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15 October 2021
File No. 128064-022

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

Attention: Mrs. Jenny Jones
Senior Environmental Analyst

Subject: Periodic Hazard Potential Classification Assessment
Pond 001 - Cell 004
Thomas Hill Energy Center
Clifton Hill, Missouri

Mr. Stundebeck:

This letter presents the results of our Periodic Hazard Potential Classification Assessment for the Associated Electric Cooperative, Inc. (AECI) Pond 001 - Cell 004 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 Periodic Hazard Potential Classification Assessment for the Cell 004 impoundment. This work was completed in accordance with the US Environmental Protection Agency's (EPA's) CCR Rule effective 19 October 2015 including subsequent revisions, specifically Code of Federal Regulations Title 40 (40 CFR) §257.73(a)(2).

The Initial Hazard Potential Classification Assessment was completed on 16 October 2016 by Haley & Aldrich. This document serves as the 5-year periodic update as required by the CCR Rule.

1.1 DESCRIPTION OF CELL 004 IMPOUNDMENT

Cell 004 is a coal combustion residuals (CCR) surface impoundment located to the south of the Thomas Hill power plant. Cell 004 was originally designed by Burns & McDonnell in 1978-1979 and was constructed shortly thereafter. It is understood that Cell 004 was modified in 1984. Cell 004 has a surface area of approximately 11.0 acres.

Cell 004 provides final settling and polishing for decant water from Cell 003 and manages a limited quantity of CCR material prior to discharging to the Middle Fork of the Little Chariton River. The impoundment is surrounded by earthen berms on all sides. Maximum embankment height is

approximately 15 ft. Exterior slopes generally range from approximately 4H:1V to 5H:1V. Interior slopes are typically 3H:1V. Crest width varies from approximately 14 to 16 ft.

The embankments were constructed from clay fill obtained from an on-site borrow source. The embankments are underlain by naturally deposited soft to stiff clay with trace sand and/or gravel, which in turn is underlain by weathered limestone, siltstone or shale.

Cell 004 has a surface area of approximately 9.9 acres based on a normal operating water level of 700. The unit has a total storage capacity of approximately 162 acre-feet based on a comparison of elevation 705 (dam low crest elevation) in the 2019 survey to the approximate topography prior to dam construction.

The outlet structure from Cell 004 consists of a rectangular concrete drop inlet tower equipped with 60-in. wide concrete stop logs. Decant water enters the structure and flows through a 48-in. diameter steel pipe that penetrates the Cell 004 south embankment and discharges from the NPDES-permitted Outfall #001 into a concrete open channel before flowing to the Middle Fork of the Little Chariton River.

The Cell 004 emergency spillway consists of an 18-ft wide riprap-lined channel which is approximately 2 ft in depth located across the crest of the south embankment. To provide vehicle access across the riprapped channel, the riprap has been topped off with a layer of crushed stone within the limits of access road.

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 21 July 2021 site visit and our review of available information, Haley & Aldrich has judged the Cell 004 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 004. These findings from the Periodic Hazard Potential Classification Assessment are consistent and unchanged from the Initial Hard Potential Classification Assessment completed on 16 October 2016 by Haley & Aldrich.

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 Periodic Hazard Potential Classification for Pond 001 – Cell 004 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:

Steven F. Putrich
Digitally signed by Steven F. Putrich
Date: 2021.10.15 14:33:53 -04'00'