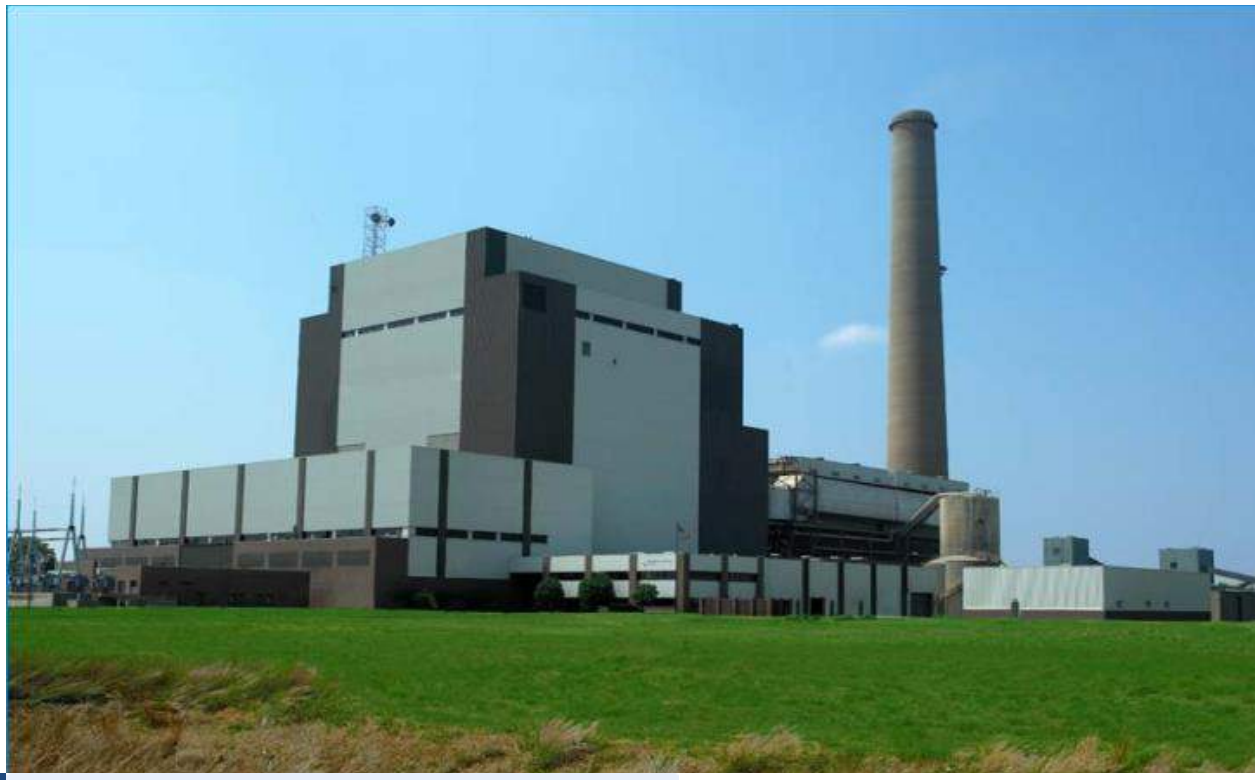

East Monofill 2022 Annual Inspection Report

Louisa Generating Station

MidAmerican Energy Company
Louisa Generating Station

Muscatine, Iowa
January 7, 2023

MidAmerican Energy Company
Louisa Generating Station
CCR East Monofill 2022 Annual Inspection Report

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MidAmerican Energy Company
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East Monofill 2022 Annual Inspection Report

Professional Engineer Certification

"I hereby certify that the Coal Combustion Residual (CCR) East Monofill at the Louisa Generating Station, owned and operated by the MidAmerican Energy Company, has been inspected and this report prepared in accordance with the CCR 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.

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 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 of its CCR landfills in accordance with 40 CFR Section 257.84. HDR conducted the 2022 annual inspection of the Louisa Generating Station (LGS) East Monofill on September 13, 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 last inspection report (i.e., placed in the facility operating record) establishes the deadline to complete the next inspection and report. 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 LGS East Monofill, must notify the Iowa Department of Natural Resources (IDNR) Director within 30 days of placing the East Monofill Annual Inspection Report in the operating record and date of posting to the CCR web site (40 CFR §257.106(g)(7) and §257.107(g)(7)).

1.2 Background

The LGS is a coal-fired generating plant located south of Muscatine, Iowa, along the west shore of the Mississippi River. The LGS has a closed CCR landfill, an active CCR landfill and a closed CCR surface impoundment. This annual inspection report covers the active East Monofill.

The East Monofill is located on the northern portion of the property. The East Monofill was constructed and began receiving CCR on October 15, 2018. The East Monofill operates under an Iowa Department of Natural Resource Operating Permit #70-SDP-

16-04. Cells 1 through 3 have been constructed with composite liner systems, and current disposal activities are focused within Cell 1 and Cell 2. Cell 3 has a temporary rain flap and ballast installed. No disposal operations are occurring in Cell 3 area. The Construction Certification for Cell 1 of the East Monofill was signed on October 3, 2018. Construction Certifications for Cells 2 and 3 were signed on January 30, 2020.

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 East Monofill were reviewed before, during and after the site inspection, including:

- Annual inspection report prepared by HDR dated January 7, 2022.
- The East Monofill weekly inspection records (per 40 CFR §257.84(a)) from October 5, 2021 through September 13, 2022.
- Construction Certifications for Cells 1, 2 and 3 stating compliance with IDNR and Federal CCR requirements.
- The East Monofill IDNR permit application and development drawings prepared by Foth Infrastructure & Environment (Foth) for the East Monofill.
- CCR disposal quantities provided by MEC.

Review of the above documents did not uncover any unresolved issues that indicated operational, safety or structural concerns of the East 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 East Monofill was performed on September 13, 2022 by Greg Shafer, PE and Garrett Williams, PE of HDR Engineering. Office reviews of available information were conducted by HDR.

The weather during the site visit was sunny with a temperature of 77 degrees Fahrenheit and wind speeds around 7 mph.

3.1 Extent of Inspection

The visual inspection involved walking the entire outer perimeters of the East Monofill. The working areas were also inspected. 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 East Monofill.

The field visit included inspection of the following:

- Site drainage

- Stability of CCR within the fill area
- Erosion within CCR disposal area
- CCR outside of permitted limits

The East Monofill was receiving CCR in Cells 1 and 2. Cell 3 had been covered with a rain flap and wind ballast.

3.2 Inspection Findings

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

- Some seam separations were observed in the wind ballast covering the rain flap at various locations in Cell 3. This was noted and reported to MEC personnel for resolution.
- Some silt fence between Cell 2 and 3 was noted to show deterioration. Continue to monitor and repair as necessary.
- Maintenance modifications to the entrance/exit at the southeast corner of Cell 1 should be made to minimize track-out. MEC staff mentioned the potential to install track-out pads to assist with management.

No significant deficiencies were identified during the inspection.

4 Changes in Geometry

The CCR Rule requires that any changes in geometry since the previous annual inspection [§257.84(b)(2)(i)] and any changes that may affect the stability or operation of the CCR landfill [§257.84(b)(2)(iv)] be discussed in the annual report.

The current geometry of the East Monofill includes an expansion of constructed Cells 2 and 3 to the north of Cell 1. Filling operations included adding CCR to all three cells to a depth of 4 to 5 feet above the floor with a rain tarp and ballast installed in the Cell 3 area. Active CCR filling is continuing in Cells 1 and 2.

There were no concerns about stability or operation of the East Monofill since the previous annual inspection.

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.

MEC tracks the volume of CCR disposed of within the East Monofill and the volume that is removed for beneficial use. The volume determined during the previous inspection was 138,600 cubic yards as of July 2021. Between August 2021 and September 2022, a net increase in CCR was determined to be 82,319 cubic yards. This includes 74,567 cubic yards CCR and 7,752 RGS Coal Fines. As such, the total volume through the end of September 2022 is 220,919 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, no apparent or potential structural weaknesses were observed on the East Monofill.

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 site stability or negatively impacted the operation of the East Monofill.

Appendix A
Facility Site Map

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NO SCALE

2022 ANNUAL INSPECTION REPORT
LOUISA GENERATING STATION - EAST MONOFILL
FACILITY SITE MAP

APPENDIX A

DATE

JANUARY 2023