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West Monofill 2021 Annual Inspection Report

Louisa Generating Station



MidAmerican Energy Company Louisa Generating Station

Muscatine, Iowa January 7, 2022

MidAmerican Energy Company Louisa Generating Station CCR West Monofill 2021 Annual Inspection Report

Table of Contents

| Professional Engineer Certification1 | | | |
|--------------------------------------|-----------------------------------|--|---|
| 1 | Intro | oduction | 2 |
| 1 | 1.1 | Purpose | 2 |
| 1 | .2 | Background | 2 |
| 2 | Rev | iew of Available Information | 3 |
| 3 | Visu | al Site Inspection | 3 |
| 3 | 3.1 | Extent of Inspection | 4 |
| 3 | 3.2 | Inspection Findings | 4 |
| 4 | Cha | inges in Geometry | 4 |
| 5 | Approximate CCR Volume | | 4 |
| 6 | Appearance of Structural Weakness | | 5 |
| 7 | Cha | inges Affecting Stability or Operation | 5 |

Appendices

Appendix A: West Monofill Final Grades and Stormwater Plan (Foth Plan excerpt from CCR website published Closure Plan)

MidAmerican Energy Company Louisa Generating Station West Monofill 2021 Annual Inspection Report

Professional Engineer Certification

"I hereby certify that the Coal Combustion Residual (CCR) West 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."

Print Name:

Signature:

Williams Garret

Date:

License #: P24856

My license renewal date is December 31, 2023.

January 7, 2022



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 landfill in accordance with 40 CFR Section 257.84. HDR conducted the 2021 annual inspection of the Louisa Generating Station (LGS) West Monofill on September 28, 2021, 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 West 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 web site (40 CFR §257.106(g)(7) and §257.107(g)(7)).

1.2 Background

The Louisa Generating Station 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 closed West Monofill.

The West Monofill is located on the northern portion of the property. The West Monofill had been in operation since 1983. In 2004, the West Monofill was permitted with the lowa Department of Natural Resources (IDNR). It encompasses approximately 33 acres and does not include a base liner system or leachate collection system. A map of

closure grading and stormwater plan is included in Appendix A. Soil containment berms contain the CCR material along the western and northern limits of the West Monofill, while the eastern side is contained by a previously existing slope downward from the east roadway. Drainage swales and a stormwater terraces convey storm water run-off from the West Monofill toward culverts located on the north. After passing through the culverts stormwater then moves downslope to a retention basin. The exterior perimeter containment berms are vegetated on the outer slopes. Permit drawings indicate the containment berms are designed with 3.5H:1V slopes. The final grade slopes are permitted to be 4H:1V with a maximum final cover elevation of 658 feet mean sea level (MSL). During the inspection, the Monofill was observed with final cover in accordance with the Closure permit for the West Monofill under 70-SDP-17-04, issued by lowa Department of Natural Resources on September 17, 2021.

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

- Annual inspection report prepared by HDR dated January 8, 2021.
- The West Monofill weekly inspection records (per 40 CFR §257.84(a)) from October 28, 2020 through September 14, 2021.
- The Construction Documentation Report completed by Foth Infrastructure and Environmental dated January 15, 2021.
- The West Monofill IDNR permit application and development drawings prepared by Montgomery Watson Harza (MWH).
- CCR disposal quantities provided by MEC.
- Closure phase mapping provided by MEC.

Review of the above documents did not uncover any unresolved issues that indicated operational, safety or structural concerns of the West 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 West Monofill was performed on September 28, 2021 by Garrett Williams, PE and Andy Lee, EIT of HDR Engineering, Inc. Office reviews of available information were also conducted by HDR.

The weather during the site visit was sunny with temperatures ranging from 54 to 80 degrees Fahrenheit and wind speeds around 8 mph.

3.1 Extent of Inspection

The visual inspection involved walking the entire outer perimeters of the West Monofill as well as across the face of the slopes of the containment berms. 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 CCR Monofill.

The field visit included inspection of the following:

- Perimeter drainage, including channels and culverts
- Stability of CCR within the fill area
- Erosion within CCR disposal area
- CCR outside of permitted limits

At the time of inspection, the West Monofill was closed.

3.2 Inspection Findings

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

- The northern culverts and outlet/slope protection are continuing to deteriorate. MEC is in process of analyzing the issue and plan to rectify once a review is complete.
- Ground cover was well established and full. Continue to monitor for potential deterioration.

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 [$\frac{257.84(b)(2)(i)}{2}$] and any changes that may affect the stability or operation of the CCR landfill [$\frac{257.84(b)(2)(iv)}{2}$] be discussed in the annual report.

In general, the current geometry of the West Monofill is similar to the prior annual inspection. Ash disposal has ceased, and final soil cover has been installed.

There were no concerns about stability or operation of the West 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.

The total volume of CCR within the West Monofill, as noted in the Notification of Closure dated July 2020, is 1,593,900 cubic yards. This volume is not anticipated to change as the Monofill is now closed.

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 West 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 West Monofill.



Appendix A West Monofill Final Grades and Stormwater Plan (Foth Plan excerpt of CCR website published Closure Plan)

