HARD HAT SERVICES™
Engineering, Construction and Management Solutions

932 N. Wright Street, Suite 160, Naperville, IL 60563
Phone (877) 630-7428
www.hardhatinc.com

VIA EMAIL

April 12, 2018

Mr. Jeffrey Maxted
Alliant Energy – Lead Environmental Specialist
4902 North Biltmore Lane
Madison, WI 53718-2148

Re: Liner Design Criteria for CCR Surface Impoundments - §257.71(a) and §257.100(a)
Alliant Energy – Wisconsin Power and Light Company
Nelson Dewey Generating Station
Cassville, Wisconsin

Dear Mr. Maxted;

Hard Hat Services (HHS) assessed the liner design criteria for the coal combustion residuals (CCR) surface impoundment located at the Wisconsin Power and Light Company (WPL) Nelson Dewey Generating Station (NED) in Cassville, Wisconsin.

Background Information
In accordance with the requirements set forth in §257.71(a) and §257.100(a) of the CCR Rule, an owner or operator of an inactive CCR surface impoundment must document whether the CCR unit was constructed with a liner that meets, at a minimum, one of the following three categories:

i. A liner consisting of a minimum of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec,
ii. A composite liner that meets the requirements of §257.70(b) - A composite liner must consist of two components; the upper component consisting of, at a minimum, a 30-mil geomembrane liner, and the lower component consisting of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. Geomembrane liner components consisting of high density polyethylene must be at least 60-mil thick. The geomembrane liner or upper liner component must be installed in direct and uniform contact with the compacted soil or lower liner component. The composite liner must meet the requirements specified in §257.70 (b)(1) through (4).
iii. An alternative composite liner that meets the requirements of §257.70(c). An alternative composite liner shall meet the following requirements:

- An alternative composite liner must consist of two components; the upper component consisting of, at a minimum, a 30-mil geomembrane liner, and a lower component, that is not a geomembrane, with a liquid flow rate no greater than the liquid flow rate of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. Geomembrane liner components consisting of high density polyethylene must be at least 60-mil thick. If the lower component of the alternative liner is compacted soil, the geomembrane liner must be installed in direct and uniform contact with the compacted soil.
- The owner or operator must obtain certification from a qualified professional engineer that the liquid flow rate through the lower component of the alternative composite liner is no greater than the liquid flow rate through two feet of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec. The hydraulic conductivity for the two feet of compacted soil used in the comparison shall be no greater than 1×10^{-7} cm/sec. The hydraulic conductivity of any alternative to the two feet of compacted soil must be determined using recognized and generally accepted methods.
- The alternative composite liner must meet the requirements specified in §257.70 (b)(1) through (4).

Facility Specific Information

NED is located north of the Village of Cassville, Wisconsin on the eastern shore of the Mississippi River in Grant County, at 11999 County Highway VV, Cassville, Wisconsin. Figure 1 provides both a topographic map and an aerial of the NED facility location, with the approximate property boundary of the facility identified. NED ceased burning coal in December 2015. At that time the generating station was decommissioned and permanently closed. As of December 2017, NED has been demolished.

NED has one remaining inactive CCR surface impoundment, which is identified as the NED WPDES Pond. As of the date of this letter, the CCR within the NED WPDES Pond has been removed, and the CCR unit is completing groundwater monitoring in accordance with the closure requirements of 40 CFR 257.102(c) of the CCR Rule.

Liner Determination

After review of the reasonably and readily available documentation, the NED WPDES Pond was determined to not meet the requirements of §257.71(a)(1)(i), (ii), or (iii).

Qualified Professional Engineer Certification

The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer attesting that the documentation as to whether a CCR unit meets the requirements 40 CFR 257.71(a) is accurate.

To meet the requirements of 40 CFR 257.71(b), I Mark W. Loerop hereby certify that I am a licensed Professional Engineer in the State of Wisconsin; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in 40 CFR 257.71(a).

By: _____

Name: MARK LOEROP

Date: APRIL 12, 2018

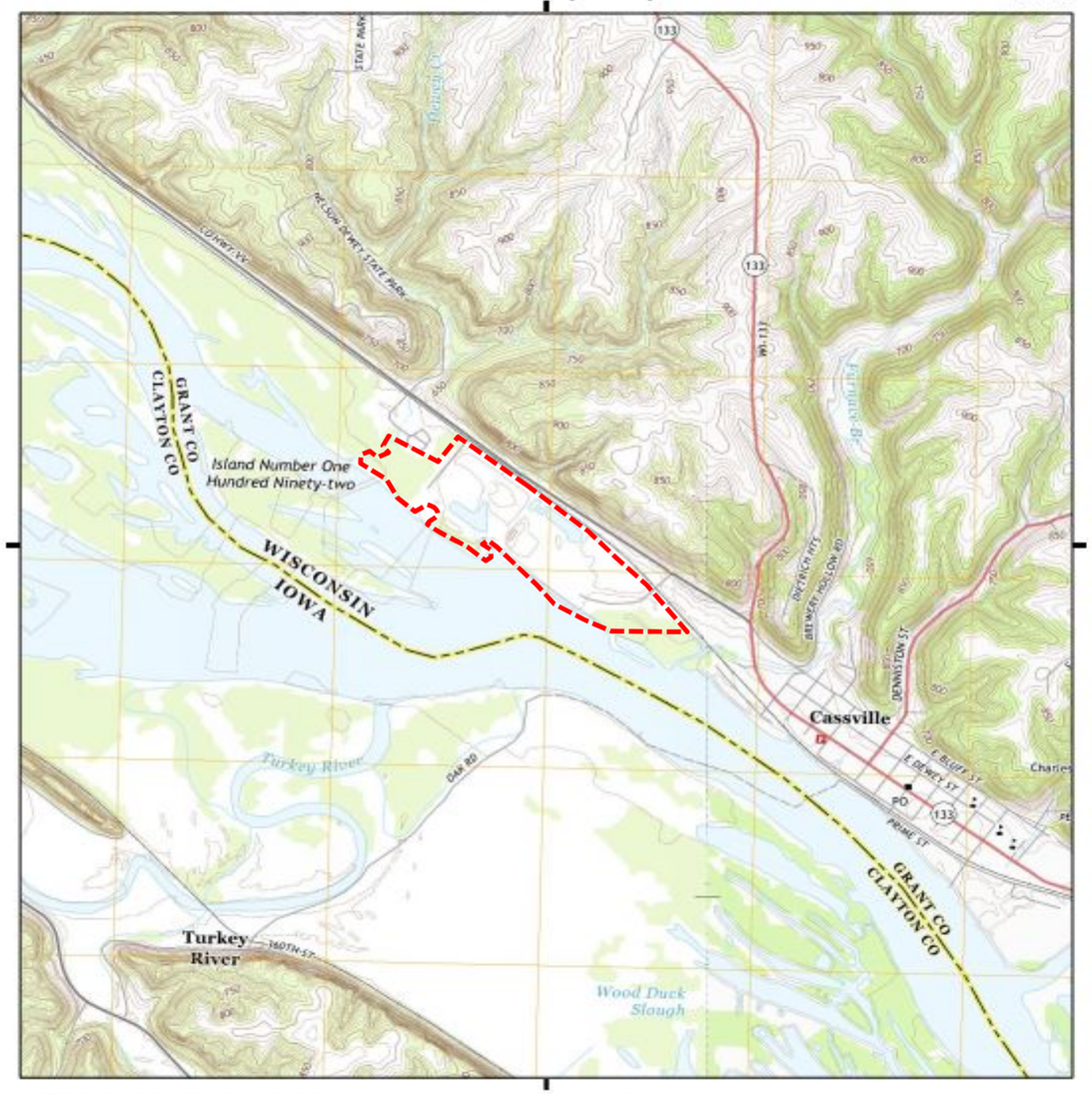
cc: Tony Morse, Alliant Energy

att: Figure 1 – Site Location

MWL/mwl/CTS
C:\Egnyte\Shared\Projects\154 - Alliant Energy\154.018 - CCR Projects\018 - NED CCR Compliance Reports\Liner Determination Letter\NED Liner Design Criteria - FINAL.doc

Historical Topo Map

2013



This report includes information from the following map sheet(s).

NW N NE
W E
SW S SE

TP, Turkey River, 2013, 7.5-minute

SE, Cassville, 2013, 7.5-minute

Miles 0.25 0.5 1 1.5

SITE NAME: Nelson Dewey Generating Station
ADDRESS: 11999 County Highway VV
Cassville, WI 53806
CLIENT: Environmental Site Assessors

N

4555570 - 11 page 4

Historical Aerial Photo 5/30/2015

Approximate Property Boundary

HARD HAT SERVICES™
Engineering, Construction and Management Solutions

Site Location
Nelson Dewey Generating Station
Wisconsin Power and Light Company

Drawing
Figure 1

Date
7/13/2016