Coal Combustion Residual
Landfill
Run-On and Run-off Control Plan

Basin Electric Power Cooperative
Antelope Valley Station
Beulah, ND

October 2016

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Purpose and Definitions

In accordance with 40 CFR §257.81, the purpose of this Run-on and Run-off Control Plan is to fulfill the requirement for a written plan to document how the run-on and run-off control systems have been designed and constructed at the Basin Electric Power Cooperative (Basin Electric) Antelope Valley Station (AVS) Landfill. CCRs generated at AVS (and thus regulated under 40 CFR §257) include bottom ash, flue gas desulfurization (FGD) materials and fly ash.

Antelope Valley Station consists of 2 coal fired units generating 900 megawatts (MW) combined. The power plant, owned and operated by Basin Electric Power Cooperative (BEPC), is approximately 7 miles northwest of Beulah, North Dakota. Unit 1 went online in 1984 and Unit 2 in 1986. CCRs from LOS are disposed at the AVS Landfill, which is regulated as a special waste disposal landfill by the North Dakota Department of Health (NDDoH).

Landfill Description

The AVS Landfill was first permitted for the disposal of CCRs in 1995, with disposal beginning at the facility in late 1996. The landfill is located in an upland reclaimed mine area, approximately 2.3 miles north and east of the AVS plant site. Partial sequential closure of the landfill has been conducted as areas of the landfill are filled and brought to final grade. To date, approximately 44.47 acres of the landfill footprint have been closed using an engineered cover system approved by the NDDoH. Sequential closure on an additional 19.7 acres is scheduled for the fall of 2016.

The AVS Landfill contains FGD wastes, bottom ash, and fly ash, which are byproducts of the coal burning process. On a daily average, approximately 2,200 tons of ash and FGD wastes are generated at AVS. The moisture-conditioned ash is transported by haul truck to the landfill, where they are dumped, spread, and compacted.

Run-On Control Description

No run-on flow onto the active portion of the CCR unit during the peak discharge from a 25-year, 24-hour storm will come in contact with CCRs. All open areas of the landfill are constructed above the surrounding area. As sequential closure of the landfill is completed, the clean water flow is directed away from the landfill and down the slopes to the surrounding landscape.

Run-Off Control Description

The run-off flow from the active portion of the CCR unit collected during a 25-year, 24-hour storm is directed to the landfill sump by the installation of ditches.

The National Oceanic and Atmospheric Administration (NOAA) Atlas shows that a 25-year, 24-hour rainfall event is approximately 3.7 inches. Based on this rainfall event, the size of the sump needs to be a minimum of 21,262 cubic yards to store the run-off captured from the 59.2 acres of captured area. The existing lined sump was constructed in 2008 with a capacity of approximately 24,353 cubic yards with an additional 2 feet of freeboard, and is therefore adequate.

Runoff is not discharged into Waters of the United States (WUS) and is thus in compliance with the provisions of §257.81(b).

Certification Statement

I certify that this Run-on and Run-off Control Plan meets the requirements of 40 CFR §257.81 specifying Run-on and Run-off Controls for CCR Landfills in the *Standards of Coal Combustion Residuals in Landfills and Impoundments.*

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