SCS ENGINEERS

COAL COMBUSTION RESIDUALS (CCR) FUGITIVE DUST CONTROL PLAN

SANDY CREEK ENERGY STATION
RIESEL, TEXAS

Prepared for:

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1.0 INTRODUCTION – REQUIREMENTS AND FACILITY BACKGROUND

This coal combustion residuals (CCR) fugitive dust control plan (Plan) has been prepared for the Sandy Creek Energy Station (Facility), a coal-fired power plant located in Riesel, McLennan County, Texas.

This Plan is required by federal rules which establish standards for the disposal of CCR in landfills and surface impoundments. The Facility is subject to this rule since it includes a CCR landfill. 40 CFR §257.80(a) states that, "The owner/operator of a CCR landfill … must adopt measures that will effectively minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from CCR units, roads, and other CCR management and material handling activities." Specifically, 40 CFR §257.80(b) requires that the owner or operator of a CCR unit prepare and operate under a CCR fugitive dust control plan as specified in 40 CFR §257.80(b)(1) through (7). This Plan has been prepared to meet these requirements.

1.1 Facility Background

The Facility is a coal-fired power station. Non-combustible residues (bottom ash) fall from the boiler into quench water and are continuously removed using an enclosed conveyor system, and conveyed from a chute onto a concrete pad with a concrete three-sided enclosure outside of the power house. Ash from the boiler's economizer is mixed with this bottom ash. Combustible residues from the boiler, as well as residues from various pollution control measures, are referred to as fly ash in this Plan. The fly ash is conveyed via a closed system to a silo, where a pin mixer adds moisture, and the moistened ash is dropped from two silo chutes and loaded into trucks which transfer it to the Facility's on-site CCR landfill. For the purposes of this Plan, the CCR landfill means the CCR landfill located on the Facility's site. Alternately, the fly ash, if sold, may be loaded dry from the silo via an enclosed, telescoping system, into enclosed trucks for transport off of the Facility property. A small portion of pre-conditioned fly ash also drops out through a Spray Dry Absorber (SDA) into a three-sided enclosed area and is also periodically loaded into trucks via a backhoe for disposal at the CCR landfill.

In summary, bottom ash, fly ash which is not sold, as well as other Facility-generated waste types (including cooling water screenings, waste coal, and coal mill rejects) are landfilled at the CCR landfill. An unpaved road leads from the main Facility grounds to the CCR landfill. At this landfill, the fly ash and bottom ash is compacted and landfilled for disposal.

The Facility uses a sweeper to clean paved areas and a water truck to suppress dust generation on unpaved areas including roads.

Based on the areas where CCR materials are generated and then disposed of, the operations described above are divided into four main operational groupings for the purposes of this Plan as follows:

- **Bottom Ash Fugitive Dust Control Measures** - Bottom ash conveyance into storage area and storage area management/housekeeping;

- **Fly Ash Fugitive Dust Control Measures** - Fly ash conveyance from the spray-dry absorber (SDA) and fly ash silo into either open transfer trucks for disposal at the Facility's landfill; or fly ash that is sold, directly into enclosed tank trucks from the silo;
- **Ash Transport Fugitive Dust Control Measures** - Conveyance of CCR materials in trucks to the CCR landfill and measures to prevent fugitive dust from enclosed tank trucks when the fly ash is being sold; and
- **CCR Landfill Fugitive Dust Control Measures** - Ash disposal (landfilling process), as well as consideration of wind erosion impacts from the landfill.

2.0 ENGINEER'S CERTIFICATION

Consistent with §257.80(b)(7), I, the undersigned, hereby certify that this Plan meets the requirements of 40 CFR §257.80.

12/18/18

David J. Mezzacappa
Texas P.E. #82028
SCS Engineers – TBPE Reg. # F-3407

3.0 RECORDKEEPING AND NOTIFICATION REQUIREMENTS

Per §257.80(b)(5), this Plan was originally completed by October 19, 2015. It is our understanding that this Plan will continue to be placed in the Facility's operating records as required by §257.105(g)(1) and on the owner/operator publically accessible website (online) per §257.107(g).

If there are any material changes in the Facility's operating conditions that would substantially affect this Plan, this Plan will be amended to address such conditions. Per §257.80(b)(6), the Plan may be amended at any time provided the revised Plan (recertified by a qualified professional engineer) is placed in the Facility's operating record per the requirements of §257.105(g)(1) and at the Facility's CCR website per §257.107(g).

Per §257.105(g), at all times, the most recent, full version of the Plan and any amendments will be contained in the Facility's operating records and at the Facility's CCR website. Lastly, per the notification requirements in §257.106(g), the State Director will be notified when information has been placed in the Facility's operating records and at the Facility's CCR website. At this time, the Texas Commission on Environmental Quality (TCEQ), the State director for the Facility has indicated that the notifications required under §257.106(g) should be in the form of emails to the following address: ccrnotify@TCEQ.Texas.gov. TCEQ has also advised that this email address will need to be verified prior to use.

3.1 Annual CCR Fugitive Dust Control Report

Per §257.80(c), although not a direct part of this Plan, an annual CCR fugitive dust control report must be prepared that includes:

- A description of the actions taken by the owner or operator to control CCR fugitive dust;
- A record of all citizen complaints; and
- A summary of any corrective measures taken.

The initial annual CCR fugitive dust control report was completed within 14 months of the original Plan's being placed into the Facility's operating records, as required by (§257.105(g)(2)). The deadline for completing a subsequent reports remains one year after the date of completing the previous report.

4.0 FUGITIVE DUST CONTROL MEASURES (§257.80)(b)(1)

This Plan describes the CCR fugitive dust control measures the owner or operator will use to minimize CCR from becoming airborne at the Facility, as required by §257.80(b)(1). Four main operational groupings at this Facility identified in Section 1.1 of this Plan are included below in different subsections.

4.1 Bottom Ash Fugitive Dust Control Measures

Bottom ash includes the conveyance of bottom ash (including a small portion of ash from the economizer) into the storage area adjacent to the power house and storage area management/housekeeping. Dust control measures that may be used for this portion of the Facility's operation are as follows:

- Bottom ash residues are inside the power house/enclosed system prior to being dropped from a chute into the storage area;
- Bottom ash is wetted from the quench water and effectively pre-conditioned prior to being dropped into the storage area;
- The character of the bottom ash is that it consists of larger particles and is less prone to creating fugitive dust;
- The wetted bottom ash is deposited onto a concrete pad and into an area surrounded by tall concrete walls on three sides, thereby creating a wind shield;
- Bottom ash is routinely removed before it dries from the enclosure thereby minimizing concerns with dust at this location; and
- The enclosure area is periodically cleaned with water, thereby further minimizing concerns with CCR dust becoming airborne.

4.2 Fly Ash Fugitive Dust Control Measures

As noted previously, fly ash operations for this Plan include fly ash conveyance through the SDA and fly ash silo. The fly ash from the SDA is discharged out the bottom of the SDA onto a concrete pad. The fly ash from the baghouse is discharged out of the bottom of the storage silo into transfer trucks (either Facility open trucks to be brought to the on-site landfill or into enclosed tank trucks if sold for conveyance off of the Facility property).

Dust control measures used for this portion of the Facility's operation include the following:

- Ash from the SDA is discharged on a concrete pad inside of an area comprised of several perimeter barriers. The ash as it is loaded into a front end loader and then onto an awaiting transfer truck. This area is periodically sprayed with water and cleaned to control dust that may accumulate in the immediate drop area.
- Equipment from the boiler and other equipment through to the storage silo is completely enclosed;
- Fly ash conveyed to open trucks for landfilling from the silo has moisture added via a pug

mill prior to dropping the fly ash into the transfer trucks when the ash is to be landfilled;
- A chute at the bottom of the silo also decreases the fall distance of the fly ash into the transfer trucks;
- Trucks are loaded from the bottom of the silo in a tunnel (partially enclosed);
- As noted in the next section, an enclosed system is used at the silo to convey dry fly ash into enclosed trucks when the ash is sold for transport from the Facility; and
- The area around the silo and silo interior are sprayed with water periodically and cleaned to control dust from ash that may accumulate around the immediate silo area.

4.3 Ash Transport Fugitive Dust Control Measures

Both bottom ash and fly ash are conveyed to either the CCR landfill via open trucks; or fly ash may be sold for beneficial reuse into enclosed tank trucks for transport off-site. This subsection of the Plan encompasses this operation from placing these types of ash into the trucks through the material arriving at the CCR landfill or leaving the Facility. Dust control measures used for this portion of the Facility's operation include the following:

Conveyance into Trucks for Disposal at the Facility

- Bottom ash is placed into the trucks while still wet so that dust control will not be an issue;
- Fly ash from the silo falls from a chute into the transfer trucks to lower the fall distance;
- Fly ash from the silo is conditioned with water in the pug mill prior to dropping it into the transfer truck;
- All open transfer trucks are high-walled and are not overfilled to minimize dust emissions;
- The size and moisture content of the bottom ash particles, when loaded into transfer trucks for hauling to the CCR landfill, reduces the potential for creating fugitive dust;
- The road to the CCR landfill is graded periodically;
- A maximum 10 mile-per-hour speed limit is observed on the road to the CCR landfill (signage is currently in-place); and
- The road to the CCR landfill is periodically watered, as needed, to control dust.

Conveyance into Enclosed Tank Trucks to be Hauled Off-Site

- Where fly ash is to be sold, it is dropped dry through a telescoping chute from the silo (does not go through the pug mill) into an enclosed tank truck;
- Excess fly ash is re-entrained by an outer chute and transported back into the silo.
- To minimize accumulation within the chute, the operator terminates the ash drop cycle and allows the excess ash to be re-entrained into the other chute and sent back to the silo; and
- For any small amounts of ash that accumulate around the seal of the tank truck, this is managed through the use of a gantry on-site that the driver of the tank truck can use to sweep off the top of the truck.
- In mid 2019, a fly ash wash pad will be installed that will allow drivers to wash down the tanks prior to leaving the site.

4.4 CCR Landfill Fugitive Dust Control Measures

This subsection covers the landfilling of CCR materials at the CCR landfill. Dust control measures used for this portion of the Facility's operation include the following:

- The CCR material is conditioned as it is landfilled as discussed in Section 5;
- The conditioned ash will be compacted during placement;
- Facility roads to the CCR landfill will be watered as necessary to minimize airborne dust;
- The maximum size of certain CCR landfill areas will be controlled (active area no larger than one acre, exposed disposal surfaces no larger than five acres in accordance with New Source Review Permit 70861, Condition 25); and
- The nature of the fly ash is such that when moistened a harder top layer develops which is utilized as necessary to decrease dust generation due to wind erosion.
- A protective cover layer of soil or bottom ash over fly ash is also used on the CRR landfill to minimize wind erosion.

5.0 LANDFILLING CCR AS CONDITIONED CCR (§257.80)(b)(2)

Since the Facility has a CCR landfill, per §257.80(b)(2), this Plan includes in this section the procedures to emplace CCR into the landfill as "conditioned CCR." For the purposes of this Plan, conditioned CCR means wetting the CCR with water, to a moisture content that will prevent wind dispersal but not result in the generation of free liquids.

Bottom ash generated at the Facility is pre-conditioned with moisture to enable transportation and landfilling in its as-generated state. Though the need is not anticipated, moisture could be added to the bottom ash at the CCR landfill using the Facility's water truck to minimize fugitive CCR dust from becoming airborne if necessary.

Fly ash generated at the Facility is pre-conditioned with moisture prior to its release into transfer trucks (whether at the SDA or at the silo) or transferred directly, and within a closed system, into enclosed tank trucks when sold. If additional conditioning of the fly ash is required, it will be performed at the CCR landfill to minimize the potential for fugitive dust generation and assist in achieving an efficient landfilled density, or the transfer procedures into the enclosed tank trucks for conveyance off-site modified. The fly ash to be landfilled will be hauled to the disposal area, where water will be added using a spreader bar or other suitable equipment. The water will be added to the ash in a way that minimizes the generation of fugitive dust. The moisture addition will be to a level which will prevent wind dispersal during landfilling (emplacement), but not so much that free liquids are generated.

6.0 TRACKING CITIZEN COMPLAINTS (§257.80)(b)(3)

As set forth in 40 CFR §257.80(b)(3), this Plan includes procedures for logging citizen complaints to the owner or operator involving CCR fugitive dust events at the Facility.

When Facility personnel receive any citizen complaints involving CCR dust events, or when TCEQ or EPA inspect the site based upon complaints involving CCR fugitive dust events, the complaint will be logged and the log maintained by the plant Compliance Manager. The information to be documented will include the following:

- Date and time of complaint;
- Date and time of alleged CCR fugitive dust-related issue being noted;
- Description of alleged event;
- Copies of any pertinent documents provided by the TCEQ or EPA, and
- Name of Facility person logging the complaint.

This information will be included in the annual reports as described in Section 3.1 of this Plan.

7.0 ASSESSMENT OF EFFECTIVENESS (§257.80)(b)(4)

Per §257.80(b)(4), the Plan must describe procedures used by the owner or operator to periodically assess the Plan's effectiveness. The following measures will be used to assess the Plan's effectiveness:

- The number of on-site observations of CCR airborne dust;
- On-site incidents of CCR airborne dust, as recorded by the owner or operator. This will include date, time, description of the incident and the related corrective measures;
- The number and character of any complaints received relating to CCR fugitive dust; and
- The results of any regulatory inspections related to CCR fugitive dust.

The required annual reports will also act as a benchmark for the effectiveness of the Plan, the measures included in it, and Facility personnel's implementation of these measures.