Retrofit Plan for Scrubber Ponds

Lewis & Clark Station

Prepared for
Montana-Dakota Utilities Co.

April 2018

4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
952.832.2600
www.barr.com

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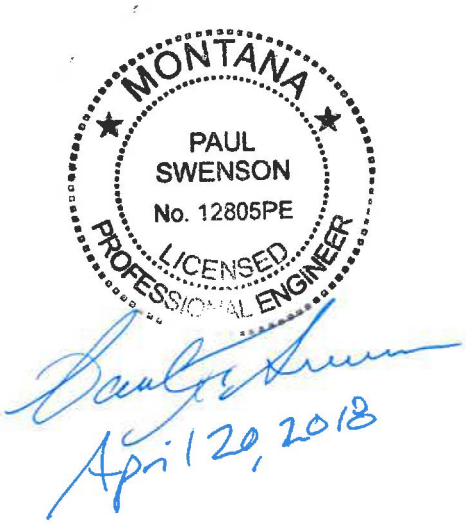
Certifications

I hereby certify that this Retrofit Plan for the existing Scrubber Ponds CCR unit at the Lewis & Clark Station meets the requirements of the Coal Combustion Residuals Rule 40 CFR §257.102(k) for retrofit activities.

Revision	Date	Summary of Revisions
0	April 20, 2018	Initial Plan



Paul T. Swenson
Barr Engineering Co.
MT Registration Number 12805PE

Dated this 20th day of April, 2018

1.0 Introduction

Montana-Dakota Utilities Co. (MDU) operates the Lewis & Clark Station (Lewis & Clark), a coal-fired steam-electric generating plant, near Sidney, Montana. Operation of the plant results in production of coal combustion residuals (CCR) that must be managed in accordance with the requirements of 40 CFR 257 Subpart D, Standards for Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments (CCR Rule).

The East Scrubber Pond and the West Scrubber Pond comprise an existing single, multi-unit surface impoundment CCR unit, as defined by the CCR rule, referred to as the Scrubber Ponds. The Scrubber Ponds receive flue-gas desulfurization (FGD) sludge and some fly ash material.

MDU intends to retrofit the Scrubber Ponds with new liners in 2018. This CCR retrofit plan has been prepared to describe the work to be undertaken to retrofit the existing Scrubber Ponds with new composite liners, and has been prepared to satisfy the requirements of 40 CRF §257.102(k), written retrofit plan for CCR surface impoundments.

2.0 Retrofit Construction Plan

The Scrubber Ponds are proposed to be retrofitted in phases. During the retrofit activities, one of the ponds will remain in operation while the other pond is taken out of service for retrofitting. The West Scrubber Pond will be the first to undergo retrofit, followed by the East Scrubber Pond. The work will include removal of CCR and contaminated soils and sediments, site grading, and construction of a new composite liner.

The first work step in the retrofit activities is the removal of the CCR buffer layer and separation berm and CCR-contaminated soils and sediments from the ponds. All material removed from the Scrubber Ponds will be placed in the Savage Ash Landfill.

The second step is placement of fill and compaction, and construction of berms where needed.

The third step is to construct a new alternative composite liner system. The new alternative composite liner system is composed (from bottom to top) of the following elements:

- Two layers of a geosynthetic clay liner (GCL) that is chemically-resistant to CCR and that is hydraulically equivalent to a two-foot-thick compacted clay liner with a maximum hydraulic conductivity of 1×10^{-7} centimeters per second (cm/s),
- 60-mil textured high-density polyethylene (HDPE) geomembrane,

3.0 CCR-Contaminated Soils and Sediments Removal Procedures

Retrofit activities will be accomplished through removal of CCR buffer layer and separation berm and CCR-contaminated soils and sediments. These materials will be mechanically excavated with standard earthmoving equipment (excavators, front-end loaders, bulldozers, etc.). A stabilizing agent may be mixed into the contaminated material as needed, either within the pond or in an adjacent area (the Temporary Storage Pad, also a CCR unit that is regulated under the CCR rule), before it is hauled off site. Each pond will be visually inspected to verify that CCR buffer layer and separation berm and CCR-contaminated soils and sediments have been removed from the site.

4.0 Quantities and Areas of CCR-Contaminated Soils and Sediments

It is estimated that a maximum of 6,000 cubic yards (CY) of CCR buffer layer and separation berm will be removed from the West Scrubber Pond, and approximately 8,000 CY of CCR buffer layer and separation berm will be removed from the East Scrubber Pond during retrofit activities.

Approximately 5.1 acres will be affected by the retrofit activities.

5.0 Schedule of Retrofit Activities

The schedule of retrofit activities may be dependent on, but not limited to, weather, and contractor and material procurement. Removal of CCR buffer layer and separation berm and CCR-contaminated soils and sediments from the West Scrubber Pond are scheduled for end of June, followed by fill placement, berm construction and composite liner construction. The West Scrubber Pond will be placed back into service immediately following completion of retrofit construction in that subunit. The East Scrubber Pond will then be taken out of service for the same retrofit activities. If deemed more appropriate, the pond subunits may be retrofitted concurrently. Retrofit construction activities for the Scrubber Ponds are scheduled to be complete in 2018.