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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 001  
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 001 (Cell 001) 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 001 was constructed with a compacted clay liner material. However, the construction method was insufficient to define the clay liner material as meeting the requirements listed above. Therefore, for purposes of the CCR Rule, Cell 001 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 001 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

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Missouri License No.: 2014035813

Title: Project Principal

Company: Haley & Aldrich, Inc.

Professional Engineer's Seal:

