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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 003
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 003 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 003 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 003 IMPOUNDMENT

Cell 003 is a coal combustion residuals (CCR) surface impoundment located to the south of the Thomas Hill power plant. Cell 003 was originally designed by Burn & McDonnell in 1978-1979 and constructed shortly thereafter. It is understood that Cell 003 was modified in 1984. Cell 003 has a surface area of approximately 13.5 acres in size.

Cell 003 is currently used for wet storage of bottom ash/boiler slag and sediments from the coal pile runoff. Cell 003 is incised on the east and west sides. On the north side, an embankment with 18-ft crest width separates Cell 003 and Cell 002. 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 north interior slope of Cell 003 varies from about 3H:1V to 2H:1V, while the north exterior slope is typically 3H:1V.

On the south side, an embankment with 16-ft crest width separates Cell 003 and Cell 004. The embankment is constructed from clay fill obtained from an on-site borrow source. The embankment is underlain by naturally deposited stiff clay with trace sand, which in turn is underlain by weathered limestone. The south interior and exterior slopes are typically 3H:1V.

Cell 003 receives decant water and suspended CCR from Cell 001 via an earthen bypass channel which flows from Cell 001 and around Cell 002, discharging into the northwest corner of Cell 003. In addition, stormwater from Cell 002 eastern basin flows to Cell 003, discharging from an underwater pipe in the northeast corner of the impoundment. Cell 003 currently receives discharge from Cell 002 West from pumping operation; however, if pumping were discontinued Cell 002 West would have the potential to fill with water and gravity flow through discharge pipes into Cell 003.

The outlet structure from Cell 003 consists of a rectangular concrete drop inlet tower equipped with concrete stop logs. Decant water enters the structure and flows through a pipe that penetrates the common Cell 003/004 embankment and discharges underwater into Cell 004. The Cell 003 emergency spillway consists of a riprap-lined channel which is approximately 2 ft in depth located across the crest of the south embankment.

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 29 August 2016 site visit and our review of available information, Haley & Aldrich has judged the Cell 003 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 003.

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 003 CCR surface impoundment at the AECI Thomas Hill Energy Center was conducted in accordance with §257.73(a)(2) of the CCR Rule.

Signed:_____
Certifying Engineer

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

Professional Engineer's Seal:

Cc: Mark Brownstein-Haley & Aldrich