

Charles R. Lowman Power Plant

Coal Combustion Residuals (CCR) Surface Impoundment Remedy

Selection and Design: Semi-Annual Progress Report June 2023

1. Introduction

Regulations codified in 40 C.F.R. § 257.97(a) and Alabama Department of Environmental Management (ADEM) Admin. Code r. 335-13-15-.06(8)(a) require the owner or operator to prepare “a semiannual report describing the progress in selecting and designing a remedy”. Once a final remedy is selected, the owner or operator must prepare and submit a final report. PowerSouth Energy Cooperative submitted an Assessment of Corrective Measures (ACM), on July 11, 2019, for the Charles R. Lowman Power Plant. The ACM identified and evaluated monitored natural attenuation (MNA), a permeable treatment barrier, and groundwater recovery and treatment as potential remedies. The ACM recommended MNA as the primary remedy. In response to comments provided by ADEM, a Revised ACM was prepared and submitted on May 5, 2020. The Revised ACM provided additional information, including the anticipated effects of source control. The Revised ACM discussed potential corrective measures and again recommended MNA as the primary remedy. Both versions of the ACM are available on the CCR compliance website for the Lowman Power Plant. To fulfill the requirements of 40 CFR §257.96(e) and ADEM Admin Code r. 335-13-15-.06(7)(e), PowerSouth hosted a public meeting at the Jackson Community Center in Jackson, Alabama on June 29, 2020, to present the proposed remedy to the community and solicit public comment.

2. Summary of Work Completed During Reporting Period

During the current semi-annual period (January through June 2023) the following activities were completed:

- Analytical results from the October 2022 semi-annual groundwater sampling were received, reviewed, and included in the 2022 Annual GWMR submitted in January 2023.
- MNA-focused analytical and physical testing results from subsurface soil samples were received, reviewed, tabulated, and initial evaluations were conducted and are ongoing. These soil samples were collected in June 2022 from 11 boring locations as discussed in the December 2022 progress report.

- Groundwater geochemical maps (DO, ORP, pH, and alkalinity) were updated with data collected in September 2022, and initial evaluations were conducted and are ongoing.
- Charts comparing groundwater COCs and geochemical parameters versus time were prepared for key monitoring wells along multiple trendlines. Evaluations were initiated and are ongoing to determine if correlations exist between the COCs and geochemical parameters.
- PowerSouth continued operating a dewatering treatment system for removal and treatment of interstitial water from the interconnected, multi-unit CCR pond system in support of closure of the CCR pond system. The dewatering treatment system has been operating since September 2021.
- PowerSouth received comments from ADEM on February 7, 2023 regarding the MW-3 Area Hydraulic Control System Remedial Design Workplan, which was designed to prevent potential offsite migration of low-level dissolved cobalt in the vicinity of monitoring well MW-3. PowerSouth responded to ADEM's comments regarding the MW-3 Area Hydraulic Control System on March 8, 2023. Since that time, PowerSouth has installed a temporary monitoring well (TW-1) at a location hydraulically downgradient of MW-3 but still on PowerSouth property. The first round of groundwater samples collected from TW-1 in April 2023 did not contain any concentrations of the analytical constituents at levels above the GWPS for the facility. This indicates the down-gradient extent of the cobalt plume is contained within PowerSouth's property boundary. We will continue to sample TW-1 to verify cobalt levels remain below the GWPS. In light of this new data, PowerSouth will suspend further development of a remediation plan for the area surrounding MW-3 and focus instead on gaining more information from the new temporary well (TW-1).

3. Preliminary Monitored Natural Attenuation Data

As noted above, additional groundwater data and soil data pertaining to the MNA evaluation were generated during the reporting period and evaluation of these data with respect to the viability of an MNA remedy is on-going. The following summarizes the types of data currently under evaluation. PowerSouth anticipates submitting a comprehensive analysis of the MNA data in a future report.

Groundwater

Eighteen monitoring wells at the site were sampled for a suite of MNA indicator parameters during 2022.

Data collected during the 2022 groundwater sampling events are currently under evaluation and sampling for the suite of MNA indicator parameters will continue on an annual basis to support the ongoing MNA demonstration.

Soil

In June 2022, soil samples were collected from 11 soil borings (SB-49 thru SB-59) from across the site at locations generally downgradient (towards the river) from the former Unit 2/3 CCR pond undergoing closure. Each boring had three soil samples collected from pre-determined sampling intervals.

Data collected during the June 2022 soil sampling activities are currently under evaluation and will be incorporated with data collected during subsequent sampling activities.

A comprehensive presentation and evaluation of soil and groundwater data will be included in the Remedy Selection Report to be prepared and submitted in accordance with the schedule contained in the PowerSouth Energy Cooperative Charles R. Lowman Power Plant Corrective Action Plan submitted to the Department on February 10, 2021.