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File No. 128064-003

Associated Electric Cooperative, Inc.  
Thomas Hill Energy Center  
5693 Highway F  
Clifton Hill, Missouri 65244

Attention: Ms. Kim Dickerson  
Senior Environmental Analyst

Subject: Initial Hazard Potential Classification Assessment  
Pond 001 - Cell 002  
Thomas Hill Energy Center  
Clifton Hill, Missouri

Ms. Dickerson:

This letter presents the results of our Initial Hazard Potential Classification Assessment for the Associated Electric Cooperative, Inc. (AECI) Pond 001 - Cell 002 CCR Surface Impoundment located at the Thomas Hill Energy Center (THEC) in Clifton Hill, Missouri.

Haley & Aldrich, Inc. (Haley & Aldrich) was contracted by AECI to perform this Initial Hazard Potential Classification Assessment for the Cell 002 impoundment. This work was completed in accordance with the US 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 §257.73(a)(2).

## **1.1 DESCRIPTION OF CELL 002 IMPOUNDMENT**

Cell 002 is an inactive coal combustion residuals (CCR) surface impoundment located to the south of the Thomas Hill power plant. Cell 002 was originally designed by Burns & McDonnell in 1978-1979 and constructed shortly thereafter. Cell 002 was previously utilized to settle sluiced CCR from the power plant.

Cell 002 is incised on the east and west sides. On the north side, Cell 002 abuts the 3H:1V downward slope from the Cell 001 processing pad/containment berm which is up to 30 ft higher in elevation than Cell 002.

On the south side, an embankment with 18-ft crest width separates Cell 002 and Cell 003. The embankment is constructed from clay fill obtained from an on-site borrow source. The embankment is

underlain by naturally deposited medium stiff to very stiff clay and silty clay. The south interior slope of Cell 002 is typically 3H:1V, while the south exterior slope varies from about 3H:1V to 2H:1V.

In 2015, a separation berm was constructed to divide Cell 002 into separate and distinct eastern and western basins with the following functions:

- Cell 002 eastern basin – The eastern basin functions as a clean, unlined, surface impoundment, serving as a non-CCR stormwater detention basin. Discharge from the eastern basin is via the concrete drop inlet structure built during the original construction of Cell 002. When the water level in the basin reaches normal pool level, water enters the structure and flows to Cell 003 through a discharge pipe that runs through the common Cell 002/003 embankment. The eastern basin is approximately 9.0 acres in size.
- Cell 002 western basin – The western basin is an inactive CCR surface impoundment that contains historic CCR. The basin is currently being pumped to maintain a dry condition to facilitate the ongoing removal of CCR from the impoundment. Discharge from the western basin is via a 15-in. diameter corrugated metal pipe (CMP) which penetrates the Cell 002/003 embankment and discharges into Cell 003. The western basin is approximately 12.5 acres in size.

The 400-ft long separation berm was constructed from compacted clay fill obtained from an on-site borrow source. The separation berm includes a compacted clay seepage cutoff trench keyed into the underlying natural soils, and an aggregate surfaced access roadway on top of the berm at El. 720. The berm runs in the north-south direction and ties into the main impoundment dike on the south and the natural grades to the north.

## 1.2 HAZARD POTENTIAL CLASSIFICATION ASSESSMENT

### 1.2.1 General

The Hazard Potential Classification of a surface impoundment is based on the potential for loss of human life, economic losses, environmental damage, and/or disruption to lifelines caused by failure or mis-operation of the surface impoundment.

EPA's Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 40 CFR Part 257 requires the owner or operator of a CCR surface impoundment to determine which of the following three hazard potential classifications characterizes their CCR unit:

- High Hazard Potential Classification – A diked surface impoundment where failure or mis-operation will probably cause loss of human life.
- Significant Hazard Potential Classification – A diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.

- Low Hazard Potential Classification – A diked surface impoundment where failure or mis-operation results in no probable loss of life, and low economic and/or environmental losses. Losses are principally limited to the surface impoundment’s owner’s property.

### 1.2.2 Hazard Potential Classification

Based on observations during our 30 August 2016 site visit and our review of available information, Haley & Aldrich has judged the Cell 002 impoundment as having **Low** Hazard Potential Classification in accordance with 40 CFR Part 257. The **Low** Hazard Potential Classification is due to no probable loss of life in the event of a failure, low economic and environmental impacts, and losses limited to the impoundment owner’s property which extends approximately 5 miles south (downstream) of Cell 002.

### 1.3 CERTIFICATION

*§257.73(a)(2)(ii): The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial hazard potential classification and each subsequent periodic classification specified in paragraph (a)(2)(i) of this section was conducted in accordance with the requirements of this section.*

I certify that this initial hazard potential classification for the Cell 002 CCR surface impoundment at the AECI Thomas Hill Energy Center was conducted in accordance with §257.73(a)(2) of the CCR Rule.

Signed:   
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Certifying Engineer

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

Professional Engineer’s Seal:

