

# CCR Certification Report: Liner Design Criteria Evaluation

## For

### East Ash Pond

### At Hennepin Power Station

# Table of Contents

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2</b>	<b>LINER EVALUATION .....</b>	<b>1</b>
<b>3</b>	<b>CONCLUSION .....</b>	<b>1</b>
<b>4</b>	<b>CERTIFICATION .....</b>	<b>2</b>

## 1 INTRODUCTION

The purpose of this liner design criteria evaluation is to document that the requirements specified in 40 CFR §257.71(a)(1) have been evaluated to support the liner certification for the Hennepin Power Station East Ash Pond, an existing CCR surface impoundment as defined under 40 CFR §257.53.

Owners or operators of existing CCR surface impoundments must document, by October 17, 2016, whether or not such units were constructed with a liner system meeting any one of the following criteria as defined in 40 CFR §257.71(a)(1):

- (i) A liner consisting of a minimum of two feet of compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec;
- (ii) A composite liner that meets the requirements of §257.70(b); or
- (iii) An alternative composite liner that meets the requirements of §257.70(c).

In accordance with §257.71(a)(3), if the CCR unit was not constructed with a liner system that meets the requirements of §257.71(a)(1)(i), (ii) or (iii) as listed above, it will be considered an existing unlined CCR surface impoundment.

## 2 LINER EVALUATION

Based on the evaluation of design drawings and available construction records, the East Ash Pond was constructed with a bottom liner consisting of a 4-foot thick compacted clay liner over a 1-foot layer of sand and sideslopes consisting of two layers of 45-mil reinforced polypropylene geomembrane over 1-foot of compacted clay. The 1-foot clay layer on the sideslopes was keyed into the 4-foot thick clay layer on the floor and extended up the sideslopes to be keyed into an anchor trench at the top of the dikes. Although a maximum permeability requirement of  $1.0 \times 10^{-7}$  cm/s was specified in the design documents, construction records were not available to determine the in-situ hydraulic conductivity. Therefore, the East Ash Pond cannot be certified as meeting the §257.71(a)(1) criteria for a lined impoundment.

## 3 CONCLUSION

The East Ash Pond at the Hennepin Power Station was evaluated relative to the USEPA CCR Rule requirements for liner certification for an existing CCR surface impoundment (§257.71(a)(1)). Based on the evaluation presented herein, the East Ash Pond was not constructed with a liner that meets the design criteria specified in §257.71(a)(1).

## 4 CERTIFICATION

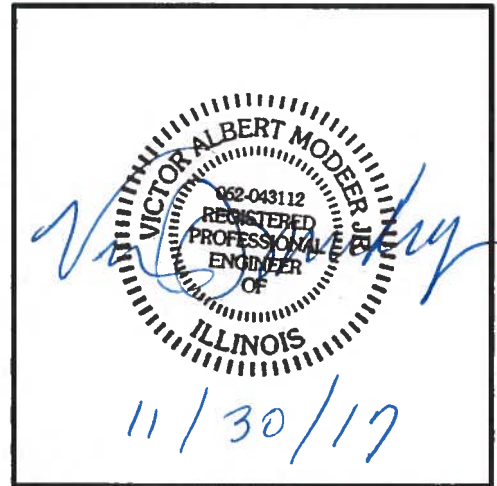
### Certification Statement 40 CFR § 257.71(b) – Liner Design Criteria for an Existing CCR Surface Impoundment

CCR Unit: Hennepin East Ash Pond

I, Victor Modeer, being a Registered Professional Engineer in good standing in the State of Illinois, do hereby certify, to the best of my knowledge, information, and belief that the information contained in this certification has been prepared in accordance with the accepted practice of engineering. I certify, for the above-referenced CCR Unit, that the documentation as to whether the CCR Unit meets the requirements of 40 CFR § 257.71(a) is accurate.

VICTOR A MODEER JR.  
Printed Name

10/13/16  
Date



## About AECOM

AECOM (NYSE: ACM) is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. With nearly 100,000 employees around the world, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and collaborative technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments. A Fortune 500 company, AECOM serves clients in more than 100 countries and has annual revenue in excess of \$19 billion.

More information on AECOM and its services can be found at [www.aecom.com](http://www.aecom.com).

1001 Highlands Plaza Drive West, Suite 300  
St. Louis, MO 63110  
1-314-429-0100