

MWG

Midwest Generation, LLC
Powerton Generating Station

Preliminary Written Closure Plan for Bypass Basin



Revision 1

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Issue Purpose: Use

Project No.: 12661-122

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1.0 PURPOSE & SCOPE

Illinois CCR Rule Reference: 35 Ill. Adm. Code 845.720(a)

Federal CCR Rule Reference: 40 CFR 257.102(b)

1.1 PURPOSE

The Bypass Basin at Midwest Generation, LLC's (MWG) Powerton Generating Station ("Powerton" or the "Station") is an existing coal combustion residual (CCR) surface impoundment that is regulated by the Illinois Pollution Control Board's "Standards for the Disposal of Coal Combustion Residuals in CCR Surface Impoundments." These regulations are codified in Part 845 to Title 35 of the Illinois Administrative Code (35 Ill. Adm. Code 845, Ref. 1) and are also referred to herein as the "Illinois CCR Rule." The Bypass Basin is also regulated by the U.S. Environmental Protection Agency's (EPA) "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," 40 CFR Part 257 Subpart D (Ref. 2), also referred to herein as the "Federal CCR Rule."

Pursuant to 35 Ill. Adm. Code 845.720(a) and 40 CFR 257.102(b), this document provides the preliminary written closure plan for the Bypass Basin at Powerton. In accordance with both sets of regulations, this document describes the steps necessary to close the CCR unit at any point during its active life. MWG intends to first retrofit the Bypass Basin with a composite liner and a leachate collection and removal system (LCRS) in accordance with 35 Ill. Adm. Code 845.770(a) and 40 CFR 257.102(k) and then use the basin to manage CCR wastestreams and several non-CCR wastestreams from the Station. After Powerton ceases coal-fired power generating operations, the Station will initiate closure of the CCR surface impoundment. Therefore, this preliminary written closure plan describes the steps necessary to close the Bypass Basin after it has been retrofitted. In accordance with 40 CFR 257.102(k)(2)(ii)(A), MWG will prepare a corresponding retrofit plan for the Bypass Basin no later than 60 days prior to submitting a retrofit construction permit application to the Illinois EPA.

MWG intends to close the retrofitted Bypass Basin by removing CCR and CCR-mixed materials remaining in the basin at the time of closure and decontaminating affected areas pursuant to 35 Ill. Adm. Code 845.740(a) and 40 CFR 257.102(c). This plan describes the steps necessary to close the Bypass Basin in this manner.

1.2 SCOPE

Per the 2016 Water Infrastructure Improvements for the Nation (WIIN) Act, the retrofitted Bypass Basin will continue to be subject to both the Illinois and Federal CCR Rules until the U.S. EPA approves the Illinois EPA's CCR permit program. The Illinois EPA has yet to publish a timeline for submitting its proposed CCR permit program to the U.S. EPA for approval, and so this preliminary written closure plan has been prepared pursuant to both sets of regulations.

2.0 CLOSURE PLAN NARRATIVE DESCRIPTION

Illinois CCR Rule References: 35 Ill. Adm. Code 845.720(a)(1)(A) & 845.740(a)

Federal CCR Rule References: 40 CFR 257.102(b)(1)(i) & 257.102(c)

MWG plans to close the retrofitted Bypass Basin by removing CCR and CCR-mixed materials remaining in the basin at the time of closure and decontaminating affected areas pursuant to 35 Ill. Adm. Code 845.740(a) and 40 CFR 257.102(c). The Bypass Basin closure will be executed according to the following sequential steps:

1. Obtaining a construction permit from the Illinois EPA for closing the retrofitted basin;
2. Ceasing all CCR and non-CCR inflows to the basin;
3. Drawing down free surface water in the basin by draining water into the existing outlet structure in the southeast corner of the basin;
4. Once the water elevation is below the invert elevation of the basin's outlet structure, promoting additional drainage and dewatering by:
 - a. Excavating sumps and trenches within the ash material,
 - b. Using portable pumps as necessary to remove additional water by pumping water into the basin's outlet structure, and/or
 - c. Utilizing earthmoving equipment to pile the ash within the basin to promote drainage;
5. Removing the CCR from the retrofitted basin, loading the material onto trucks, and transporting the material to a beneficial-use facility or a permitted disposal facility;
6. Removing the retrofitted basin's LCRS, filter layer installed over the LCRS, and any soil and geosynthetic materials installed over the filter layer and transporting the materials to a permitted disposal facility;
7. Removing the retrofitted basin's composite liner system;
8. Removing the original geomembrane liner (which MWG plans to use as a supplemental liner for the retrofitted basin pursuant to 35 Ill. Adm. Code 845.770(a)(4));
9. Inspecting the basin subgrade to verify it is not contaminated with CCR constituents;
10. Removing the retrofitted basin's appurtenant structures (e.g., inlet troughs, outlet structures, piping);
11. Sampling the groundwater at the basin site to verify the groundwater monitoring concentrations do not exceed the groundwater protection standards established for constituents in accordance with the operating permit issued by the Illinois EPA for the basin; and
12. Certifying (via a qualified professional engineer licensed in the State of Illinois) that the CCR has been removed from the basin and the CCR surface impoundment has been decontaminated in accordance with the closure plan in effect at the time of closure and in accordance with the corresponding construction permit issued by the Illinois EPA.

3.0 CCR REMOVAL & DECONTAMINATION PROCEDURES

Illinois CCR Rule References: 35 Ill. Adm. Code 845.720(a)(1)(B) & 845.740(a)

Federal CCR Rule References: 40 CFR 257.102(b)(1)(ii) & 257.102(c)

The preliminary closure plan for the retrofitted Bypass Basin is to follow the sequential steps outlined in Section 2.0.

Upon receipt of the construction permit from the Illinois EPA for closing the retrofitted Bypass Basin and after permanent cessation of all flows into the impoundment, MWG will first draw down the free surface water remaining in the CCR surface impoundment and dewater the CCR stored therein. Initially, free water remaining in the retrofitted basin will be drawn down by allowing the water to drain to the outlet structure at the southeast corner of the basin. Once the water level falls below the outlet structure's invert elevation, additional drainage and dewatering may be facilitated by:

- Excavating sumps and trenches within the ash,
- Using portable pumps to pump water into the basin's outlet structure, and/or
- Utilizing earthmoving equipment to pile the CCR within the retrofitted basin to promote drainage.

Once the CCR within the impoundment is sufficiently dewatered to handle, construction equipment will then be used to load CCR materials onto trucks and transported to a beneficial-use facility or a permitted disposal facility. Trucks transporting the CCR materials off-site will carry manifests pursuant to 35 Ill. Adm. Code 845.740(c)(1)(A) and as specified in 35 Ill. Adm. Code 809. In addition, a CCR transportation plan will be prepared in accordance with 35 Ill. Adm. Code 845.740(c)(1)(B) which will include:

- Identification of the transportation method selected;
- The frequency, time of day, and routes of CCR transportation;
- Any measures to minimize noise, traffic, and safety concerns caused by the transportation of the CCR;
- Measures to limit fugitive dust from any transportation of CCR;
- Installation and use of a vehicle washing station;
- A means of covering the CCR for any mode of CCR transportation;
- A requirement that the CCR is transported by a permitted special waste hauler under 35 Ill. Adm. Code 809.201.

On-site fugitive dust control measures will also be implemented as necessary to minimize airborne CCR particulates while CCR materials are being handled. Pursuant to 35 Ill. Adm. Code 845.740(c)(2)(A), these dust control measures will include a water spray, commercial dust suppressant, or a combination of these.

Prior to the removal of CCR materials from the retrofitted Bypass Basin, signage will be posted at the Station's entrance warning of the hazards of CCR dust inhalation in accordance with 35 Ill. Adm. Code 845.740(c)(3)(A). Pursuant to 35 Ill. Adm. Code 845.740(c)(3)(B), a written notice will be issued to each of the local governments through which the CCR materials will be transported. This written notice will include an explanation of the hazards of CCR dust inhalation, the aforementioned CCR transportation plan, and a tentative transportation schedule.

The containment systems installed within the retrofitted Bypass Basin (*i.e.*, LCRS, composite liner, filter layer over the LCRS, *etc.*) will be removed from the impoundment. The original geomembrane liner and appurtenant structures (*i.e.*, inlet trough, outlet structure, piping, *etc.*) will also be removed. Materials removed from the impoundment site will be loaded onto trucks and transported to permitted disposal facilities in accordance with the aforementioned CCR transportation plan developed for the closure work. Finally, the basin subgrade will be visually inspected to verify the area is not contaminated with CCR constituents.

In accordance with 35 Ill. Adm. Code 845.740(e) and 40 CFR 257.102(c), CCR removal and decontamination will be complete when constituent concentrations throughout the retrofitted Bypass Basin and areas that may have been affected by releases from the basin have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standards established under 35 Ill. Adm. Code 845.600. After CCR removal and decontamination of the retrofitted Bypass Basin has been completed, MWG will submit a report documenting the completion of CCR removal and decontamination of the unit, which will include a certification from a qualified professional engineer licensed in the State of Illinois that CCR removal and decontamination was completed in accordance with 35 Ill. Adm. Code 845.740.

In accordance with 35 Ill. Adm. Code 845.740(b), MWG will continue groundwater monitoring in accordance with Subpart F of the Illinois CCR Rule ("Groundwater Monitoring and Corrective Action") for three years after the completion of CCR removal and decontamination. After groundwater monitoring has been completed, MWG will submit a report documenting the completion of groundwater monitoring, which will include a certification from a qualified professional engineer licensed in the State of Illinois that groundwater monitoring was completed in accordance with 35 Ill. Adm. Code 845.740.

4.0 ESTIMATED MAXIMUM INVENTORY OF CCR

Illinois CCR Rule Reference: 35 Ill. Adm. Code 845.720(a)(1)(D)

Federal CCR Rule Reference: 40 CFR 257.102(b)(1)(iv)

Detailed records of the maximum inventory of CCR ever stored in the Bypass Basin are not available. For the purposes of this preliminary written closure plan, the maximum inventory of CCR ever on-site over the

active life of the Bypass Basin is conservatively based on the estimated maximum capacity of the basin prior to retrofit: 9,000 cubic yards.

5.0 CLOSURE SCHEDULE

Illinois CCR Rule Reference: 35 Ill. Adm. Code 845.720(a)(1)(F)

Federal CCR Rule Reference: 40 CFR 257.102(b)(1)(vi)

Closure activities for the retrofitted Bypass Basin are expected to be completed by 2030. Table 1 lists the major milestones necessary for closing the basin and the expected duration for completing each milestone.

Table 1 – Planning Level Schedule for Closing the Retrofitted Bypass Basin

Activity	Estimated Duration
Prepare Closure Construction Design Documents	6 Months
Obtain Closure Construction Permit from Illinois EPA	13 Months
Hire Contractor to Complete Closure Activities in Accordance with Illinois EPA Permit	4 Months
Cease All Flows into Retrofitted Bypass Basin	--
Draw Down Water & Dewater Impounded Ash	5 Months
Remove Impounded Ash	1 Month
Remove Basin Containment Systems and Appurtenant Structures	2 Months
Submit Completion of CCR Removal and Decontamination Report and Certification to Illinois EPA	2 Weeks
Obtain Approval of Completion of CCR Removal and Decontamination Report from Illinois EPA	3 Months
Complete and Certify Closure of the Retrofitted Bypass Basin	--

6.0 AMENDMENTS TO CLOSURE PLAN

Illinois CCR Rule Reference: 35 Ill. Adm. Code 845.720(a)(3)

Federal CCR Rule Reference: 40 CFR 257.102(b)(3)

This closure plan will be amended in accordance with 35 Ill. Adm. Code 845.720(a)(3) and 40 CFR 257.102(b)(3) if a change in the operation of the Bypass Basin would substantially affect this closure plan or if an unanticipated event necessitates a revision to this closure plan. Any and all amendments to this closure plan will be certified by a qualified professional engineer registered in the State of Illinois in accordance with 35 Ill. Adm. Code 845.720(a)(4) and 40 CFR 257.102(b)(4).

7.0 COMPLETION OF CLOSURE ACTIVITIES

Illinois CCR Rule Reference: 35 Ill. Adm. Code 845.760

Federal CCR Rule Reference: 40 CFR 257.102(f)

Upon completion of all CCR removal and decontamination activities required by 35 Ill. Adm. Code Part 845 and 40 CFR 257.102(c) and approved by the Illinois EPA in a construction permit, a closure report and a closure certification for the retrofitted Bypass Basin will be submitted to the Illinois EPA in accordance with 35 Ill. Adm. Code 845.760(e). The closure report will include (1) the engineering and hydrogeology reports containing any monitoring well completion reports, boring logs, all construction quality assurance (CQA) reports, certifications, designations of CQA officers-in-absentia required by 35 Ill. Adm. Code 845.290; (2) photographs with time, date, and location information relied upon for documentation of construction activities; (3) a written summary of the closure requirements and completed activities as stated in the closure plan in effect and 35 Ill. Adm. Code Part 845; and (4) any other information relied upon by the qualified professional engineer for the certification. Pursuant to 35 Ill. Adm. Code 845.760(e)(2) and 40 CFR 257.102(f)(3), the certification will be prepared by an independent, qualified professional engineer licensed in the State of Illinois and will verify that the retrofitted Bypass Basin has been closed in accordance with the closure plan in effect at the time of the closure work, the requirements of 35 Ill. Adm. Code Part 845, and the requirements of 40 CFR 257.102. Finally, within 30 days of the Illinois EPA approving the closure report and closure certification, a notification of completion of closure will be prepared in accordance with 35 Ill. Adm. Code 845.760(f).

8.0 CERTIFICATION

Illinois CCR Rule Reference: 35 Ill. Adm. Code 845.720(a)(4)

Federal CCR Rule Reference: 40 CFR 257.102(b)(4)

I certify that:

- This preliminary written closure plan for the Bypass Basin was prepared by me or under my direct supervision.
- The work was conducted in accordance with the requirements of 35 Ill. Adm. Code Part 845 and with the requirements of 40 CFR 257.102.
- I am a registered professional engineer under the laws of the State of Illinois.

Certified By: Thomas J. Dehlin

Date: October 29, 2021

Seal:



Th. Dehlin
10/29/2021
Exp. 11/30/2021

9.0 REFERENCES

1. Illinois Pollution Control Board. "Standards for Disposal of Coal Combustion Residuals in CCR Surface Impoundments." 35 Ill. Adm. Code 845. Accessed October 19, 2021.
2. U.S. Environmental Protection Agency. "Standards for Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments." 40 CFR Part 257 Subpart D. <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-257/subpart-D>. Accessed October 19, 2021.