
CCR Rule Siting Criteria

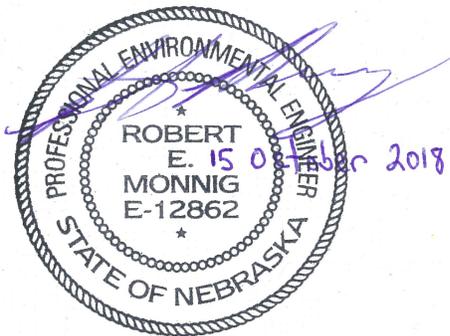
§257.64 Unstable Areas

Lon D. Wright Power Plant
Fremont, Nebraska

Prepared for
Fremont Department of Utilities

400 E. Military Road
Fremont, NE 68025

October 15, 2018



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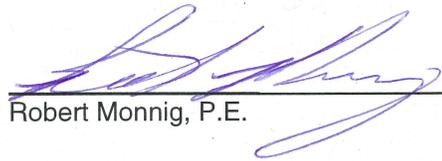
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PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify, as a Professional Engineer in the State of Nebraska, that the information in this document was assembled under my direct supervisory control. This report is not intended or represented to be suitable for reuse by the City of Fremont or others without specific verification or adaptation by the Engineer.

I hereby certify, as a Professional Engineer in the State of Nebraska that the Unstable Areas assessment provided herein meets the requirements of 40 Code of Federal Regulations §257.64.



Robert Monnig, P.E.

October 15, 2018

Date

1.0 INTRODUCTION

The City of Fremont Department of Utilities (FDU) operates a fossil fuel combustion ash disposal site (Site). The Site is an existing facility, sited, constructed, permitted, and operated as part of the FDU Lon D. Wright Power Plant (Power Plant) east of the City of Fremont, Nebraska (City). The Site only accepts coal combustion residue (CCR) from the Power Plant; therefore, the fossil fuel combustion ash disposal area (CCR landfill) represents an ash monofill (Monofill).

Specifically, §257.64 indicates the CCR landfill must not be located within unstable areas. §257.53 defines an unstable area as a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity, including structural components, of some or all the CCR unit that are responsible for preventing releases from such unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains.

The Nebraska Department of Environmental Quality implements regulations through the requirements contained in Title 132, Integrated Solid Waste Management Regulations, which includes a permit process for Fossil Fuel Combustion Ash Disposal Areas. The Site's initial construction permit application included the requirement, found under Title 132, Chapter 4, Section 002.06, that the disposal area is constructed in an area that is not deemed unstable.

1.1 EXISTING CONDITIONS

The Site is flat, and only a maximum of 10 feet of ash will be placed in the Monofill. The Phase I Monofill was excavated approximately 5 feet to install the recompacted clay liner. The recompacted clay liner was compacted to obtain a hydraulic conductivity of no more than 1×10^{-7} cm/sec. This well-compacted base over a reasonably homogeneous soil results in minimal differential settlement. Settlement and strain on the leachate collection system from the clay liner was modeled during the initial construction permit application and determined not to impact the integrity of the system.

1.2 UNSTABLE AREAS EVALUATION

The compacted clay liner and subgrade materials are not susceptible to excessive deformation or mass movement and provide adequate stability for the CCR foundation. No karst or other unstable features are present at this site.

1.3 CONCLUSION

FDU CCR disposal facility meets the requirements of §257.64 – Unstable Areas.

1.4 SOURCES

[1] USEPA, 2015. 40 CFR Parts 257 and 261, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. April 17, 2015. 201 pp.

[2] USGS, 2004. Open-File Report 2004-1352, Digital Engineer Aspects of Karst Map: A GIS Version of Davies, W.E., Simpson, J.H. Ohlmacher, G.C., Kirk, W.S., and Newton, E.G., 1984, Engineering Aspects of Karst: U.S. Geological Survey, National Atlas of the United States of America, Scale 1:7,500,000.