



HISTORY OF CONSTRUCTION

WEC Temporary Ash Disposal Area

Hastings Utilities / City of Hastings, Nebraska and
Public Power Generation Agency



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**History of Construction, 40 CFR §257.73(c)
WEC Temporary Ash Disposal Area**

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1. Introduction and Purpose

On April 17, 2015 the U.S. Environmental Protection Agency (EPA) issued the final rule for the regulation and management of coal combustion residuals (CCR) under Subtitle D of the Resource Conservation and Recovery Act (RCRA) [40 CFR Part 257, Subpart D]. The rule – effective on October 19, 2015 – and as amended, applies to the WEC Ash Disposal Area which is considered an existing CCR surface impoundment.

CCR Rule 40 CFR §257.73(c) requires that owners or operators compile the history of construction, which shall contain, to the extent feasible, the information specified in 40 CFR 257.73(c)(1)(i) through (xii). Most of the facility information is contained in the solid waste permit application with the Nebraska Department of Environment and Energy (NDEE) obtained under Title 132 – *Solid Waste Management Regulations*.

2. Facility Description

The Whelan Energy Center located near Hastings, Nebraska, has two coal fired electric generating units. WEC Units 1 and 2 have net capacity ratings of 77 megawatts and 220 megawatts, respectively. Figure 1 provides the location of WEC relative to City of Hastings, Nebraska. Hastings Utilities / City of Hastings, NE (Hastings) is the owner and operator of WEC Unit 1 (WEC1) and the operating agent of WEC Unit 2 (WEC2) for Public Power Generation Agency (PPGA). The WEC Temporary Ash Disposal Area, located at WEC, is permitted under the Nebraska Department of Environmental Quality (NDEQ) [now referred to as the Nebraska Department of Environment and Energy (NDEE)] Title 132 – Integrated Solid Waste Management Regulations. Original Title 132 permitting efforts began in 1999 pursuant to NDEQ requirements. The federal CCR rule – effective on October 19, 2015 – and as subsequently amended, applies to the WEC Ash Disposal Area which is considered an existing CCR surface impoundment.

The WEC Temporary Ash Disposal Area is an unlined CCR surface impoundment of approximately 23.2 acres that has historically received CCR in sluiced and dry form for storage prior to removal for beneficial uses. Fossil fuel ash sluicing and disposal at this site began in 1981, the same year that WEC1 began commercial operation. The disposal area was constructed as an ash pond to provide storage for ash, sluice water, and other process waters with option to recycle water back to the WEC. Due to ash pond size and evaporation, recycling water back to the plant did not occur. Over time, other process waters such as cooling tower blowdown was redirected away from the WEC Temporary Ash Disposal Area. With start-up of WEC2, commercial operations on May 1, 2011, scrubber ash was sluiced to the East Area and fly ash was periodically sluiced to the West Area. Sluicing of scrubber ash ended in 2013 after a pug mill was installed to load trucks with moistened scrubber ash for hauling and placement within the East Area of the WEC Temporary Ash Disposal Area. Figure 2 shows the locations of the plant, supporting facilities, WEC Temporary Ash Disposal Area, and groundwater monitoring wells.

2.1. Site Location

The legal description of the Whelan Energy Center site is as follows: “The North Half of Section 14, Township 7 North, Range 9 West in Adams County, Nebraska, containing 320 acres more or less.” The Site is approximately 2 miles east of Hastings, Nebraska, on Highway 6.

The site includes the WEC generating station, electric substation, WEC Temporary Ash Disposal Area, farming operations, and a train car repair facility. The current disposal area footprint of the WEC Temporary Ash Disposal Area is approximately 23.2 acres located along the west property boundary.

2.2. Site Description

The regional and site-specific topography is generally level. On the WEC site, moderately sloping elevations vary up to about 15 feet. The WEC Temporary Ash Disposal Area has a base elevation at 1888 feet above mean sea level within in-situ lean clay material of Peoria loess having a permeability of approximately 10^{-4} to 10^{-8} cm/sec (HDR 2006). Three sides of the WEC Temporary Ash Disposal Area are cut slopes to the CCR. The only embankment that extends above the natural ground is the south embankment.

3. History of Construction

The original ash pond was constructed prior to 1981, the year fossil fuel ash sluicing and disposal began with WEC1 commercial operations. On-site clay soils were used in the construction. The available information on history of construction is summarized and/or included in the WEC Temporary Ash Disposal Area, Title 132 Permit Renewal Application dated October 2016 which was posted to the CCR Rule Compliance Data and Information website. Table 1 lists the specific locations of the history of construction information in the Title 132 Permit.

Table 1. WEC Temporary Ash Disposal Area, History of Construction Summary

40 CFR Rule	Rule Information	Title 132 Permit Information Location/ Document Sections
257.73(c)(1)(i)	Owner and Unit Information	NDEQ Application for Fossil Fuel Combustion Ash Waste Disposal Area Permit form, Permit #NE0204129
257.73(c)(1)(ii)	Unit Location on USGS Quadrangle Map	- Section II.A Site Location and Description - Figure 4 USGS Map attached
257.73(c)(1)(iii)	Purpose of CCR Unit	Section I. Introduction
257.73(c)(1)(iv)	Name and Size of Watershed	- WEC located in Little Blue Watershed (Source: Nebraska Department of Natural Resources, Water Planning Division) - Little Blue Watershed 1,539,200 acres - Figure 5 Little Blue Watershed attached
257.73(c)(1)(v)	Description of Foundation and Abutment Materials	- Section II.C.2 Site Geology - Appendix L-Supplemental Hydrogeologic Characterization
257.73(c)(1)(vi)	Statement of Materials Used in Construction, Method of Site Preparation, Dates of Construction	- Section II.C.2 Site Geology - Section II.D Effects on Waters of the State - Appendix K-Hydrogeologic Characterization - Appendix L-Supplemental Hydrogeologic Characterization - Appendix P-Facility Record Drawings
257.73(c)(1)(vii)	Detailed Drawings of Unit	Appendix I-Permit Drawings

40 CFR Rule	Rule Information	Title 132 Permit Information Location/ Document Sections
257.73(c)(1)(viii)	Existing Instrumentation Details	Appendix A-Operational Plan, Section 4.5 Note: Painted bollards (i.e. visual gauge) no longer needed since spillways no longer used.
257.73(c)(1)(ix)	Area-Capacity Curves	Not available
257.73(c)(1)(x)	Spillway and Diversion Design Features	- Appendix B-Leachate Management Plan, Section 2.1 - Appendix I-Permit Drawings 00C501 - Appendix M-Site Drainage Calculations Note: Spillways no longer used.
257.73(c)(1)(xi)	Construction Specifications and Surveillance, Maintenance, and Repair Provisions	- Appendix A-Operational Plan, Section 4.0 Record Keeping and Monitoring Programs - Appendix B-Leachate Management Plan, Section 2.1.1 Pond Ash Management - Appendix H-Construction Quality Assurance Plan
257.73(c)(1)(xii)	Structural Instability Records	- CCR Annual Inspection Reports 2016 thru 2019 on CCR website - TM257.64-Unstable Areas Evaluation on CCR website

4. References

Federal Register, 2015. 40 CFR Parts 257 and 261 Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities. Vol. 80, No. 74, Pages 21302 – 21501. April 17, 2015.

Hastings, 2020. CCR Rule Compliance Data and Information website at [CCR Rule Compliance Data and Information - City of Hastings, NE](#).

HDR, Inc., 2006. Supplemental Hydrogeologic Characterization for Whelan Energy Center Fossil Fuel Combustion Ash Temporary Ash Disposal Area. Prepared for Hastings Utilities. Original December 2001.

HDR, Inc., 2016. Title 132 Permit Renewal Application, WEC Temporary Ash Disposal Area. Whelan Energy Center. Prepared for Public Power Generation Agency and Hastings Utilities. October 6, 2016.