

Coal Combustion Residual Annual Fugitive Dust Control Report

**Basin Electric Power Cooperative
Antelope Valley Station**

November 2017

Table of Contents

Purpose and Definitions	3
Actions Taken to Control Fugitive Dust	4
Citizen Complaint Log	5
Periodic Assessments and Corrective Measures	5
Certification Statement.....	5

Purpose and Definitions

40 CFR §257.80 requires the owner or operator a Coal Combustion Residual (CCR) landfill or surface impoundment to effectively minimize CCR from becoming airborne at a facility, including CCR fugitive dust originating from CCR units, roads, and other CCR material management and material handling activities. This Annual Fugitive Dust Control Report (Annual Report) for Basin Electric Power Cooperative (Basin Electric) Antelope Valley Station (AVS) Landfill includes a description of the actions taken to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken. This Annual Report for AVS CCR facilities, covers the period from October 1, 2016 to September 30, 2017. Annual Reports will be completed and placed in the facility operating record and on Basin Electric's publicly accessible CCR website no later than December 1st of each subsequent year.

AVS operates two lignite-fired boilers, resulting in the production of CCRs. CCRs and CCR fugitive dust are defined in 40 CFR §257.53 (Definitions) as:

“CCR means fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers.”

“CCR fugitive dust means solid airborne particulate matter that contains or is derived from CCRs, emitted from any source other than a stack or chimney.”

CCRs generated at AVS (and thus regulated under 40 CFR 257) include bottom ash, flue gas desulfurization (FGD) materials and fly ash.

Dust from coal piles, aggregate surfaced roads, soil stockpiles and other non-CCR sources are not subject to this plan.

Actions Taken to Control Fugitive Dust

CCR loading, hauling and landfill operations present the greatest potential sources of CCR fugitive dust emissions. The facility Environmental Coordinator, Coal Yard Supervisors, all Shift Supervisors, Lead Yard Equipment Operators and Equipment Operators work collectively to ensure fugitive dust is minimized.

Fugitive dust from loading operations is predominantly controlled by the moisture-conditioning of materials. Bottom ash is a relatively coarse-grained material and contains 15 to 25 percent moisture when loaded into haul trucks. These factors (grain-size and high moisture content) greatly reduce fugitive dust emissions of this material. The combined fly ash/FGD material is relatively fine-grained, and if excessively dry, has the potential for becoming airborne during loading operations. The combined ash is moisture conditioned (typically to 10 to 20% moisture content by weight) in twin-paddle mixers and then discharged into haul trucks. To further minimize fugitive dust, CCRs are loaded into haul trucks in a partial enclosure. The moisture-conditioned CCRs are transported by haul truck approximately 2.3 miles to the AVS landfill, where the CCRs are dumped, spread and compacted.

The primary means of controlling fugitive dust during CCR hauling operations is by moisture conditioning the materials (described earlier) before transport. The haul road speed limit is set at 30 mph to further limit fugitive dust emissions.

As with loading and hauling operations, the primary means of controlling fugitive dust during landfill operations is the CCR moisture conditioning that occurs before the materials are loaded into haul trucks. Since the distance from the CCR load out facility to the landfill is relatively short, moisture-conditioned CCRs arrive at the landfill with essentially the same moisture content as when initially loaded.

On areas where fly ash/FGD will not be immediately placed or on areas subject to equipment traffic, bottom ash is spread to seal the area, minimizing fugitive dust. Water is spread on the landfill if needed for additional dust suppression. Finally, the practice of partial sequential closure is integral to dust suppression efforts at the facility. As areas of the landfill are brought to grade, the final cover system is installed, effectively eliminating the possibility of CCR fugitive dust emission from these capped and revegetated areas.

Citizen Complaint Log

A log for recording citizen complaints was established as part of the AVS Fugitive Dust Control Plan. To date, Basin Electric has not received any public complaints due to CCR dust emissions from this facility.

Periodic Assessments and Corrective Measures

The facility Environmental Coordinator or other qualified person included observations for fugitive dust emissions while performing weekly inspections required by the CCR Rule under 40 CFR §257.84. No fugitive dust issues were noted in conjunction with CCR landfill operations at AVS. Fugitive dust observations of CCR loading and hauling, however, identified several instances when additional dust minimization measures were deemed necessary. In these instances, operations personnel worked to increase/optimize the water content of the CCRs to minimize fugitive dust. Variations in materials (such as when water treatment plant sludge is mixed with the ash) also required the fine-tuning of the mixing equipment to minimize fugitive dust.

Certification Statement

I certify that this Fugitive Dust Control Annual Report meets the requirements of 40 CFR §257.80 (Air Criteria) in the *Standards for the Disposal of Coal Combustion Residuals in Landfills and Impoundments*.



Kevin L. Solie, North Dakota PE-9488
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