



Appendix F

Post-Closure Plan

Omaha Public Power District
North Omaha Generating Station
Ash Disposal Area

September 2019, Revised December 2019





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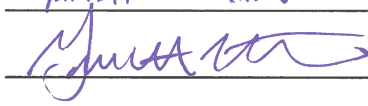
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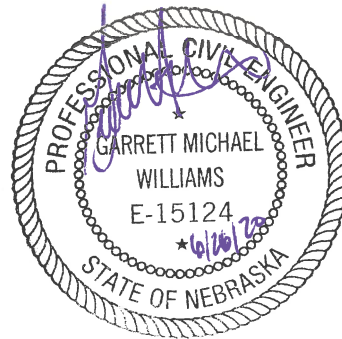


Professional Engineer Certification

"I hereby certify that this Post-Closure Plan for the North Omaha Ash Disposal Area at the Omaha Public Power District North Omaha Generating Station meets the requirements of the Coal Combustion Residual Rule 40 CFR 257.104. I am a duly licensed independent Professional Engineer under the laws of the State of Nebraska."

Print Name: Garrett Williams
Signature: 
Date: JUNE 26, 2020
License #: E-15124

My license renewal date is December 31, 2020.





1 Site Identification

1.1 Introduction

On April 17, 2015 the U.S. Environmental Protection Agency (EPA) published the final rule for the regulation and management of coal combustion residuals (CCR) under the Resource Conservation and Recovery Act (RCRA). The rule – effective on October 19, 2015 – applies to electric utilities and independent power producers that fall within NAICS code 221112, and the facility produces or stores CCR materials in impoundments or landfills. This regulation applies to Omaha Public Power District's (OPPD's) North Omaha Generating Station.

OPPD has a five-unit fossil fuel-fired generating plant at the North Omaha Power Station. Units #1-3 were converted to burn natural gas in 2016. Units #4-5 continue to burn coal. This Station has an existing landfill permitted under NDEE Title 132 regulations for fossil fuel combustion ash disposal areas. The North Omaha Station Ash Disposal Area is permitted and will continue to receive CCR for disposal both before and after October 19, 2015.

This Post-Closure Plan, prepared in accordance with Nebraska Department of Environment and Energy (NDEE) Title 132, Chapter 4 and updated to comply with the federal CCR rule, provides a description of monitoring and maintenance activities, frequencies, and post-closure use of the North Omaha Ash Disposal Area. This Post-Closure Plan must be amended whenever there is a change in the operation of the CCR landfill that would substantially affect the written post-closure plan or after post-closure activities have commenced, unanticipated events necessitate a revision of the written post-closure plan. OPPD will not implement modifications to the design or operations of the North Omaha Ash Disposal Area that would result in modifications to this Post-Closure Plan without prior approval from NDEE.

1.2 Facility Identification

Facility:	North Omaha Ash Disposal Area
NDEE Permit No.:	NE0054739
Owner Contact Address:	Omaha Public Power District Environmental and Regulatory Affairs 444 South 16 th Street Omaha, Nebraska 68102-2247

1.3 Legal Description

Station property covers NW 1/4 and SW 1/4 of Section 27 and portions of Section 28, Township 16 North, Range 13 East of the 6th Principal Meridian, Douglas County, Nebraska, containing approximately 120 acres more or less. The general legal description of the ash disposal area is as follows:

“A tract of land located in the east ½ of Section 28, Township 16 North, Range 13 East, Douglas County, Nebraska.”



The North Omaha Ash Disposal Area is approximately 23.8 acres with approximately 13.2 acres used for current ash disposal operations, approximately 4.5 acres formerly closed under pre-Subtitle D regulations, approximately 4.2 acres closed in 2017, and approximately 1.94 acres permitted undeveloped area for ash disposal. The Station property is approximately 3.5 miles northwest of Eppley Airfield, along the west shore of the Missouri River at River Mile 625.2.

1.4 Post-Closure Documentation, Notifications and Certification

OPPD will prepare, directly or through a contract, the documentation of post-closure care in accordance with NDEE Title 132, Chapter 4. In accordance with current state regulations, the results of all groundwater monitoring will be reported to the NDEE. During the post-closure care period, annual groundwater monitoring and corrective action reports required by the CCR rule will be posted to the CCR website and notification submitted to NDEE.

In accordance with the CCR rule requirements, the following post-closure notifications will be provided to the Director of NDEE:

- Notification that Post-Closure Plan is available and posted to the CCR website, and any amendment thereof
- Notification of completion of post-closure care, including certification by qualified professional engineer
- Notification of completion must be provided within 60 days of completion of post-closure care and include certification by an independent professional engineer registered in the State of Nebraska verifying that post-closure care has been completed in accordance with this or any subsequently amended Post-Closure Plan and the requirements of the CCR rule 40 CFR 257.104.

At the completion of the post-closure care period, OPPD will provide a notification as described in above.

2 Post-Closure Plan

The Post-Closure Plan will be implemented immediately after approval of completion of final closure in accordance with NDEE Title 132, Chapter 4 and the federal CCR rule. OPPD will conduct, or cause to be conducted, post-closure care for the North Omaha Ash Disposal Area for 30 years as required by the federal CCR rule. If at the end of the post-closure care period the North Omaha Ash Disposal Area is under a groundwater assessment monitoring program, then post-closure care shall be continued until the groundwater monitoring returns to detection monitoring in accordance with 40 CFR 257.95.

No person shall excavate, disturb the final cover, or remove any deposited materials from the closed North Omaha Ash Disposal Area without having received prior approval from NDEE. If such excavations are required, reference should be made to appropriate sections of NDEE Title 132.

2.1 Planned Use During Post-Closure Period

The closed North Omaha Ash Disposal Area will be designated as open space during the post-closure period and access will be controlled via site fencing and signage. The property is anticipated to continue as a power generating station, and will be managed to not disturb the integrity of the final cover or function of the monitoring systems.

2.2 Monitoring Schedule

This Post-Closure Plan includes a monitoring schedule, monitoring procedures, and maintenance activities, separated into component systems that are monitored and cared for during the post-closure care period. For monitoring and maintenance purposes, the North Omaha Ash Disposal Area has been divided into the following components:

- Final Cover System
- Vegetative Support
- Erosion Controls
- Storm Water/Drainage System
- Groundwater Monitoring System
- Access Controls

Table 1 provides a proposed frequency of monitoring activities based on the CCR rule required 30-year post-closure period. Visual inspections will be conducted by OPPD personnel or a qualified contractor. In order to facilitate any necessary repair work, inspections will generally be conducted during the spring and fall of each year and/or after severe storms, as needed. Monitoring and maintenance activities will be adjusted in accordance with the season, climate, and weather conditions. During each inspection, descriptions of the condition of the closed facility will be recorded and placed in the operating record maintained by OPPD. Table 2, located at the end of this plan, provides a general inspection checklist for recording the condition of the North Omaha Ash Disposal Area. Damages to the monitoring components will be documented.

Table 1 Post-Closure Inspection Schedule

Activity/Year	Frequency, per year ¹					
	1	2	3	4	5	6-30
Final Cover System	Q	Q	S	S	S	A
Vegetative Support	Q	Q	S	S	S	A
Erosion Controls	Q	Q	S	S	S	A
Stormwater/Drainage System	Q	Q	S	S	S	A
Groundwater Monitoring System ²	S	S	S	S	S	S
Access Controls	A	A	A	A	A	A

Notes:

¹ S = 2 times per year; A = 1 time per year, Q= 4 times a year

² Detection monitoring will monitor for 40 CFR 257 Appendix III constituents, and assessment monitoring, if required will comply with the CCR rule 40 CFR 257 and NDEE. Refer to the Groundwater Sampling and Analysis Plan (Permit – Appendix E).

Maintenance activities may or may not be periodically required, depending on the exact situation encountered. Any detected damages or deterioration will be assessed as to the cause and extent before repairs begin. Repairs will occur at the earliest possible time following detection. Temporary repairs may be performed until permanent repairs can be installed. Photographic records will be made, whenever possible, of repair activities for documentation. Repair work will be done in accordance with the Construction Quality Assurance Plan (Permit – Appendix H). All post-closure period repairs will be documented and placed in the operating record.

2.3 Final Cover System

Inspections of the final cover system include walking the closed North Omaha Ash Disposal Area looking for evidence of the following items:

- Settlement and subsidence
- Surface erosion
- Vegetative damage
- Cracks or desiccation
- Biotic intrusion of the cover (burrowing rodents or animals)

Visual inspections for subsidence can include walking the cover after a major rainstorm or the beginning of snowmelt and thaw and looking for puddles or ponding. If large or radical changes in the ground surface elevation occur, these are strong indicators of settlement, which may result in damage to the infiltration layer and ponding of water or improper surface drainage. Areas observed to have significant ponding of water on the cap should be investigated for cap integrity and repaired. Eroded and cracked cover materials will be repaired and additional erosion controls



(such as erosion control matting, mulching, silt fence, or other measures) installed if necessary. Burrowing rodents will be trapped and removed as necessary to ensure final cover integrity. Repair of the final cover in damaged areas should include the following:

- Replacing soils by type
- Proper filling and compaction of the infiltration layer (to permeability no greater than 1×10^{-5} cm/sec)
- Repairing/patching the geomembrane and/or geocomposite drainage net
- Re-grading as necessary
- Re-establishing vegetation

All repair work shall be in accordance with the Construction Quality Assurance Plan (Permit – Appendix H). The location of all damage in the cap and the repair procedure should be clearly documented. Annual maintenance requirements may be affected by weather and other variables. The level of maintenance should decrease with time and the stability of the vegetative support system. Maintenance repairs will be seasonally adjusted based on weather and growing seasons.

2.4 Vegetative Support

Vegetation will be visually inspected for the following:

- Volunteer vegetation (such as weeds, shrubs, and trees)
- Bare spots
- Drought stress
- Insects or bugs
- Other damage or die-off

Condition of the vegetative cover will be documented as part of the scheduled inspection(s) and periodically after rainstorms for failure, and then repaired as necessary. Noxious weeds and woody vegetation will be removed on an annual basis. Bare spots or areas of cracking and vegetative die-off may be indicators of other problems, such as rodents, improper soil type (such as highly alkaline), erosion damage, or other factors. After the root problem has been corrected, vegetative cover will be re-established in these areas.

Because native grasses are used for vegetative cover, mowing is anticipated to be minimal, with an anticipated frequency of mowing two times annually for financial assurance estimating purposes.

2.5 Erosion Controls

The erosion controls will be visually inspected for the following:

- Sedimentation levels
- Erosion rills near control structures
- Damage to erosion control measures such as terraces, berms, silt fences, and hay bales
- Sedimentation leading to drainage structures or impacting vegetation



Terraces and letdown structures will be visually inspected in accordance with Table 1. Maintenance of erosion controls can include removal of accumulated sedimentation and repair or replacement of damaged erosion controls.

2.6 Storm Water/Drainage System

Periodic visual inspection of the storm water/drainage system should include the following areas:

- Culverts
- Ditches
- Monitoring/discharge structures
- Other drainage control structures

Inspection will identify any accelerated erosion in a particular area and differential settling of drainage control structures. Inspections will also look for sedimentation, clogs or obstructions, deterioration, and vegetative intrusion.

Damaged drainage control structures will be repaired, replaced, or restored to original conditions. When drainage structures become plugged or silt filled, they will be cleaned by water jetting or similar means. Silt-filled drainage channels will be cleaned, regarded and vegetated, as necessary to maintain drainage capacity.

2.7 Groundwater Monitoring System

During the semi-annual sampling events, the groundwater monitoring wells will be visually inspected for the following:

- Erosion or biotic intrusion around the base
- Condition of concrete pad
- Condition of protective casing
- Damage to locking well caps or locks
- Integrity of well seals/ well casing
- Integrity of any well markers or protective structures

Areas of erosion at groundwater monitoring wells will be filled with compatible soil materials, graded to drain, and covered with vegetative growth, as necessary. Damaged well caps, concrete pads, and well seals will be repaired and/or replaced. Dedicated pumps that are not working or are performing poorly will be repaired or replaced, or alternatively replaced by a different sampling method approved by the NDEE. Wells damaged below grade levels may need to be evaluated further and possibly replaced.

Sampling frequency shall be in accordance with Table 1 and will be reported to the NDEE on a semi-annual basis and a groundwater monitoring and corrective action report prepared annually in accordance with the federal CCR rule. All sampling, packaging, shipping, and testing should conform to the Groundwater Sampling and Analysis Plan (Permit – Appendix D).

At the conclusion of the post-closure monitoring period, all monitoring wells may be abandoned in accordance with the requirements of the State of Nebraska Department of Health Title 178, unless the further monitoring is required.



2.8 Access Controls

Access will be controlled throughout the post-closure period. Access control structures and signage will be visually inspected for the following:

- Cuts or other damage in fencing
- Damage to fence posts
- Integrity of locks and gates
- Damage to or deterioration of (or missing) posted signs and warnings

All corrective actions, e.g., repair or replacement of damaged fencing, gates, and signs, will be completed within 60 days of noting the deficiency or an alternative schedule developed.

Table 2 Post-Closure Inspection/Maintenance Checklist

COMPONENT	YES/NO ¹	COMMENTS/CORRECTIVE ACTION ²
Final Cover System		
Indications of Settlement	__Y__N	
Erosion of Cap	__Y__N	
Exposed CCR	__Y__N	
Litter	__Y__N	
Cracks or Dessication	__Y__N	
Evidence of Biotic Intrusion	__Y__N	
Vegetative Support		
Vegetation Condition/Bare Spots	__Y__N	
Volunteer Vegetation (weeds, woody growth)	__Y__N	
Erosion Controls		
Terraces – Clear of Debris	__Y__N	
Terraces – Erosion	__Y__N	
Letdown Structures – Clear of Debris	__Y__N	
Letdown Structures – Erosion	__Y__N	
Other Erosion Controls – Good Condition (Silt Fences, Hay Bales, Etc.)	__Y__N	
Sedimentation Leading to Drainage Structures	__Y__N	
Storm Water/Drainage System – Perimeter Channels		
Perimeter Ditches – Clear of Debris	__Y__N	
Perimeter Ditches – Erosion	__Y__N	
Discharge Structure or Culverts Condition – Clear of Debris/Damage	__Y__N	
Groundwater Monitoring System		
Condition of protective casing, locking cap and lock, concrete pad, well seal/well casing, protective bollards/posts, and erosion or biotic intrusion.		See well sampling field forms for conditions of wells
Access Controls		
Fencing/Fence Posts – Good Condition	__Y__N	
Integrity of Locks and Gates – Intact	__Y__N	
Missing or Damaged Signs	__Y__N	

Notes:

¹ If 'Yes' checked, identify issue and follow up with corrective action –temporary and/or permanent repairs. Permanent repairs may be delayed until weather conditions are adequate; temporary repairs may be implemented in the interim to help prevent further damage from occurring.

² Attach corrective action documentation (description and date correction/repairs) when completed.

Date: _____ **Inspector Signature:** _____