

Coal Combustion Residuals Landfill

Run-On and Run-off Control Plan

**Basin Electric Power Cooperative
Laramie River Station
Wheatland, WY**

October 2021

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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) Laramie River Station (LRS) Landfill. CCRs generated at LRS (and thus regulated under 40 CFR §257) include bottom ash, flue gas desulfurization (FGD) materials and fly ash.

The Laramie River Station consists of 3 coal fired units generating 1,710 megawatts (MW) combined. The power plant, owned by the Missouri Basin Power Project (MBPP) and operated by Basin Electric Power Cooperative (BEPC), is approximately 5 miles northeast of Wheatland, Wyoming. Unit 1 went online in 1980, Unit 2 in 1981, and Unit 3 in 1982. CCRs from LRS are disposed at the LRS Landfill, which is regulated by the Wyoming Department of Environmental Quality (WYDEQ).

According to 40 CFR § 257.81, Basin Electric will amend the written run-on and run-off control system plan whenever there is a change in conditions that would substantially affect the written plan. Additionally, Basin Electric will prepare periodic updates to the plan every five years (minimum).

Landfill Description

The LRS Landfill contains FGD materials and fly ash, which are byproducts of the coal burning process. On a daily average, approximately 1,200 tons of FGD materials and fly ash are generated at LRS. The moisture-conditioned fly ash and FGD material are transported by haul truck to the onsite LRS landfill, where they are dumped, spread, and compacted.

The LRS Landfill was placed into operation in April 1980. A series of landfill cells have been constructed throughout the operating life of the facility. Approximately 84.45 acres of the landfill have undergone partial sequential closure through seven landfill closure/capping projects.

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, thus creating a plateau.

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 prevented by the installation of a ditch and lined sump system. All run-off from open areas of the landfill are sloped and/or ditched towards a larger conveyance ditch. The conveyance ditch directs the flow from the active portion of the landfill to the sump.

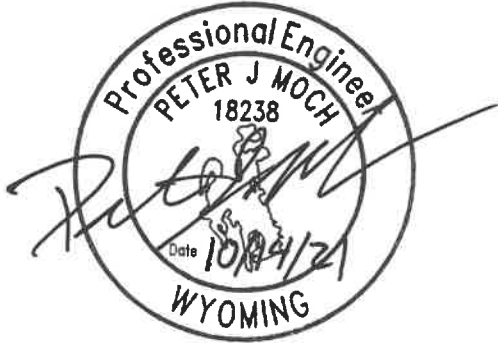
The National Oceanic and Atmospheric Administration (NOAA) Atlas shows that a 25-year, 24-hour rainfall event is approximately 3.3 inches. Based on this rainfall event, the size of the sump needs to be a minimum of 21,764 cubic yards to store the run-off captured from the 83.26 acres of open landfill space. The sump was constructed in 2001 with a capacity of approximately 34,972 cubic yards, therefore is more than adequate.

Based on the 25-year, 24-hour rainfall event and the area of run-off capture, the conveyance ditch needs to handle approximately 144 cubic feet per second (cfs). The ditch was constructed in 2001, and is 10' wide at the bottom, with 3:1 sideslopes, and a depth of 3'. It is designed to handle approximately 316 cfs, therefore is more than 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 for the Disposal of Coal Combustion Residuals in Landfills and Impoundments*.



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