

Coal Combustion Residual Landfill Annual Inspection Report 2021

**Basin Electric Power Cooperative
Laramie River Station**

January 2022

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Purpose and Definitions

In accordance with **40 CFR § 257.84(b)(2)**, the purpose of this document is to fulfill the requirements for an Annual Inspection Report prepared by a Qualified Professional Engineer (QPE) to ensure the design, construction, operation, and maintenance of the Basin Electric Power Cooperative (Basin Electric) Laramie River Station (LRS) landfill is consistent with recognized and generally accepted good engineering standards.

LRS operates three coal-fired boilers, resulting in the production of CCRs. CCRs 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.”

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

CCR Production and Handling

On a daily average, approximately 1,200 tons of FGD materials and fly ash are generated at LRS. The moisture-conditioned CCRs (fly ash and FGD material) are transported by haul truck to the onsite LRS landfill, where the CCRs are dumped, spread and compacted. Bottom ash is managed in surface impoundments adjacent to the landfill. The surface impoundments are addressed in a separate Annual Inspection Report.

Review of Existing Records

The LRS Landfill, designated as File # 20.066 by the Wyoming Department of Environmental Quality (WYDEQ), was placed into operation in April 1980. A series of landfill “cells” (specific areas of the landfill footprint) have been constructed throughout the operating life of the facility. Approximately 66.75 acres of the landfill have undergone partial sequential closure through six discrete landfill closure/capping projects, referred to as “tracts.” A review of existing records for the facility confirms the design, construction, operation, and maintenance of the landfill has been generally consistent with recognized and accepted good engineering standards.

Weekly Inspection Review

During 2021, qualified individuals (generally the LRS Environmental Coordinator) conducted weekly inspections for any appearance of actual or potential structural weakness and other conditions which were disrupting or had the potential to disrupt the operation or safety of the CCR unit. Appearances of structural weakness may include, but are not limited to: (1) signs of piping and other internal erosion; (2) transverse, longitudinal, and desiccation cracking; (3) slides, bulges, boils, sloughs, scarps, sinkholes, or depressions; (4) animal burrows; (5) excessive or lacking vegetative cover; and (6) slope erosion. A review of the periodic inspection reports for the LRS CCR landfill indicated no signs of actual or potential structural weakness or other adverse conditions as described above.

Onsite Inspection of Facility

The LRS CCR landfill was visually inspected November 29, 2021 by Kevin Solie, Wyoming Professional Engineer PE-15120. Waste placement appeared to be consistent with good operating practices and the WYDEQ permit. Run-on and run-off were properly controlled and no fugitive dust was evident.

Previously closed areas appeared to be well-vegetated and were graded in accordance with the WYDEQ landfill permit. No erosion or signs of slope instability were observed. Overall operation and maintenance of the facility appeared to be consistent with good industry practices. No signs of distress or malfunction of the CCR unit were observed during the inspection.

Annual Report Findings and Recommendations

The total volume of CCRs present in the LRS landfill as of November 2021 is estimated to be approximately 8,570,000 cubic yards. The annual inspection revealed no appearance of actual or potential structural weakness of the CCR unit. No signs of distress or malfunction of the CCR unit were observed during the inspection and no changes have occurred that affect the stability or operation of the facility. The design, construction, operation and maintenance of the facility are consistent with recognized and generally accepted good engineering standards and industry practices. No corrective measures are recommended for the LRS CCR landfill.

Certification Statement

I certify that this report has been prepared in accordance with **40 CFR § 257.84(b)(2)** requiring a written Annual Inspection Report by a Qualified Professional Engineer as set forth in the *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments*.



Kevin L. Solie, Wyoming PE-15120
January 13, 2022

