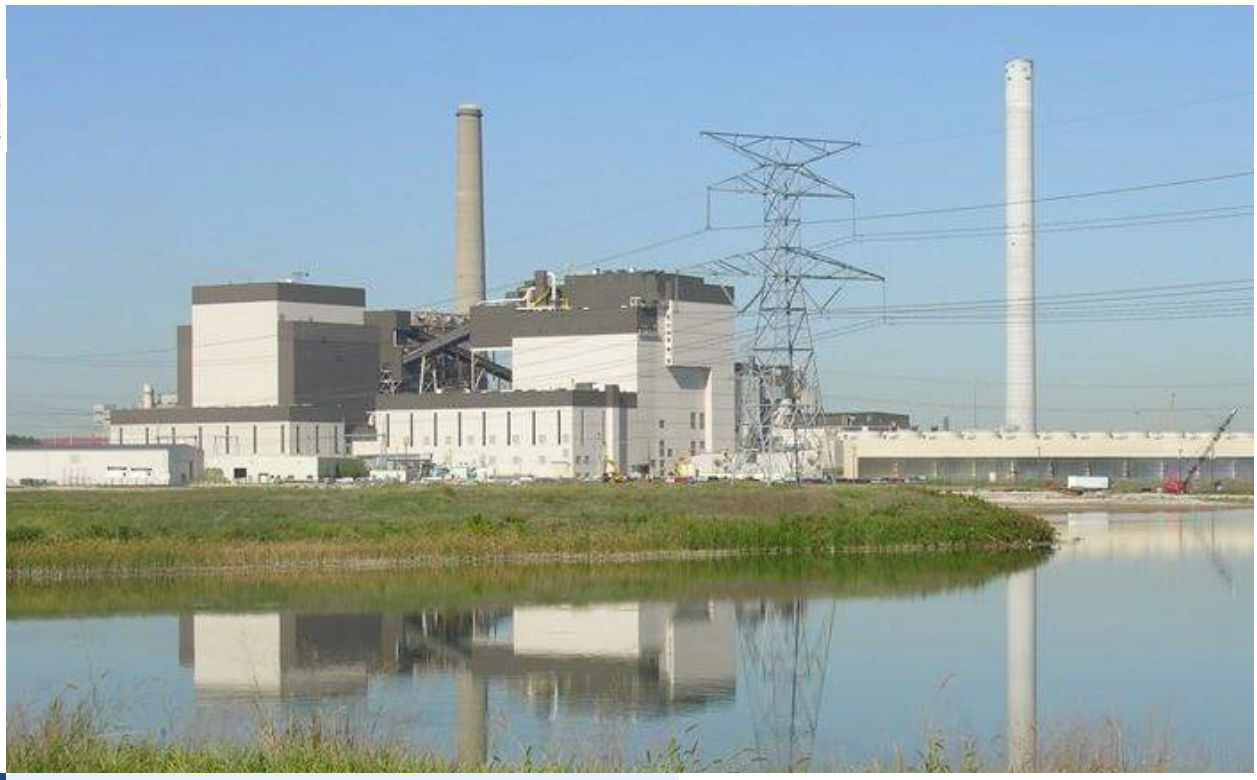

South CCR Surface Impoundment 2022 Annual Inspection Report

Walter Scott, Jr. Energy Center

MidAmerican Energy Company
Walter Scott, Jr. Energy Center

Council Bluffs, Iowa
January 7, 2023

MidAmerican Energy Company
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South CCR Surface Impoundment
2022 Annual Inspection Report

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Professional Engineer Certification

"I hereby certify that the South CCR Surface Impoundment at the Walter Scott, Jr. Energy Center, owned and operated by the MidAmerican Energy Company, has been inspected and this report prepared in accordance with the Coal Combustion Residual Rule 40 CFR 257.83(b). I am a duly licensed Professional Engineer under the laws of the State of Iowa."

I hereby certify that these engineering documents were prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

1/7/2023

Gregory M. Shafer — Date
Iowa License No. P26072
My license renewal date is December 31, 2023.

Pages or sheets covered by this seal:
All.

1 Introduction

On April 17, 2015, the U.S. Environmental Protection Agency (EPA) published the final rule for the regulation and management of coal combustion residuals (CCR) under Subtitle D of the Resource Conservation and Recovery Act [RCRA, 42 United States Code (U.S.C.) §6901 et seq.]. The CCR Rule defines a set of requirements for the disposal and handling of CCR within CCR units (defined as either landfills or surface impoundments). MidAmerican Energy Company (MEC) is subject to the CCR Rule and therefore must have a qualified professional engineer conduct an annual inspection on all CCR surface impoundments in accordance with 40 CFR Section 257.83. HDR conducted the 2022 annual inspection of the Walter Scott, Jr. Energy Center (WSEC) South CCR Surface Impoundment (South Impoundment) on September 22, 2022, on behalf of MEC. This report contains the results and observations of the inspection.

1.1 Purpose

The CCR Rule requires inspections of CCR units and reports to be completed and filed on an annual basis. The completion date of the previous inspection report (i.e., placed in the facility operating record) establishes the deadline to complete the subsequent inspection and report. The requirements of the annual inspection for CCR surface impoundments include:

- A review of available information regarding the status and condition of the CCR unit - §257.83 (b)(1)(i),
- A visual inspection of the CCR unit and appurtenant structures to identify signs of distress or malfunction - §257.83 (b)(1)(ii),
- A visual inspection of any hydraulic structures underlying the base or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation - §257.83 (b)(1)(iii),
- An inspection report that includes the following:
    - Changes in geometry since the last inspection - §257.83 (b)(2)(i),
    - Location and type of existing instrumentation and maximum recorded readings - §257.83 (b)(2)(ii),
    - Approximate minimum, maximum and present depth and elevation of impounded water and CCR - §257.83 (b)(2)(iii),
    - Storage capacity of the impounding structure at time of inspection - §257.83 (b)(2)(iv),
    - Approximate volume of impounded water and CCR in unit at time of inspection - §257.83 (b)(2)(v),
    - Appearance of actual or potential structural weakness of the CCR unit - §257.83 (b)(2)(vi),
    - Any other changes which may have affected the stability or operation of the CCR unit since the last inspection - §257.83 (b)(2)(vii).

MEC, as owner and operator of the WSEC South CCR Surface Impoundment, must notify the Iowa Department of Natural Resources (IDNR) Director within 30 days of placing the South CCR Surface Impoundment Annual Inspection Report in the operating record and date of posting to the CCR website (40 CFR §257.106(g)(5) and §257.107(g)(5)).

1.2 Background

The Walter Scott Jr. Energy Center is a coal-fired generating plant located in Council Bluffs, Iowa, along the east shore of the Missouri River. WSEC has an existing CCR landfill and two inactive CCR surface impoundments. This annual inspection report covers the South Impoundment.

The South Impoundment is located on the southeast side of the WSEC plant site along the north side of the south access road, and immediately west of Interstate 29. The South Impoundment had an intake structure located at the northwest corner which recycled water to the plant. Recycled water was used to sluice bottom ash into this impoundment. A railroad line runs along the western side of the impoundment from south to north. There are two peninsulas which extend into the impoundment on the south side. They serve as a foundation for transmission lines and are not considered part of the impoundment embankment. The area enclosed by the perimeter embankment is approximately 133 acres. A facility site map showing location of South Impoundment is included in Appendix A.

At the time of the inspection, grading operations related to the North and South CCR Surface Impoundment closure projects were underway. The projects include removal consolidation and grading the existing CCR and installation of a final cover system. Grading activities began in 2020 and are scheduled to be completed in 2023. The specifics of the project are described in the Closure Plan for the North & South CCR Surface Impoundments, Burns & McDonnell, Revision 1, 3/10/2020, and are published on the CCR website. A portion of the Closure Plan is quoted below and describes the closure, specifically from Section 2.2, Closure Method.

> "The CCR will be removed in its entirety in the south and west 29 acres of the North Impoundment as well as the 7 acres west of the rail line that contains CCR. This material will be consolidated into the northeast 120 acres of the impoundment.
>
> Additionally, the CCR in the northeast 120 acres will be removed from the groundwater table and relocated so that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR unit and the uppermost aquifer due to normal fluctuations in groundwater elevations (including the seasonal high-water table). The CCR material will be consolidated and covered as described in Section 2.2.1.
>
> The CCR material in the South Impoundment will be excavated and relocated to the North Impoundment, at which time the South Impoundment will be closed by

removal of CCR in accordance with 40 CFR §257.102(c). CCR removal will be verified by visual methods and confirmed with topographical survey data in comparison with the Impoundment bottom design surfaces."

2 Review of Available Information

Section 257.83(b)(1)(i) of the CCR Rule requires that available information regarding the status and condition of the CCR surface impoundment, such as the previous weekly and annual inspections, are to be reviewed. Several documents pertaining to the operation and structural integrity of the South Impoundment were reviewed before, during and after the site inspection, including:

- Annual inspection report prepared by HDR dated January 7, 2022. MEC indicated that all items from the previous year inspection had been addressed.
- The South Impoundment weekly inspection records (per Section 257.83(a)) from September 29, 2021 through September 21, 2022.
- Closure Plan for the North & South CCR Surface Impoundments, Burns & McDonnell, Revision 1, 3/10/2020. CQA Documentation provided by HDR.
- Topographic survey provided by Burns & McDonnell.

Review of the above documents did not uncover any unresolved issues that indicated operational, safety or structural concerns of the South Impoundment.

3 Visual Site Inspection

Sections 257.83(b)(1)(ii) and (b)(1)(iii) of the CCR Rule requires a visual inspection of the CCR surface impoundment be performed. A site inspection of the WSEC South Impoundment was performed on September 22, 2022, by Greg Shafer, PE, of HDR Engineering, Inc. (HDR). Office reviews of available information were conducted by Greg Shafer.

The weather during the site visit was mostly clear and calm with temperatures ranging from 60 to 61 degrees Fahrenheit. The wind was calm with a light breeze out of the northeast shifting to the southeast at about 5 to 7 miles per hour (mph).

3.1 Extent of Inspection

The visual inspection involved walking the entire perimeter of the WSEC South CCR Surface Impoundment and along the crest of the containment berms. The intent of the visual inspection is to identify signs of any distress or malfunction of the CCR surface impoundment and appurtenant structures and check the hydraulic structures for structural integrity and continued safe and reliable operation.

The field visit focused on the following:

- Perimeter embankments/berms condition (surface cracking, erosion, slides/sloughs, inadequate slope protection, poor vegetation, animal burrows, settlement, seepage).
- Interior berms condition.
- Sluice line flow condition, not in use but still in place.
- Perimeter drainage including channels and culverts.

The South Impoundment is reported by MEC as inactive and was previously receiving flow from the dewatering of the North Impoundment, as part of the closure activities at the time of the inspection. At the time of inspection, dewatering discharge was occurring at Outfall 006 west of the South Impoundment at the Missouri River.

3.2 Inspection Findings

Based on the observations made at the time of the visual inspection, the following are the findings of the South Impoundment inspection:

- Interior and exterior berm along the northern side of the impoundment had full, stable, and well-maintained ground cover.
- Vegetation along the interior and exterior east, south and west berms continues to be well established with little to no erosion impacts identified.
- Exterior side of the east impoundment berm appears to sustain full vegetation.
- The hydraulic structure (i.e., intake structure) has been removed.

The South Impoundment appeared to be well maintained and in good working order. No significant deficiencies were observed during the inspection.

4 Changes in Geometry

Section 257.83(b)(2)(i) of the CCR Rule requires that any changes in geometry be noted since the previous annual inspection.

The current geometry of the South Impoundment is in a transition state consistent with the closure activities. However, it has not changed significantly from the geometry at the time of the previous annual inspection.

5 Instrumentation

Section 257.83(b)(2)(ii) of the CCR Rule requires location and type of existing instrumentation and maximum recorded readings of each instrument since the previous annual inspection.

The gauge that was located at the intake structure (lift station) and used for recycling water has been removed. The gauge was divided into feet and tenths of feet. The

maximum recorded reading since the previous inspection was 966.3 (9/29/2021) feet mean sea level (MSL), as recorded by MEC during weekly inspections.

6 Approximate Depth - Impounded Water and CCR

Section 257.83(b)(2)(iii) requires the approximate minimum, maximum and present depth, and elevation of the impounded water and CCR to be identified since the previous annual inspection.

At the time of inspection, there was no water present.

At the time of inspection, CCR material in the South Impoundment was being excavated and hauled to the North Impoundment for consolidation and closure. Completion of this activity is scheduled for the end of this year. Prior to excavation activities, CCR top elevations ranged from 966 to 970 feet MSL with a depth ranging from 0 to 10 feet.

7 Storage Capacity

Section 257.83(b)(2)(iv) requires the storage capacity of the impounding structure at the time of inspection to be identified.

The total impounded volume was estimated for the previous annual inspection to be approximately 860 acre-feet. As noted in Section 8 below, the volume of CCR has decreased to about 300,000 cubic yards. Because the CCR material has been replaced with clean sand, the impoundment storage capacity remains unchanged.

8 Approximate Volume - Impounded Water and CCR

Section 257.83(b)(2)(v) requires the approximate volume of CCR and water in the CCR surface impoundment to be estimated as part of the annual inspection report. The volume of CCR in the South Impoundment has changed from the previous annual inspection report, which was estimated to be a total of 937,970 cubic yards. Current excavation and consolidation activities to the North Impoundment have reduced the total to about 300,000 cubic yards.

Previously, the estimated volume for the water elevation of 967 feet MSL was approximately 210 acre-feet. During this inspection, there was no water present.

9 Appearance of Structural Weakness

Section 257.83(b)(2)(vi) of the CCR Rule requires any appearances of actual or potential structural weakness or conditions that could disrupt or potentially disrupt operation and

safety of the CCR surface impoundment and appurtenant structures be noted in the annual inspection report.

Based on the visual inspection findings reported above in Section 3 on the South Impoundment, no apparent or potential structural weaknesses were observed.

10 Changes Affecting Stability or Operation

Section 257.83(b)(2)(vii) of the CCR Rule requires that changes that affect stability or operation of the impounding structure be identified since the last annual inspection. Based on review of weekly inspections, there were no reported, observed, or suspected changes that have affected stability or negatively impacted the operation of the South Impoundment.

Appendix A
Facility Site Map

N

NO SCALE

NOTE: AERIAL IMAGE PROVIDED BY GOOGLE EARTH.