling operations. Coordinated use of spray and surfactant systems allows portions of the systems to be removed from service for maintenance activities. Some of the systems may be unavailable during winter months while weather conditions could result in freezing temperatures.

- 6.4.2 Vessel unloading is to an enclosed receiving hopper. Unloading shall be performed in a manner to control the production of fugitive dust. Controls may include abeyance of unloading during periods of high winds, as determined by observation of dust production in excess of limits defined in Section 4.0 (above), during unloading.
- 6.4.3 Tire washing for Gypsum transport and PetCoke delivery trucks will be used as necessary to control dust, except during periods of freezing weather and equipment maintenance.
- 6.4.4 All vehicles transporting bulk loads off site shall comply with Section 324.5524(3)(d) of the MI Natural Resources & Environmental Protection Act which requires covers over solid loads that may generate dust and that leaks of liquid be prevented.
- 6.4.5 Rail unloading is via an enclosed rotary dumper serviced by a dust collector.
- 6.4.6 All coal conveyors will be enclosed on at least three sides, except CV-C4 & R-2, which are situated so close to the ground that enclosing is not possible. Dust from coal is controlled by dust suppressant. MDEQ Permit-to-Install (PTI) #23-11 requirements do not apply to CV-C4 as EU-TRANSFERHS-S1 consists of coal handling activity taking place in the existing Transfer House as outlined in the MDNRE Fact Sheet/Staff Report on that PTI.
- 6.4.7 PetCoke material storage and handling procedures vary based on stages of project implementation and are identified in Attachment A.
- 6.4.8 All fly ash that is stored on site will be transported wet via pipeline for disposal at the "On-Site" basin, or dry through fully sealed pneumatic tubes to an off-site location.
- 6.4.9 PTI #27-13 includes an enhanced fuel blending project for Monroe Power Plant. Should this project be implemented, the dust collectors in the Cascades Room (DC1 through DC6) require replacement with new dust collectors which meet permit requirements. If and when the dust collectors in that area are replaced due to the fuel blending project, the vent stacks for the dust collectors must be installed so that the exhaust vents are pointing vertically upwards.

6.4.10 The REF process is serviced by various dust control devices (dust collectors, bin vent filters, etc.) as outlined in PTI #27-13. Dust control in the roadways and surfaces in the area is the responsibility of Fuel Systems. The surfaces are included in the plant's dust control procedures. Any releases of coal (treated or untreated) and solid sorbent are cleaned up as necessary and are the responsibility of the REF Plant Manager.

6.5 Construction Activities

- 6.5.1 Roads and vehicle staging, turning and loading areas that are formed of compacted granular material (e.g., ash, sand, limestone, etc.) shall be evaluated daily by the Environmental Project Plant Manager, or his delegate, in light of expected traffic load, weather conditions and road surface.
- 6.5.2 The Environmental Project Plant Manager, or his delegate, shall request dust suppressant measures from Fuel Systems, as may be appropriate, consistent with 6.2 and 6.3 above.
- 6.5.3 During stack demolition, measures will be taken to ensure that dust is controlled from additional truck traffic (water sprays, wheel wash, enclosures, etc.). In addition, work on the stack, including crushing and dropping concrete will be done in a manner to minimize fugitive dust. Sprays and a sand base inside the stack at the bottom of the stack will aid in reduction of fugitive dust. Additional measures will be taken as necessary. The environmental group will periodically inspect the area to ensure that there is sufficient dust control. In addition to measures taken to control dust, DTE Electric Company will notify the MDEQ at the commencement of stack demolition work, at the commencement of stack concrete demolition and at the conclusion of the project.
- 6.5.4 Concrete generated from the demolition of the stacks may be kept on site for reuse. Concrete may be crushed to different sizes for various applications. This process may be performed by a vendor with a portable concrete crushing operation. Should an outside party be brought on site to perform such a task, the party must have a valid air permit for the operation performed. The vendor and all associated subcontractors, if applicable, must follow all provisions of that air permit as well as all air permits for Monroe Power Plant and this plan. Dust must be controlled using methods including, but not limited to water sprays & enclosures.

6.6 Reporting Procedures

- 6.6.1 Documentation logs of all activities specified under Sec. 6, Control Procedures of this Order shall be readily accessible at the Plant, for all fly ash process activities, for a period of five (5) years.

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6.6.2 The documentation shall be entered onto a Fuel Systems Daily Shift Log in PlantView by Fuel Systems Operations.

6.6.3 An entry will be made in the Fuel Systems Daily Shift Log in PlantView for each control activity specified in Sec. 6, Control Procedures. Any additional control measures taken on a given day will also be documented.

7.0 Malfunction Abatement Plan

7.1 Purpose

This Malfunction Abatement Plan (MAP) has been prepared to meet the requirements of the Permit to Install (PTI) No. 27-13 issued by the State of Michigan for petroleum coke (PetCoke) material handling at the Monroe Power Plant. This permit requires Monroe Power Plant to implement and maintain all process and emission control equipment as specified in a MAP approved by the MDEQ – Air Quality Division. This Malfunction Abatement Plan has been prepared by DTE Electric Company accordance with Rule 911 of the Michigan Air Pollution Act (Part 55 of Michigan Act 451).

7.2 Scope

The temporary PetCoke handling consists of a storage pile and a ground-level hopper/conveyer system (the plant’s emergency reclaim system). The material is delivered to the facility by truck to the storage pile. The material is manually fed onto the plant’s conveying system by the use of front end loaders, end dump trucks, and/or scrapers.

7.3 Definitions

None

7.4 Responsibilities

See Section 5.0 Responsibilities above.

7.5 Procedures and Corrective Actions

7.5.1 Daily Inspections

PetCoke pile will be monitored daily by non-certified visible emission observations. Records of emissions will be maintained in the Daily Shift Log in PlantView. If water spray is inadequate, further procedures identified in Section 6.3.1 above will be implemented as necessary.

7.5.2 Wheel Wash

Wheel wash circulating pump operation is monitored by the FGD control room. If water levels are low, an alarm is triggered and a journeyman is dispatched to inspect and either add more water or perform necessary maintenance on circulating pump. The wheel wash is operated from April 1 – November 1 to avoid freezing temperatures.

7.5.3 Reclaim Hopper and Conveyor

If a failure occurs and the reclaim hopper and conveyor can no longer feed the coal into the plant, any PetCoke accumulated on the grizzly bars will be removed and returned to the PetCoke storage pile. The PetCoke pile will continue to be managed per Section 7.5.1. If an extended outage (7 days or more) is needed to return the conveyance system to service and weather conditions exhibit the potential for fugitive dust, the pile can be sealed using Dustabate to further prevent any potential fugitive dust issues.

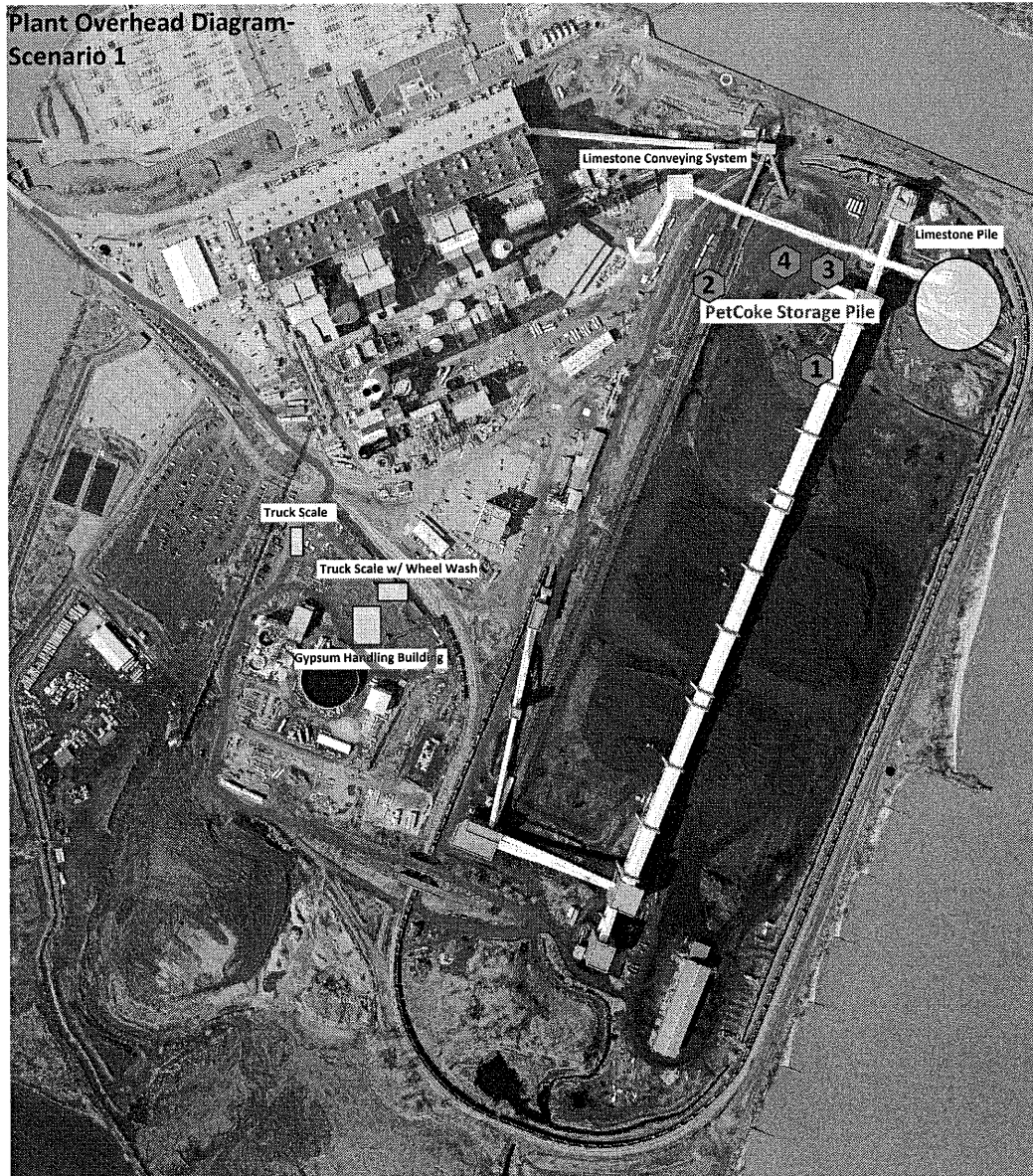
8.0 Revision History

Revision No.	Reviewed by:	Changes
		Original Document
0		Revised to update controls
1		Updated to include electronic log
2		Updated to include new permit requirements
3		Updated to include stack demo requirements (6.5.3)
4		Updated 6.4.7 & 6.4.9 to include requirements of new air permits (Permit-to-Install 93-09A). Updated 6.5.3 to include activities related to upcoming demolition of the old 3-4 stack.
5		Updated 6.4.7 & 6.4.9 to include requirements of new air permits (Permit-to-Install 93-09A). Updated 6.5.3 to include activities related to upcoming demolition of the old 3-4 stack.
6	B. Marietta	Updated 6.4.7 & 6.4.9 to include requirements of new air permits (Permit-to-Install 93-09A). Updated 6.5.3 to include activities related to upcoming demolition of the old 3-4 stack.
7	K. Johnson	Added references to PetCoke storage piles throughout; updated responsibilities to include FGD SO; updated PTI numbers; added PetCoke storage pile handling to 6.3.1 bullet 4 and flyash handling facility to 6.3.1 bullet 8; updated suppressants used in 6.4.1; added 6.4.7 regarding PetCoke material handling systems; added PetCoke MAP.

Attachment A

Scenario 1:

Before conveying equipment is brought onsite, PetCoke will be stored at the northwest corner of the coal pile storage area. The pile will be supplied via truck delivery following the route identified in "Plant Overhead Diagram: Scenario 1". The material will be loaded into the plant's emergency reclaim system identified on the drawing using front end loaders, end dump trucks, and/or scrapers. The material will be carried up a ramp to the reclaim hopper where it is offloaded onto grizzly bars that feed the plant's main conveyance system. The storage pile will contain between 5 and 10 thousand tons of PetCoke at a given time. Photos of the storage area are also attached as described below. Locations are identified in and are labeled in the overhead diagram.



Scenario 2:

Temporary feeders and conveying equipment will be installed at the southwest corner of the coal pile storage area. The pile will be supplied via truck delivery following the route identified in "Plant Overhead Diagram: Scenario 2". The material will be loaded into feed hoppers using front end loaders. The hopper will feed two conveyors and a chute that transfers the material to CV-C4 where it is added to the existing fuel stream and fed to the plant. The temporary conveyors will be utilizing canvas/rubber coverings to control material transfer points. The storage pile will contain around 20 thousand tons of PetCoke at any given time. Photos of the storage area are also attached as described below. Locations are identified in and are labeled in the overhead diagram.

