CCR Monofill 2023 Annual Inspection Report

Walter Scott. Jr. Energy Center

MidAmerican Energy Company
Walter Scott, Jr. Energy Center

Council Bluffs, Iowa
January 5, 2024

MidAmerican Energy Company
Walter Scott, Jr. Energy Center
CCR Monofill 2023 Annual Inspection Report

Table of Contents

Appendices

MidAmerican Energy Company
Walter Scott, Jr. Energy Center
CCR Monofill 2023 Annual Inspection Report

Professional Engineer Certification

"I hereby certify that the CCR Monofill 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 257.84(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.

Gregory M. Shafer — 1/5/2024 Date

Iowa License No. P26072

My license renewal date is December 31, 2025.

Pages or sheets covered by this seal:

All.

1 Introduction

On April 17, 2015, the United States 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 landfills in accordance with 40 CFR Section 257.84. HDR conducted the 2023 annual inspection of the Walter Scott, Jr. Energy Center (WSEC) Monofill (WSEC CCR Monofill) on September 20, 2023, on behalf of MEC. This report contains the results and observations of the inspection.

1.1 Purpose

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

- A review of available information regarding the status and condition of the CCR unit - §257.84 (b)(1)(i),
- A visual inspection of the CCR unit to identify signs of distress or malfunction - §257.84 (b)(1)(ii),
- An inspection report that includes the following:
    - Changes in geometry since the last inspection - §257.84 (b)(2)(i),
    - Approximate volume of CCR in unit at time of inspection - §257.84 (b)(2)(ii),
    - Appearance of actual or potential structural weakness of the CCR unit - §257.84 (b)(2)(iii),
    - Any other changes which may have affected the stability or operation of the CCR unit since the last inspection - §257.84 (b)(2)(iv).

MEC, as owner and operator of the Walter Scott Jr Energy Center CCR Monofill, must notify the Iowa Department of Natural Resources (IDNR) Director within 30 days of placing the CCR Monofill Annual Inspection Report in the operating record and date of posting to the CCR website (40 CFR §257.106(g)(7) and §257.107(g)(7)).

1.2 Background

The WSEC is a coal-fired generating plant in Council Bluffs, Iowa, along the east shore of the Missouri River. WSEC has an existing CCR landfill and two existing inactive CCR

surface impoundments. This annual inspection report covers the existing CCR landfill known as the WSEC CCR Monofill.

The WSEC CCR Monofill is located south of the plant, along the north side of Applewood Road. Construction drawings prepared by MWH Americas, Inc. (MWH) and HDR Engineering, Inc. (HDR) were reviewed for a better understanding of the Monofill design and geometry. The WSEC CCR Monofill currently includes constructed Cells 1 through 9, which encompass approximately 88 acres. A facility site map showing the existing landfill area is included in Appendix A. A total of 187.6 acres of disposal area are permitted with the IDNR of which 88 acres are currently constructed (Cells 1 through 9). Cell 1 was constructed in 2007, Cells 2 and 3 were constructed in 2008, Cell 4 was constructed in 2010, Cell 5 was constructed in 2011, Cell 6 was constructed in 2012, Cell 7 was constructed in 2015/2016, and Cell 8 and the new leachate management pond were constructed in 2019. Cell 9 was constructed in 2021. Partial capping was installed in Cells 1, 2, 3N, 3S, 4, 5, 6, 7, and 8S in 2022 and 2023. Cells 8N and 9 are scheduled for partial capping in 2024. The final cover design is with 4H:1V side slopes.

The base liner system consists of, from bottom to top, a two (2) foot thick layer of compacted clay with a permeability of 1×10^{-7} centimeters per second (cm/sec) or less, a 60-mil high density polyethylene geomembrane, a geocomposite drainage layer (drainage grid sandwiched between 2-layers of nonwoven geotextile), a minimum one (1) foot leachate collection layer, and a geotextile fabric. Leachate is collected by leachate collection pipes within the drainage layer on top of the liner system. The leachate is then pumped out of the cells through pipes into a lined leachate holding pond. Leachate is generally used for dust suppression on the WSEC CCR Monofill. As a backup disposal option, MEC entered into a contractual agreement with the City of Council Bluffs Wastewater Treatment Plant, located immediately north of the WSEC site. Documentation of this arrangement was submitted to IDNR on April 10, 2009 and incorporated into the Operating Permit as Permit Amendment #9. This agreement is typically renewed every 5-years. The documentation was not reviewed as part of this report.

2 Review of Available Information

Section 257.84(b)(1)(i) of the CCR Rule requires that available information regarding the status and condition of the CCR landfill such as the previous weekly and annual inspections are to be reviewed. Several documents pertaining to the operation and structural integrity of the WSEC CCR Monofill were reviewed before, during and after the site inspection, including:

- Annual inspection report prepared by HDR dated January 7, 2023. MEC indicated that all items from the previous year inspection had been addressed.
- The WSEC CCR Monofill weekly inspection records (per 40 CFR §257.84(a)) from September 28, 2022 through September 14, 2023.
- The WSEC CCR Monofill IDNR permit application and construction drawings prepared by MWH and HDR.

- Topographic survey and estimated quantities provided by MEC.

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

3 Visual Site Inspection

Section 257.84(b)(1)(ii) of the CCR Rule requires a visual inspection of the CCR landfill be performed. A site inspection of the WSEC CCR Monofill was performed on September 20, 2023 by Greg Shafer, PE of HDR. Inspections were coordinated with MEC environmental staff. Office reviews of available information were conducted by Greg Shafer.

The weather during the site visit was mostly cloudy with temperatures ranging from about 68 to 70 degrees Fahrenheit. There was a light breeze out of the south-southeast of 2 to 4 miles per hour (mph).

3.1 Extent of Inspection

The visual inspection involved walking the entire perimeter of the WSEC CCR Monofill, along the working area, and along the top of the side slopes. As the CCR Rule only requires the inspection of the existing CCR landfill itself, this report does not address the condition of the groundwater monitoring system, access roads beyond the landfill perimeter, grades, and drainage channels that are not a component of the WSEC CCR Monofill.

The field visit included inspection of and for the following:

- Perimeter drainage including channels and culverts
- Stability of CCR fill area
- Erosion within CCR disposal area
- CCR outside of permitted disposal limits
- Issues with leachate collection system
- Final cover condition

At the time of inspection, CCR was being placed on the top deck of the north end of the Monofill in Cell 9. CCR is trucked to the site using side-dump trucks, dumped, graded, and compacted with a loader or bulldozer in relatively flat lifts.

3.2 Inspection Findings

Based on the observations made at the time of the visual inspection, the following are the findings of the WSEC CCR Monofill inspection:

- Vegetation on landfill side slopes appeared full throughout the closed areas and appeared stable at the time of inspection.
- The leachate system was functioning without any reported issues.

- Ditches and culverts around the perimeter appeared to be free flowing with no current blockages.
- All interior disposal areas were observed and appeared stable at the time of this inspection. No erosion issues were observed.
- No animal burrows were observed.
- Vegetation/weeds growing through the gravel roads in some locations.
- Culverts on the north end of the east side of Monofill had some debris (tumble weeds and windblown trash). MEC was notified and will address these items.

Overall, the WSEC CCR Monofill appeared to be well maintained with strong vegetation and in good working order. No significant deficiencies were identified.

4 Changes in Geometry

Section 257.84(b)(2)(i) of the CCR Rule requires that any changes in geometry since the previous annual inspection be noted in the annual report. Section 257.84(b)(2)(iv) of the CCR Rule requires that any changes that may affect the stability or operation of the CCR Monofill since the previous annual inspection be discussed.

The geometry has not significantly changed from the previous annual inspection which included Cell 9, completed in 2021. This increased the footprint by approximately 6 acres and extended north about 300 feet. See Appendix B. Disposal operations are ongoing across the entire top deck of each cell with a current focus along the north end of the Monofill.

5 Approximate CCR Volume

Section 257.84(b)(2)(ii) of the CCR Rule also requires that the approximate volume of CCR in the Monofill be estimated as part of this annual inspection report. To determine the volume, MEC contracted licensed land surveyors at HGM Associates, Inc (HGM). From the HGM survey dated October 12, 2023, an estimated total of 4,308,530 cubic yards of CCR is within the WSEC CCR Monofill. A copy of the survey is included in Appendix B.

From the previous annual survey dated November 16, 2022 with 4,122,297 cubic yards total CCR in place, to the latest survey dated October 12, 2023, the estimated total volume of CCR disposed in the WSEC CCR Monofill increased by approximately 186,233 cubic yards.

6 Appearance of Structural Weakness

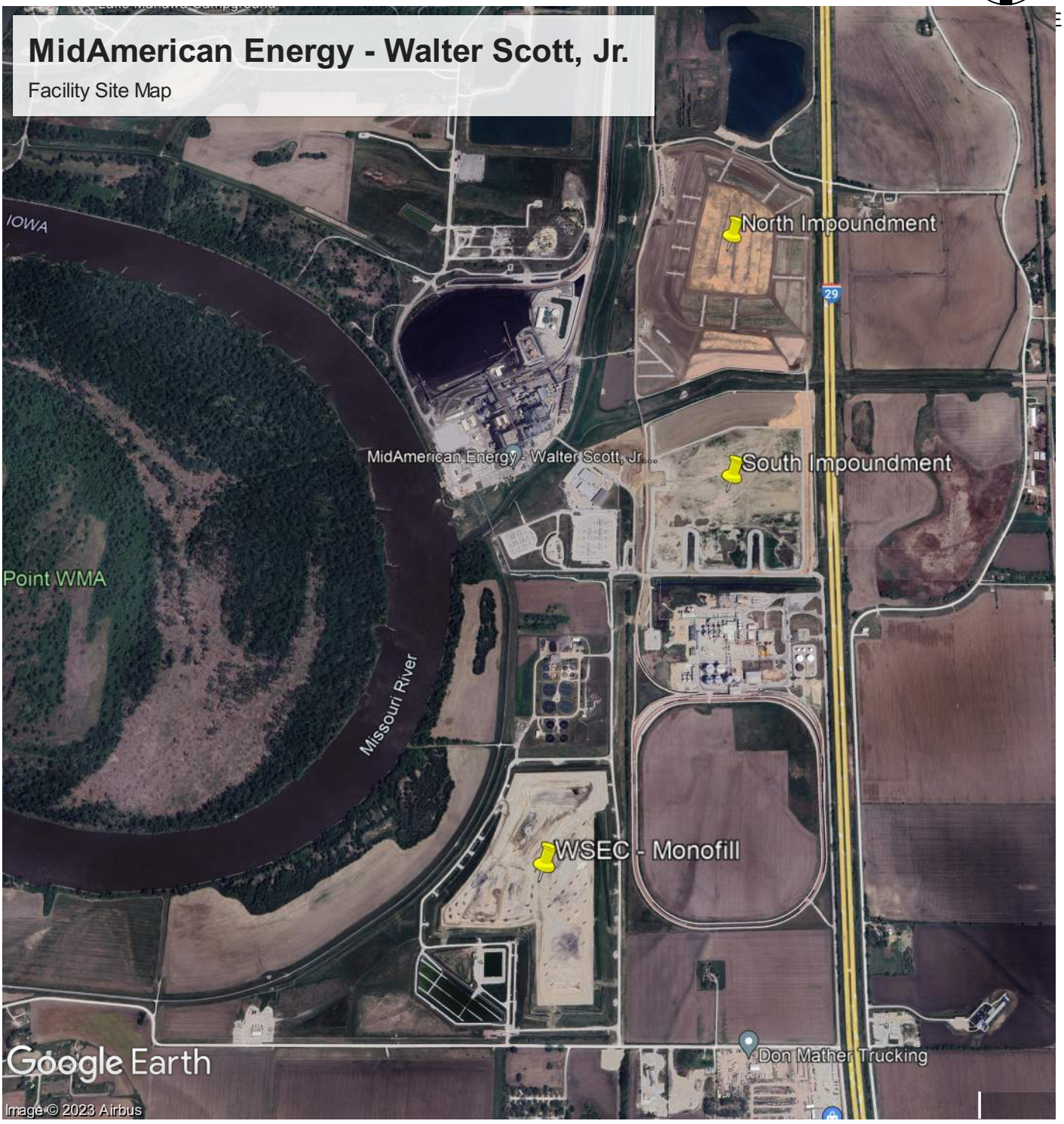
Section 257.84(b)(2)(iii) of the CCR Rule requires any appearances of actual or potential structural weakness or conditions that could disrupt or potentially disrupt operation and safety of the CCR landfill be noted in the inspection report.

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

7 Changes Affecting Stability or Operation

The CCR Rule requires that changes that affect stability or operation of the CCR landfill be identified since the last annual inspection. There were no reported, observed, or suspected changes that have weakened the site stability or negatively impacted the operation of the WSEC CCR Monofill.

Appendix A
Facility Site Map



NOTE: AERIAL IMAGE PROVIDED BY GOOGLE EARTH.

Appendix B
Site Survey & Estimated Quantities

THIS SURVEY WAS COMPLETED ON OCTOBER 12, 2023 THERE WAS 4,308,530 CUBIC YARDS OF MATERIAL PLACED IN THE MONOFILL.

NOTE: IN THE LOCATIONS WHERE CAPPING HAS BEEN COMPLETED, CCR ELEVATION POINTS WERE USED FROM HISTORICAL POINT FILES BEFORE CAPPING.

EXISTING CELL 7

EXISTING CELL 8

EXISTING CELL 3S

EXISTING CELL 3N

EXISTING CELL 1

EXISTING CELL 2

EXISTING CELL 4

EXISTING CELL 5

EXISTING CELL 6

EXISTING CELL 9

hgm ASSOCIATES INC.
640 FIFTH AVENUE COUNCIL BLUFFS, IOWA
PHONE: (712) 323-0530

DEF drawn	DEF designed	DEF approved	NOV'23 date

project WSEC MONOFILL
COR VOLUME CALCULATION 2023

client MIDAMERICAN ENERGY COMPANY
7215 NAVAJO ST., COUNCIL BLUFFS, IOWA 51501

sheet EXHIBIT

project no. 103823

sheet 1 OF 1

file: S:\Survey\Drafting\103823_MEC-WSEC 2023_Survey\no\Engineering\Dwgs\Survey\103823_WSEC_TOP_COR_2023.dwg
hgm: 103823