CCR Landfill 2020 Annual Inspection Report

NC2 Ash Disposal Area

Omaha Public Power District
Nebraska City Station

Nebraska City, Nebraska
January 15, 2021

OPPD Nebraska City Station
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Professional Engineer Certification

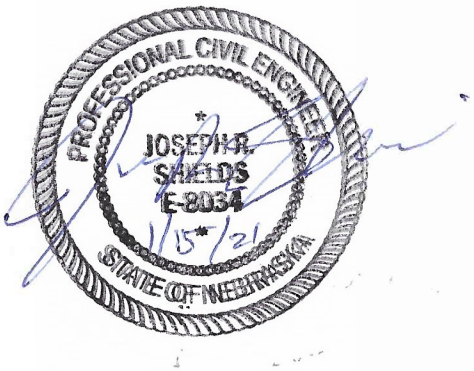
"I hereby certify that the CCR landfill known as the NC2 Ash Disposal Area at the Nebraska City Generating Station, owned and operated by the Omaha Public Power District, was inspected and this report prepared in accordance with the Coal Combustion Residual Rule 40 CFR 257.84(b). I am a duly licensed Professional Engineer under the laws of the State of Nebraska."

Print Name: Joseph R. Shields

Signature:

Date: January 15, 2021

License #: E-8034



My license renewal date is December 31, 2022.

1 Introduction

Omaha Public Power District (OPPD), Nebraska City Generating Station (Station) currently owns and operates two (2) coal combustion residual (CCR) landfills: NC1 Ash Disposal Area and 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 or any lateral expansion of a CCR landfill must have the landfill inspected on a periodic basis by a qualified professional engineer 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 must 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 the current 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))

Numerous 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)) from January 1, 2019 through December 31, 2019
- NDEE Title 132 permit
- Recent topographic survey
- Documentation regarding recent 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. During the inspection, landfilling operations were occurring at Cells 2 and 3.

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

On December 7, 2020, OPPD personnel performed a site inspection of the NC2 Ash Disposal Area, including:

- Joseph R. Shields PE, Environmental Operations
- Mark Hansen, Environmental Affairs Administrator
- Kyle Uhing, Environmental Inspector

The weather during the site visit was sunny with temperatures approximately 50 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
- Sideslope 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. The erosion was located west of the stilling basin northeast of the landfill and was not near landfilled ash or a stability concern. OPPD will monitor the erosion during future inspections.
- During the year, erosion had occurred at the transition of intermediate terrace to letdown structure on the north face of Cell 1. The erosion was repaired and vegetative cover was reestablished at the time of the annual inspection.
- Drainage paths were clear and appeared to be functional.
- During the year, sediments buildup in the West Leachate Pond, particularly near the storm water outlet conduits, were removed and placed in the landfill.
- CCR was being placed, spread, and compacted in Cell 2/3 footprint.

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 was estimated by adding the amount of CCR deposited in 2020 to the amount in the landfill from the previous annual inspection report, which was 1,602,969 cubic yards. The estimated quantities of CCR deposited in 2020 is approximately 163,000 cubic yards. Therefore, the estimated total volume of CCR at the time of inspection is 1,766,000 cubic yards.

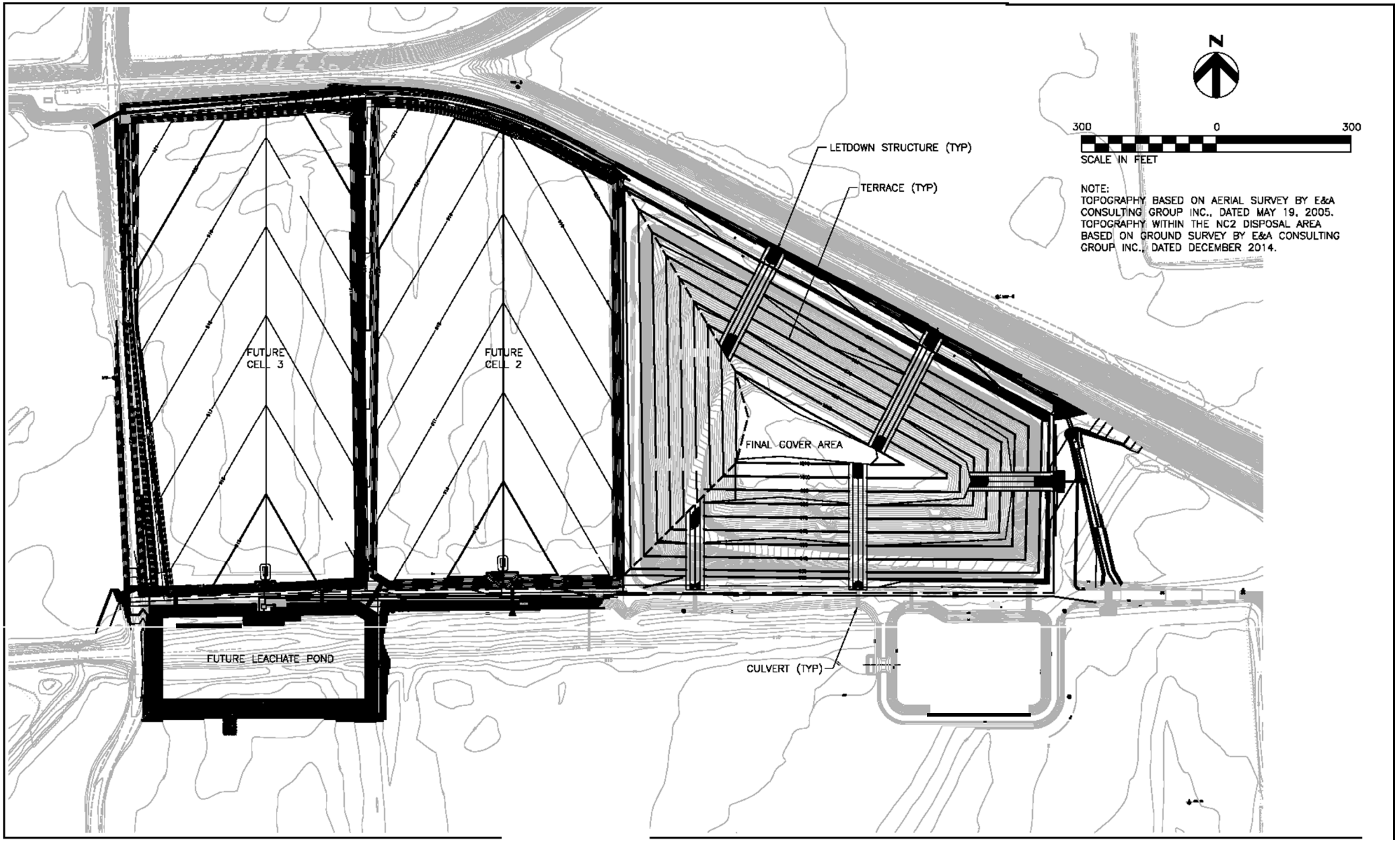
6 Appearance of Structural Weakness

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.

Appendix A
Facility Site Map



OPPD
NEBRASKA CITY STATION
NC2 ASH DISPOSAL AREA

INSPECTION MAP

DATE
OCTOBER 2015

FIGURE
1