

Coal Combustion Residual SDA and Decant Pond Regulatory Determination

**Basin Electric Power Cooperative
Antelope Valley Station**

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Purpose

During the course of Basin Electric Power Cooperative's (Basin Electric's) self-implementation of the Coal Combustion Residual (CCR) Rule for Antelope Valley Station (AVS), it became apparent that the Spray Dryer Ash Make-Up Water Pond (SDA Pond) and the SDA Decantation Pond (Decant Pond) did not fit the definition of CCR surface impoundments under 40 CFR §257.2 (*Definitions*). The purpose of this document is to demonstrate and document the regulatory status of the SDA and Decant Ponds at AVS.

Introduction

Antelope Valley Station (AVS) is a lignite coal-fired power plant consisting of two units that generate about 900 megawatts (MW) combined. The power plant, owned and operated by Basin Electric Power Cooperative (Basin Electric), is located approximately eight miles northwest of Beulah, in Mercer County, North Dakota. CCRs from AVS are disposed at the Section 7 Landfill, permitted as special waste landfill 0160 by the North Dakota Department of Health (NDDoH).

The CCR Rule, in 40 CFR 257.2, defines a CCR Surface Impoundment as a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR. In Section VI, B, 2 (page 21357) of the preamble of the Rule, EPA clarifies that CCR surface impoundments do not include units such as process water or cooling ponds that may accumulate trace amounts of CCR but will not contain the significant quantities that give rise to the risks modeled in EPA's (risk) assessment.

Fly ash is collected in silos and bottom ash is collected in dewatering bins before ultimate dry disposal in the permitted landfill. While used for AVS plant process water storage and management, the SDA Pond and Decant Pond are not part of the coal ash handling system described above. The SDA and Decant Ponds are permitted by the North Dakota Department of Health (NDDoH) under the surface impoundment provisions of the state's solid waste management rules.

Description of Units

The SDA Pond is designed for a maximum depth of 11 feet and has a nominal capacity of 28 acre-feet. The pond is designed to provide make-up water for the ash water system, the sulfur dioxide (SO₂) removal system (i.e. spray dryer), and the coal handling dust suppression systems. Major inputs (water sources) to the pond are the AVS plant low quality sumps and the neutralizing sump. In addition, the coal handling sumps, and the SO₂ absorber and lime receiving building sumps discharge into the pond. Solid wastes that enter the water system are derived from plant washdowns and lime slurry spillage. The washdown water contains coal dust, coal fines, and airborne particulate matter that settles inside plant buildings.

The SDA Decantation Pond (Decant Pond) covers 3.4 acres and has a sloped floor with an average depth of 5.5 feet below the raised dikes. The pond has a minimum 24 inches of clay as the underlying liner and perforated drain pipe is plumbed along the low points to a collection sump to aid in drainage. Settled solids from the SDA Pond are periodically hydraulically dredged and sluiced to the Decant Pond for dewatering, taking care to avoid scouring the pond floor and side walls. Once the SDA Pond has been emptied, the Decant Pond is equipped with a sump pump to remove free liquids. Upon reaching a sufficiently dewatered state, the contents of the Decant Pond are excavated and placed in the AVS landfill.

Conclusion

The SDA Pond and Decant Pond are not part of the coal ash handling system at AVS, with fly ash and bottom ash (CCRs) managed by separate and discrete systems. The SDA and Decant Ponds are designed and utilized for plant process water storage and management, and are regulated as solid waste surface impoundment by the North Dakota Department of Health. The SDA and Decant Ponds do not fit the definition of CCR Surface Impoundments under the CCR Rule. Accordingly, the CCR Rule is not applicable to these surface impoundments.



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