HARD HAT SERVICES™
Engineering, Construction and Management Solutions

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VIA EMAIL

September 2, 2016

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

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

Dear Mr. Maxted;

Hard Hat Services (HHS) completed the hazard potential classification assessment for the existing CCR surface impoundment located at the Interstate Power and Light Company (IPL) Lansing Generating Station in Lansing, Iowa.

Background Information

In accordance with the requirements set forth in §257.73(a)(2) of the CCR Rule, an owner or operator of an existing CCR surface impoundment must conduct initial and periodic hazard potential classification assessments of their CCR surface impoundment, except for those existing CCR surface impoundments that are incised. The owner or operator must determine each CCR surface impoundment 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 in order 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 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 – Lansing Generating Station (LAN) is located at 2320 Power Plant Drive, Lansing, IA. 52151. Figure 1 provides both a topographic map and an aerial of the LAN facility location, with the approximate property boundary of the facility identified. LAN has one existing CCR surface impoundment, which is identified as LAN Upper Ash Pond (Figure 2).

LAN Upper Ash Pond

The LAN Upper Ash Pond is located southwest of the generating plant and south of Power Plant Drive. The LAN Upper Ash Pond receives influent flows from the Unit 4 boiler floor sumps, water treatment sumps, fly ash hydroveyor system, storm water runoff from the active dry ash landfill, as well as sluiced CCR. The LAN Upper Ash Pond is the only receiver of sluiced CCR at LAN. The CCR is sluiced from the generating plant to the south east corner of the LAN Upper Ash Pond. The sluiced CCR discharges into the southeast corner of the LAN Upper Ash Pond where the majority of the CCR settles. Ongoing maintenance dredging is conducted in the southern portion of the LAN Upper Ash Pond. The dredged CCR is temporarily stockpiled and dewatered prior to being transported to the on-site active dry ash landfill located south of the LAN Upper Ash Pond.

The sluiced water that is discharged into the LAN Upper Ash Pond flows to the west prior to flowing north through a series of five interconnected settling ponds separated by intermediate dikes. The intermediate dikes consist of 30-inch diameter corrugated metal pipes on the west and east sides, which hydraulically connects the five settling ponds. The water from each settling pond flows north until it enters the large open settling pond area of the LAN Upper Ash Pond. The north end of the LAN Upper Ash Pond consists of a concrete water level control structure that controls the LAN Upper Ash Ponds water level, and is identified as Weir Box #1. The water in the LAN Upper Ash Pond flows through the Weir Box #1, under Power Plant Drive, and through a second water level control structure identified as Weir Box #2. The water then flows through a 24-inch diameter high density polyethylene pipe, which connects Weir Box #2 to Weir Box #3. The water flows through Weir Box #3 and discharges to the west through a 24-inch diameter corrugated metal pipe into an Unnamed Creek #1. Unnamed Creek #1 flows to the north into Unnamed Creek #2 which then discharges into the Mississippi River. The National Pollution Discharge Elimination System (NPDES) Outfall 002 monitoring location, which consists of flow monitoring instrumentation, is located at Weir Box #1.

Where Unnamed Creek #2 meets the Mississippi River, the U.S Fish and Wildlife Service National Wetlands Inventory indicates that there is 1.02 acres of "Freshwater Emergent Wetland" (classification code of PEMFh) at the point of convergence.

The total surface area of the LAN Upper Ash Pond is approximately 11.5 acres and has an embankment height of approximately 20 feet from the crest to the toe of the downstream slope at its greatest height. The area of the entire CCR Unit inclusive of the impoundment and the dredging and dewatering areas is approximately 17 acres. The interior storage depth of the LAN Upper Ash Pond is approximately 28 feet. The volume of impounded CCR and water within the LAN Upper Ash Pond is approximately 587,000 cubic yards.

Hazard Potential Classification

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

LAN Upper Ash Pond

LAN Upper Ash Pond has been assigned a **Significant 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 and the closest residents are higher in elevation than the impoundment. The south and east side of the impoundment are incised. Based on the criteria above, Allamakee County Highway X-52 (Great River Road), immediately west of the LAN Upper Ash Pond, has the potential to become engulfed if a failure of the west embankment were to occur. A release to the west has the potential to enter the Unnamed Creek #1 and extend beyond the facility property limits. Additionally, a release has the potential to combine with the high flow rate of the condenser discharge channel, located north of the LAN Upper Ash Pond, which would likely cause a release of CCR into the Mississippi River where CCR has the potential to be transported downstream causing economic losses and environmental damages beyond the property limits. A release to the north would disrupt Power Plant Road, which is the only access point to the facility and would not allow for ingress or egress from the facility or the areas east of the impoundment in the event of an emergency. The release would discharge toward the north and then flow west toward Unnamed Creek #1 and follow the same path previously noted.

Qualified Professional Engineer Certification

To meet the requirements of 40 CFR 257.73(a)(2)(ii), 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).

By: _____

Name: MARK LOEROP

Date: 09-02-2016

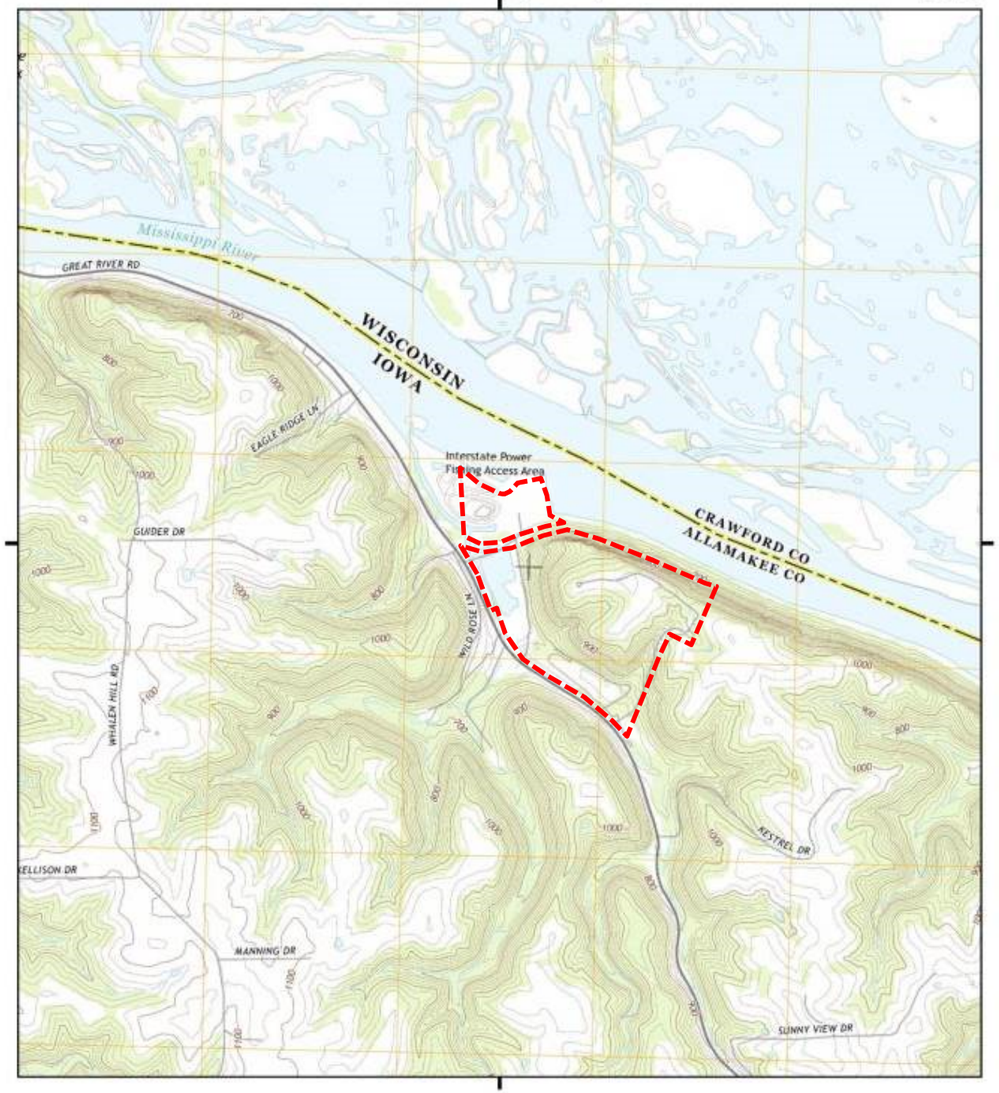
cc: Cory Carter, IPL – Lansing Generating Station
Tony Morse, Alliant Energy

att: Figure 1 – Facility Location Map
Figure 2 – LAN Upper Ash Pond

MWL/tjh/CTS
C:\Egnyte\Shared\Projects\154 - Alliant Energy\154.018 - CCR Projects\012 - 2016 CCR Compliance Program\002 - LAN\Hazard Potental Classification\LAN Hazard Potential Analysis - FINAL.DOCX

Historical Topo Map

2013



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

Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Lansing, 2013, 7.5-minute

SITE NAME: Lasing Generating Station
ADDRESS: 2364-2366 Power Plant Dr
Lansing, IA 52151
CLIENT: Environmental Site Assessors

N

4555570 - 1 page 5

Historical Aerial Photo

Approximate Property Boundary

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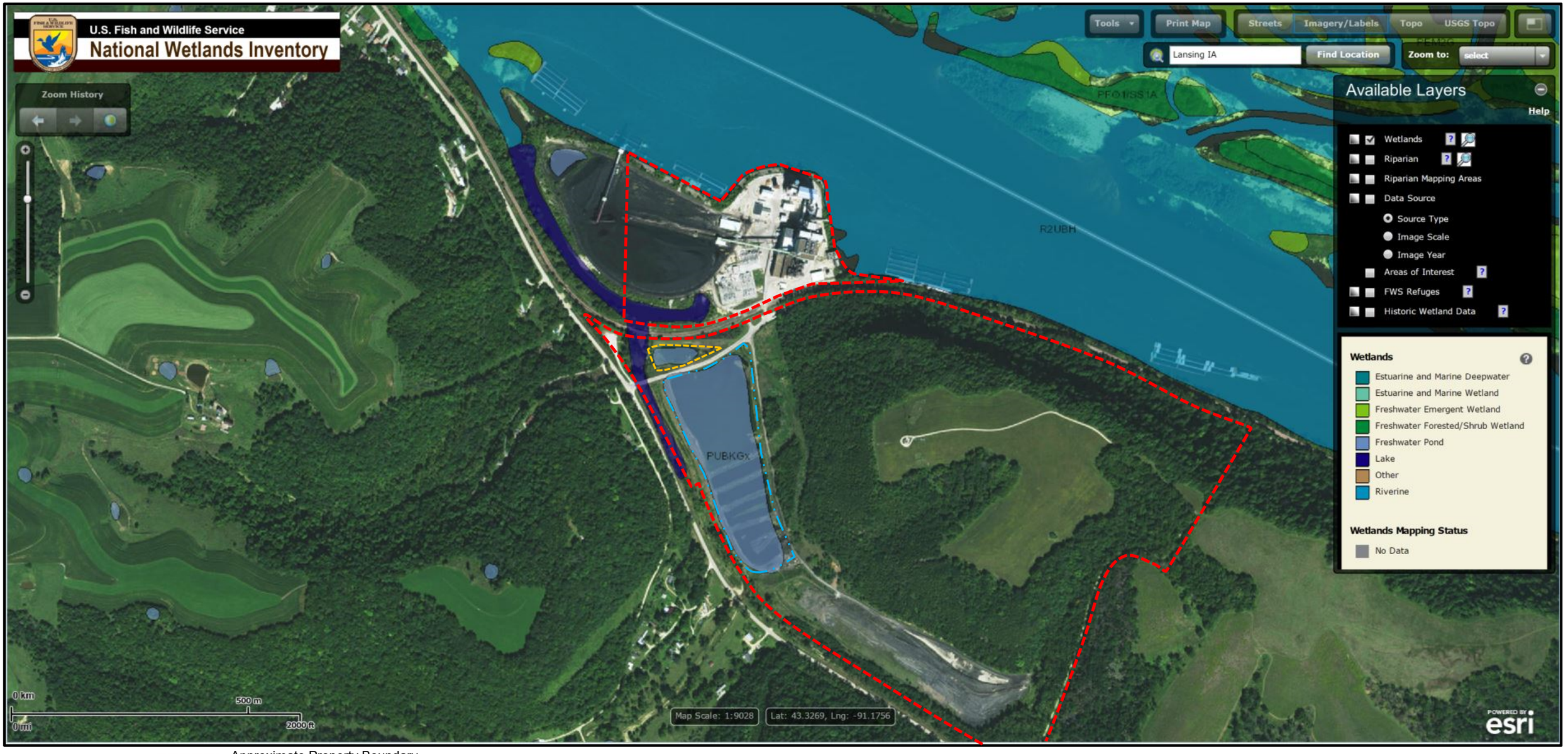
Site Location
Lansing Generating Station
Intersate Power and Light Company

Drawing
Figure 1

Date
6/7/2016



Approximate Property Boundary
LAN Upper Ash Pond
LAN Lower Ash Pond (Closed in August 2015)

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Wetland Location Map
Lansing Generating Station
Intersate Power and Light Company

Drawing
Figure 2

Date
6/8/2016