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File No. 128064-003

SUBJECT: Liner Design Criteria for Existing CCR Surface Impoundments  
Associated Electric Cooperative, Inc.  
Thomas Hill Energy Center – Cell 003  
Clifton Hill, Missouri

Haley & Aldrich, Inc. has developed this Liner Design Criteria demonstration on behalf of Associated Electric Cooperative, Inc. (AECI) Thomas Hill Energy Center (THEC) located near Clifton Hill, Missouri. AECI operates the existing coal combustion residuals (CCR) surface impoundment referred to as Pond 001 - Cell 003 (Cell 003) for management of CCRs generated. This document has been developed to address the liner design criteria certification from the U.S. Environmental Protection Agency's Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 40 CFR Part 257 (CCR Rule), specifically §257.71.

*§257.71(a)(1): No later than October 17, 2016, 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).*

Cell 003 was constructed on natural grades that consist of clayey soils. However, the in-situ construction method did not render a liner sufficient to meet the requirements listed above as defined by the USEPA. Therefore, for purposes of the CCR Rule, Cell 003 is considered an unlined CCR surface impoundment.

§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 certify that Cell 003 at the AECl Thomas Hill Energy Center was not constructed with the USEPA defined liners listed under §257.71(a)(1) of the CCR Rule based on available documentation and that the existing CCR surface impoundment is considered unlined.

Signed:   
\_\_\_\_\_  
Certifying Engineer

Print Name: Steven F. Putrich  
Missouri License No.: 2014035813  
Title: Project Principal  
Company: Haley & Aldrich, Inc.

Professional Engineer's Seal:

