Revised Hazard Potential Classification Assessment Report

For Compliance with the EPA Coal Combustion Residuals (CCR) Rule 40 CFR 257.83(a)(2)

Erickson Power Station

Clear Water Pond

May 16, 2022

Prepared for:
Lansing Board of Water and Light
Erickson Power Station
3725 South Canal Road
Lansing, Michigan 48917

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1 Introduction and Purpose

HDR MICHIGAN, Inc. (HDR) has prepared this Revised Hazard Potential Classification Assessment Report for the Clear Water Pond at Erickson Power Station following the requirements of the Federal Coal Combustion Residuals (CCR) Rule to demonstrate compliance of the existing Erickson Power Station in Lansing, Michigan. The initial Hazard Potential Classification Assessment Report dated June 19, 2020 (Ref. [4]) included the hazard classification assessment for the Clear Water Pond as previously determined by GZA GeoEnvironmental, Inc. (Ref. [2]). This Revised Hazard Potential Classification Assessment Report for the Clear Water Pond supplements initial Hazard Potential Classification Assessment Report (Ref. [4]) and provides the updated hazard classification assessment for the Clear Water Pond in compliance with the date requirement stated in 40 CFR §257.73(f)(2)(i).

On April 17, 2015, the United States Environmental Protection Agency (EPA) issued the final rule (Ref. [1]) for disposal of Coal Combustion Residuals (CCR) under Subtitle D of the Resource Conservation and Recovery Act (RCRA). CCR Rule 40 CFR §257.73(a)(2) requires that owners or operators document the hazard potential classification of each CCR unit as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment, or a low hazard potential CCR surface impoundment. Additionally, CCR Rule 40 CFR §257.73(a)(2) requires that the owner or operator must also document the basis for each hazard potential classification.

The Hazard Potential Classification Assessment Report presented herein addresses the specific requirements of 40 CFR §257.73(a)(2). This Hazard Potential Classification Assessment Report was prepared by Mr. Bryce Burkett, P.E. Mr. Burkett is a registered Professional Engineer in the State of Michigan.

1.1 Site Location

Erickson Power Station is an electrical power generation facility located at 3725 South Canal Road, Lansing, Michigan which is owned and operated by Lansing Board of Water & Light (BWL). The latitude and longitude of the Erickson Power Station are approximately 42.692422 N and 84.657764 W. The site is located southwest of Lansing Michigan, near the intersection of Interstates 69 and 96, as shown in the site vicinity map, Figure 1.

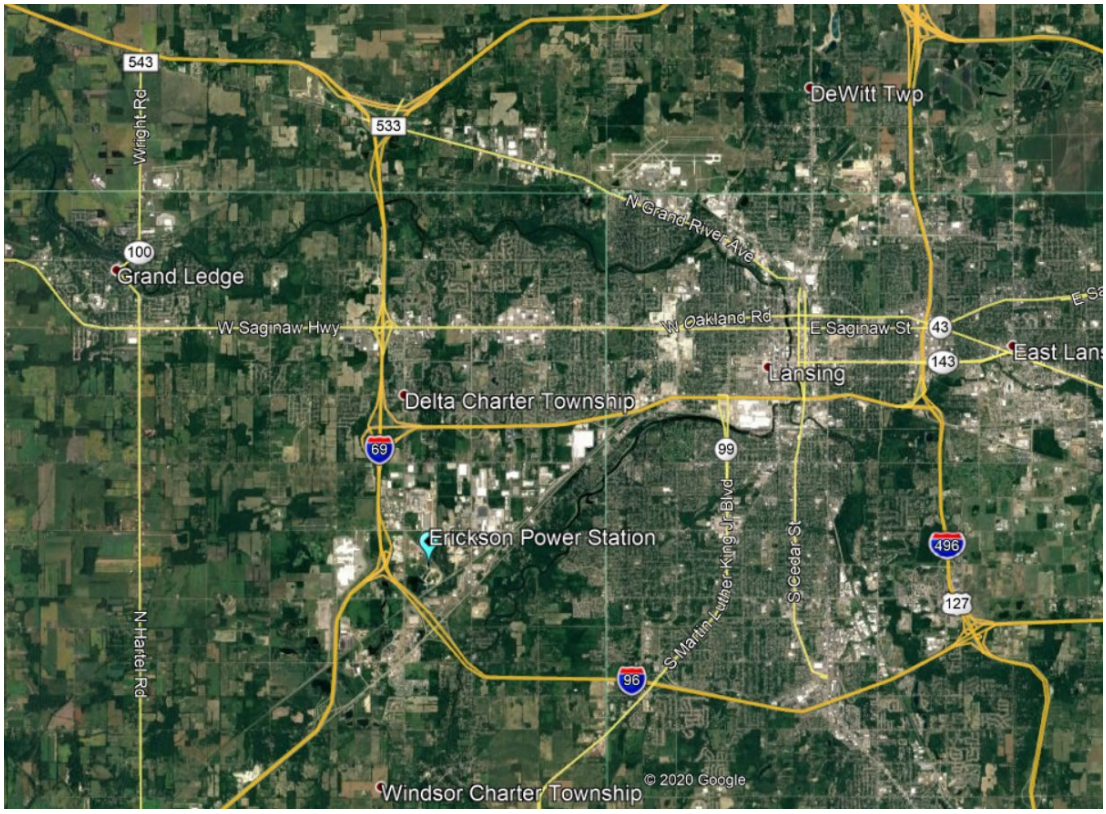


Figure 1. Site Vicinity Map

1.2 Site Description

Erickson Power Station was constructed starting in 1970, was completed in 1973, and is scheduled to close by December 31, 2022 as part of the BWL's move to cleaner energy sources. Erickson Power Station contains a single coal-fired steam turbine/generator capable of producing 165 megawatts of electricity.

Historically, fly ash and bottom ash resulting from the coal combustion process were mixed with water to form a slurry and pumped from the plant to the 33-acre impoundment system (physically closed in 2014). From the impoundment, the water then flowed hydraulically to the Clear Water Pond. Water from the Clear Water Pond was recycled back to the plant via the Pump House for reuse.

From 2009 through 2014, the ash was removed from the 33-acre impoundment and a new system (including the construction of the Forebay and Retention Basin) (Ref. [5]) was installed. The Forebay and Retention Basin were installed within the footprint of the excavated Former Impoundment and cover approximately 5-acres, leaving the Former Impoundment with a surface area of approximately 28-acres.

Currently, bottom ash from the coal-fired boiler is sluiced from the plant to dewatering tanks (hydro-bins). The dewatered bottom ash is trucked to a sanitary landfill and the decant water is hydraulically fed through the current impoundment system, which consists of a series of three impoundments: the Forebay, Retention Basin, and Clear Water Pond.

Figure 2 displays the Erickson Power Station site configuration, including the current and former impoundment system.

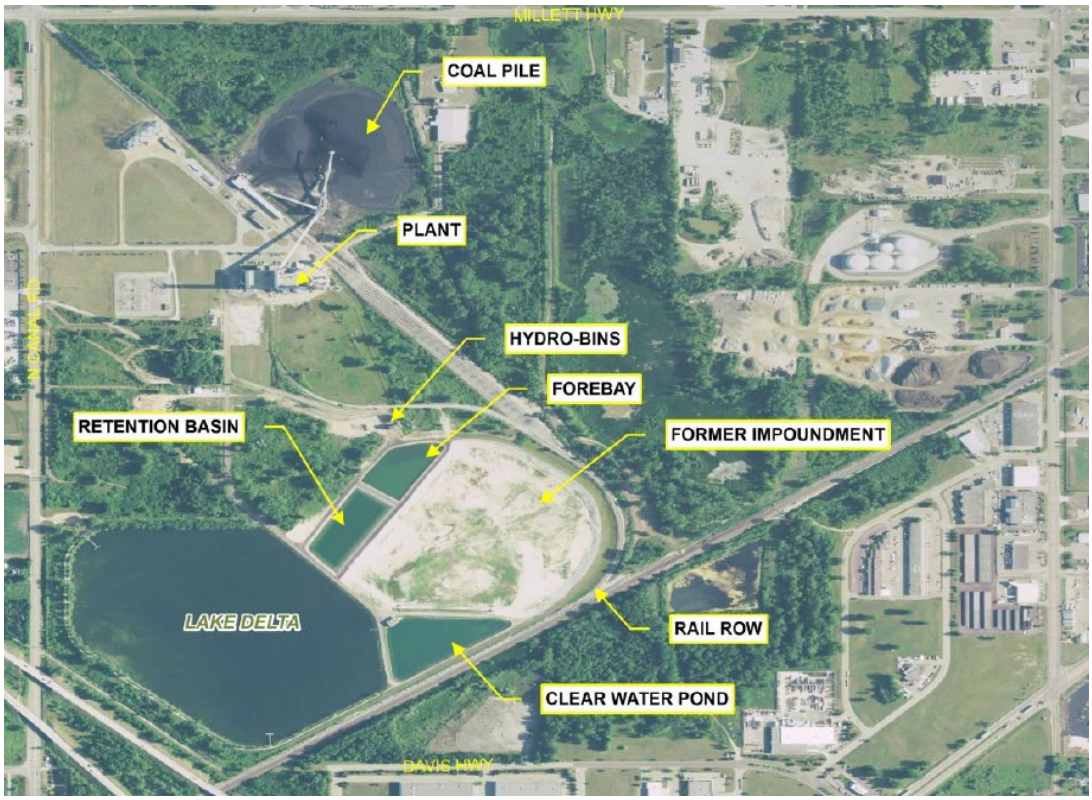


Figure 2. Erickson Power Station Site Configuration

Figure 3 presents a Google Earth® view looking north northeast (NNE), identifying the Clear Water Pond in relation to the impoundment system. Also viewable in Figure 3 is the Forebay, Retention Basin, Lake Delta, Former Impoundment, coal pile, and Erickson Power Station.

Figure 3. Google Earth® Image of Impoundment System

1.3 Hazard Potential Classification

The EPA defines the hazard potential classifications as follows:

- High hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation will probably cause loss of human life.
- Significant hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.
- Low hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation results in no probable loss of life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment's owner's property.

1.3.1 Clear Water Pond

The Clear Water Pond is an existing CCR surface impoundment at Erickson Power Station which was originally constructed starting in 1970 and was completed in 1973 as part of the original construction Erickson Power Station.

The Clear Water Pond collects water from the Retention Basin through the Retention Basin Transfer Structure and then Old Ash Impoundment Transfer Structure, with an invert of approximately El. 872 feet NAVD88 located at the north embankment of the Clear Water Pond. The Clear Water Pond is used to provide a storage basin for water prior to recycling it back to Erickson Power Station via the Pump House located on the northwest corner of Clear Water Pond. The perimeter embankment of the Clear Water Pond separates the Clear Water Pond from the Former Impoundment to the north, Lake Delta to the southwest, and the swale adjacent to the railroad right of way to the southeast. The maximum storage volume of the Clear Water Pond at the maximum pool elevation of approximately El. 884.0[1] feet is approximately 37.5 acre-feet (Ref. [3]). The bottom elevation of the Clear Water Pond is at approximately El. 872 feet NAVD88. A summary of the Clear Water Pond storage volumes is presented in Table 1.

Table 1. Clear Water Pond Summary

Surface Impoundment	Bottom of Pond Elevation (feet)	Top of Embankment Elevation (feet)	Scenario	Water Surface Elevation (feet)	Storage Volume (acre-feet)
Clear Water Pond	872.0	884.0	Normal	881.7	28.5
			Maximum Storage	884.0	37.5
Note: Elevations reported in NAVD88					

If the perimeter embankment of the Clear Water Pond fails, the water from the surface impoundment will discharge into either 1) the Former Impoundment, 2) Lake Delta, or 3)

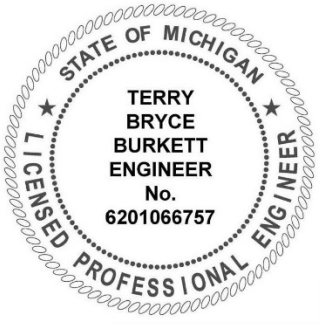
[1] Assumed to be approximately at lowest Top of Dike elevation of Clear Water Pond according to 2018 Droneview survey (Ref. [6])

into the swale adjacent to the southeast embankment. No probable loss of human life, low economic/environmental damage, and no disruption of lifeline facilities are expected during this scenario. Losses from this scenario would be principally limited to BWL property. Therefore, the Clear Water Pond has been determined to have a low hazard potential classification.

2 Closure

Based on the information provided to HDR by BWL, information available on BWL's CCR website, and HDR's visual observations and analyses, this Hazard Potential Classification Assessment was conducted in accordance with the requirements of the USEPA 40 CFR Parts §257 and §261 Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, April 17, 2015 (CCR Final Rule). Based on the information currently available, I certify to the best of my knowledge, information and belief that this Hazard Potential Classification Assessment meets the requirements of CCR Rule §257.73(a)(2) in accordance with professional standards of care for similar work. HDR appreciates the opportunity to assist BWL with this project. Please contact us if you have any questions or comments.

Bryce Burkett, P.E.
Senior Geotechnical Project Manager



16 May 2022

3 References

Ref. [1] Environmental Protection Agency, 40 CFR Parts 257 and 261; Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, Washington D.C., April 2015.

Ref. [2] GZA GeoEnvironmental, Inc. Draft Round 10 Dam Assessment Report, Lansing Board of Water & Light, Erickson Power Station, Ash Pond. April 30, 2012.

Ref. [3] HDR Engineering, Inc. Inflow Design Flood Control System Plan, Erickson Power Station – CCR Surface Impoundments, Lansing Board of Water & Light, Lansing, Michigan, June 9, 2020.

Ref. [4] HDR Michigan, Inc. Hazard Potential Classification Assessment Report, Erickson Power Station – Forebay, Retention Basin, & Clear Water Pond, Lansing Board of Water & Light, Lansing, Michigan, June 19, 2020.

Ref. [5] Mayotte Design & Engineering, P.C. Construction Documentation Report Ash Impoundment System Reconfiguration, Lansing Board of Water & Light Erickson Power Station, Lansing, Michigan, May 2015.

Ref. [6] NTH Consultants, Ltd. Closure Plan, CCR Surface Impoundment System, Erickson Power Station. August 16, 2019.