Fugitive Dust Control Plan –
Coal Combustion Residual (CCR)
TCEQ Registration Application

Twin Oaks Power Generating Station
Robertson County, Texas

January 12, 2022

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1.0 Introduction

The following Fugitive Dust Control Plan is intended to fulfill the requirements of 30 TAC §352.801 and Coal Combustion Residual Rule §257.80 (Air Criteria). This document also provides a written plan to minimize fugitive dust emissions from onsite coal combustion residual (CCR) sources. In accordance with §257.80(b) the following describes control measures, documentation of citizen complaints, and the periodic assessment and amendment of the Fugitive Dust Control Plan.

This plan does not replace or supersede permitted authorizations onsite; the plan is in addition to existing plans currently employed for the reduction of CCR fugitive dust emissions.

2.0 Fugitive Dust Emission Sources

The ash by-products generated at this facility are cementitious due to the limestone injection process utilized during the combustion of the lignite fuel source. The injection of ground limestone increases the calcium content of the ash by-products improving the disposal and transport characteristics and lowering the potential for fugitive dust emissions throughout the disposal process. The following describes identified areas within the facility that have the potential to generate CCR fugitive dust emissions.

2.1 Bed Ash Concrete Bunker(s)

Bed (or bottom) ash is generated at the facility as a combustion by-product of the lignite fuel source. The bed ash generally consists of sand to gravel sized solids that are discharged in a moist form by a Submersible Scraper Conveyor (SSC) system into concrete bunker(s) adjacent to each boiler block of the facility. The bed ash is discharged into the bunkers in a moistened state. The bunkers are actively monitored while the bed ash is removed using front-end loaders (FEL) and then placed into dump trucks for transport and either sold for offsite use or disposed of in the adjacent utility landfill. The bed ash has high moisture content and fugitive dust from transport processes is inherently low.

2.2 Fly Ash Silo(s)

Fly ash is another combustion by-product generated at the facility. Fly ash is collected as dry powder from the bag-house filtration unit and stored in enclosed concrete silos. The fly ash is either sold or landfilled onsite. For resource recovery, the fly ash is loaded via lowered chute equipped with a de-dust blower (or vacuum) into over the highway dry bulk pneumatic trailers. Loading activities are contained in a partially enclosed bay below the day hopper.

Fly ash to be landfilled is moisture conditioned (moisture content of approximately 25 to 30 percent) by an enclosed pug mill, drop loaded and then transported to the disposal site by dump trucks.

Because of the loading processes employed for highway trucks, and the moisture conditioning of the fly ash prior to transport to the landfill, the fugitive dust generated is inherently low.

2.3 Roadways

2.3.1 Unpaved Roadways

The primary means of transporting ash by-product to the landfill is via a haul road, with an approximate length of ½ mile. The haul road consists generally of crushed aggregate material. Haul road fugitive dust emissions may be generated by the disturbance of CCR dust (from spillage) caused by moving traffic or extremely high wind conditions. Controlling haul road dust via wet suppression is important for employee safety, equipment maintenance and protecting the air quality of the area.

2.3.2 Paved Roadways

Concrete or hot mix asphaltic (HMA) concrete pavement is utilized around the facility. Fugitive dust emissions may be generated by the disturbance of CCR dust (from spillage) caused by moving traffic or extremely high wind conditions. Fugitive dust emissions are controlled via wet suppression and routine sweeping.

2.4 CCR Landfill

Ash by-products are disposed of at an onsite landfill facility. As discussed previously, the by-products (bed and fly-ash) are transported to the landfill either in a moistened (bed ash) or moisture conditioned (fly-ash) state. By-products are placed and spread into thin lifts (approximately eight [8] to 12 inches) by equipment and compacted. The ash by-products generated at this facility are cementitious with an elevated calcium content (direct injection of ground limestone into the furnace) that becomes extremely hard once cured. The fugitive dust generated by the hardened ash by-product(s) after placement at the landfill is inherently low. Access roadways on the landfill may degrade with heavy traffic, allowing for dust emission.

3.0 Fugitive Dust Control Methods

Wet suppression or mechanical application of water is the predominate and most effective method of suppressing and preventing fugitive dust at this facility. Application of water is dependent on ambient conditions (e.g., rainfall, humidity, temperature), activities occurring in the areas (e.g., vehicle traffic) and other factors. Conditions are monitored throughout the day and adjustments are made in dust suppression activities based on visible emissions and maintaining a safe work environment.

3.1 Bed Ash Bunker(s)

Bed (or bottom) ash is moistened through processes controlled inside the facility prior to being deposited (free fall height typically less than 10 feet) in the bed ash bunker adjacent to the boiler unit. Material is loaded into dump trucks from the concrete-walled hopper while in a moistened condition (no free liquid present) via a front-end loader (FEL) and then and sold for offsite use or transported to the landfill. Free-fall height of the ash is minimized (less than 10 feet) as much as possible during loading procedures. Because of the moistened state (moisture content of approximately 30 percent) of the bed ash and reduced speed limit (to minimize spillage in transit), the generation of fugitive dust from the transport vehicle is inherently low. The concrete bunker provides protection from wind and subsequent drying of the bottom ash. Furthermore, the bunker location at the facility and construction protects against wind dispersion of material. Because of the moistened state of the bed ash, no additional wet suppression of dust is required and fugitive emissions are inherently low.

The current methods employed are appropriate for site and operational conditions to deter CCR fugitive dust emissions.

3.2 Fly Ash Silo(s)

3.2.1 Merchant/Resale Truck Loading

Fly ash in dry powder form is conveyed and stored in enclosed silos at the facility. Fly ash to be located in merchant trucks are loaded within a partially enclosed bay below the storage bunker silo and loaded via a drop chute. The drop chute consists of two (2) components, an inner chute which dispenses the fly-ash into the trailer and an outer chute

which is under vacuum during loading procedures by a de-dust blower system. Loading will not occur until the de-dusting blower system has been activated. During the loading process, the operator maintains constant observation of the loading activities. If spillage were to occur, the material would be immediately cleaned and properly disposed of prior to vehicle movement. Prior to departure from the silo bay, trailer bin lids are latched and secured.

The current methods employed appear appropriate for site and operational conditions to deter CCR fugitive dust emissions.

3.2.2 Onsite Disposal Truck Loading

Fly ash that is not sold is processed in an enclosed pug mill mixer. The fly ash is moisture conditioned until a moisture content of 25 to 30 percent (no free liquid) is achieved. Once thoroughly mixed, the moisture conditioned fly ash is loaded via drop gate from the pug mill directly into a transport vehicle. Free fall of moisture conditioned fly ash varies dependent on the type of truck being loaded. However, because of the moistened state, dust emissions (if any) are significantly reduced. This loading procedure is conducted in the same partially enclosed bay below the silo where highway trucks are loaded. Because of the moisture conditioned state of the fly ash and reduced speed limit (to minimize spillage in transit), the generation of fugitive dust from the transport vehicle is inherently low.

The current methods employed appear appropriate for site and operational conditions to deter CCR fugitive dust emissions.

3.3 Roadways

3.3.1 Unpaved Roadways

The primary means to control fugitive dust along unpaved roadways (including the haul road) is by wet suppression, road maintenance (including additional crushed aggregate surface course), and grading. In addition, speed limits along the haul road are posted (maximum of 30 mph) and reduced as needed. The haul road is watered periodically during periods of low use and as needed during high traffic, hot or dry conditions. Facility

personnel monitor for visible dust emissions and apply control methods as appropriate for the situation, ambient conditions, and safety

3.3.2 Paved Roadways

The primary means to control fugitive dust along paved roadways includes wet suppression and periodic cleaning via an onsite street sweeper or similar. Because the transport of ash by-product in open bed trucks is primarily restricted to unpaved areas, the occurrence of fugitive emissions is reduced on paved roadways. Where ash by-product is handled, loaded or transported on paved roadways, wet suppression is used in conjunction with routine sweeping and cleanup activities. Facility personnel monitor for visible dust emissions and apply control methods as appropriate for the situation, ambient conditions, and safety.

3.4 CCR Landfill

Ash by-product disposed at the landfill is moisture conditioned or in a moistened state (no free water) during placement. Transported material is immediately spread into thin lifts with an approximate thickness of eight (8) to 12 inches. This material is then compacted with a smooth drum roller with the application of water to accelerate the curing process. As mentioned in subsequent sections, the ash by-product is cementitious and cures to a concrete like material. The unique properties of the ash by-product upon curing into a concrete like structure significantly reduce the possibility of fugitive emissions being generated after placement in the landfill by wind or similar ambient conditions.

Landfill access roadways are monitored during ash by-product transport activities for visible dust emissions. Wet suppression is the primary and most effective means to suppress and control fugitive dust emissions. Application of water is dependent on ambient conditions (e.g., rainfall, humidity, temperature), activities occurring in the areas (e.g., vehicle traffic) and other factors. Conditions are monitored throughout the day and adjustments are made in dust suppression activities based on visible emissions and maintaining a safe work environment.

4.0 Excess Fugitive Dust Complaints

In the instance that excess CCR fugitive dust extends beyond the facility's property line or, if fugitive dust is determined, via inspection, to have settled on a property adjacent to the facility as a result of activities occurring on the facility, the following should apply.

Onsite personnel shall determine the effectiveness of additional wet suppression, or the reduction or cessation of activities as deemed necessary until meteorological or site conditions improve should excess fugitive dust result after the implementation of the preventative measures outlined in this plan.

4.1 Citizen Complaint(s) – Procedures

In the event that excess CCR fugitive dust results in a citizen complaint received by the facility owner, the following steps should be followed:

1. Notification of complaint to the onsite facility Environmental Manager;
2. Environmental Manager shall document:
    a. Date of excess fugitive dust reported by citizen
    b. Date complaint received;
    c. Contact information of citizen making complaint; and
    d. Log into facility operating record (CCR Fugitive Dust Control Plan).
3. Review of Fugitive Dust Control Plan
    a. Amend or modify if necessary.

5.0 Plan Maintenance

5.1 Plan Maintenance and Assessment

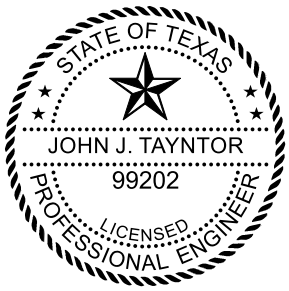
The facility Environmental Manager (or similar official) should review this plan every six (6) months or as necessary as new sources of fugitive dust emissions are observed, suppression systems are modified, or effectiveness of primary suppression systems altered. If new sources of fugitive dust emissions are noted and not presented herein, the Fugitive Dust Control Plan should be amended to reflect changes in the operation or primary suppression means employed.

Amendments made to the Fugitive Dust Control Plan should be reviewed and certified by a Professional Engineer prior to placement in the facility's operating record. The facility may add amendments as necessary.

6.0 Fugitive Dust Control Plan Certification

By means of this certification, (i) I am familiar with the requirements of 30 TAC §352.801 and CCR Rule §257.80 (Air Criteria), (ii) I or my agent has visited and examined the facility, (iii) the Fugitive Dust Control Plan has been prepared in accordance with §257.80(b), (iv) procedures for amendment or modification of the Fugitive Dust Control Plan have been established; and (v) the Fugitive Dust Control Plan is currently adequate for the facility and processes described herein.

By: 



Dated: January 12, 2022

TBPE Firm No. F16721