April 17, 2019
File No. 25219067.00

Mr. Brian Clepper
Columbia Energy Center
W8375 Murray Road
Pardeeville, WI 53954

Subject: Groundwater Monitoring Statistical Method Certification
             Columbia Energy Center – COL Secondary Pond, Pardeeville, Wisconsin

Dear Mr. Clepper:

This letter documents the selection of a statistical method for evaluating data from the groundwater monitoring system at the Columbia Energy Center – Secondary Pond (COL Secondary Pond), in accordance with the requirements of 40 CFR 257.93(f). The selected statistical method is appropriate for evaluating the groundwater monitoring data for the coal combustion residual (CCR) management area.

Groundwater monitoring data for the COL Secondary Pond CCR unit will be evaluated in accordance with 40 CFR 257.93(f)(3), using a tolerance or prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

A narrative description of the selected statistical method is provided below.

Groundwater Monitoring System Information

This groundwater monitoring system at the COL Secondary Pond monitors a single inactive CCR unit:

- Columbia Energy Center – COL Secondary Pond

The groundwater monitoring system consists of two upgradient and three downgradient monitoring wells.

Narrative Description of Statistical Method

For evaluation of groundwater monitoring results under detection monitoring or assessment monitoring, statistical analysis will be conducted to evaluate whether or not there is a statistically significant increase (SSI) over background values for each required constituent. The statistical analysis will use a prediction interval approach as recommended for detection monitoring in the March 2009 United States Environmental Protection Agency Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities. The approach will meet the statistical method requirements of 40 CFR 257.93(g).

For the prediction interval evaluation, interwell or intrawell testing will be selected based on the considerations outlined in Chapter 6 of the Unified Guidance. Background data for each parameter

will be analyzed to assess whether the data fit a normal distribution or can be transformed to fit a normal distribution (e.g., lognormal). The calculation of the prediction limit(s) for each parameter will be appropriate for the distribution (parametric, parametric with transformed data, or non-parametric).

Monitoring results from the compliance wells will be compared to the upper prediction limits to evaluate whether an SSI over background has occurred. Assessment monitoring results will also be compared to the site-specific groundwater protection standards developed in accordance with 40 CFR 257.95(h).

PE Certification

	I, Sherren Clark, hereby certify that that the selected statistical method for the Columbia Energy Center – COL Secondary Pond is appropriate for evaluating the groundwater monitoring data for the CCR management area in accordance with the requirements of 40 CFR 257.93(f)(6). I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.
WISCONSIN Sherren C. Clark E-29863 Madison, Wis. PROFESSIONAL ENGINEER	_(signature)_ _____ 4-12-19 _(date)_
	Sherren Clark _(printed or typed name)_
	License number E-29863
	My license renewal date is July 31, 2020.
	Pages or sheets covered by this seal: Letter - 3 pages

Sincerely,

Sherren C. Clark, PE, PG
Project Director
SCS Engineers

Thomas J. Karwoski, PG
Senior Project Manager
SCS Engineers

MDB/lmh/TK/SCC

cc: Jeff Maxted, Alliant Energy
      Jerry Lokenvitz, Columbia Energy Center

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