

CCR Landfill 2022 Annual Inspection Report

NC2 Ash Disposal Area



Omaha Public Power District
Nebraska City Station

Nebraska City, Nebraska
January 13, 2023

**OPPD Nebraska City Station
NC2 Ash Disposal Area
CCR Landfill 2022 Annual Inspection Report**

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**OPPD Nebraska City Station
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Professional Engineer Certification

"I hereby certify that the CCR landfill known as the NC2 Ash Disposal Area at the Nebraska City Generating Station, owned and operated by the Omaha Public Power District, was 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 Nebraska."

Name: Joseph R. Shields. PE

Registration State: Nebraska

Registration Number: E-8034

Date: 1/13/2023

My license renewal date is December 31, 2024.

1 Introduction

Omaha Public Power District (OPPD), Nebraska City Generating Station (NCS) currently operates an active coal combustion residual (CCR) landfill, referred to as the NC2 Ash Disposal Area. On April 17, 2015, the U.S. Environmental Protection Agency (EPA) published the final rule for the regulation and management of CCR under Subtitle D of the Resource Conservation and Recovery Act (CCR Rule). Requirements for the disposal and handling of CCR within units (either landfills or surface impoundments) are defined in 40 Code of Federal Regulations (CFR) Section 257.

Section 257.84(b) of the regulations specifies that an owner or operator of a CCR landfill have a qualified professional engineer inspect the landfill annually to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. This annual inspection report meets this requirement for the NC2 Ash Disposal Area.

1.1 Purpose

The CCR rule requires the initial inspection report for existing CCR landfills be completed and filed in the operating record 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. Subsequent inspections and reports must be completed and filed on an annual basis. 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, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety 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)

OPPD, as owner and operator of the Station, must notify the Nebraska Department of Environment and Energy (NDEE) Director within 30 days of placing the CCR Landfill Annual Inspection Report in the operating record and posting to the CCR web site (40 CFR §257.106 and §257.107).

1.2 Facility Background

The Station located 5.5 miles southeast of Nebraska City, Nebraska, along the west shore of the Missouri River. NC2 Ash Disposal Area CCR landfill is permitted under NDEE Title 132

regulations for fossil fuel combustion ash disposal area (NDEE Permit No. NE0204421, Facility ID 58343). The NC2 Ash Disposal Area is a CCR landfill with a composite liner and leachate collection system and encompasses a total of 40.7 acres. A facility site map is included in Appendix A.

2 Review of Available Information (40 CFR 257.84(B)(1)(i))

Documents pertaining to the operation and structural integrity of the CCR landfill were reviewed before, during and after the site inspection, including:

- The CCR Landfill weekly inspection records (per Section 257.84(a))
- NDEE Title 132 Permit No. NE0204421
- Documentation regarding NC2 Ash Disposal Area, Cell 1 Closure

Review of the above documents did not uncover any unresolved issues that indicated operational, safety or structural concerns of the CCR landfill. Currently, Cell 1 of the NC2 Ash Disposal Area has been graded and received final cover.

3 Visual Site Inspection (40 CFR 257.84(B)(1)(ii))

On December 6, 2022, OPPD personnel performed a site inspection of the NC2 Ash Disposal Area, including:

- Joseph R. Shields PE, Senior Engineer
- Mark Hansen, Environmental Affairs Program Administrator
- Kyle Uhing, Senior Environmental Specialist
- Jason Teter, Chemist
- Bryan Lorence, Manager, Environmental Operations

The weather during the site visit was partly cloudy with temperatures approximately 45 degrees Fahrenheit. The site was free of snow cover.

3.1 Extent of Inspection

The inspection included a driving and walking review of the NC2 Ash Disposal Area. As the CCR rule only requires the inspection of the existing active 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 landfill.

The field visit included inspection of the following:

- Perimeter channel conditions
- Side slope conditions
- Top of closed landfill cell
- General drainage

- Leachate pond(s)

3.2 Inspection Findings

The following are the findings of the site inspection:

- Minor rill erosion was noted in the drainage channel on the north side of Cell 1 during the last two annual inspection and was inspected. The erosion is located northeast of the landfill near the toe of the railroad embankment and not within landfilled ash. It does not appear to pose a stability concern to the railroad embankment and the condition has not noticeably changed in the last two years. OPPD will continue to monitor the erosion during future inspections.
- Minor erosion was noted at the south toe of Cell 3, north of the leachate pond. Erosion does not appear to be currently impacting stability; however, OPPD's landfill contractor will be directed to repair the toe to prevent conditions from worsening.
- Slopes and let down structures on Cell 1 were in good condition and no deficiencies were noted.
- CCR was being placed, spread, and compacted in Cell 2/3 footprint. To improve dust control, one third of the landfill face is being filled and the other two thirds is coated with a biodegradable polymer.

4 Changes in Geometry

The CCR rule requires that the site geometry changes be identified since the last annual inspection. The continuing CCR placement in Cell 2/3 is the only change in geometry.

5 Approximate CCR Volume

Total ash disposal is estimated on the August 2021 survey and estimated volumes based on daily records. Through November 2021 it is estimated that the total volume of CCR landfilled was about 1,537,000 cubic yards. From December 2021 through November 2022, it is estimated that 175,800 cubic yards were landfilled, bringing the total to 1,712,800 cubic yards.

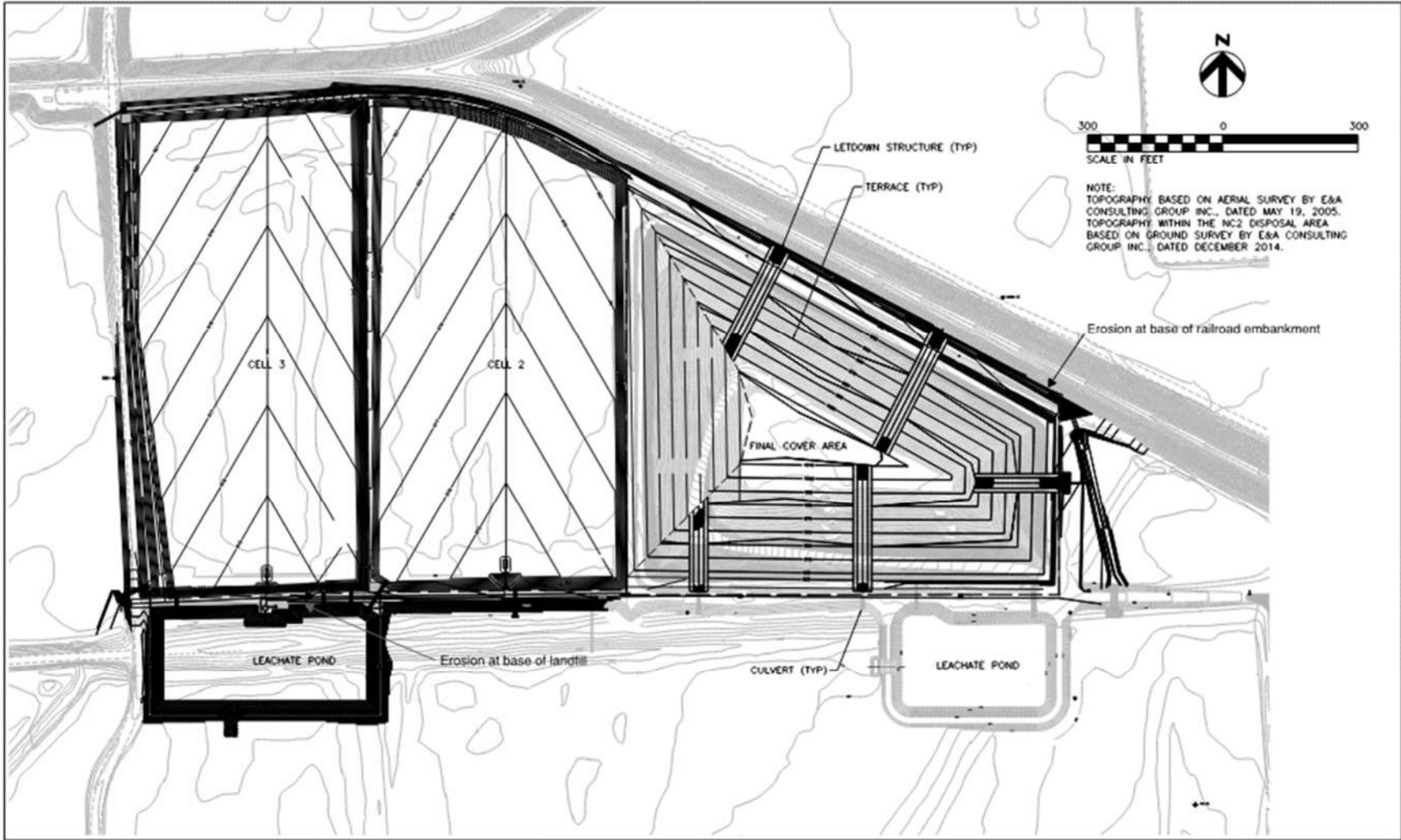
6 Appearance of Structural Weakness

Based on the visual inspection, no apparent or potential structural weaknesses were observed.

7 Changes Affecting Stability or Operation

The CCR rule requires identification of changes that affect stability or operation of the CCR landfill since the last annual inspection. No changes that affect stability were identified. To improve dust control, OPPD revised the plan for ash landfilling to reduce the active working face and began applying a binding agent on haul roads and open inactive areas of the landfill.

Appendix A
Facility Site Map



**OPD
 NEBRASKA CITY STATION
 NC2 ASH DISPOSAL AREA**

INSPECTION MAP

DATE
 DECEMBER 2022

FIGURE

1

Filename: 2022 NC2 Landfill Annual Inspection Report rev2
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m
Title:
Subject:
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Keywords:
Comments:
Creation Date: 12/30/2022 9:22:00 AM
Change Number: 3
Last Saved On: 1/9/2023 12:51:00 PM
Last Saved By: SHIELDS, JOSEPH R
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