Summary of Liner Construction
Monticello Impoundments

Luminant Generating Company, LLC

Monticello Steam Electric Station CCR Documentation
Project No. 90601

09/16/2016
Summary of Liner Construction
Monticello Impoundments

prepared for

Luminant Generating Company, LLC
Monticello Steam Electric Station CCR Documentation
Titus County, Texas

Project No. 90601

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prepared by

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INDEX AND CERTIFICATION

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Report Index

<table>
<thead>
<tr>
<th>Chapter Number</th>
<th>Chapter Title</th>
<th>Number of Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Introduction</td>
<td>2</td>
</tr>
<tr>
<td>2.0</td>
<td>Liner Construction</td>
<td>1</td>
</tr>
</tbody>
</table>

Certification

I hereby certify, as a Professional Engineer in the state of Texas, that the information in this document was assembled under my direct personal charge. This report is not intended or represented to be suitable for reuse by Luminant Generating Company, LLC or others without specific verification or adaptation by the Engineer.

Randell Lee Sedlacek, P.E. (Texas License No. 99056)
Date: 9/14/14
TABLE OF CONTENTS

EXECUTIVE SUMMARY

1.0 INTRODUCTION ........................................................................................................ 1-1

2.0 LINER CONSTRUCTION ............................................................................................ 2-1
   2.1 Bottom Ash Ponds ................................................................................................. 2-1

APPENDIX A - NORTHEAST ASH WATER RETENTION POND
APPENDIX B - WEST ASH SETTLING POND
APPENDIX C - SOUTHWEST ASH SETTLING POND
**LIST OF ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Term/Phrase/Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMcD</td>
<td>Burns &amp; McDonnell</td>
</tr>
<tr>
<td>CCR</td>
<td>Coal Combustion Residual</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulation</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>GM</td>
<td>Geomembrane</td>
</tr>
<tr>
<td>MOSES</td>
<td>Monticello Steam Electric Station</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
</tr>
</tbody>
</table>
1.0 INTRODUCTION

On April 17, 2015, the Environmental Protection Agency (EPA) issued the final version of the federal Coal Combustion Residual Rule (CCR Rule) to regulate the disposal of coal combustion residual (CCR) materials generated at coal-fired units. The rule will be administered as part of the Resource Conservation and Recovery Act [RCRA, 42 United States Code (U.S.C.) §6901 et seq.], using the Subtitle D approach.

Luminant is subject to the CCR Rule and as such must document the liner construction for existing surface impoundments per 40 Code of Federal Regulations (CFR) §257.71. This document provides the liner construction documentation for the following existing CCR surface impoundment at Monticello Steam Electric Station (MOSES):

- Bottom Ash Ponds
  - Southwest Ash Settling Pond
  - West Ash Settling Pond
  - Northeast Ash Water Retention Pond

![Figure 1 MOSES Site Plan](image)
An existing surface impoundment is classified as lined if the liner was constructed with any of the following:

- A liner consisting of a minimum of two feet of compacted soil with a hydraulic conductivity of no more than $1 \times 10^{-7}$ centimeters per second.
- A composite liner that meets the requirements of §257.70(b).
- An alternative composite liner that meets the requirements of §257.70(c).
2.0 LINER CONSTRUCTION

The following section describes the liners at the CCR Impoundments at MOSES.

2.1 Bottom Ash Ponds

Based on drawings provided by Luminant, these ponds have compacted clay liners installed in them. Drawing No. 129-1423-302 Sheet 2, Rev 3 (See Appendix A) indicates the Ash Ponds have three feet of clay soil. The clay soil is covered by four inches of revetment.

Based on the drawings provided, and the GM/soil system described on those drawings, BMcD’s opinion is the Ash Ponds, which include the NE Ash Water Retention Pond, the West Ash Settling Pond, and the SW Ash Settling Pond, would be considered lined per the Rule. BMcD’s opinion is based on the following:

1. The drawings show that there is three feet of compacted soil with a hydraulic conductivity of no more than $1 \times 10^{-7}$ cm/sec, which meets the requirements of the Rule.
APPENDIX A - NORTHEAST ASH WATER RETENTION POND

DRAWING NO. 129-1423-302 SHEET 02 REV. 3
MONTICELLO ASH POND DESIGN MEMO 1990
DRAWING NO. INDG-9788-G-672 REV. 8
MONTICELLO STEAM ELECTRIC STATION

Replace Ash Water Retention Pond - Phases II & III
Conceptual Design Meeting
February 27, 1990

DESIGN SUMMARY

A. Construct two new ponds by adding a dike splitting the existing East Bottom Ash Pond.

1. The north part, the Settling Pond, will measure approximately 500' x 500'.

2. The south part, the Runoff Collection Pond, will measure approximately 940' x 500'. Storage capacity of runoff equivalent to a 10-year, 24-hour rainfall event.

B. Settling Pond

1. Bottom elevation 361' to match West Bottom Ash Ponds.

2. Two weirs join the Settling Pond to the West Bottom Ash North Pond.

3. Line pond with 3' of clay and a 4" concrete revetment mat.

4. Raise top of dike elevation to 386.5' to match WBAP.

C. Runoff Collection Pond

1. Bottom elevation 358' to avoid water table at 357'.

2. Line with Claymax and 8" of fill.

3. Provide grass cover over entire surface of pond.

4. Lower dikes to elevation 371'. Use existing dike and pond floor material to construct new dike.

5. Invert elevation of drainage into the pond at 362'.

6. Provide roadway at top of dikes to allow passage of motor vehicles completely around both ponds.

7. Reuse two existing 2000 gpm pumps at the Ash Water Retention Pond for pumping water to the Operating Pond. Pump shafts to be shortened as required (by plant).
Mount pumps on a permanent concrete intake structure in lieu of a barge.

Pond has to be kept as dry as possible to be prepared for 10-year, 24-hour rainfall event.

Rainage Modification

- Use existing culverts as much as possible by reversing flow where needed.
- Need two new culverts below tracks near entrance to the runoff collection pond.
- Details of runoff collection at ash car maintenance facilities pending review of surveying drawings.

Power Requirements

Utilize one of the two options, based on plant preference and future expansion, listed below:

1. Extend the existing 13.2 kV distribution line located at the south end of the existing East Bottom Ash Pond to the new intake structure. Install a transformer and appropriate starters, controls, etc. for the pump motors. Install a distribution panel for lighting, convenience receptacles, welding receptacle, etc.

2. Extend the existing duct bank that runs to the Ash Water Retention Pond to the new intake structure. Install the appropriate power and control wiring for the motor feeders, controls, lighting, and receptacles.

ND LINER OPTIONS

Settling Pond

Clay liner with revetment mat is most feasible and economical.

Runoff Collection Pond

1. Clay liner: Due to high water table (357' elevation) and low invert elevation (362'), in order to maintain sufficient clearance to groundwater during excavation, 3' of clay leaves only 1' to invert elevation. Disregard clay liner.