



San Miguel Electrical Cooperative, Inc. Atascosa County, Texas

Ash Pond Retrofit Plan

August 2019



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Definitions and Acronyms

Owner – San Miguel Electrical Cooperative.

Engineer – NewFields, responsible for Construction Oversight, QA, and Engineering.

Drawings – The Drawings included as part of the Retrofit Plan.

Design Professional – NewFields, responsible for design of the Retrofit Plan.

CCR – Coal Combustion Residual

CFR – Code of Federal Regulations

CY – Cubic Yard

EQ – Equalization

HDPE – High Density Polyethylene

MSL – Mean Sea Level

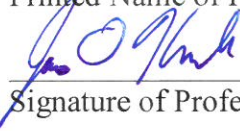
SMEC – San Miguel Electrical Cooperative

USEPA – United States Environmental Protection Agency

I, the undersigned Texas Professional Engineer, hereby certify that I am familiar with the technical requirements of 40 CFR 257.102. I also certify that it is my professional opinion that, to the best of my knowledge, information, and belief, that the activities outlined in this retrofit plan are in accordance with current good and accepted engineering practice(s) and standard(s) appropriate to the nature of the project and the technical requirements of 40 CFR 257.102(k).

For the purpose of this document, "certify" and "certification" shall be interpreted and construed to be a "statement of professional opinion". The certification is understood and intended to be an expression of my professional opinion as a Texas Licensed Professional Engineer, based upon knowledge, information, and belief. The statement(s) of professional opinion are not and shall not be interpreted or construed to be a guarantee or a warranty of the retrofit activities.

James O. Kendrick
Printed Name of Professional Engineer


Signature of Professional Engineer

84079
Texas License Number

8/28/19
Date





1.0 INTRODUCTION

1.1 General

The San Miguel Electrical Cooperative (SMEC) operates an electrical power generating station in Atascosa County, Texas. Pursuant to the current rules for the management of coal combustion residual (CCR) materials (40 CFR, Part 257), SMEC plans to retrofit their two existing coal ash ponds (Ash Ponds A and B). As existing Ponds A and B are each approximately 13 acres in size, it is estimated that the largest area of the pond that will be affected by the retrofit operation will be 26 acres.

1.2 Project Objectives

The primary objective of this work is to retrofit Ash Ponds A and B to a double-lined system by October 31, 2020 pursuant to currently effective 40 CFR 257.101(a)(1). The retrofitted ponds will consist of a minimum 2-ft. thick lower liner of compacted clay with a permeability less than 1×10^{-7} cm/s and an upper liner consisting of a 60-mil HDPE liner system.¹

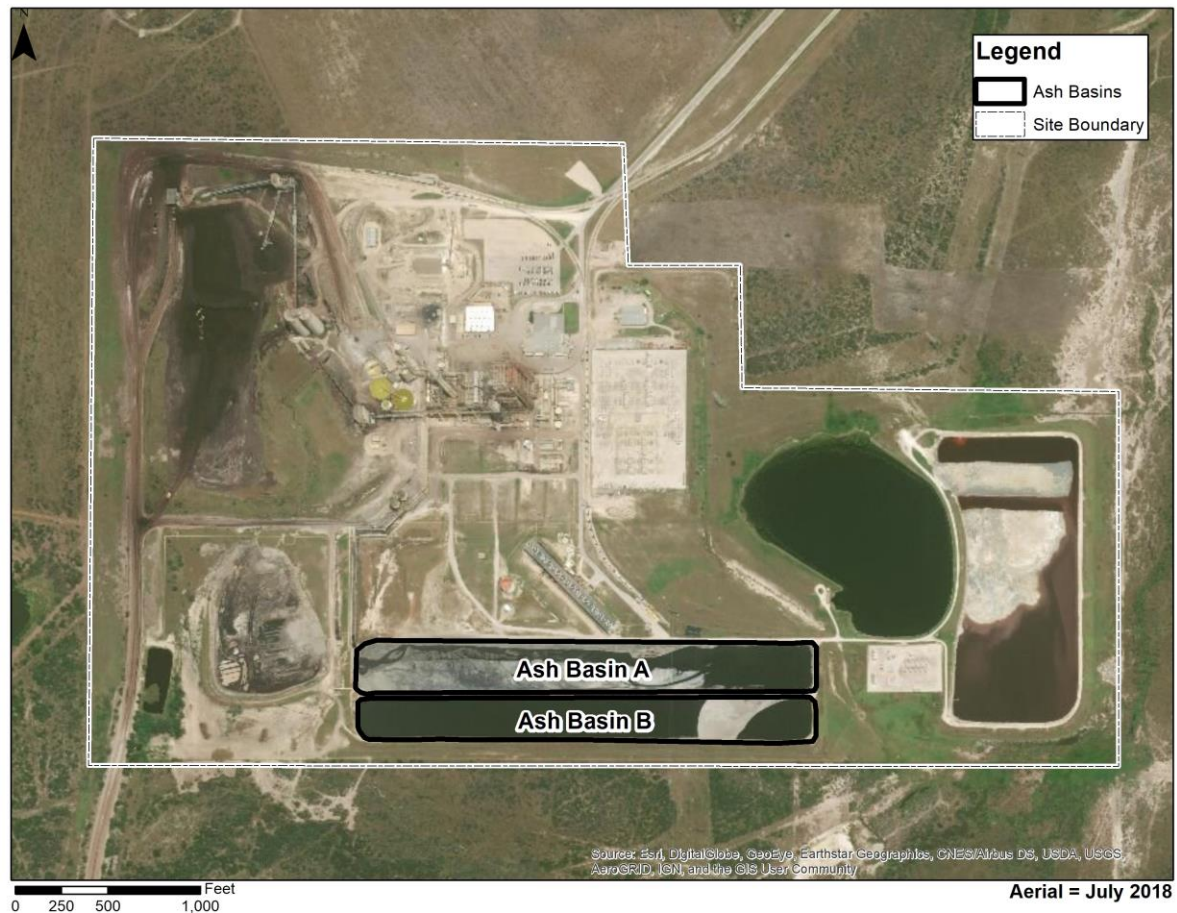
1.3 Description of Retrofit Activities

Figure 1-1 and Drawings C-101 and C-102 show the existing site conditions in the pond areas of the SMEC Plant. As is typical at power generation stations, retrofitting of unit processes usually has to be performed without interruption to the overall system operation. The retrofitting of the existing ponds will occur in sequence with Pond A being retrofitted while Pond B remains in operation, after which Pond A will be put back in operation and Pond B will then be retrofitted.

¹ SMEC's pre-existing certifications under the Federal CCR rules, including certifications related to the existing clay liner from ERM and Power Engineering, are available at the following website: <http://www.smeci.net/ccr-rule>



Figure 1-1 Existing Site Conditions



As part of this project, Pond B will be segmented into two ponds by installing a separator berm into the existing pond. The pond on the eastern side will continue to be connected to Pond A at the eastern end by the existing weir structure. The remaining portion at the western side will function as the Plant's new equalization basin.

The activities under the Retrofit Plan are as follows:

- Pond A Ash Removal
- Pond A Surface Tilling, Grading and Compaction
- Pond A Liner Installation
- Return Pond A to Service
- Pond B Dewatering and Ash Removal
- Pond B Divider Berm Installation
- New Pond B and New Equalization (EQ) Basin Surface Tilling, Grading and Compaction
- New Pond B and New EQ Basin Liner Installation
- Return New Pond B and New EQ Basin to Service
- Improvements to access road on Internal Pond Berms



1.3.1 Ash Removal

Once pond retrofit construction commences, ash will be removed from the ponds to the bottom of the pond (elevation 295-ft. above MSL) and to the elevations of the clay berm as depicted on Drawings C-104 and C-105. Standard excavation techniques (excavator, front end loader, bulldozer, and dump trucks) will be used to excavate the ash from the ponds. It is estimated that the maximum amount of CCR that will be removed as part of the retrofit operation will be approximately 350,000 cubic yards. Each pond will be visually inspected to verify that the CCR material has been removed.

1.3.2 Clay Liner Preparation

The ponds will be tilled, followed by grading and compacting their surfaces. The purpose of tilling is to create a uniform surface for grading and compaction. The purpose of grading and compaction is to assure proper drainage of the ponds during maintenance and to assure a smooth, non-obstructed surface for the installation of geosynthetic liner material.

1.3.3 Liner Installation

A 60-mil HDPE liner will be installed over the surface of the ponds to the top of the berms as depicted on Drawings C-107 and C-108. For the berm separating ponds A and B, the liner will be laid over the berm connecting the liners in the ponds (Drawing C-106). The liner seams will be welded and tested to assure long-term operation. The liner system will be attached to the top of the pond berms on the outside perimeter of the pond system in an anchor trench system designed to hold the liner in place.

1.3.4 New EQ Basin

Pond B will be divided into two equally sized ponds, as shown on Drawing C-106, with the western pond becoming the new plant EQ Basin and the eastern pond used for continued ash management. Both basins will be approximately 6.5 acres in size. The new EQ Basin will be lined similarly to the ash basins.

1.3.5 Top of Berm Road

Access is required for maintenance vehicles on the berms separating the retrofitted ponds (berm between the former Ponds A and B and the berm between the new Pond B and the new EQ Basin). Because liner material will traverse these berms, the liner will be protected by a clay, geotextile, and stone cover, that is suitable for vehicular traffic.

1.3.6 Pond Retrofitting Schedule

Construction on the retrofit of Pond A is scheduled to begin in December of 2019 and to be completed during the spring of 2020. It is anticipated that the retrofit of Pond B will begin in the spring of 2020 and be completed by September of 2020.