



CCR CERTIFICATION REPORT

LINER EVALUATION RESULTS FOR  
CCR SURFACE IMPOUNDMENT

COAL PILE RUNOFF POND  
ZIMMER POWER STATION  
MOSCOW, OHIO

by Haley & Aldrich, Inc.  
Cleveland, Ohio

for Dynegy Zimmer, LLC

File No. 129673-007  
February 2018

## 1. Introduction

Haley & Aldrich, Inc. performed a liner design criteria evaluation for the Coal Pile Runoff Pond, an existing CCR surface impoundment located at the Zimmer Power Station in Moscow, Ohio. This is an updated evaluation and supersedes the previous liner evaluation completed for the Coal Pile Runoff Pond prior to October 17, 2016. This updated evaluation was performed in accordance with the U.S. Environmental Protection Agency's (EPA's) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 40 CFR Part 257, specifically §257.71(a)(1), which provides that the owner or operator of an existing CCR surface impoundment must document:

*whether or not such unit was constructed with any one of the following:*

- (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 that meets the requirements of §257.71(a)(1)(i), (ii) or (iii), the unit will be considered an existing unlined CCR surface impoundment.

## 2. Liner Evaluation

The previous liner evaluation concluded that the Coal Pile Runoff Pond liner system was designed as a 3-foot thick compacted clay layer, but construction records were not available to determine the in-situ hydraulic conductivity.

A supplemental field investigation and laboratory testing program was completed in 2017 by Haley & Aldrich to confirm as-built conditions and to determine the in situ hydraulic conductivity. The investigation demonstrated that the liner system as-built conditions consist of a minimum of two feet of compacted clay with a hydraulic conductivity of less than  $1 \times 10^{-7}$  cm/sec. The average clay liner thickness of 4.6 feet (ranging between 4.0 and 6.0 feet) is greater than the minimum 2 feet required and the average hydraulic conductivity of  $9.1 \times 10^{-9}$  cm/sec (ranging between  $7.3 \times 10^{-9}$  cm/sec and  $1.0 \times 10^{-8}$  cm/sec) is less than the maximum allowable hydraulic conductivity requirement. The hydraulic conductivity was determined using recognized and generally accepted methods. The results of the investigation are documented in the operating record.

Based on evaluation of design drawings, available construction drawings, and results of the supplemental field investigation and laboratory testing program, the Coal Pile Runoff Pond meets the §257.71(a)(1)(i) criteria for a lined impoundment.

## 3. Conclusion

The Coal Pile Runoff Pond at the Zimmer 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, the Coal Pile Runoff Pond was constructed with a liner that meets the design criteria

specified in §257.71(a)(1)(i) and, is therefore, considered a “lined CCR surface impoundment” for purposes of the CCR Rule. As a result, the Coal Pile Runoff Pond is not subject to §257.101(a) of the CCR Rule.

#### 4. Certification

*§257.71(b): The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer attesting that the documentation as to whether a CCR unit meets the requirements of paragraph (a) of this section is accurate.*

I, Steven F. Putrich, being a Registered Professional Engineer in good standing in the State of Ohio, do hereby certify, to the best of my knowledge, information, and belief, that the as-built liner system for the Coal Pile Runoff Pond meets the design criteria of 40 CFR §257.71(a)(1)(i) and that the documentation in the operating record supporting that conclusion is accurate.



Signed: \_\_\_\_\_  
Consulting Engineer

Print Name: Steven F. Putrich  
Ohio License No.: 67329  
Title: Vice President  
Company: Haley & Aldrich, Inc.

Professional Engineer’s Seal:

