

CCR Fugitive Dust Control Plan

TS Power Plant

Eureka County, Nevada

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TS Power Plant

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October, 2015

Rev. 0

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1. Introduction

This Fugitive Dust Control Plan (Plan) is being prepared to document procedures that are undertaken at TS Power Plant to minimize Coal Combustion Residue (CCR) from becoming airborne. Included in this plan are procedures related to:

- Management of CCR from the combustion process to temporary storage in silo's or impoundments near the TS Power Plant boiler building.
- Management of CCR during transfer from fly ash storage silo to dry bulk tractor trailer for transport off- site
- Management of CCR during transfer from fly ash storage silo to haul truck for transport to TS Power Plant ash landfill.
- Management of CCR during transport to TS Power Plant ash landfill
- Management of CCR during and after disposal at TS Power Plant at TS Power Plant
- Documentation of any citizen complaints, corrective action and follow-up engagement

2. Regulatory Basis

This Plan is being prepared to accordance with requirements of the 2015 Coal Combustion Residue Rule (40CFR Part 257.8). This section requires the owner or operator of a CCR unit to prepare and operate in accordance with a CCR Fugitive Dust Control Plan.

In addition to these provisions, the CCR Landfill at TS Power Plant is currently operated in accordance with the following permits:

- Class 1 Air Quality Operating Permit No. AP4911-2502 issued by Nevada Bureau of Air Pollution Control – this operating permit includes the following Emission Units that relate to CCR management; with associated operating provisions:
 - Emission Unit S2.009 – Fly Ash Silo Loading
 - Emission Unit PF 1.012 – Fly Ash Silo Unloading
 - Emission Unit PF 1.013 – Bottom Ash Transfer to Containment Area
 - Emission Unit PF 1.014 – Front End Loader transfer of Bottom Ash to Haul Truck
 - Emission Unit PF 1.015 – Fly Ash/Bottom transfer Waste Disposal Site

- Solid Waste Disposal Class III Permit No. SW270REV01 issued by Nevada Bureau of Waste Management – The landfill Operating Plan incorporated into the landfill permit includes various conditions related to handling and disposal of CCR to minimize generation of fugitive dust.

Existing Permit Conditions associated with management of CCR to minimize fugitive dust are incorporated into this Plan.

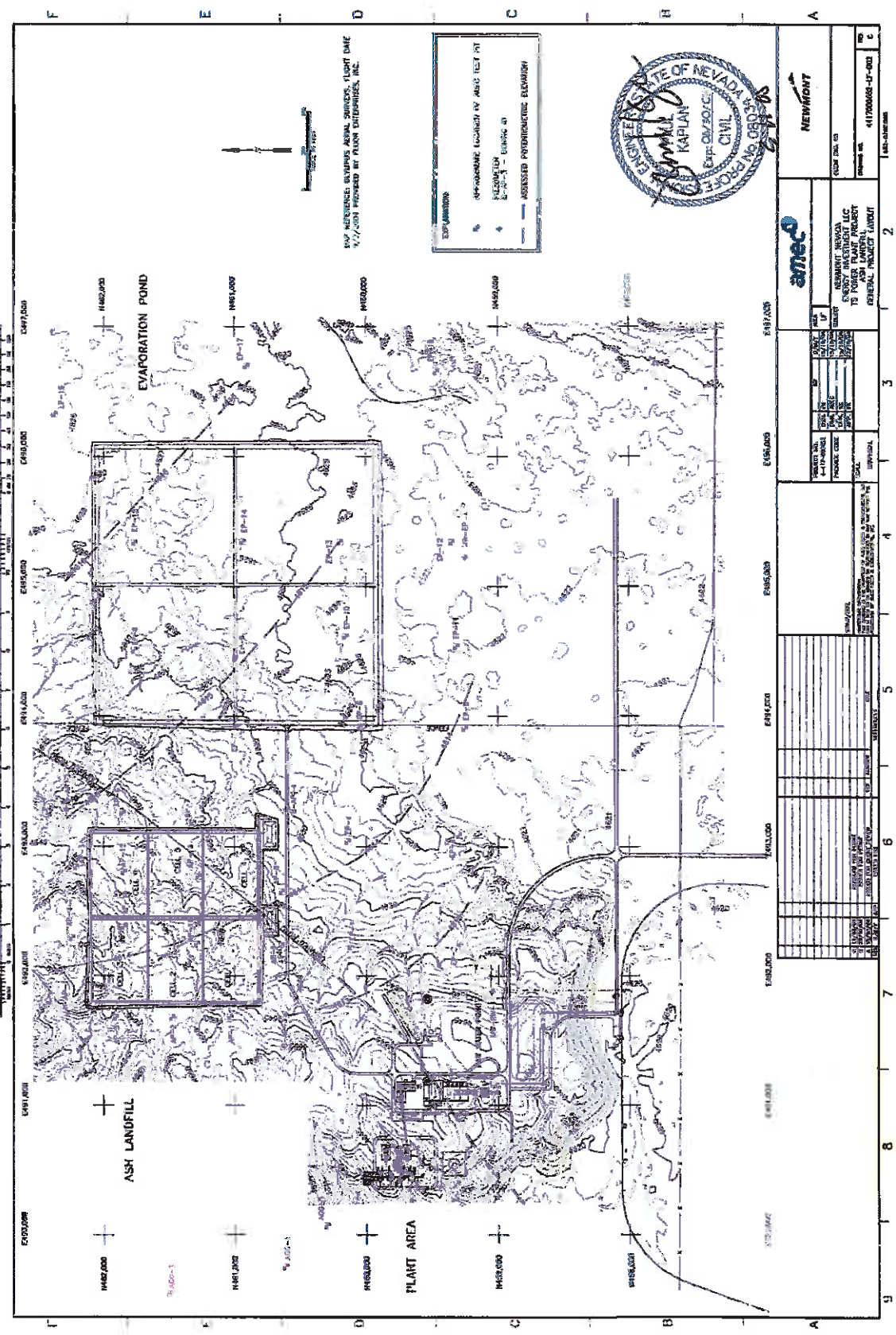
3. Site Description

TS Power Plant (TSPP) is a 242 MW coal-fired power plant located in Eureka County, Nevada. TSPP was commissioned in 2008 and is one of the newest and most advanced coal fired plants in the United States. Sub-bituminous coal from the Powder River Basin in Wyoming is the primary fuel at the facility. The coal contains approximately 5.4% ash. At full load, the plant burns approximately 110 tons/hr of coal and generates about 5.9 tons/hr of ash.

The TSPP facility includes an ash landfill located approximately 0.5 miles northeast of the power plant (Figure 1). The landfill is a lined facility (80 mil HDPE) with a total designed footprint of 36 acres and a maximum height of 60 feet. During the operational life of the power plant the landfill will be constructed incrementally as six (6) adjacent six-acre cells. Currently, two cells (Cell 1 and Cell 2) have been constructed. Cell 1, the southwestern cell of the landfill, was part of original plant construction and has operated from 2008 to present. Cell 2, an identical 6 acre cell immediately north of Cell 1, was constructed in 2013 and is currently accepting the designated waste streams.

The landfill has been permitted as a Class III Landfill by Nevada Division of Environmental Protection – Bureau of Waste Management. Under conditions of this permit, three (3) waste streams are acceptable for disposal in the landfill: Fly Ash, Bottom Ash and Water Treatment Filter Cake. A description of these waste streams follows:

Fly Ash – Fly ash consists of fine particles of ash that are generated during combustion, carried in the flue gas stream and separated from flue gas by filtration in the bag house. From the baghouse it is transferred pneumatically to the fly ash storage silo where it is stored temporarily until offloaded to trucks for disposal in the ash landfill or re-use off site. Fly ash has



the consistency of fine powder and will contribute to fugitive dust if not properly managed. The fly ash at TSPP is classified as a Type “C” fly ash and is naturally pozzolanic and self-cementing. When wetted and dried, the fly ash tends to form a surface crust, which, if undisturbed, stabilizes the material and reduces the potential for generating fugitive dust. Approximately 85-90% of the CCR produced at TSPP is fly ash.

Bottom Ash – Bottom ash is a sinter/slag materials that forms along the furnace walls in the combustion zone of the boiler. The bottom ash falls from the boiler to a water filled trough and conveyed from the trough by a drag chain where it is deposited in a temporary containment. From the containment, the bottom ash is loaded by front end loader to a haul truck where it is transported to the landfill for disposal. Bottom ash is a granular material with the consistency of coarse sand. Due to its coarse, granular nature and the wet process for collecting the material, bottom ash will not generate fugitive dust. Approximately 10-15% of the CCR generated at TSPP is bottom ash.

Water Treatment Filter Cake - In addition to the CCR described above, water treatment filter cake is also generated at TSPP and disposed of in the ash landfill. The filter cake is generated in the side stream softening water treatment system. This water treatment system is designed to continuously treat a stream of raw cooling water as a means of controlling cooling water chemistry. The water is treated to reduce the hardness, lower TDS and reduce the silica content. The treated water is then reintroduced into the cooling water inventory. The process generates a waste stream consisting of a wet cake consisting predominantly of spent soda ash and magnesium oxide used in the treatment system. The cake is transported to the landfill in filter bins for disposal. It is a wet waste product that hardens on drying and does not contribute to the generation of fugitive dust. The volume of filter cake generated is relatively small, typically around 1,000 tons/year.

4. CCR Management Procedures

The management practices described herein have been developed to minimize the potential for generation of fugitive dust from CCR. The practices specifically describe management of fly ash, which has the greatest potential to generate fugitive dust. The following sections describe

practices and procedures to manage fly from the generation in the baghouse to disposal in the fly ash landfill.

The TS Power Plant bag house is a six-compartment fabric filter, pulse air baghouse. It contains 4,992 filter bags with 246,920 ft² of filtration area. The baghouse is effective at removing 99.9% of particulates from the flue gas stream. In addition to the ash generated from coal combustion, other constituents in the fly ash includes (1) lime (CaO) and Ca-S compounds from the flue gas desulphurization (scrubber) process, and (2) powdered activated carbon with adsorbed metals from the mercury control system.

Fly ash collects in bins in the bottom of the bag house compartments and is transported pneumatically to the fly ash silo, an 800-ton capacity silo adjacent to the baghouse (Figure 2). The silo is equipped with a dust collector to prevent fugitive release of particulates during ash transfer.

In accordance with conditions of the Class 1 Permit No. AP4911-2502 monitoring of the fly ash silo consists of :

- Weekly Inspections of the Fly Ash Silo Bin Vent Filter -- in accordance with manufacturer's recommendations. Documentation of the inspections is maintained in the TSPP scheduled maintenance records.
- Monthly visible emission inspection of the Fly Ash silo bin vent filter. If visible emissions are observed, a Method 9 visible emission test is to be conducted. Records are maintained in the TSPP environmental files.

4.1. Procedures for Unloading Fly Ash Silo

Ash can be removed from the silo using one of two options. The unloading method depends on whether the ash is to be disposed of at the on-site ash landfill or transported off-site for reuse.

Removal of ash for disposal in ash landfill Ash is removed from the bottom of the silo to a 20-ton articulated dump truck pulled into the truck loading bay (Figure 3-4). All ash unloaded in this manner passes through a mixing device, called a pug mill, that mixes

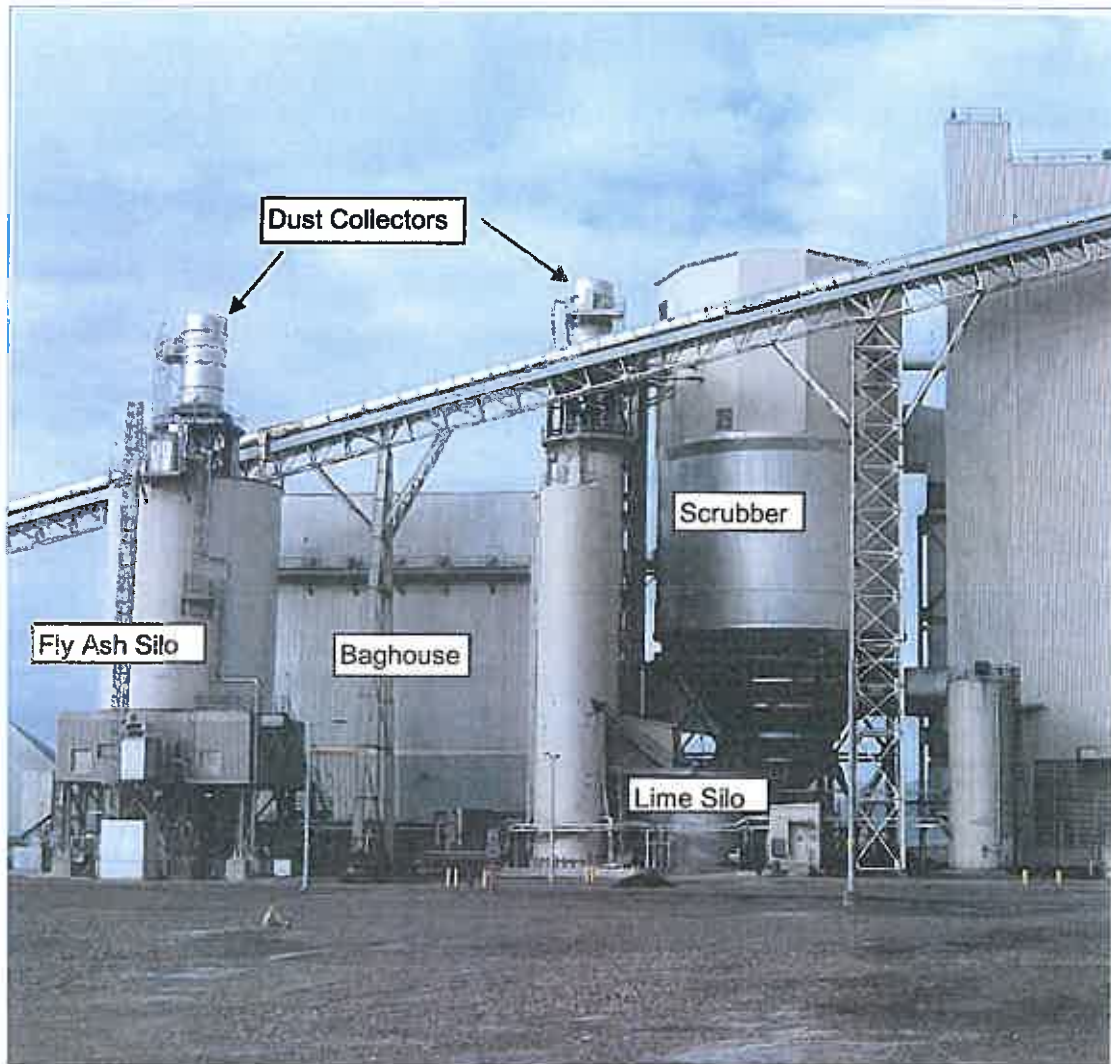


Figure 2 – Layout of Air Quality Control System (Scrubber, Baghouse, Fly Ash Silo)



Figure 3 – Loading 20-ton TSPP Dump truck for transport of fly ash to landfill

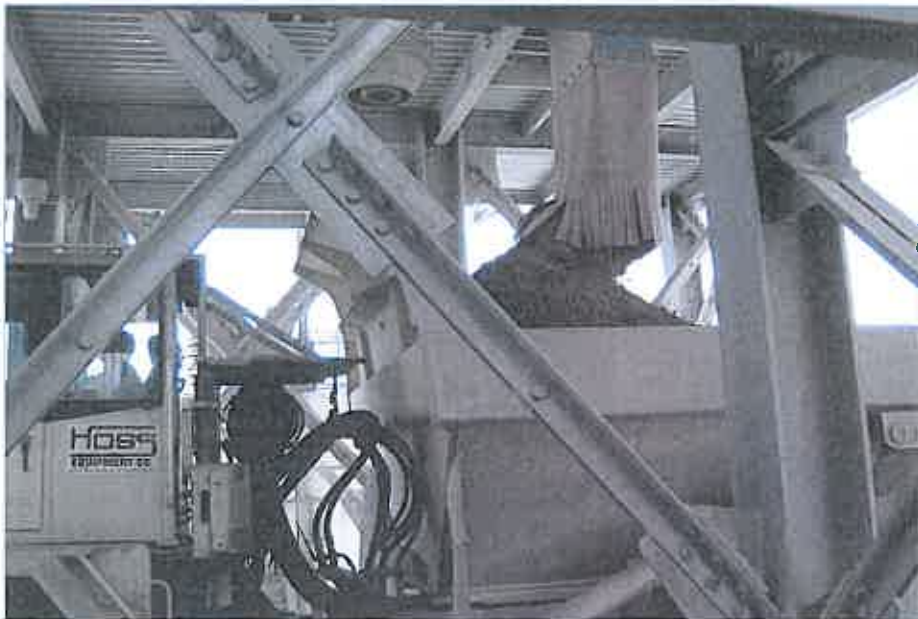


Figure 4 – Conditioned, (wetted) fly ash filling site dump truck

water, at the rate of approximately 90 gpm, with the dry ash (Figure 5). The addition of water in the pug mill conditions the ash, producing an agglomerated, wetted ash for transport. The conditioned ash drops from the pug mill through a shroud to the haul truck. The shroud acts as a wind barrier to prevent exposure of the fly ash to wind during silo unloading to trucks. When properly operated, the silo unloading process is free of fugitive dust. (Figure 6).

All operators are trained in the operation of pug mill to properly condition the fly ash to minimize the potential for fugitive dust during transport. This is done largely by observation and making adjustments to ash unloading rates or water addition rates to ensure the proper consistency of the conditioned fly ash. A “Fly Ash Storage Silo Wet Unloading Operating Procedure” (Attachment 1) has been developed and is posted in the pug mill area to guide operations.

In accordance with provisions of the Class I Air Permit (Emission Unit PF 1.012), monitoring of ash unloading includes monthly visible emission observations to ensure the process is working properly and fugitive dust is not being generated. If visible emissions are observed, a Method 9 visible emission test is to be conducted. Records are maintained in the TSPP environmental files.

Removal for transport off-site The fly ash generated at TS Power Plant is classified as a “Type C” fly ash and is a valuable commodity for use as a Portland cement substitute in certain concrete applications. A portion of the fly ash from TSPP is transported to nearby mining operations for use as a cement substitute for a portion of the cement used in the backfilling of underground mines..

Bulk tractor trailers, similar to those used for transport of cement and other dry bulk products, are used for transporting fly ash offsite. (Figures 7-8). During loading, the trailers are pulled into the truck loading bay and an extensible dry unloading chute is fitted to one of the hatches of the trailer. A return airline in the chute creates a negative pressure in the trailer and forms a vacuum seal between the unloading chute and the



Figure 5 – Pugmill for adding and mixing water to dry fly ash



Figure 6 – Agglomerated conditioned fly ash



Figure 7 – Loading dry fly ash to bulk pneumatic trailer for transport offsite



Figure 8 – Loading dry fly ash to bulk pneumatic trailer for transport and re-use offsite

trailer (Figure 9). This permits the loading of bulk trailers with virtually no fugitive particulate emissions.

TSPP policy is that all hatches on the trailers are closed and latched prior to loads of ash leaving the site. The bulk trailers are equipped for pneumatic unloading, so there is no potential for release of ash from leaking bottom hatches.

Trained site personnel make the connections of the unloading chute to the truck, initiate the truck loading operation and retract the chute when loading has been completed.. A check list has been developed that guides the process in a step-by-step format and ensures the truck loading operation is conducted in a safe manner without the release of fugitive emissions (Attachment 2). The check list requires a documented visible emission observation during the loading process and instructs the operator to stop loading operations and contact plant maintenance personnel if visible emissions are present. The checklist is completed for every load and kept on file in the plant operations files.

As indicated above, fly ash may be offloaded for disposal in the ash landfill or transported off site for reuse. In recent years, the majority of fly ash has been transported off-site. In 2014, approximately 87% of fly ash generated at TS Power Plant (36,323 tons) was transported off-site for reuse and not disposed of in the landfill.

4.2. Procedures for Transporting Fly Ash to Ash Landfill

Ash is transported to the landfill, located approximately 0.5 miles north of the plant in open haul trucks with tail gates to minimize spillage. In accordance with conditions of the TS Power Plant Class I Air Permit facility roads, including the landfill haul road, are paved to control fugitive dust. The speed limit along the road is posted and enforced at 10 mph. The road is periodically washed with an on-site water truck to remove incidental spillage from the road surface that could contribute to the generation of fugitive dust.

4.3. Procedures for Managing Ash During and After Disposal at the Ash Landfill

Fly Ash is end dumped from the haul truck in an active area of the landfill and periodically dozed into position. As a result of conditioning, the ash is of a damp consistency and should not generate fugitive dust during disposal. Due to the self-cementing character of the ash, a surface



Figure 9 – Dry unloading chute for loading bulk trailers

crust will form on the ash which will stabilize the material and reduce the potential for fugitive dust generation. The crust will continue to form as a result of periodic rain fall events. Breaking of the surface crust could result in generation of fugitive dust. To prevent the disruption of the crust vehicle activities are limited to active areas of the landfill that are designated by boundary stakes.

In accordance with provision of the Class I Operating Permit (Emission Unit PF 1.015), a visible emissions observation is conducted and documented on a weekly basis as ash is being offloaded at the landfill. If visible emissions are observed, a Method 9 visible emission test is to be conducted. Records are maintained in the TSPP environmental files.

If fugitive dust becomes an issue at the landfill, operations personnel are instructed to apply water as a dust control measure.

4.4. Procedures for Documenting and Addressing Citizen Complaints

Any citizen complaints regarding fugitive dust at TS Power Plant are handled in accordance to with an *Issues and Concerns Management and Resolution Procedure* developed and implemented by Newmont's External Relations Department. The procedure is applicable to all Newmont Nevada sites, including TS Power Plant.

Complaints and concerns may be received in verbal or written format directed at: the TS Power Plant, Newmont External Relations representatives or other personnel in nearby communities, Newmont regional offices. In order to ensure any complaints are properly documented and addressed, recipients fill out and submit an External Relations Opportunity/Issues form which is submitted electronically to the assigned External Relations Representative (ERR) for the site. The ERR enters the information into StakeTracker® stakeholder management software; a tracking system to document community concerns, follow-up activities and corrective actions.

Once entered into the system, procedures include:

- ERR acknowledges receipt of the concern with the complainant with three (3) business days
- As part of the acknowledgement, the ERR will describe the process to be undertaken to resolve the complaint.

- Corrective actions will be undertaken at TS Power Plant to modify procedures as appropriate to resolve fugitive dust issues.
- ERR will discuss corrective actions with complainant to close the issue.

On an annual basis, TS Power Plant management will review the log of fugitive dust citizen complaints and determine if additional corrective actions are required.

5. Evaluation of Plan Effectiveness

An Annual CCR Fugitive Dust Report will be prepared that will (1) describe actions taken by TS Power Plant to control CCR fugitive dust, (2) document citizen complaints during the previous 12 months with associated corrective actions, and (3) evaluate procedures to control CCR fugitive dust at TS Power Plant and determine if changes to the fugitive dust control plan are warranted. The annual report will be placed in the landfill operating record upon completion.

The initial Annual Dust Report will be completed by December 1, 2016.

Attachment 1

TS Power Plant

Fly Ash Storage Silo – Wet Unloading Procedure

Fly Ash Storage Silo Wet Unloading Operating Procedure

It is very important to keep the amount of dust produced during fly ash truck loading to a minimum. If the mix of water and ash in the pug mill is correct, there should be little or no visible dust.

- Park Haul Truck under pug mill "A" discharge chute.
- On the 2nd floor of the storage silo use the yellow stairs to open the air supply for the Storage Ash discharge gate valve (FV-0250). Use caution and ensure drain valve is closed before opening air supply to valve.
- Open in line water valve (ISV-0254) for the pug mill water supply.
- Open pug mill and check that it is clean and ready for operation.
- Check the master control switch set to remote. This enables the downstairs controls.
- Start pug mill and watch material as it is loaded into the truck. The material should be of a damp, agglomerated consistency. The loading should be free of any dusting from dry ash.
- If the material is too wet, open manual valve (ISV-0251) located below FV-0250 in the ash storage discharge line to help maintain a consistent mixture.
- If the material is too dry, close the manual valve (ISV-0251) located below FV-0250 in the ash storage discharge line to help maintain a consistent mixture.
- When truck is full allow 30 seconds for pug mill to empty.

Pug Mill Clean Out

- Clean out the pug mill after the last load of fly ash. Load the last truck from the back to front leaving space for the clean out water.
- Return the pug mill master control to local.
- Shut off the water isolation valve (ISV-0254) to the pug mill.
- Isolate and bleed air off the storage ash discharge valve FV-0250.
- Run pug mill with air and water isolated to allow cleanout.
- Open pug mill breaker and use hose to cleanout pug mill.
- Close the pug mill breaker and ensure pug mill is returned to normal standby position.

Attachment 2

TS Power Plant

Fly Ash Truck Loading Check Sheet



NNA-TSPP-CHECKLIST-11A Fly Ash Truck Loading Check Sheet

Name: _____ Product: _____ Date: _____

- Ensure driver has valid contractor safety sticker, signed in on visitor log, and has been issued a safe work permit.
- Ensure the driver has a safety harness and lanyard when work is performed above 6 feet to open hatches.
- Position the contractor vehicle to be loaded properly for the intended procedure.
- Ensure the driver engages the truck brakes and places wheel chocks to prevent movement in either direction.
- Inspect load out spout and loading equipment. If any unsafe conditions are present, stop loading and report/repair.
- Inform driver of safety shower/eye wash locations, communication equipment, and plant emergency procedures.
- Ensure truck driver wears the proper personal protective equipment during the loading process.
- Make the transfer by dropping load out spout and open the gate to insure a safe leak-free transfer.
- Have the driver communicate when the contract truck is full, stand by to shut-off valve.
- Retract loading spout before loading the second trailer.
- Transfer product to the second trailer using the same procedure as above.
- Assure the driver remains out of the cab during the transfer to assure constant communication.
- End transfer when completed.
- Retract load out spout.
- Allow driver to enter vehicle when the transfer of Fly Ash is completed and wheel chocks are removed and stowed.
- Get proper paperwork for product that has been loaded.
- Ensure driver signed off on visitors log.

Complete below for Fly Ash loading

Yes / No Are visible Emissions coming from the load out spout? **If YES stop truck unloading and contact Maintenance**

Completed by _____ Supervisor review _____

Target **ZERO** Not just a goal, but a way of life!

Original Issue date: 11/07/07 Revised: 02/16/2015

Attachment 3

TS Power Plant

External Relations Opportunity/Issues Reporting Form



Today's Date

Your Department

Your Name

Your E-mail Addr.

Your Phone Number (Include Area Code)

May we contact you? (select from drop-down at right)

Explanation of opportunity or issue

If you learned about this opportunity / issue from someone else, please provide any of the following information that you know:

From whom did you learn about this opportunity / issue? (select from drop-down at right)

Individual's / organization's name or function

Individual's / organization's phone number (include area code)

Individual's / organization's e-mail address

May we contact this individual / organization? (select from drop-down at right)

Submit this form to External Relations

Reset Form

Print Form