July 29, 2024
File No. 25224034.00

Mr. Jeff Maxted
Alliant Energy
4902 N. Biltmore Lane
Madison, WI 53718

Subject: Design Certification
Phase 2, Modules 12 and 13 Liner and Leachate Collection/Removal System
Dry Ash Disposal Facility
Columbia Energy Center, Pardeeville, Wisconsin

Dear Mr. Maxted:

SCS Engineers (SCS) reviewed the design of the alternative composite liner and leachate collection and removal system prior to the construction of the Phase 2, Modules 12 and 13 liner at the Columbia Energy Center (COL) dry ash disposal facility. The review was performed on the design documents supporting the May 3, 2024 plan of operation modification for initial permitting of a coal combustion residuals (CCR) landfill, issued by the Wisconsin Department of Natural Resources. The plan of operation modification follows the alternative composite liner and the leachate collection and removal system design requirements detailed in 40 CFR 257.70.

The alternative composite liner design for Modules 12 and 13 consists of two components:

- Upper component
  - 60-mil thick high density polyethylene (HDPE) geomembrane
  - Geosynthetic clay layer (GCL)

- Lower component
  - Two feet of compacted clay with a hydraulic conductivity of no more than 1×10^{-7} cm/sec.

The leachate collection and removal system design includes HDPE pipe, leachate drainage layer, drainage filter, coarse aggregate bedding, and geotextile. The system is designed and will be operated to maintain less than a 30-centimeter (1-foot) depth of leachate over the liner. Each of the leachate collection and removal system design components will be chemically resistant to CCR and CCR-generated leachate. The HDPE pipe was designed with sufficient strength to resist collapse due to pressures exerted by CCR, cover materials, and equipment used in the operation of Modules 12 and 13. The drainage filter was designed to minimize the movement of fine particles into the leachate collection pipes and prevent clogging. The leachate collection and removal system is also designed with cleanout riser pipes to allow pipe cleaning and prevent clogging.

Pursuant to 40 CFR 257.70(e), our certification of the alternative composite liner and leachate collection and removal system design for Phase 2, Modules 12 and 13 is provided on the following page.

Sincerely,

Phillip E. Gearing, PE
Project Manager
SCS Engineers

Eric J. Nelson, PE
Project Director
SCS Engineers

RJG/PEG/jsn/EJN

cc: Brian Clepper, Columbia Energy Center

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P.E. CERTIFICATION

7/29/24

I, Phillip E. Gearing, hereby certify that the liner and leachate collection and removal system for Phase 2, Modules 12 and 13 at the Columbia Energy Center dry ash disposal facility have been designed in accordance with the requirements in 40 CFR 257.70. This certification is based on my review of the design documents supporting the May 3, 2024 plan of operation modification for initial permitting of a coal combustion residuals (CCR) landfill, issued by the Wisconsin Department of Natural Resources. I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.

7/29/2024

(signature) (date)

Phillip Gearing

(printed or typed name)

License number E-45115-6

My license renewal date is July 31, 2026.

Pages or sheets covered by this seal:

Entire document – letter and certification page.