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Interstate Power and Light Company
Ottumwa Generation Station
CCR Surface Impoundment Annual Inspection Report
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Hard Hat Services
ph: 877-630-7428
hardhatinc.com
932 N. Wright St., Suite 160
Naperville, IL 60563

Executive Summary

This annual inspection report has been prepared in accordance with the requirements of the United States Environmental Protection Agency published Final Rule for Hazardous and Solid Waste Management System – Disposal of Coal Combustion Residual (CCR) from Electric Utilities (40 CFR Parts 257 and 261, also known as CCR Rule) and Extension of Compliance Deadlines for Certain Inactive Surface Impoundments.

This annual inspection report has been prepared to assess the condition of existing and inactive CCR surface impoundments. Primarily, the annual inspection report is focused on the structural stability of the CCR surface impoundments and to ensure that the operation and maintenance of the CCR surface impoundments is in accordance with recognized and generally accepted good engineering standards.

At the time of the annual inspection, the OGS Ash Pond was no longer receiving process water. After conducting the annual inspection, as well as review of available information pertaining to the status and condition of the existing CCR surface impoundments, discussions with facility personnel who oversee and maintain the operation, maintenance, and inspection activities of the existing CCR surface impoundments, there are no operating deficiencies and there have been no changes that have affected the stability or operation of the CCR surface impoundments since the previous annual inspection other than closure activities associated with the OGS Ash Pond.

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1. INTRODUCTION

This annual inspection report has been prepared in accordance with the requirements of §257.83(b) and §257.100(a) of the United States Environmental Protection Agency (USEPA) published Final Rule for Hazardous and Solid Waste Management System – Disposal of Coal Combustion Residual (CCR), herein referenced as the CCR Rule.

1.1 CCR Rule Applicability

The CCR Rule requires annual inspections by a qualified professional engineer (PE) for both existing and inactive CCR surface impoundments with a height of 5 feet or more and a storage volume of 20 acre-feet or more or the CCR surface impoundment has a height of 20 feet or more (40 CFR §§ 257.73(b), 257.73(d), 257.83(b) and 257.100(a)).

1.2 Annual Inspection Applicability

The Interstate Power and Light Company (IPL), Ottumwa Generating Station (OGS) in Ottumwa, Iowa has one inactive CCR surface impoundment, the OGS Zero Liquid Discharge (ZLD) Pond, and one existing CCR surface impoundment, the OGS Ash Pond, that meet the requirements of Section 1.1. The OGS ZLD Pond has been assigned a state identification number by the Iowa Department of Natural Resources (IDNR), which is 90-UDP-01-15, and the OGS Ash Pond has been issued a Closure Permit by IDNR with the permit number 90-SDP-16-15C.

As of September 2020, the OGS Ash Pond no longer received CCR or sluice water from the facility. As of May 2022, the OGS Ash Pond no longer received any process water from on or off site. OGS Ash Pond dewatering started in April 2022 and is scheduled to close by the end of 2023. Consolidation and

capping activities within the OGS Ash Pond were ongoing during the Annual Inspection.

In 2021, the OGS Low Volume Wastewater Treatment (LVWT) Pond was constructed within the footprint of the former OGS ZLD Pond. This work included the removal of all CCR materials from the impoundment and the rerouting of the Solids Contact Unit blowdown, stormwater runoff and facility floor drains into the impoundment. The interior slopes of the impoundment were enhanced with rip-rap materials, while the external slopes remained unchanged. The overall height of the embankment has not changed. The new discharge weir box directs effluent water through Outfall 007 where it combines with other facility process water and is discharged into the Des Moines River through Outfall 008. Because the former OGS ZLD Pond is not officially closed due to ongoing groundwater assessment, this Report assesses the embankment and continue to discuss the impoundment as the former OGS ZLD Pond.

The annual inspection of the CCR surface impoundments at OGS was completed by a qualified PE on May 15, 2023. The annual inspection was completed to ensure that the design, construction, operation, and maintenance of the CCR surface impoundments at OGS are consistent with recognized and generally accepted good engineering standards.

The annual inspection of the CCR surface impoundments at OGS included a review of available information regarding the status and condition of the CCR surface impoundments. The information reviewed included relevant files available in the operating record at the time of the annual inspection, as well as the Alliant Energy CCR Rule Compliance Data and Information website entries

for OGS (ccr.alliantenergy.com). These files for the CCR surface impoundments at OGS included, but is not limited to, CCR surface impoundment design and construction information (history of construction), hazard potential classification, structural stability assessment, safety factor assessment, hydrologic and hydraulic capacities (inflow flood control plan), results of 7-day inspections and instrumentation monitoring by a qualified person, and results of previous annual inspections.

This annual inspection also included a visual inspection of the CCR surface impoundments to identify signs of distress or malfunction of the CCR surface impoundments and appurtenant structures. Additionally, the visual inspection included hydraulic structures underlying the base of the CCR surface impoundments or passing through the dikes of the CCR surface impoundments for structural integrity and continued safe and reliable operation.

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2. ANNUAL INSPECTION REPORTING CRITERIA

The following sub-sections address the annual inspection reporting criteria per §257.83(b)(2) and §257.100(a) of the CCR Rule for the CCR surface impoundments located at OGS.

2.1 OGS Ash Pond

2.1.1 Changes in Geometry (§257.83(b)(2)(i))

After conducting the annual inspection, as well as review of available information provided by OGS pertaining to the status and condition of the existing CCR surface impoundment, and discussions with OGS facility personnel who oversee and maintain the operation, maintenance, and inspection activities of the existing CCR surface impoundment, there have been no identified changes in the geometry since the previous annual inspection, other than the activities associated with closure of the unit. Within the softer areas of the impoundment geotextile and geogrid was placed to provide stability of the placement of CCR. Based on visual observations the additional material thickness was approximately 6 to 8 feet.

2.1.2 Existing Instrumentation (§257.83(b)(2)(ii))

Instrumentation that supports the operation of the OGS Ash Pond includes the following:

- *Parshall flume discharge structure and equipment to measure the flow of the discharged water through the NPDES Outfall 001.* The instrumentation is in the northeast corner of the OGS Ash Pond within the former Polishing Pond area of the CCR surface impoundment.

- *Staff gauge to monitor the water elevation of the CCR surface impoundment.* The staff gauge was located on the northwest corner of the OGS Ash Pond until it was removed as part of the current closure activities. The 7-day inspections were reviewed from May 2, 2022 through April 26, 2023. Staff gauge measurements were not recorded on the 7-day inspections because of lowered water elevations during the closure activities and the staff gauge was eventually removed. There is no recorded maximum water elevation within the OGS Ash Pond.

2.1.3 Depth and Elevation of Impounded CCR and Water (§257.83(b)(2)(iii))

The approximate minimum, maximum, and present depths and elevations of the impounded CCR and water in the OGS Ash Pond since the previous annual inspection were determined using information that was collected during the annual inspection, as well as from historical information provided from IPL.

- At the time of the annual inspection, water was not observed to be present within the OGS Ash Pond. Therefore, the minimum and present depth and elevation of water within the CCR surface impoundment was unable to be recorded.
- After review of staff gauge water elevation data provided by IPL since the previous annual inspection, no water has been present.
- From the 1976 drawing of the original site grading plan contours, the original bottom contour elevations varied from west to east within the existing area of impounded water within the CCR surface impoundment. The depth of the OGS Ash Pond varied between an elevation of 675 feet near the western portion of the CCR surface impoundment to an

elevation of 665 feet in the eastern portion of the CCR surface impoundment adjacent to the Polishing Pond area.

- At the time of the annual inspection, depths of CCR could not be determined as closure and capping activities were taking place during the Annual Inspection. CCR had previously been consolidated from the former OGS ZLD Pond and placed within the OGS Ash Pond. In the softer areas of the impoundment, geogrid had been used and capping materials were being placed atop the CCR materials. A Closure Construction Documentation Report will contain information on the final elevations once closure is complete.

2.1.4 Storage Capacity of Impounding Structure (§257.83(b)(2)(iv))

The storage capacity (i.e. water volume) of the CCR surface impoundment at the time of the annual inspection was not estimated because the impoundment had been dewatered as part of the ongoing closure activities.

2.1.5 Volume of Impounded CCR and Water (§257.83(b)(2)(v))

The volume of impounded CCR and water (i.e. total volume) within the OGS Ash Pond at the time of the annual inspection was determined using estimated information from Burns & McDonnell OGS Closure Plan Revision 0 dated October 31, 2022. This plan states that the amount of material consolidated into the OGS Ash Pond from the former ZLD Pond is approximately 147,000 cubic yards, of which 97,300 was CCR. Additionally, it estimates that there will be 437,000 cubic yards of CCR material and CCR-impacted soils capped in the southern portion of the OGS Ash Pond, which is estimated to be the maximum amount of CCR stored in the unit during its active life. No water was present during the annual inspection.

2.1.6 Structural Weaknesses and Disruptive Conditions (§257.83(b)(2)(vi))

After review of available information provided by OGS pertaining to the status and condition of the existing CCR surface impoundment, discussions with OGS facility personnel who oversee and maintain the operation, maintenance, and inspection activities of the existing CCR surface impoundment, as well as conducting the on-site visual inspection of the existing CCR surface impoundment, there have been no identified appearances of an actual or potential structural weakness of the existing CCR surface impoundment. Additionally, there were no identified issues with the structural integrity of the hydraulic structures (NPDES Outfall 001) associated with the OGS Ash Pond.

Regarding the existing conditions of the OGS Ash Pond, there were no existing conditions identified along the upstream and downstream slopes of the embankments that were disrupting or have the potential to disrupt the operation and safety of the existing CCR surface impoundment. At the time of the annual inspection, the upstream and downstream slopes of the embankments of the CCR surface impoundment were well maintained.

2.1.7 Other Changes Affecting Stability or Operation of Impounding Structure (§257.83(b)(2)(vii))

After review of available information provided by OGS pertaining to the status and condition of the existing CCR surface impoundment, as well as discussions with OGS facility personnel who oversee and maintain the operation, maintenance, and inspection activities of the existing CCR surface impoundment, there have been no identified changes that have affected the stability or operation of the OGS Ash Pond since the previous annual inspection other than the ongoing closure construction activities.

2.2 OGS Zero Liquid Discharge Pond

2.2.1 Changes in Geometry (§257.83(b)(2)(i) and §257.100(a))

After conducting the annual inspection, as well as review of available information provided by OGS pertaining to the status and condition of the inactive surface impoundment, and discussions with OGS facility personnel who oversee and maintain the operation, maintenance, and inspection activities of the inactive surface impoundment, the former OGS ZLD Pond has been excavated and replaced with a new lined pond. The embankment height, internal and external slopes and overall area have not significantly changed.

2.2.2 Existing Instrumentation (§257.83(b)(2)(ii) and §257.100(a))

Instrumentation that supports the operation of the former OGS ZLD Pond has been removed during the material excavation. There were no recordable water level measurements recorded from May 1, 2022 to April 30, 2023 because the former OGS ZLD Pond material excavation activities had been completed prior to this timeframe.

2.2.3 Depth and Elevation of Impounded CCR and Water (§257.83(b)(2)(iii) and §257.100(a))

The approximate minimum, maximum, and present depths and elevations of the impounded CCR and water in the former OGS ZLD Pond since the previous annual inspection were not determined as the impoundment has been excavated and replaced with a new lined low volume wastewater treatment pond (LVWTP).

2.2.4 Storage Capacity of Impounding Structure (§257.83(b)(2)(iv) and §257.100(a))

The storage capacity (i.e. water volume) of the CCR surface impoundment at the time of the annual inspection was not determined as the impoundment has been excavated and replaced with a new lined LVWTP.

2.2.5 Volume of Impounded CCR and Water (§257.83(b)(2)(v) and §257.100(a))

The volume of impounded CCR and water (i.e. total volume) within the former OGS ZLD Pond at the time of the annual inspection was not determined as the impoundment has been excavated and replaced with a new lined LVWTP.

2.2.6 Structural Weaknesses and Disruptive Conditions (§257.83(b)(2)(vi) and §257.100(a))

After review of available information provided by OGS pertaining to the status and condition of the inactive surface impoundment, discussions with OGS facility personnel who oversee and maintain the operation, maintenance, and inspection activities of the inactive, surface impoundment, as well as conducting the on-site visual inspection of the inactive surface impoundment, there have been no identified appearances of an actual or potential structural weakness of the inactive surface impoundment.

Regarding the existing conditions of the former OGS ZLD Pond, there were no existing conditions identified along the upstream and downstream slopes of the embankments that were disrupting or have the potential to disrupt the operation and safety of the inactive surface impoundment. At the time of the annual inspection, the upstream and downstream slopes of the embankments of the CCR surface impoundment were well maintained.

2.2.7 Other Changes Affecting Stability or Operation of Impounding Structure (§257.83(b)(2)(vii) and §257.100(a))

After review of available information provided by OGS pertaining to the status and condition of the inactive surface impoundment, as well as discussions with OGS facility personnel who oversee and maintain the operation, maintenance, and inspection activities of the inactive surface impoundment, there have been no other identified changes that have affected the stability or operation of the former OGS ZLD Pond since the previous annual inspection.

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3. CERTIFICATION

To meet the requirements of 40 CFR §§ 257.83(b) and 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 §§ 257.83(b) and 257.100(a).

By: _____

Name: MARK LOEROP

Date: JUNE 21, 2023