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

March 05, 2018

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

Re: Hazard Potential Classification Assessment - §257.73(a)(2) and §257.100(a)
Alliant Energy – Interstate Power and Light Company
IPL – Sutherland Generating Station
Marshalltown, Iowa

Dear Mr. Maxted;

Hard Hat Services (HHS) completed the hazard potential classification assessment for the inactive coal combustion residuals (CCR) surface impoundments located at the Sutherland Generating Station in Marshalltown, Iowa.

Background Information
In accordance with the requirements set forth in §257.73(a)(2) and §257.100(a) of the CCR Rule, an owner or operator of an existing or inactive CCR surface impoundment must conduct initial and periodic hazard potential classification assessments of their CCR surface impoundments, except for those CCR surface impoundments that are incised. The owner or operator must determine each CCR surface impoundments hazard potential classification through a hazard potential classification assessment.

FEMA (FEMA Publication 333, Federal Guidelines for Dam Safety, Hazard Potential Classification System for Dams, April 2004) developed a "hazard potential" classification to classify surface impoundments based on the probable loss of human life, and the impacts on economic, environmental, and lifeline interests in the event of an unintentional release from a surface impoundment. Three hazard potential classification levels are used, as follows:

1. High Hazard Potential – Assigned to surface impoundments where failure or mis-operation will probably cause loss of human life.
2. Significant Hazard Potential – Assigned to surface impoundments where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, or disruption of lifeline facilities or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or

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agricultural areas but could be located in areas with population and significant infrastructure.

3. Low Hazard Potential – Assigned to surface impoundments where failure or mis-operation has no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

Facility Specific Information

The IPL – Sutherland Generating Station (SGS) is located at 3001 East Main Street Road, Marshalltown, IA 50158-0537. SGS ceased burning coal 2012 and generating operations as of June 22, 2017. The CCR surface impoundments at SGS have not received CCR on or after October 19, 2015. Figure 1 provides both a topographic map and an aerial of the SGS facility location, with the approximate property boundary of the facility identified. SGS has two non-incised CCR surface impoundments, which are identified as follows:

- Inactive CCR surface impoundment: SGS Main Ash Pond
- Inactive CCR surface impoundment: SGS Polishing Pond

SGS Main Ash Pond

The SGS Main Pond is located east of the generating plant and has been assigned an Iowa Department of Natural Resources state identification number of 64-UDP-02-15. The SGS Main Ash Pond receives influent flows from the SGS North Primary Pond and SGS South Primary Pond, as well as storm water runoff from the surrounding area. The SGS North Primary Pond discharges into the northwest corner of the SGS Main Ash Pond while the overflow pipe from the SGS South Primary Pond discharges into the west end of the SGS Main Ash Pond.

The water within the SGS Main Ash Pond is designed to flow around a series of intermediate berms prior to discharging into the southern end of the SGS Polishing Pond, which is located north of the SGS Main Ash Pond. The water in the SGS Main Ash Pond is designed to discharge into the SGS Polishing Pond via a concrete mixing channel located in the northeast corner of the SGS Main Ash Pond. Since SGS ceased coal burning activities the water within the SGS Main Ash Pond has receded well below the invert elevation of the concrete mixing channel, therefore, water no longer discharges into the SGS Polishing Pond during normal facility operations.

Immediately east of the SGS Main Ash Pond, the U.S. Fish and Wildlife Service National Wetlands Inventory has identified one wetland area that is a 5.53 acre "Freshwater Emergent Wetland" with classification code PEM1A.

The SGS Main Ash Pond has a surface area of approximately 6.25 acres and has an embankment height of approximately 10 feet from the crest to the toe of the downstream slope. The interior storage depth of the SGS Main Ash Pond is approximately 8 feet. According to the previous Annual Inspection, the volume of impounded CCR and water within the SGS Main Ash Pond is approximately 34,000 cubic yards.

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SGS Polishing Pond

The SGS Polishing Pond is located east of the generating plant and north of the SGS Main Ash Pond. The SGS Polishing Pond receives influent flows from the SGS Main Ash Pond, as well as storm water runoff from the surrounding area. The water in the SGS Main Ash Pond is designed to discharge into the SGS Polishing Pond via a concrete mixing channel located in the northeast corner of the SGS Main Ash Pond. Since SGS ceased coal burning activities the water within the SGS Main Ash Pond has receded well below the invert elevation of the concrete mixing channel, therefore, water no longer discharges into the SGS Polishing Pond during normal facility operations. The water that previously discharged into the SGS Polishing Pond was designed to discharge through the National Pollutant Discharge Elimination System (NPDES) Outfall 001, which consists of a Parshall flume and flow metering equipment. The water that flowed through NPDES Outfall 001 discharged into an outfall pond, which eventually drained towards the east into the Iowa River.

According to the U.S. Fish and Wildlife Service National Wetlands Inventory, there are no wetlands identified downstream of the SGS Polishing Pond.

The SGS Polishing Pond has a surface area of approximately 1.1 acre and has an embankment height of approximately 7 feet from the crest to the toe of the downstream slope. The interior storage depth of the SGS Polishing Pond is approximately 5 feet. The SGS Polishing Pond is normally dry.

Hazard Potential Classification

Each non-incised CCR surface impoundment has been assigned a hazard potential classification, as identified below.

SGS Main Ash Pond

SGS Main Ash Pond has been assigned a **Low Hazard Potential** classification. Mis-operation or failure will likely not result in loss of life as there are no occupied buildings or residences located in the immediate vicinity of the CCR surface impoundment. IPL owns the property surrounding the SGS Main Ash Pond. The west boundary is incised, while the north is adjacent to the SGS Polishing Pond. A release to the east and south would impact the downstream land, which could include the identified wetland. In all cases, a release from the surface impoundment would principally be limited to the facility property and there would likely be low economic losses and environmental damages.

SGS Polishing Pond

SGS Polishing Pond has been assigned a **Low Hazard Potential** classification. Mis-operation or failure will likely not result in loss of life as there are no occupied buildings or residences located in the immediate vicinity of the CCR surface impoundment. IPL owns the property surrounding the SGS Polishing Pond. The west boundary is incised. The south boundary is adjacent to the SGS Main Ash Pond while the north boundary is adjacent to the discharge pond. A release to the east would impact the downstream land. In all cases, a release from the surface impoundment would principally be limited to the facility property and there would likely be low economic losses and environmental damages.

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Qualified Professional Engineer Certification

To meet the requirements of 40 CFR 257.73(a)(2)(ii) and 40 CFR 257.100(a), I Mark W. Loerop hereby certify that I am a licensed Professional Engineer in the State of Iowa; 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 257.73(a)(2) and 40 CFR 257.100(a).

By: _____

Name: MARK LOEROP

Date: MARCH 5, 2018

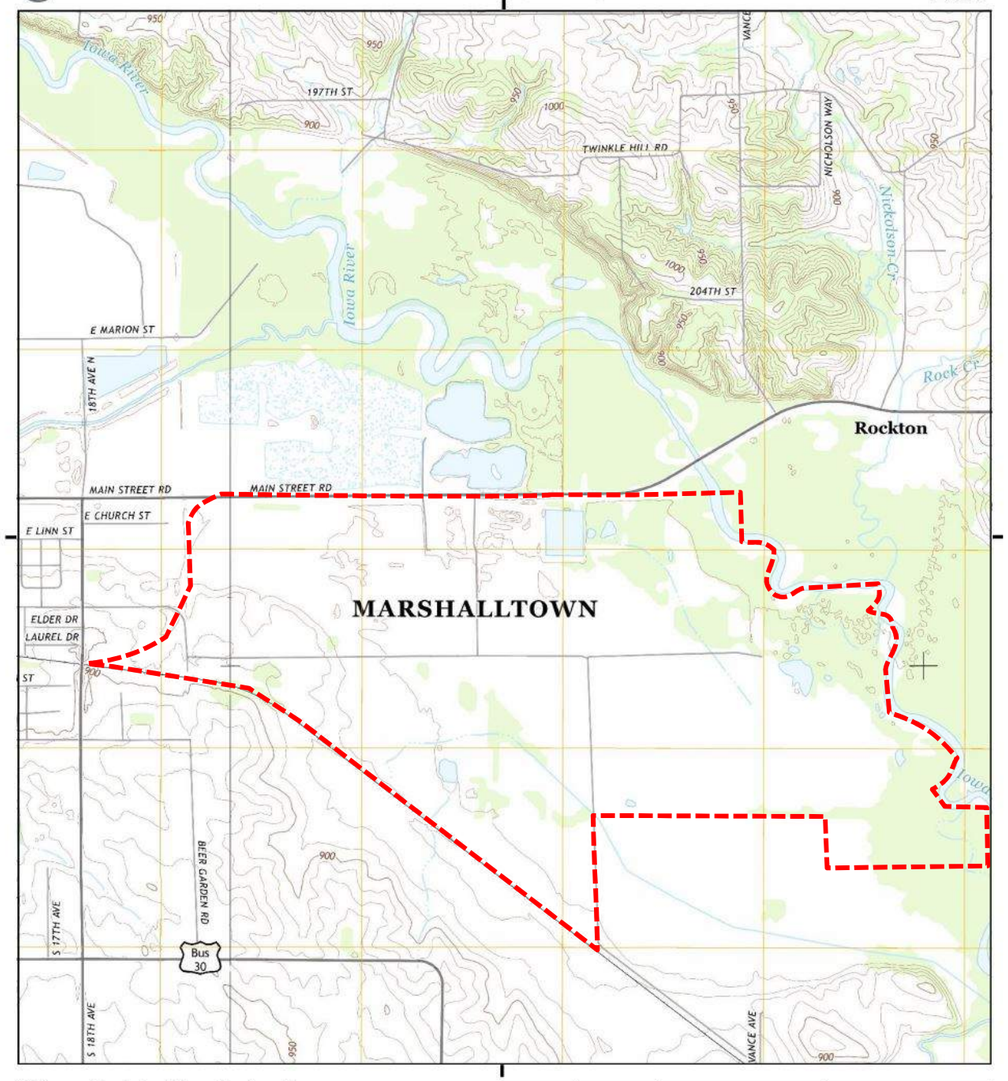
cc: Tony Morse, Alliant Energy

att: Figure 1 – Facility Location Map
Figure 2 – Wetland Location Map

MWL/mwl/CTS
C:\Egnyte\Shared\Projects\154 - Alliant Energy\154.018 - CCR Projects\016 - SGS CCR Compliance Reports\Hazard Potential Classification\SGS Hazard Potential Analysis FINAL.docx

Historical Topo Map

2013



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

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Le Grand, 2013, 7.5-minute
W, Marshalltown, 2013, 7.5-minute

SITE NAME: Sutherland Generating Station
ADDRESS: 3001 East Main Street Road
Marshalltown, IA 50158
CLIENT: Environmental Site Assessors

N

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Historical Aerial Photo

Approximate Property Boundary

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Site Location
Sutherland Generating Station
Interstate Power and Light Company

Drawing
Figure 1

Date
10/27/2017

Approximate Property Boundary
SGS Main Ash Pond
SGS Polishing Pond

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Wetland Location Map
Sutherland Generating Station
Interstate Power and Light Company

Drawing
Figure 2

Date
10/27/2017