solutions and action

Wisconsin Power and Light Company
Columbia Energy Center
CCR Surface Impoundment Annual Inspection Report
154.018.027.005
Report issued: October 29, 2024

Hard Hat Services
ph: 877-630-7428
hardhatinc.com
245 Kenilworth Ave.
Glen Ellyn, IL 60137

01/17/2025 - Classification: Internal - ECRM13436327

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.

After conducting the annual inspection, as well as review of available information provided by Wisconsin Power and Light Company pertaining to the status and condition of the CCR surface impoundments, and discussions with facility personnel who oversee and maintain the operation, maintenance, and inspection activities of the 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. The surface impoundments no longer receive process water or CCR materials.

Since the previous annual inspection, the plant has initiated closure activities for the COL Primary Ash Pond and continued closure activities for the COL Secondary Ash Pond, which include removal of the CCR and placement within the onsite landfill.

01/17/2025 - Classification: Internal - ECRM13436327

Table of Contents

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

01/17/2025 - Classification: Internal - ECRM13436327

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 Wisconsin Power and Light Company (WPL) Columbia Energy Center (COL) in Pardeeville, Wisconsin has two CCR surface impoundments that meet the requirements of Section 1.1. They are identified as the COL Primary Ash Pond (existing) and the COL Secondary Ash Pond (inactive). The COL Secondary Ash Pond has not received CCR after October 2015. In 2023, closure earthwork was completed within both impoundments which involved dewatering, removal of CCR, backfilling, restoration and CCR placement into the onsite landfill.

The annual inspection of the CCR surface impoundments at COL was completed by a qualified PE on September 18th, 2024. The annual inspection was completed to ensure that the design, construction, operation, and maintenance of the CCR surface impoundments at COL are consistent with recognized and generally accepted good engineering standards.

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

01/17/2025 - Classification: Internal - ECRM13436327

The annual inspection of the CCR surface impoundments at COL included a review of available information regarding the status and condition of the CCR surface impoundments. The information reviewed included all 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 COL (ccr.alliantenergy.com). These files for the CCR surface impoundments at COL include, but are 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 the previous annual inspection.

The 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.

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

01/17/2025 - Classification: Internal - ECRM13436327

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 existing and inactive CCR surface impoundments located at COL.

2.1 COL Primary 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 COL pertaining to the status and condition of the CCR surface impoundment, and discussions with COL 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 closure activities.

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

Historically, instrumentation that supported the operation of the COL Primary Ash Pond included a submersible hydrostatic level transducer for monitoring water elevations in the eastern portion of the COL Primary Ash Pond (CCR settling pond area). The instrumentation equipment was in the northeast corner of the COL Primary Ash Pond. The submersible hydrostatic level transducer was installed in 2010 and was removed during the closure activities. Water elevation data is no longer collected from the impoundment as the CCR materials have been removed and now the area is only used to collect and infiltrate precipitation that has not been in contact with CCR.

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 COL Primary Ash Pond since the previous annual inspection were

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

01/17/2025 - Classification: Internal - ECRM13436327

determined using information that was collected during the annual inspection, as well as from historical information that was previously provided from WPL.

- At the time of the annual inspection, stormwater was present within the COL Primary Ash Pond. Water levels are no longer recorded because the CCR materials have been removed, the measurement devices have been removed, the area does not manage any CCR or non-CCR wastewaters, and construction closure activities are complete. The minimum, maximum, and present depths of water are unknown.
- From the 1975 original design drawing contours of the COL Primary Ash Pond, the original design bottom contour elevation of the CCR surface impoundment was approximately 780 feet, which was prior to the closure activities.

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 CCR has been removed from the impoundment and the construction closure activities have been completed.

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, not including freeboard) within the COL Primary Ash Pond at the time of the annual inspection was not estimated because the CCR had been removed from the impoundment and the construction closure activities are complete. The remaining water within the impoundment is from stormwater runoff which infiltrates into the ground.

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

After review of available information provided by COL pertaining to the status and condition of the existing CCR surface impoundment, discussions with COL facility personnel who oversee

01/17/2025 - Classification: Internal - ECRM13436327

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 visual inspection issues with the structural integrity of the hydraulic structures (permanently closed 18-inch corrugated metal pipe) associated with the COL Primary Ash Pond.

Regarding the existing conditions of the COL Primary Ash Pond, there were no 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.

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

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

01/17/2025 - Classification: Internal - ECRM13436327

2.2 COL Secondary Ash 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 COL pertaining to the status and condition of the CCR surface impoundment, and discussions with COL facility personnel who oversee and maintain the operation, maintenance, and inspection activities of the CCR surface impoundment, there have been no identified changes in the geometry since the previous annual inspection other than the closure activities.

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

The COL Secondary Ash Pond does not have permanent instrumentation that supports the operation of the CCR surface impoundment. CCR has been removed and placed into the onsite landfill. Water elevation data is no longer collected from the impoundment as the CCR materials have been removed and now the northern portion of the impoundment area is operated as an infiltration basin for stormwater only. No water elevations have been recorded within this stormwater impoundment.

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 COL Secondary Ash Pond since the previous annual inspection were determined using information that was collected during the annual inspection, as well as from historical information that was previously provided from WPL.

- At the time of the annual inspection, stormwater was present within the COL Secondary Pond. Water levels are no longer recorded because the CCR materials have been removed, the measurement devices have been removed, the area does not manage any CCR or non-CCR wastewaters, and construction closure activities are complete.

01/17/2025 - Classification: Internal - ECRM13436327

- From the 1975 original design drawing contours of the COL Secondary Ash Pond, the original design bottom contour elevation of the CCR surface impoundment was approximately 780 feet, which was prior to the closure activities.

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 COL Secondary Ash Pond at the time of the annual inspection was not estimated because the CCR has been removed from the impoundment and the construction closure activities have been completed.

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, not including freeboard) within the COL Secondary Ash Pond at the time of the annual inspection was not estimated because the CCR had been removed from the impoundment and the construction closure activities are complete. The remaining water within the impoundment is from stormwater runoff which infiltrates into the ground.

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

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

Regarding the existing conditions of the COL Secondary Ash Pond, there were no existing conditions identified along the upstream and downstream slopes of the embankments that

01/17/2025 - Classification: Internal - ECRM13436327

were disrupting or have the potential to disrupt the operation and safety of the CCR surface impoundment.

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 COL pertaining to the status and condition of the CCR surface impoundment, as well as discussions with COL facility personnel who oversee and maintain the operation, maintenance, and inspection activities of the CCR surface impoundment, there have been no other identified changes that have affected the stability or operation of the COL Secondary Ash Pond since the previous annual inspection.

01/17/2025 - Classification: Internal - ECRM13436327

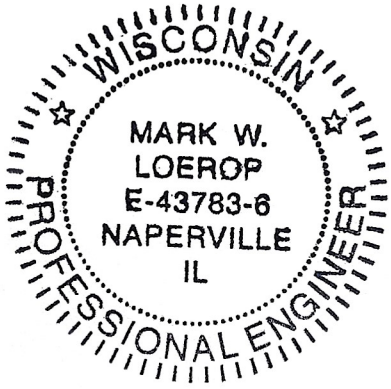
3. CERTIFICATION

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 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 §§ 257.83(b) and 257.100(a).

By: _____

Name: MARK LOEROP

Date: 10/29/2024



01/17/2025 - Classification: Internal - ECRM13436327