16 April 2019
File No. 128064-006

Associated Electric Cooperative, Inc.
2814 South Golden Avenue
P.O. Box 754
Springfield, Missouri 65801-0754

Attention: Jenny Burns – Senior Environmental Analyst
               Russ Weatherly – Supervisor, Land and Water Resources

Subject: Certification of Statistical Methods – Ash Pond System
               Thomas Hill Energy Center, Clifton Hill, Missouri

Dear Ms. Burns and Mr. Weatherly:

Associated Electric Cooperative, Inc. (AECI) operates four existing coal combustion residual (CCR) management units (the Ash Pond System) at the Thomas Hill Energy Center located in Clifton Hill, Missouri. These CCR management units are referred to as Cell 001, Inactive Cell 002 West, Cell 003, and Cell 004 and are managed as a multi-unit groundwater system. Pursuant to Code of Federal Regulations Title 40 (40 CFR) Chapter I, Subchapter I, Part 257, Subpart D § 257.93(f)(6)[1], I certify that the selected statistical methods described herein are appropriate for evaluating the groundwater monitoring data for the CCR management area. The statistical methods described below were used for the evaluation of the groundwater quality data collected from monitoring wells constructed in accordance with the requirements of 40 CFR 257.91 *Groundwater Monitoring Systems* at the Ash Pond System.

Based on the attributes of the water quality dataset, one statistical method has been used to evaluate water quality data obtained from monitoring wells completed at the Ash Pond System. The statistical method is prediction limits. A prediction limit procedure is one in which concentration limits [0, PL] for each constituent are established from the distribution of the background data, with a specified confidence level (e.g., 95 percent). The upper endpoint of concentration limits is called the upper prediction limit (UPL). Depending on the background data distribution, parametric or non-parametric prediction limit procedures are used to evaluate groundwater monitoring data using this method. Parametric prediction limits utilize normally distributed data or normalized data via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the prediction limit. If all the background data are non-detect, a maximum reporting limit may serve as an approximate UPL.

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[1] "The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating the selected statistical method is appropriate for evaluating the groundwater for the CCR management area. The certification must include a narrative description of the statistical method selected to evaluate the groundwater monitoring data."

This certification and the evaluation to select the statistical procedures were conducted under my direction or supervision according to a system designed to assure that qualified personnel selected the statistical procedure pursuant to 40 CFR 257.93. The certification submitted is, to the best of my knowledge, accurate and complete.

Signed: _____
Certifying Engineer

Print Name: Steven F. Putrich
Missouri License No.: 2014035813
Title: Principal Consultant

HALEY ALDRICH