CCR Landfill 2020 Annual Inspection Report

NC1 Ash Disposal Area

Omaha Public Power District
Nebraska City Station

Nebraska City, Nebraska
January 15, 2021

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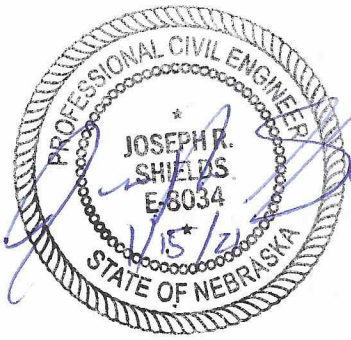
Professional Engineer Certification

"I hereby certify that the CCR landfill known as the NC1 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 NC1 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. NC1 Ash Disposal Area CCR landfill is permitted under the current NDEE Title 132 regulations for fossil fuel combustion ash disposal area (NDEE Permit No. NE0054712, Facility ID 58343). The NC1 Ash Disposal Area is an unlined CCR landfill of approximately 52 acres that has historically received CCR for disposal. 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
  Phase 3 Closure Plans and as-built surveys

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

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

On December 7, 2019, OPPD personnel performed a site inspection of the NC1 Ash Disposal Area, including:

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

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 NC1 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 erosion/stability of CCR fill areas
- Final cover/top of landfill

3.2 Inspection Findings

The following are the findings of the site inspection:

- The landfill is no longer receiving CCR fill. Construction for final closure was completed this year.
    - Ash Fill and grading ompleted Aug 14
    - Infiltration layer completed Aug 19
    - Erosion layer completed Aug 31
    - Seed andmulch completed Sept 17
- The top of the landfill had been regraded, an 18 inch layer of low permeability soil placed, overlaid by 6 inches of topsoil, and seeded. At the time of annual inspection, a stand of grass had been established.
- Site slopes of the landfill and runoff letdown structures were not disturbed during final closure construction. Vegetation on the side slopes was well established and there were no signs of erosion, settlement, or damage from burrowing animals.
- The ditches around the perimeter of the landfill were regraded and seeded as part of the final closure. Disturbed areas of regraded ditches had been recently revegetated with erosion blanketing and generally looked good. Ditches will be monitored for erosion of the ditches during the post-closure period.
- A limestone gravel access roads to the top surface of the landfill remained in place. Minor erosion was present and will be monitored during post-closure.

4 Changes in Geometry

The CCR rule requires that the site geometry changes be identified since the last annual inspection.

- The top of the landfill was regraded to eliminate the runoff detention pond and provide positive drainage to the side slopes, where runoff is collected and directed to the letdown structures.
- Drainage channels along the base of the landfill were regraded to improve runoff and revegetated.
- In late 2019, sloughing repairs to the backside of a terrace section on a north face of the OPPD NC1 Ash Disposal area occurred. The 2.5:1 terrace back slope was modified to a 3:1 slope in the slough area as a part of the repair.

5 Approximate CCR Volume

The total CCR volume in place near the end of 2019 was estimated to be 3,216,203 cubic yards. In 2020, approximately 51,500 cubic yards of ash was landfilled at NC-1 Ash Landfill Area. The estimated total volume of ash in the landfill is 3,266,700 cubic yards.

6 Appearance of Structural Weakness

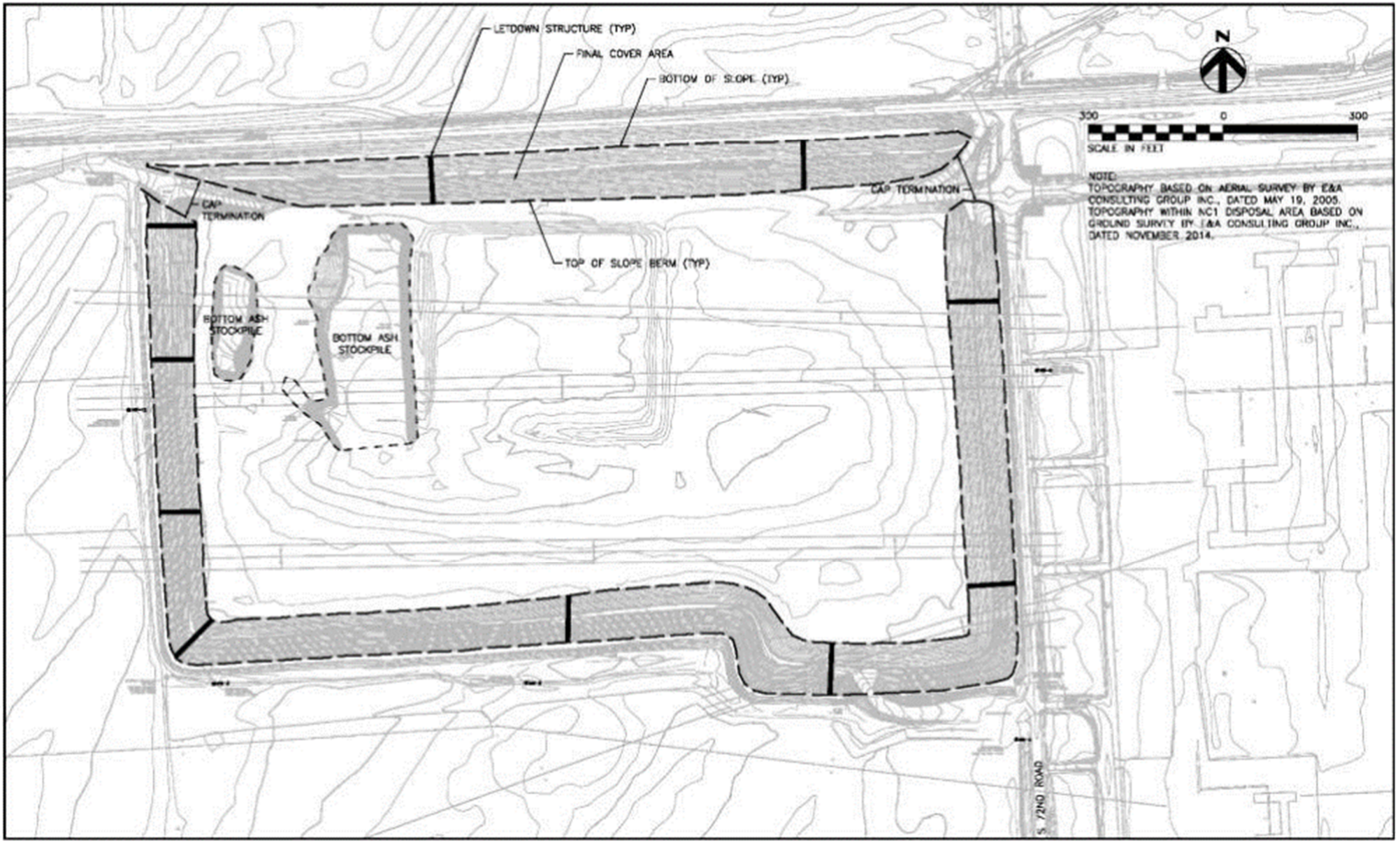
Based on the visual inspection, no apparent or potential structural weaknesses were observed.

7 Changes Affecting Stability or Operation

The CCR rule requires that changes that affect stability or operation of the CCR landfill be

identified since the last annual inspection. There are no changes that affect stability. Since the last inspection, the landfill has been functionally closed, in accordance with permit requirements. Final regulatory closure is expected to occur in early 2021.

Appendix A
Facility Site Map



OPPD
NEBRASKA CITY STATION
NC1 ASH DISPOSAL AREA

INSPECTION MAP

DATE
OCTOBER 2015

FIGURE